Interim Report
Soil Borings And Groundwater Investigation

Pfohl Brothers Landfill

Cheektowaga, New York
Site Number 9-15-043

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE

Prepared For:

New York State
Department Of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

Division Of Hazardous Waste Remediation

Michael J. O'Toole, Jr., P.E.
Director

Camp Dresser & McKee
New York, New York

May, 1990

CDM

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May 30, 1990

Mr. Robert W. Schick, P.E.
Chief, Remedial Action Section A
Bureau of Western Remedial Action
Division of Hazardous Waste Remediation
New York State Department of
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Albany, New York 12233

Project: Pfohl Brothers Landfill RI/FS
NYSDEC No. D-001894
CDM No. 897-12-RC-SOBS

Subject: Draft Interim Report on the Soil Borings and Ground Water Investigations

Dear Mr. Schick:

Attached please find ten (10) copies of the above-referenced report.

It is our understanding that this report is for internal NYSDEC use only, and as such, has not received QA/QC review for technical accuracy. Only some of the data have been validated. During your review of this document we will complete the validation of the data so that a final report can be issued later this month.

A preliminary review of the dioxin (2,3,7,8-TCDD) results show no detections in any of the Round 2 ground water samples. These data will be incorporated into our final report.

Should you have any questions or require additional information, please do not hesitate to call.

Very truly yours,

CAMP DRESSER & McKEE

Lee Guterman

Lee Guterman
Project Manager

cc: R. Schwartz
File

(LG3/21)ES

1.0 INTRODUCTION

Camp Dresser and McKee (CDM), under contract with the New York State Department of Environmental Conservation (NYSDEC), installed soil borings and monitoring wells and collected ground water samples at the Pfohl Brothers Landfill site in Cheektowaga, New York from October, 1989 to December, 1989. This work was undertaken as part of a Remedial Investigation to determine the nature and extent of contamination at the site.

The Pfohl Brothers site is a 120 acre inactive facility formerly used for the disposal of industrial and/or hazardous wastes from the surrounding townships. The landfill, which operated from 1932 to 1969, is listed in the New York State Registry of Inactive Hazardous Waste Sites. The landfill is located in a commercial/residential area approximately one mile east of the Buffalo International Airport in the Town of Cheektowaga, New York (figure 1-1).

This investigation included the installation of 24 monitoring wells in and around the site and 17 exploratory borings on-site to evaluate the nature and extent of soil and groundwater contamination attributable to the landfill. CDM subcontracted Rochester Drilling Company, Inc. (RDC) for borehole drilling and monitoring well installation.

1.1 OBJECTIVES OF STUDY

This investigation was conducted to determine the nature and extent of soil and ground water contamination and gather all necessary data to support the development of a Feasibility Study addressing site mitigation. The objectives of the borehole drilling and monitoring well installation were as follows:

- develop a comprehensive geologic profile of the unconsolidated deposits at the site;
- verify the existence, as well as determine the thickness and

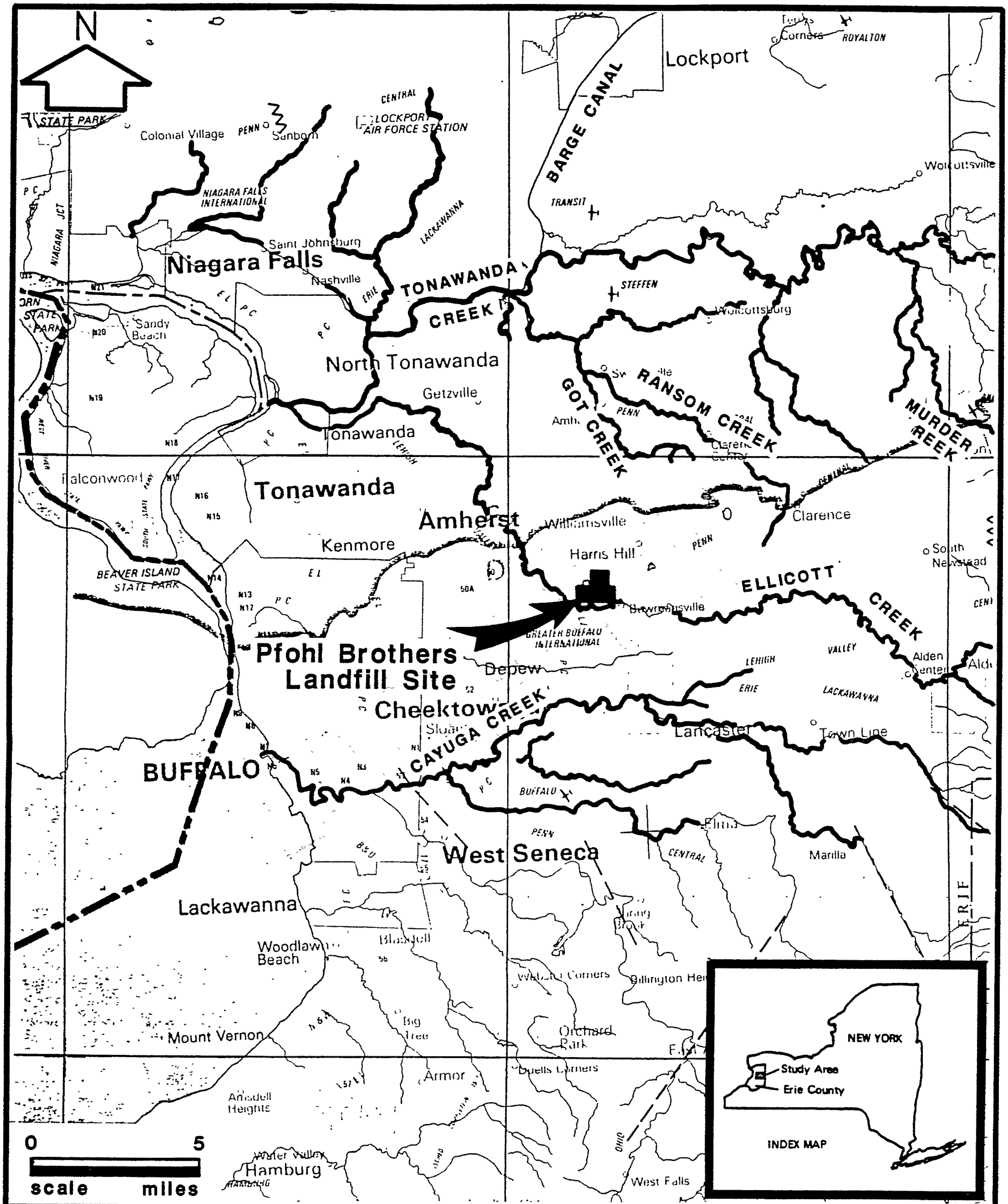

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Figure 1-1

Location Plan

Pfohl Brothers Landfill, Cheektowaga, New York

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extent, of a natural clay layer across the landfill;

- o determine the extent of contamination within the undisturbed native soils;
- o augment the data collected during the test pit investigation;
- o determine the bedrock surface across the site;
- o delineate the location of a trench identified in a 1964 aerial photograph that appeared to have been excavated in the northeast quadrant of Area B;
- o evaluate the site-specific hydrogeology; and
- o identify potential contaminants and migration pathways in the unconsolidated and bedrock aquifers.

1.2 HYDROGEOLOGIC SETTING

1.2.1 GLACIAL DEPOSITS

Glacial deposits are either laid down directly by the ice sheet, such as till--an unsorted mixture of particles ranging in size from clay to boulders; or as melt water/runoff material typified by such features as kames, outwash plains and lacustrine (lake) sediments.

The Pfohl Brothers landfill is located in the Lake Erie Plain, a smooth to gently rolling surface 6 to 12 miles in width formed by Pleistocene glaciation. The Lake Erie plain was covered by pre-glacial lakes prior to the formation of Lake Erie. Within and surrounding the lakes were sandy beach ridges and bottom deposits of varved red clay that formed in the developing basin. The varved red clay deposits typically occur in the vicinity of Cheektowaga (Buehler and Tesmer, 1963). The alternating light and dark banding associated with varved deposits is the result of seasonal variation in sediment runoff.

The advancement, melting and subsequent retreat of the glacial ice sheet resulted in the deposition of till and lacustrine sediments in the area now occupied by the Pfohl Brothers Landfill. The lacustrine deposits typically consists of clay with discontinuous stringers of very fine sand and silt.

The lacustrine deposits have a very low permeability and therefore, are generally not conducive to the development of a potable water supply. Several shallow wells installed in glacial till and lacustrine deposits were hydraulically (slug) tested at the Union Road Site, located 5 miles southwest of the study area. The tests were performed as part of a remedial investigation at an inactive hazardous waste disposal facility. The calculated values of hydraulic conductivities range between 2.01 ($0.7E^{-3}$ cm/sec) and 51.02 ($0.18E^{-1}$cm/sec) feet per day with a mean of 10.91 feet per day ($0.38E^{-2}$ cm/sec) (Dvirka and Bartilucci, 1989). By contrast, hydraulic conductivity values for glacial till typically range between 1.33 E^{-5} to 1.33 feet/day ($4.69E^{-9}$ to $0.5E^{-3}$) (Freeze and Cherry, 1979).

1.2.2 BEDROCK

The water bearing properties of a carbonate rock are a function of primary (intergranular) porosity, and secondary porosity such as bedding plane partings, vugs (solution cavities) and fractures. Karstic conditions have been identified in the area. A sink hole exists approximately 2 miles northeast of the landfill. The area in the vicinity of the sink hole corresponds to an aquifer recharge area. In a recharge area there is little hydraulic head to cause ground water to flow. Therefore, the residence time of the ground water in the aquifer is longer, thus the effects of chemical solutioning are greater. As the ground water moves down gradient towards the site, the hydraulic head and flow rate increase, and the residence time and the effects of chemical solutioning decrease. Therefore, fractures rather than karstic features are probably the most significant feature effecting ground water flow in the study area.

The primary aquifer within the study area is the Onondaga Limestone. The limestone outcrops locally in the Buffalo Crushed Stone Company Quarry two miles to the east of the site. The Devonian age limestone is gray, compact and fossiliferous. It is a productive aquifer with wells typically yielding between 10 to 300 gal/min. Most of the ground water flow is through secondary porosity features such as interconnected solution cavities and fractures (La Sala, 1968). The aquifer thickness is approximately 140 feet, where not eroded by glaciation. However, most wells in the area do not penetrate the entire thickness of the aquifer.

Structurally, the bedrock has a regional dip southward at 0.43^0. LaSala (1968) identified two main vertical fracture sets trending northeast and northwest through the region. The fractures are reported to be spaced 30 to 50 feet apart and between 50 and 300 feet in length at the surface. The development of the fractures is probably due to differential isostatic rebound subsequent to glacial retreat. The frequency of fractures diminishes with depth, however no limiting depth of fracture occurrence has been defined (Giddings, 1980). Horizontal fractures also occur in the rock along bedding planes. The occurrence and orientation of fractures within the study area, however, is unknown.

At the Union Road site the limestone was found to be very competent (few fractures) from 10 to 25 feet below the bedrock surface. Natural gas was detected during installation of most of the wells at a depth of 25 to 29 feet below the bedrock surface. The investigators hypothesized that ground water flow was through near surface fractures within 10 feet of the surface of the bedrock (Dvirka and Bartilucci, 1989).

Drillers have reported (Giddings, 1980) a decrease in hydraulic head with depth in the Onondaga limestone. A decrease in hydraulic head with depth indicates that the ground water is flowing downward. Since the number of fractures appear to decrease with depth, it is assumed that there is a corresponding decrease in transmissivity with depth. Although a vertical component of ground water flow exists, it appears that the effective discharge of ground water is essentially horizontal due to preferential flow in near surface fractures.

The hydraulic properties of the Onondaga limestone vary greatly throughout the flow domain. Transmissivity was found to range from 40 to 3342 square feet/day (La Sala, 1968). The great variability in the areal distribution of transmissivity indicates that the aquifer may be anisotropic and therefore, vectors of preferential flow exist. Wells that show high values of transmissivity probably intercept fractures.

Dye studies were conducted by the U.S.G.S. in several sink holes in the area including the Harris Hill sink hole, which is located approximately 3 miles northeast of the landfill. The dye was injected into the sink hole and its occurrence was monitored in a limited number of monitoring wells, and at spring faces along the Onondaga Escarpment (Staubitz and Miller, 1987). The dye was never observed at any of the monitoring points, which indicates the aquifer may be extremely anisotropic.

Hydraulic gradient is the driving force of ground water and is equal to the magnitude and direction of the maximum rate of change in head. In an anisotropic aquifer the direction of flow is not always parallel with the hydraulic gradient. In other words, the direction of ground water flow in an isotropic system is perpendicular to the equipotential (contour) lines on a potentiometric map. In an anisotropic system, however, ground water flow may be oblique to the equipotential lines of a potentiometric map.

1.2.3 GROUND WATER RECHARGE

Recharge to the unconsolidated aquifer comes from precipitation which averages about 36 inches per year. Allowing for evapotranspiraton and surface discharge to streams, approximately 4.2 to 8.4 inches of precipitation per year actually reach the groundwater system (La Sala, 1968).

Recharge to the bedrock aquifer occurs by direct infiltration of precipitation, vertical recharge by the overlying unconsolidated aquifer, and to some extent, vertical leakage of surface waters.

1.2.4 GROUND WATER DISCHARGE

An east-west trending ground water divide exists approximately 9000 feet northeast of the site as shown in figure 1-2 . The divide corresponds to a topographic high midway between the Onondaga Escarpment and NYS Thruway. South of the divide the direction of ground water flow in both aquifers is south. North of the divide ground water is flowing north (Miller and Staubitz, 1985).

On a local scale, the hydraulic gradient in the unconsolidated aquifer is generally a subtle reflection of the bedrock surface, and hence, surface topography. The topographic lows, which correspond to wetlands or creeks, are discharge areas for the unconsolidated aquifer. Site specific discharge areas include Ellicott Creek and Aero Lake.

The water level in the unconsolidated aquifer varies considerably throughout the year. During the dryer months, discharge of ground water to streams, wetlands and the bedrock aquifer exceeds recharge and the water table declines (Miller and Staubitz, 1985).

If the limestone aquifer behaves anisotropically, the gradient determined from a potentiometric map of the aquifer may not indicate flow direction. Under these conditions, the fractures may act as preferential conduits of flow. Pumping tests would be necessary to evaluate the degree of aquifer anisotropy and to determine the principal direction of flow. Since there have been no pumping tests conducted in the limestone aquifer in the proximity of the study area, it is impossible to determine the degree of aquifer anisotropy, and hence, the preferred direction of flow.

It is likely, however, at least locally, that Ellicott Creek serves as a discharge area for ground water that is flowing within the near surface fractures in the Onodaga Limestone aquifer. However, because of the downward gradient observed by drillers, it is also likely that some component of ground water flow occurs beneath the creek. The ultimate

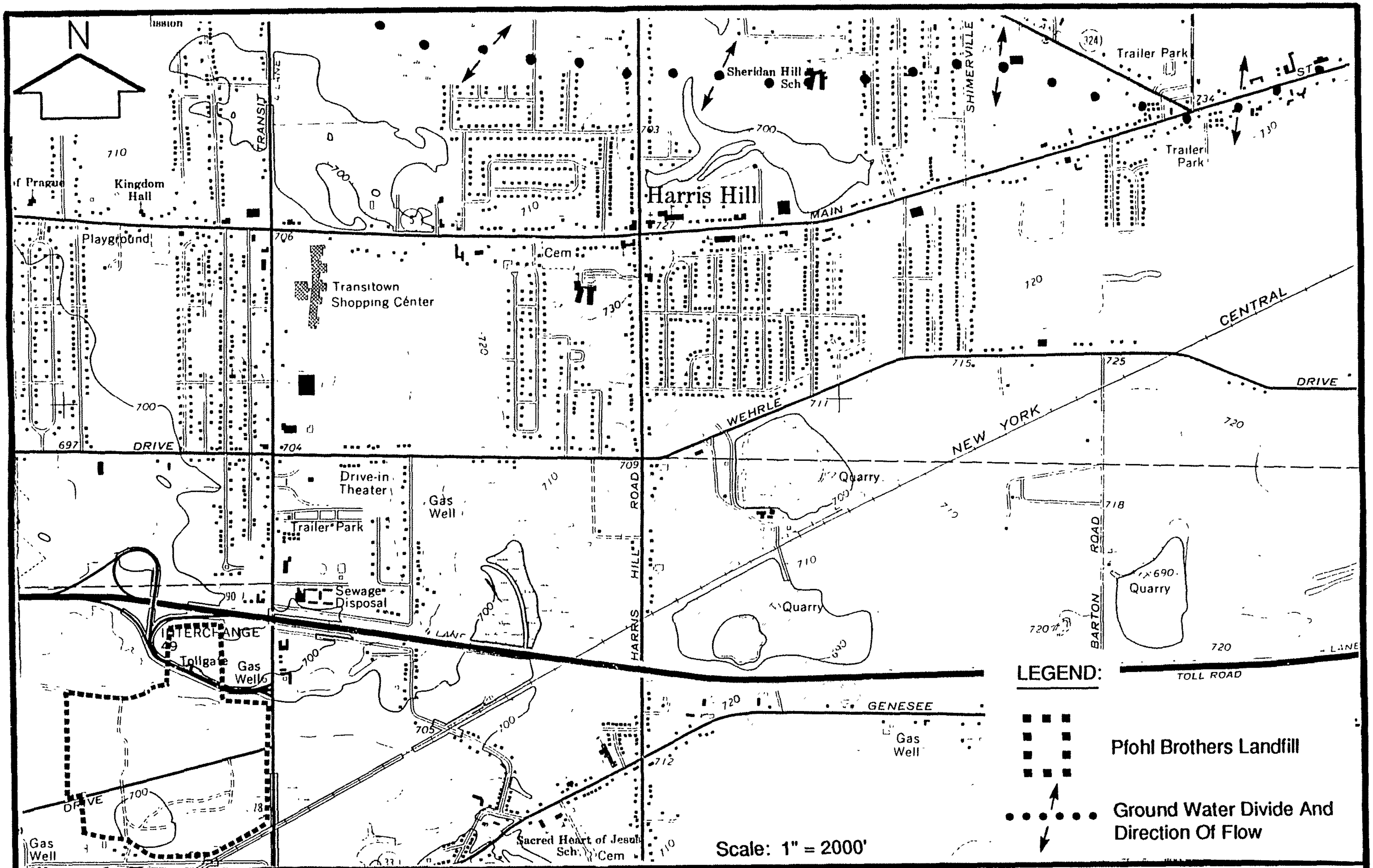

FIGURE 1-2

Location Of Ground Water Divide

Pfohl Brothers Landfill, Cheektowaga, New York

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discharge point of both aquifers south of the divide is Lake Erie.

1.2.5 GROUND WATER USAGE

The public water in the Towns of Cheektowaga, Bowmansville and Williamsville is either directly supplied by, or purchased from the Cheektowaga Water Authority (CWA). The location of these towns with respect to the Pfohl Brothers Landfill is shown in figure 1-3. The source of water for the CWA is from Lake Erie and/or the Niagara River.

Cheektowaga and Williamsville are fully developed residential suburban communities of the City of Buffalo. Every home has access to public water lines, however, there is no mandatory hook up law requiring residents to connect to the public water system.

According to the CWA (telecommunication, 1990), nearly all areas in Bowmansville are served by public water. However it is possible that a few outlier rural homes still use private wells for their potable water supply. There is no record available at the CWA or Erie County Department of Health on the number or location of residents using groundwater as their primary source. It is probable that ground water is used more frequently as a secondary source (e.g., irrigation, etc.) in these areas.

1.2.6 GROUND WATER PUMPAGE

The Buffalo Crushed Stone Quarry (BCS), located a little over one mile east of the study area, began operation in 1904. The quarry consists of two pits in which two dewatering pumps have been installed, each capable of purging 400,000 gallons/hour per pump. The water is either discharged to Ellicott Creek via a drainage ditch, or used in the on site processing plant.

A potentiometric map was constructed by the U.S.G.S. (1987) of the Onondaga Aquifer for Eastern Erie County. As shown on figure 1-4, the map

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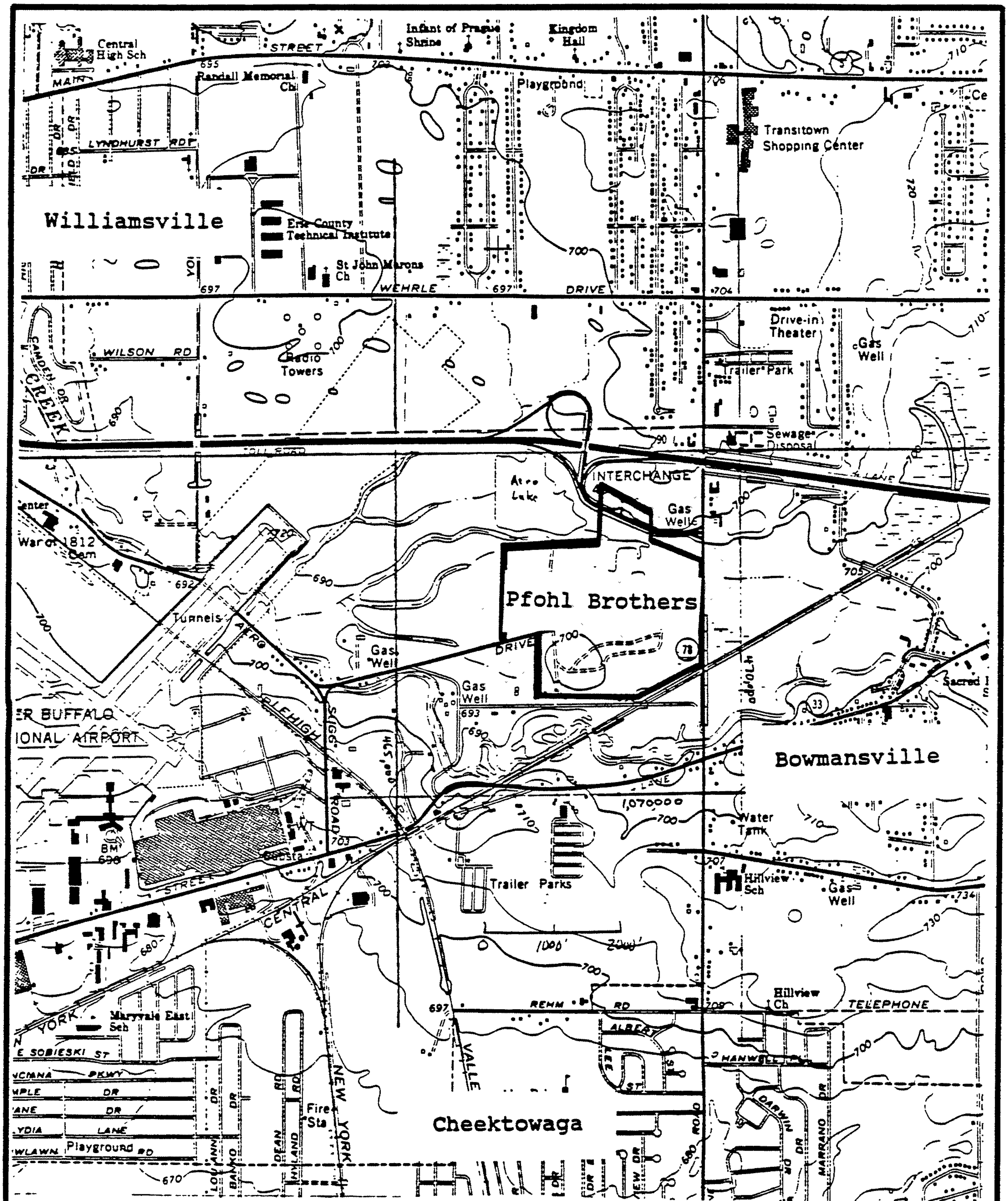

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Figure 1-3

Location of Neighboring Towns

Pfohl Brothers Landfill

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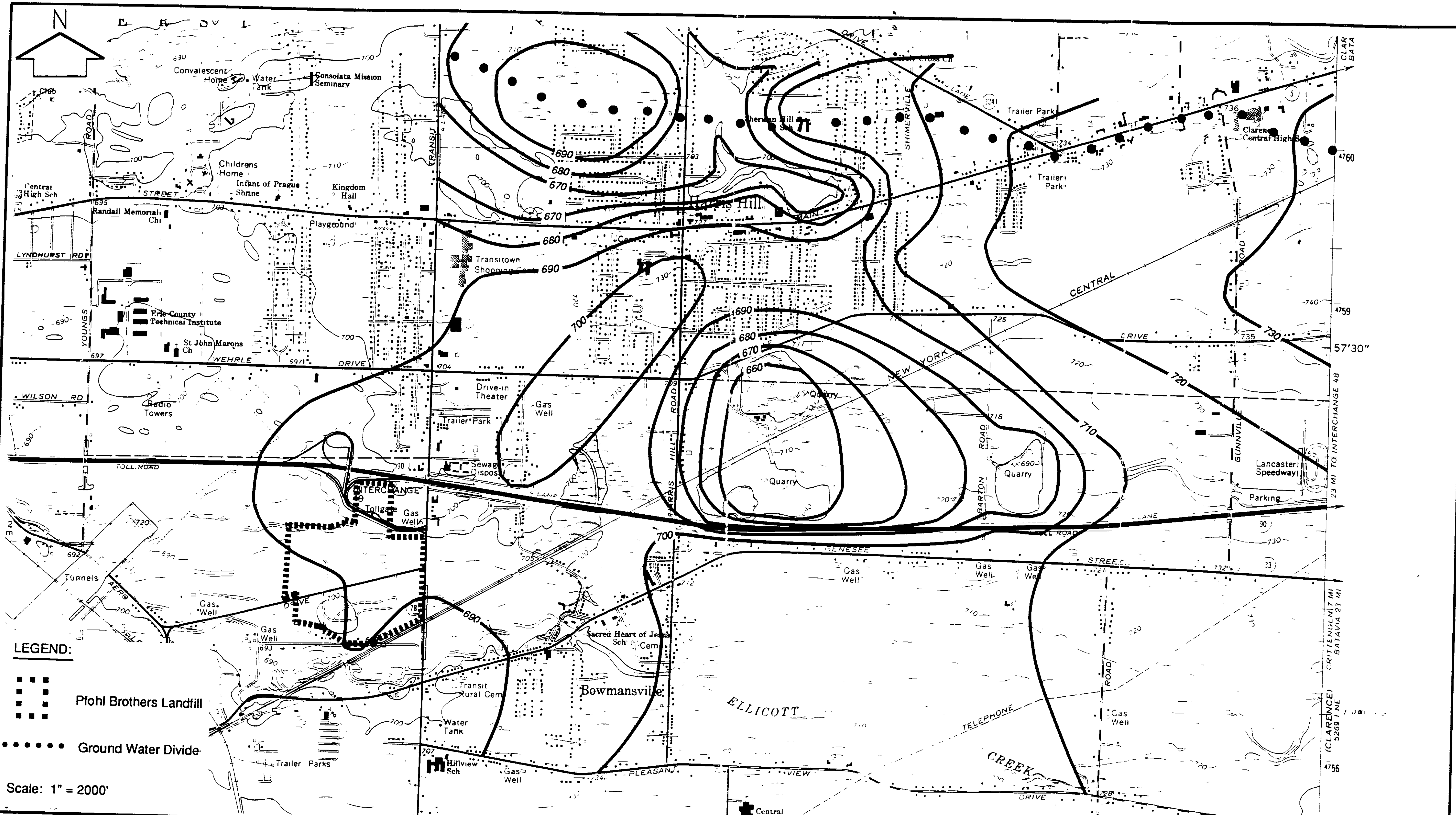

LEGEND:

Pfohl Brothers Landfill

Ground Water Divide

Scale: 1" = 2000'

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FIGURE 1-4

Effect Of Quarry Pumping On The Potentiometric Surface Of The Ondndagn Aquifer

Pfohl Brothers Landfill, Cheektowaga, New York

includes the area surrounding the BCS quarry. Water levels taken from site specific monitoring wells were used to extend the map into the boundaries of the Pfohl Brothers Landfill. The cone of depression created by the BCS quarry dewatering pumps extends to within 5000 feet of Transit Road, east of the landfill. As a result, it does not appear that quarry dewatering would effect potential contaminant migration at the landfill.

1.2.7 SURFACE WATER HYDROLOGY

Pfohl Brothers Landfill lies within the Erie-Niagara Drainage Basin. Surface water bodies surrounding the site include Aero Lake and Ellicott Creek, which are north and south of the landfill, respectively (figure 1-5).

Water is supplied to both water bodies from direct discharge of the unconsolidated and/or bedrock aquifer, as well as surface runoff during rain or snow fall events. The average annual runoff for the area is about 15 inches (Harding and Gilbert, 1969).

The surface outflow of the lake is an intermittent stream located along the northern edge of the landfill. Drainage is to the southwest. Aero Lake is classified as Class D waters, indicating the water is suitable for fishing and boating. The man made 40 acre lake originated from a borrow pit which was excavated for fill material during the construction of the NYS Thruway. The lake is approximately 20 feet in depth and used by local residents for fishing in the warmer months.

Ellicott Creek is a major tributary to the Erie-Niagara Basin. It is classified throughout most of its reach as Class B waters, and therefore, conducive to supporting fish of the trout species.

The natural flow of the Creek is augmented along its reach near Bowmansville by the discharge of ground water which is pumped out from the BCS quarry.

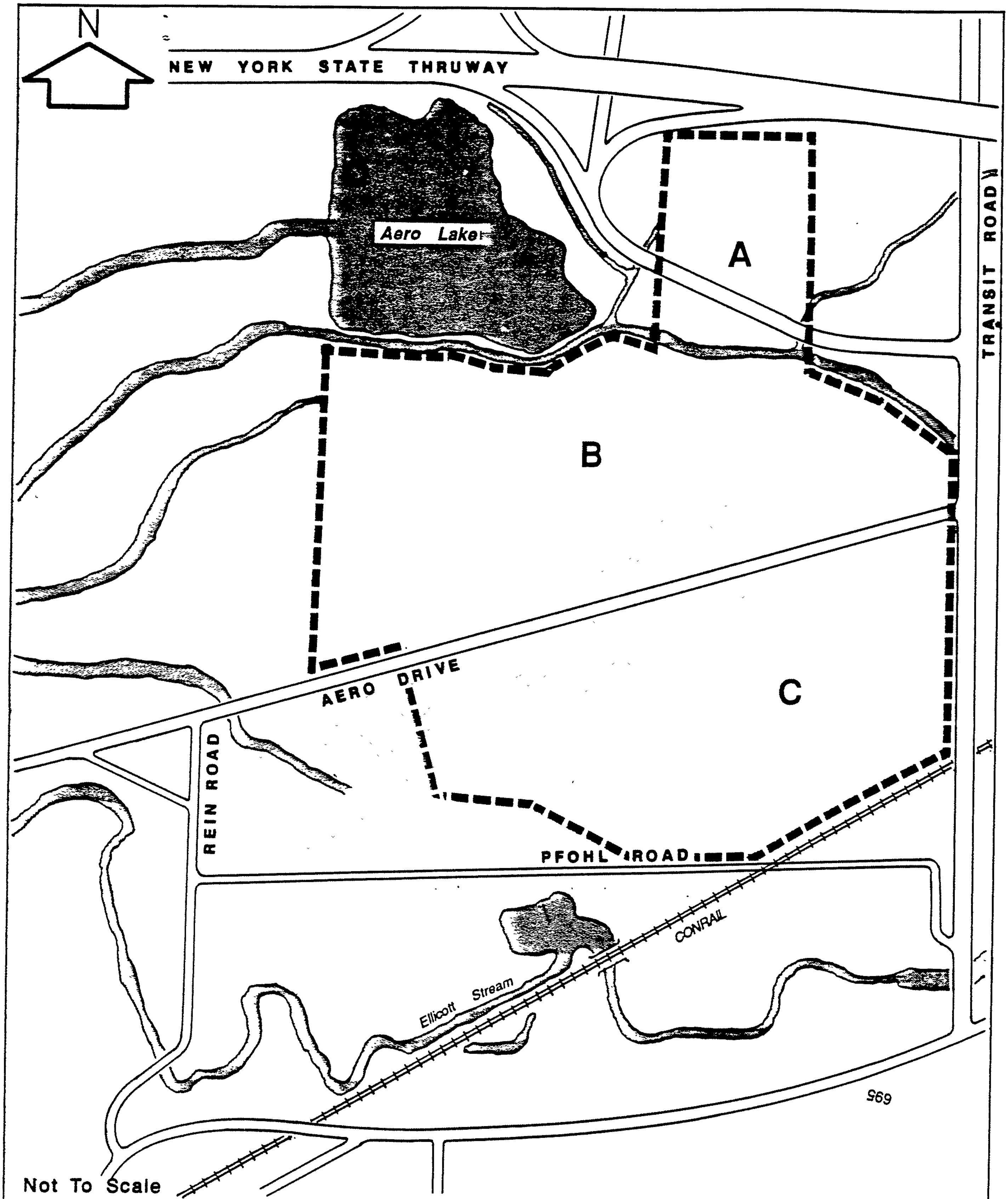

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FIGURE 1-5

Pfohl Brothers Landfill Site

Pfohl Brothers Landfill, Cheektowaga, New York

The flooding potential of the Pfohl Brothers landfill is shown on figure 1-6. Most of Areas A, B and C lie within areas of minimal flooding or areas between the limits of the 100-year and 500-year flood.

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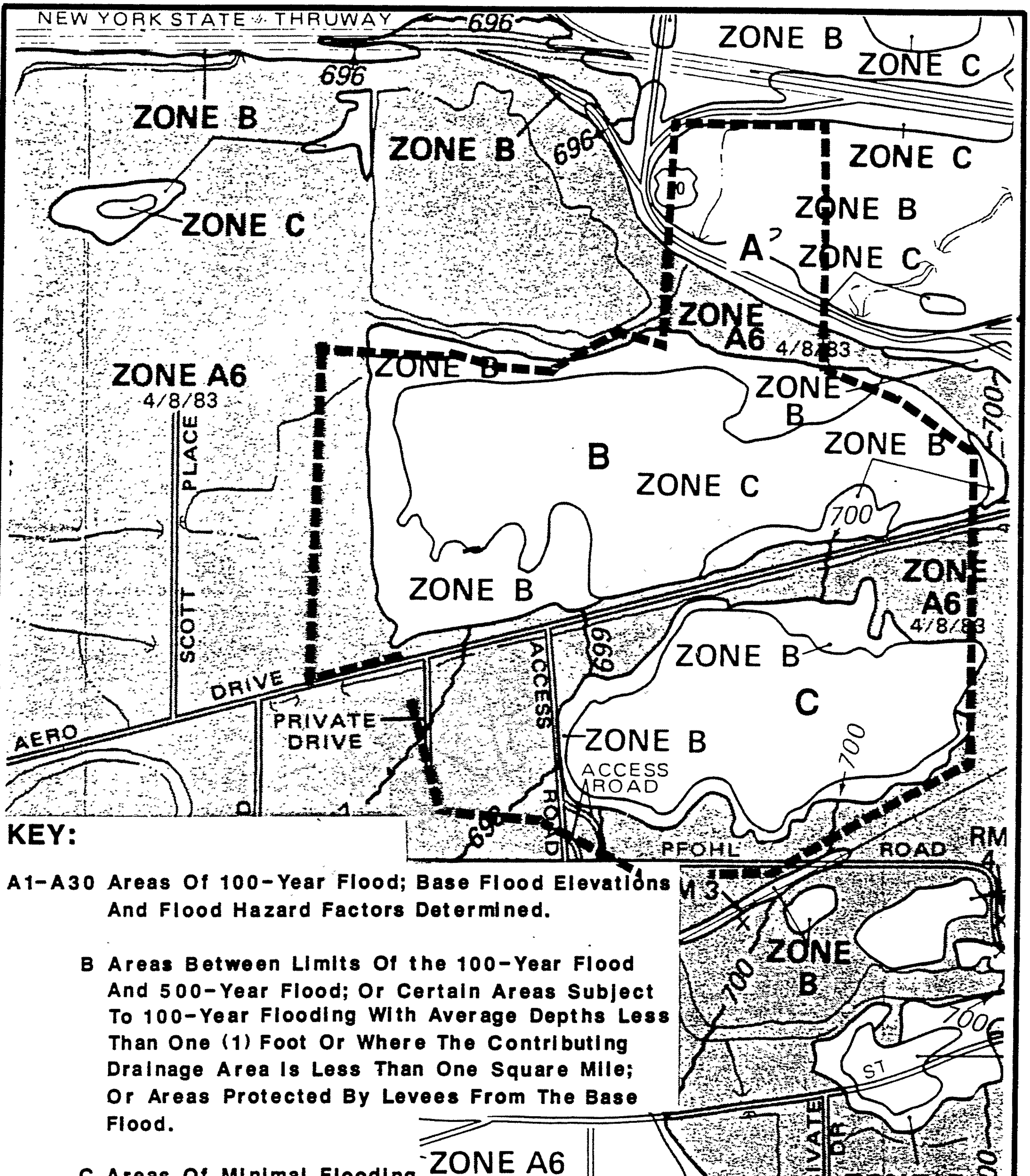

KEY:

A1-A30 Areas Of 100-Year Flood; Base Flood Elevations And Flood Hazard Factors Determined.

B Areas Between Limits Of the 100-Year Flood And 500-Year Flood; Or Certain Areas Subject To 100-Year Flooding With Average Depths Less Than One (1) Foot Or Where The Contributing Drainage Area Is Less Than One Square Mile; Or Areas Protected By Levees From The Base Flood.

C Areas Of Minimal Flooding

Not To Scale

SOURCE: Federal Emergency Management Agency, 1983

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Figure 1-6

Pfohl Brothers Landfill Site
Flood Potential

Pfohl Brothers Landfill, Cheektowaga, New York

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2.0 DRILLING AND SAMPLING METHODOLOGIES

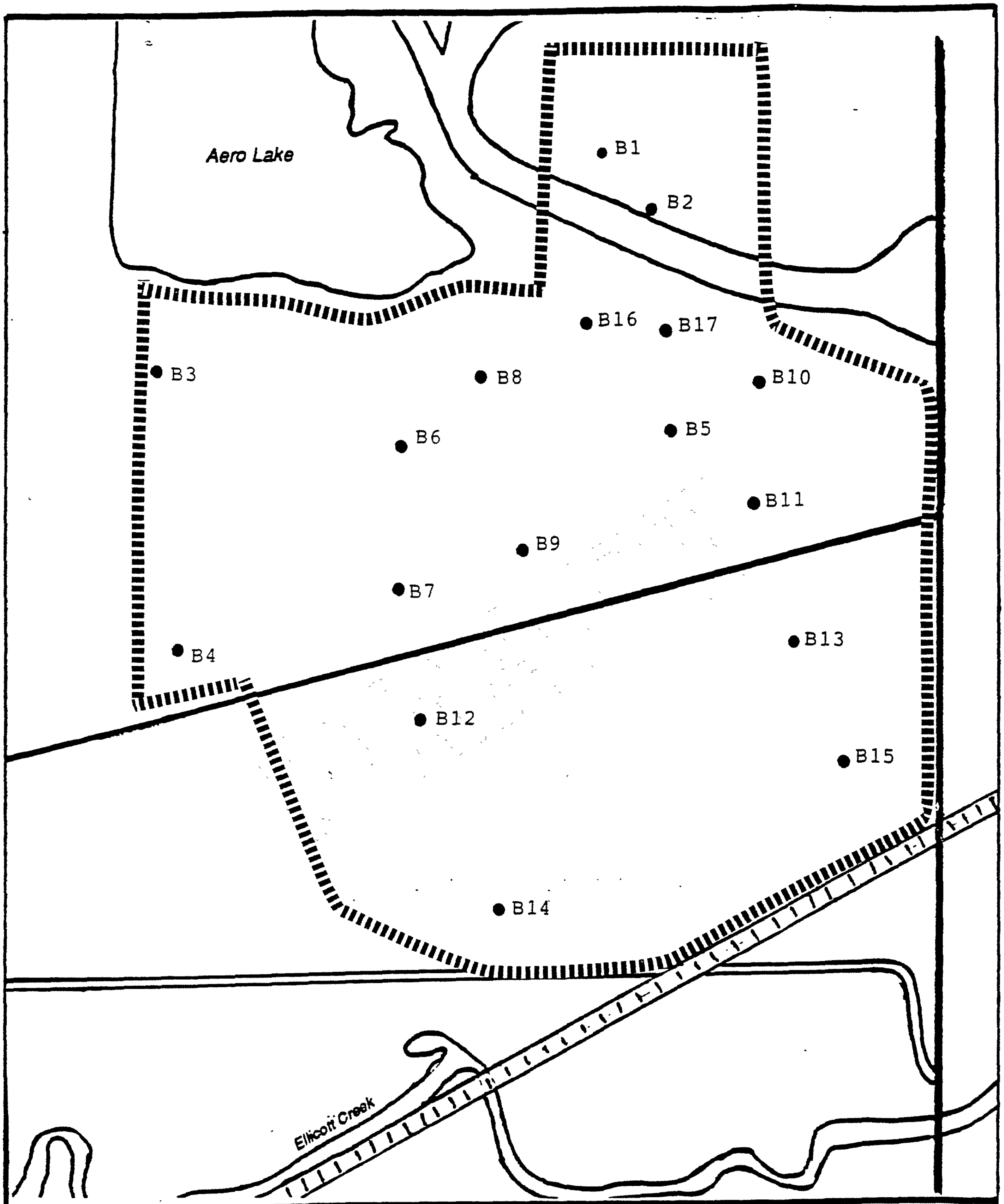
2.1 BOREHOLE INSTALLATION

A total of 17 exploratory borings were installed in Areas A, B and C. Two borings were installed in Area A, eleven in B and four in C. The location of the 17 exploratory boreholes is shown on figure 2-1.

The borehole drilling and sampling effort was accomplished through the use of a Mobile B-61 drilling rig, which was operated by RDC personnel. As requested by NYSDEC, the drilling rig, sampling equipment and borehole location were secured with a four foot high cyclone fence at the start of each new borehole. All personnel participating in the sampling effort within the established work zone donned Level "C" respiratory and dermal protection. The breathing zone in the work area was continuously monitored for volatile organic compounds using an Organic Vapor Analyzer (OVA) and a photo ionizing detector (HNu) equipped with a 11.7 eV probe. In addition, an explosimeter was continuously used to measure the lower explosive limit (LEL), as well as available oxygen, to safeguard against a potential explosive environment.

The boreholes were advanced using a 6 1/4" inch hollow stem auger and a standard 2 inch outer diameter (O.D.) split spoon. Continuous samples were collected from ground surface to bedrock at two foot intervals. The spoon was driven into the ground by a standard weight (140 lb.) hammer. Upon retrieval, the spoon was opened and scanned for volatiles using an OVA and HNu. The observed readings were recorded in the field notebook.

The contents of the split spoon were described using Bermeister soil classification, photographed, and if sufficient quantity of soil present, collected for head space and/or chemical analysis. Descriptive logs of the borings are provided in Appendix A. All samples were extracted from the split spoon using a clean stainless steel trowel and placed in the appropriate sample jars. Samples selected for chemical analysis were



Scale: 1"=500'

Figure 2-1

Boring Location Map

Pfohl Brothers Landfill

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placed on ice.

Specific samples were selected from each borehole using the following criteria:

- o Total volatile organic content measured in the sample headspace and in the borehole
- o Visual observations (e.g., discoloration,etc.)
- o Geologic profile (e.g., change in soil type)
- o Sample depth
- o Hydraulic profile (e.g., saturated vs. unsaturated strata).

In all cases, samples corresponding to the highest headspace measurements were selected for laboratory analysis if enough sample were recovered.

During the installation of the off-site monitoring wells in October 1988, samples collected from each borehole were screened using an OVA equipped with a strip chart recorder. This procedure was intended to provide a chromatogram that would identify contaminants, or group of contminants. This process was time-consuming and produced questionable results. It was therefore decided between CDM and NYSDEC that all future headspace analyses would be accomplished using the HNu and the OVA without the use of a chromatograph. This modified procedure for headspace analysis was implemented upon resumption of the boring program in June 1989.

Selected samples were shipped to Keystone Laboratories for analysis of TCL parameters, plus cyanide.

Generally, two samples from each borehole were sent to the laboratory for analysis. At least one sample from the unsaturated and saturated zone was analyzed, as well as the last sample collected in the borehole. The matrix of the deepest sample, in almost all cases, consisted of clay/clayey silt. Sample selection in the upper zone was based on visual inspection and/or insitu screening.

Excess soil was temporarily shoveled next to the borehole prior to backfilling. The split spoons were cleaned using alconox, water and a scrub brush prior to collecting new samples at the same borehole location. The procedure was repeated until the auger and/or split spoon came in contact with the bedrock.

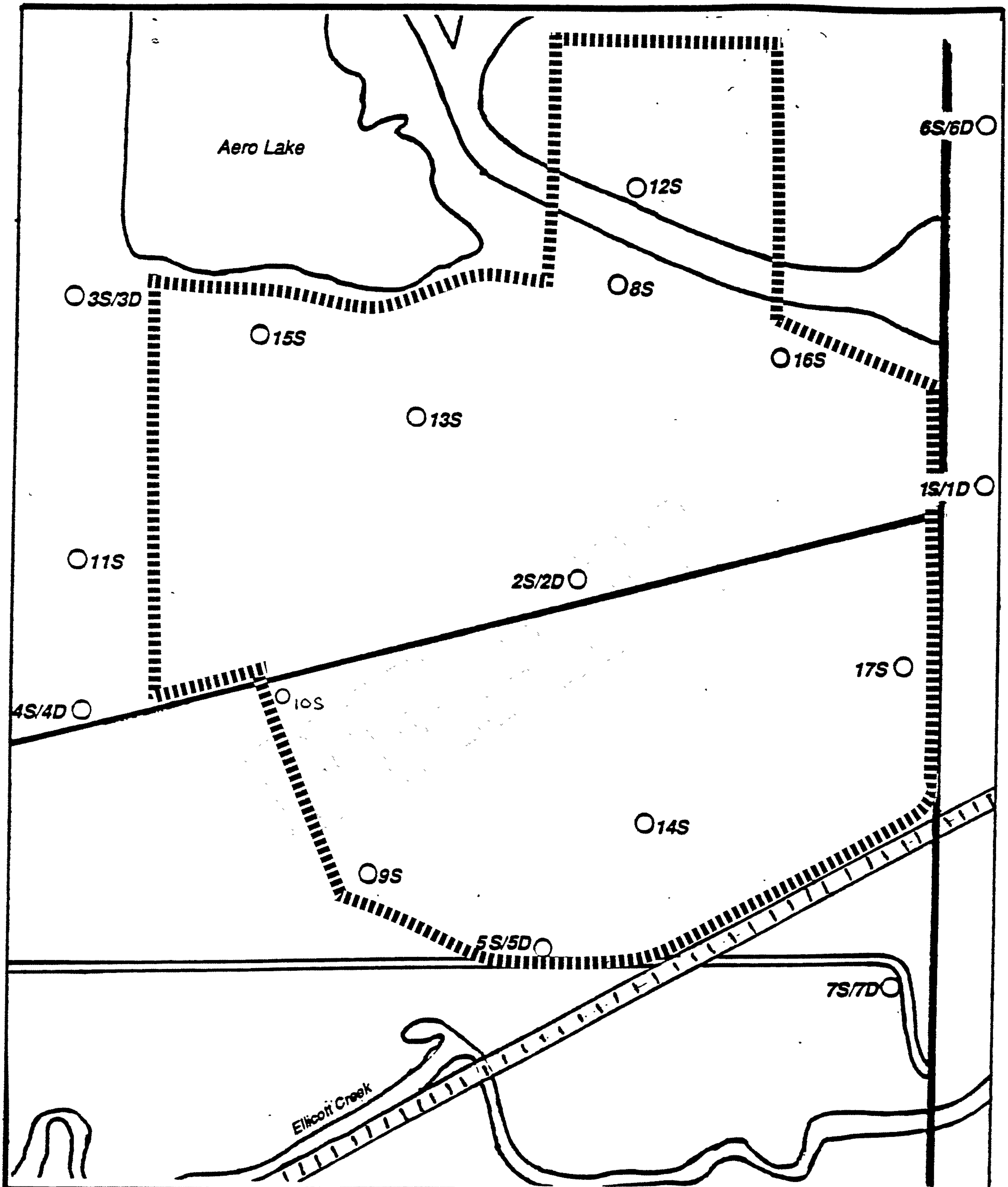
Once bedrock was reached, the auger plug was pulled and bentonite pellets were poured down through the augers to seal the bottom of the hole. This seal generally extended from the top of the bedrock upward about five feet into the clay layer (where present). The borehole was then backfilled with the drill cuttings from the hole. Prior to the start of a new boring, the drill rig, equipment and split spoons were steam cleaned at the decon pad. The stainless steel trowels were decontaminated with alconox, deionized water, nitric acid and acetone as outlined in the Site Operations Plan (SOP).

A radiation survey was conducted using a Portable Ludlum Model 2220 scaler/ratemeter with a Ludlum Model 44-10 (2"x2") NaI gamma probe at several borehole locations. After the borehole was sealed with bentonite, a 10-foot section of 3-inch diameter schedule 40 PVC was lowered inside the augers. The augers were then removed, leaving the PVC in the hole. The gamma probe was lowered in the open PVC pipe and a reading was taken every six inches. The depth that showed the highest reading was measured again for quality control purposes.

Six undisturbed clay samples were collected using Shelby tubes at randomly selected locations. The samples were collected for the purpose of determining the vertical hydraulic conductivity of the clay directly above the bedrock.

2.2 MONITORING WELL INSTALLATION

Twenty four monitoring wells were drilled throughout Areas A, B and C, as shown on figure 2-2, to evaluate the hydraulic and chemical characteristics



Scale 1"=500'

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Figure 2-2

Well Location Map

Pfohl Brothers Landfill

shown on figure 2-2, to evaluate the hydraulic and chemical characteristics of the ground water within the study area. Initially, locations of the proposed wells were chosen in and around the landfill that would provide good areal coverage and assist in determining if local ground water mounding was occurring. The final positioning of the wells was a proactive process which evolved from refinement of geologic profiles and identification of data gaps as the boring program progressed.

A total of 24 monitoring wells were installed in an around the Pfohl Brothers landfill. Well cluster 6S/6D located approximately 1000 feet northeast of Area B, served as background wells. Two shallow wells were installed in Area A (8S and 12S).

Three well clusters were installed outside the boundaries of Area B. Wells 3S/3D and 4S/4D were installed along the western perimeter of Area B; wells 1S/1D were installed east of Transit Road. A single shallow well, 11S, was also installed along the western perimeter of Area B, approximately midway between the two off-site well clusters.

A total of five wells were installed in Area B. Three of these wells, 13S, 15S and 16S, were installed as single wells. Well cluster 2S/2D was installed approximately mid center of Area B, just north of Aero Drive.

One off-site well cluster, 7S/7D, was installed southeast of Area C, south of Pfohl Road. Four single wells were installed in Area C (14S, 9S, 10S and 17S). Cluster well 5S/5D was installed in the southern portion of Area C, north of Pfohl Road.

In October 1988, four well clusters were installed. These included 1S/1D, 3S/3D, 4S/4D, and 5S/5D. An additional seven were installed and sampled from June through July, 1989. These wells included 11S, 10S, 9S, 6S/6D, 7S/7D, 8S and 12S. The remaining wells, 15S, 13S, 16S, 2S/2D, 14S and 17S, were completed between November 1989 through December 1989.

Prior to drilling, each drill site was secured with a 4 foot high cyclone fence. Level C respiratory and dermal protection was maintained by all drilling and sampling personnel for on site well construction. Modified Level D (dermal protection) was worn during the installation of the off site wells. The work and breathing zone at each well site was continuously monitored for volatile organic compounds using an Organic Vapor Analyzer (OVA) and/or photo ionizing detector (HNu) equipped with a 11.7 eV probe. An explosimeter was also employed to monitor the lower explosive limit to safeguard against a potential explosive atmosphere.

The 17 wells completed in the unconsolidated aquifer were installed using a 6 1/4 inch hollow stem auger and a standard 2 inch O.D. split spoon. The spoon was driven into the ground by a standard weight (140 lb.) hammer. Soil samples were collected and described by CDM personnel. Selected samples were analyzed for TCL parameters, plus cyanide by Keystone Environmental Resources, Inc. The results of the soil samples collected during monitoring well installation are presented in Section 4.2 of this report.

Following contact with bedrock, the bottom of the borehole was sealed with bentonite in all the borings except 1S, 3S and 5S. A 2-inch diameter 10-foot long stainless steel casing and a five to ten foot 0.10-inch slot size screen was installed for all the shallow wells. Whenever possible, the well screen was set in sand as opposed to clay. The sand pack extended from the bottom of the well screen to approximately two feet above the top of the screen. A one foot bentonite seal was placed on top of the filter pack to prevent grout from inundating the screen. The remainder of the open borehole was filled with bentonite/cement grout.

Well construction diagrams are provided in Appendix B. The completed wells were secured with protective casings, caps and keyed-alike locks. All drill cuttings from the well installations were drummed, labelled and secured in the drum storage area.

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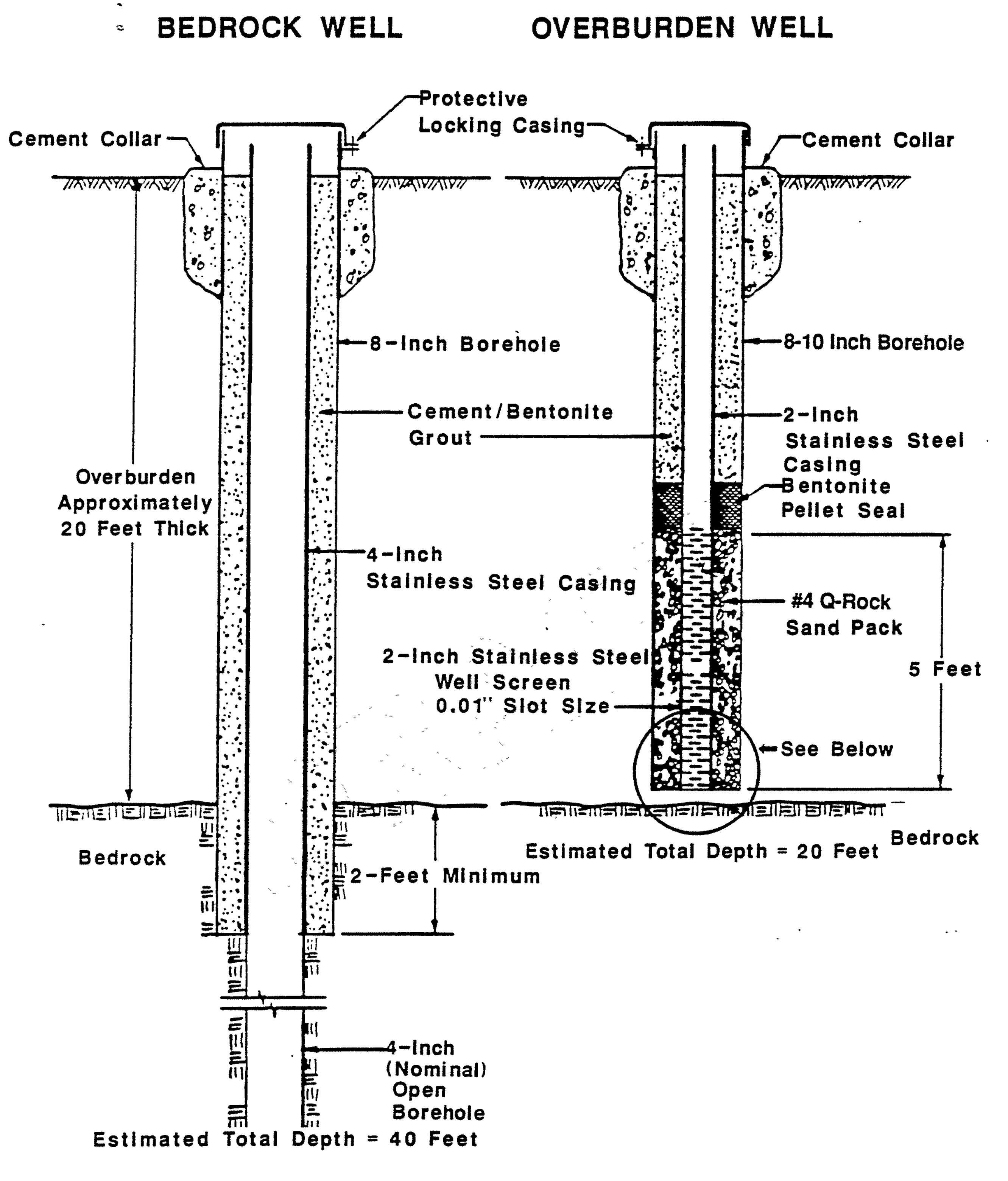
The bedrock well, 2D, was installed as a double-cased well in order to minimize the possibility of introducing contaminants from the upper aquifer to the bedrock aquifer. The depth to the clay layer in this area was known from the sampling at well MW-2S. Clay was found at 16 feet below grade and bedrock was encountered at roughly 23 feet below grade. A hole was drilled using 6 1/4 inch augers down to 18 feet. An 18 foot section of 6-inch diameter steel casing was installed in the hole. This outer casing was then pressure grouted into the borehole. After hardening, the grout was reamed out of the hole with 4-inch roller bit. The bit was advanced down to bedrock and used to drill a two foot socket in the rock. A four-inch diameter stainless steel casing was put into the open hole and secured by pressure grouting. The remainder of the well was completed in a manner similar to the other bedrock wells as described below.

At all the deep well locations, the borehole was advanced in the bedrock with a diamond tipped, NX (3" O.D.) core barrel. The corehole was advanced approximately 20 feet below the bedrock surface. The core sample was examined and described by CDM personnel. The core descriptions are provided on the boring log summary reports included in Appendix A. The cores are presently stored in a secure area on site should further examination be warranted.

After reaching the desired depth, the core barrel was removed and the entire depth of the boring was reemed with a 3 7/8 inch roller drill bit to facilitate pumping, development and sampling. The wells were subsequently secured in a manner similar to the shallow wells previously described. A schematic showing the typical construction of the bedrock and unconsolidated wells is illustrated on figure 2-3.

Following well construction, all wells were developed to optimize their hydraulic efficiency. Depending on their yield, a centrifugal pump, air lift system or bailer was used to remove the drilling residue (rock flour, mud, etc.) from the wells. The development process continued until the discharge water was relatively clear. The development water from on site



Not To Scale

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Figure 2-3

Schematic Well Construction Details

Pfohl Brothers Landfill, Cheektowaga, New York

wells was discharged on the ground, whereas the water from off site wells was containerized to limit the migration of potential contamination. If the wells produced an adequate supply of water, specific capacity tests were conducted. The results of these tests are also provided on the well construction diagrams in Appendix B.

The horizontal and vertical locations of all wells were surveyed by Larsen Engineers, Architects Planners and Surveyors, a New York State certified land surveyor. The elevation of the wells were tied into an established U.S.G.S. benchmark.

Ground water samples were collected for analysis from all wells following well development. A minimum of three well volumes were purged from the well prior to sample collection. The purged water was handled in a manner similar to that of the development water. The samples were collected using a clean bottom loading Teflon bailer which was attached to a braided polyethylene cord. Following each use, the bailer was cleaned with alconox, deionized water, acetone and nitric acid in accordance with the procedures outlined in the SOP. The collected samples were appropriately preserved and shipped to Keystone Environmental Resources, Inc. laboratory for TCL analysis.

If the turbity of a ground water sample was greater than 50 ntu, then filtering of the sample for metals analysis was required. An unfiltered metals sample was also sent to the lab for analysis in a preserved one-liter polyethylene bottle. The sample to be filtered was collected in an unpreserved one-liter polyethylene bottle. If the ambient temperature outside was below freezing, the sample was brought back to the trailer for filtering. This reduced the possibility of mechanical failure of the peristoltic pump and freezing of the filter membrane. Otherwise, the ground water sample was filtered immediately upon collection. The filtered sample was required to pass through a filter membrane with a pore size of 0.45 micrometers. Because of the high turbidity and amount of suspended solids in the ground water, the samples were usually pre-filtered using a membrane with a pore size of 0.80 micrometers before filtering with the 0.45 membrane. This facilitated filtering through the smaller membrane. The filters discarded after every use. After the sample was filtered, it was poured into a new preserved one-liter polyethylene bottle, labelled, and shipped with the other samples to the analytical laboratory.

To date, four rounds of water level measurements have been taken. These data are presented in Appendix C. The January and May 1990 round of water level measurements included ground water data from all wells installed to date. The January and May 1990 rounds of water level measurements were used to construct piezometric maps illustrating ground water flow direction in the unconsolidated aquifer and the hydraulic gradient of the bedrock aquifer. These maps are presented in the following section.

Falling and rising head (slug) tests were also conducted in the wells to determine the hydraulic properties of the aquifer. A minimum of two tests were conducted on each well. The first (falling head) test was performed by rapidly lowering a stainless steel slug into the well, displacing the water, and recording the water level response over time with a pressure transducer and data logger. The second (rising head) test was conducted by rapidly removing the slug from the well and similarly recording the water level response.

The Bouwer and Rice (1976) method for determining the hydraulic conductivity of unconfined aquifers was applied to the data. The application of this traditional method for unconfined aquifer analysis assumes, among other things, that the hydrogeologic system is isotropic. It is assumed that because of the consistently fine grained nature of the native soil within the study area, the unconsolidated glacial aquifer is isotropic.

In contrast, fractured bedrock aquifers are rarely isotropic. When slug tests are conducted in anisotropic aquifers, the curves of time versus head that are generated from the data, suffer problems of being non-unique. That is to say, variations in the curve can not be thoroughly evaluated by using slug test models that are based on isotropic flow to and from the well. Analytical solutions can be formulated for these unique curves given enough information regarding the geometry of the hydrogeologic system. However, it is not practical to collect the volume of hydrogeologic data that is necessary to develop a realistic analytical solution. However, if a standard isotropic analysis is applied, the derived hydraulic conductivity is typically overestimated only by a factor of three or less (Barker and Black, 1983). At the very least, the data collected from the bedrock wells are useful for relative comparison of permeability between bedrock wells.

(PBLF3/5)MP

3.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The National Contingency Plan (NCP) requires that a determination be made as to all applicable or relevant and appropriate Federal, state or local public health and environmental requirements for all sites included on the National Priorities List (NPL). Federal or state advisories, criteria and guidance are to be considered in identifying site-specific ARARs for potential remedial actions at the site. Although this site is a New York State Superfund site and is not included on the NPL, the Remedial Investigation and Feasibility Study is being performed in accordance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and Superfund Amendments Reauthorization Act of 1986 (SARA). As such, the development of ARARs is a requisite for this study.

An index list of New York State ARARs was provided to CDM by NYSDEC on January 11, 1990. This list was reviewed and preliminary ARARs and guideline values for the Pfohl Brothers Landfill were identified for each of the environmental media that were investigated in this study.

The ground water ARARs identified for the Pfohl Brothers site are the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) - Ambient Water Quality Standards and Guidance Values (4/1/87). The NYSDEC TOGS Water Quality Standards (ST) and Guidance Values (GV) provide ambient pollutant concentrations aimed at protecting New York State waters for their best classified use. Standards and guidance values for each pollutant are categorized according to the New York State water classification system.

Ground Water

The ARARs identified with respect to the ground water at the Pfohl Brothers Landfill sites, are the NYSDEC standards and guidelines for class GA ground water.

Soil Borings

For the purpose of this investigation, all soil data are compared against background samples, both locally and regionally.

(PBLF/8)OG

4.0 RESULTS

4.1 PHYSICAL HYDROGEOLOGY

4.1.1 GLACIAL AQUIFER

The surface of the Pfohl Brothers landill reflects the topography of the bedrock surface. Figure 4-1 presents a bedrock surface contour map of the Pfohl Brothers Landfill site constructed from boring logs.

Several surficial deposits were identified beneath the trash. Cross sections were constructed along several transects as shown on figures 4-2 through 4-8. The majority of the borings encountered between 0 and 2 feet of till at the base of the boring. The till consists of a mixture of silt, gravel and clay. The remaining glacial stratigraphy consists of discontinuous lenses of clay, silt, sand, silty clay and silty sand.

The clay layer that was reported to exist by the former landfill bulldozer operator, Mr. Lavocat (1986), was found only in discontinuous lenses. All of the glacial sediments found across the site are extremely fine grained. The chaotic distribution of the sediments across the site are typical of glacial deposits. Because of the seemingly random areal distribution of glacial sediments, it is nearly impossible to predict the glacial stratigraphy across the site.

The location of the trench which was previously exposed during the excavation of test pit 33 (the results of the test pit investigation will be provided in the next report entitled "Interim Report on the Test Pit Investigation") was not confirmed in any of the borings. It was thought that the stripping of the "clay" in this area may provide a hydraulic "window" allowing the contaminants to migrate more rapidly into the bedrock aquifer.

Two water table maps (January and May 1990) were constructed from water level measurements taken from the unconsolidated wells. Figures 4-9 and 4-10 illustrates how the rise in the water table during the wet seasons (May)

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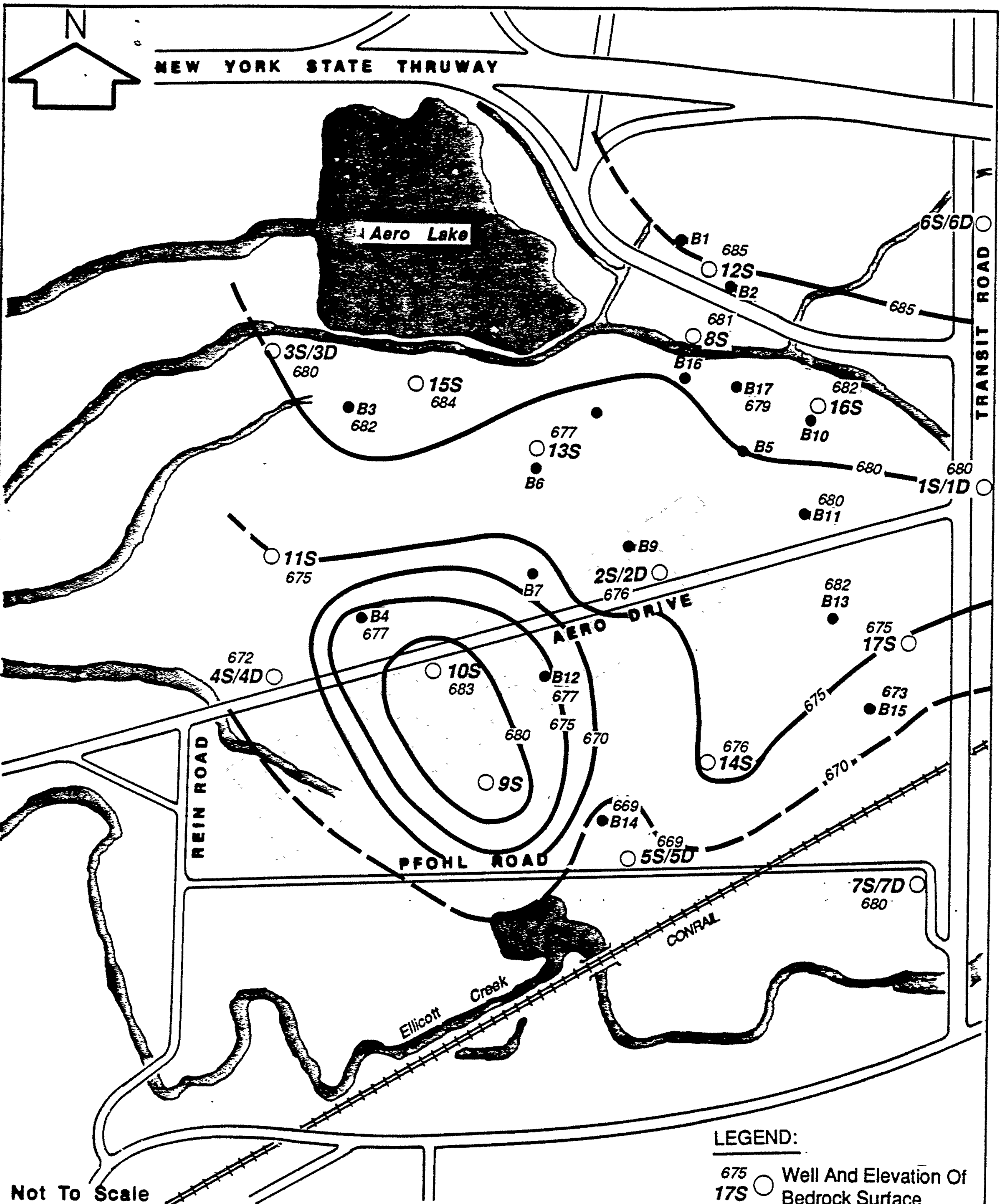

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FIGURE 4-1

Bedrock Surface Contour Map

Pfohl Brothers Landfill, Cheektowaga, New York

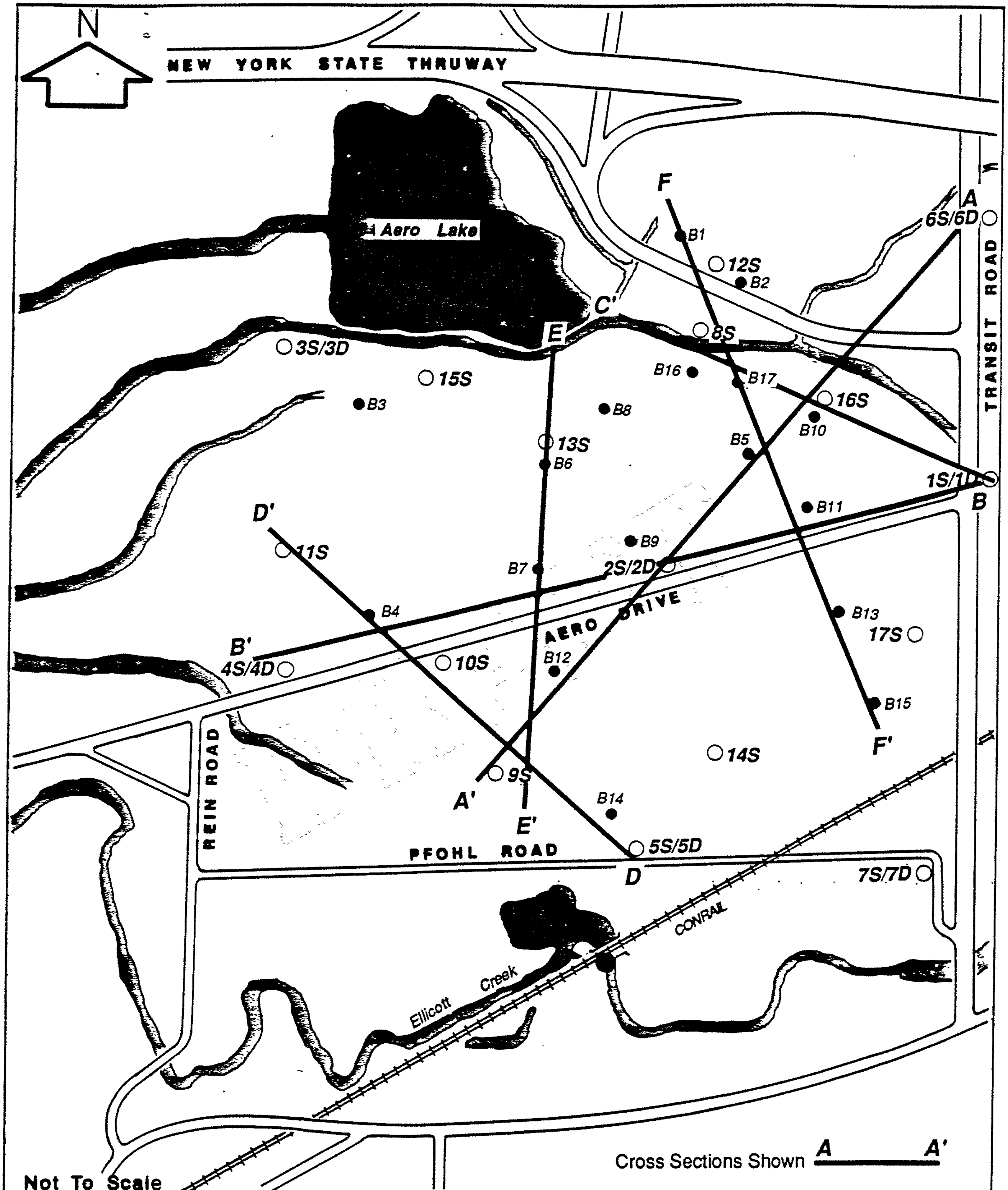

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FIGURE 4-2

Cross Section Location Map

Pfohl Brothers Landfill, Cheektowaga, New York

067420

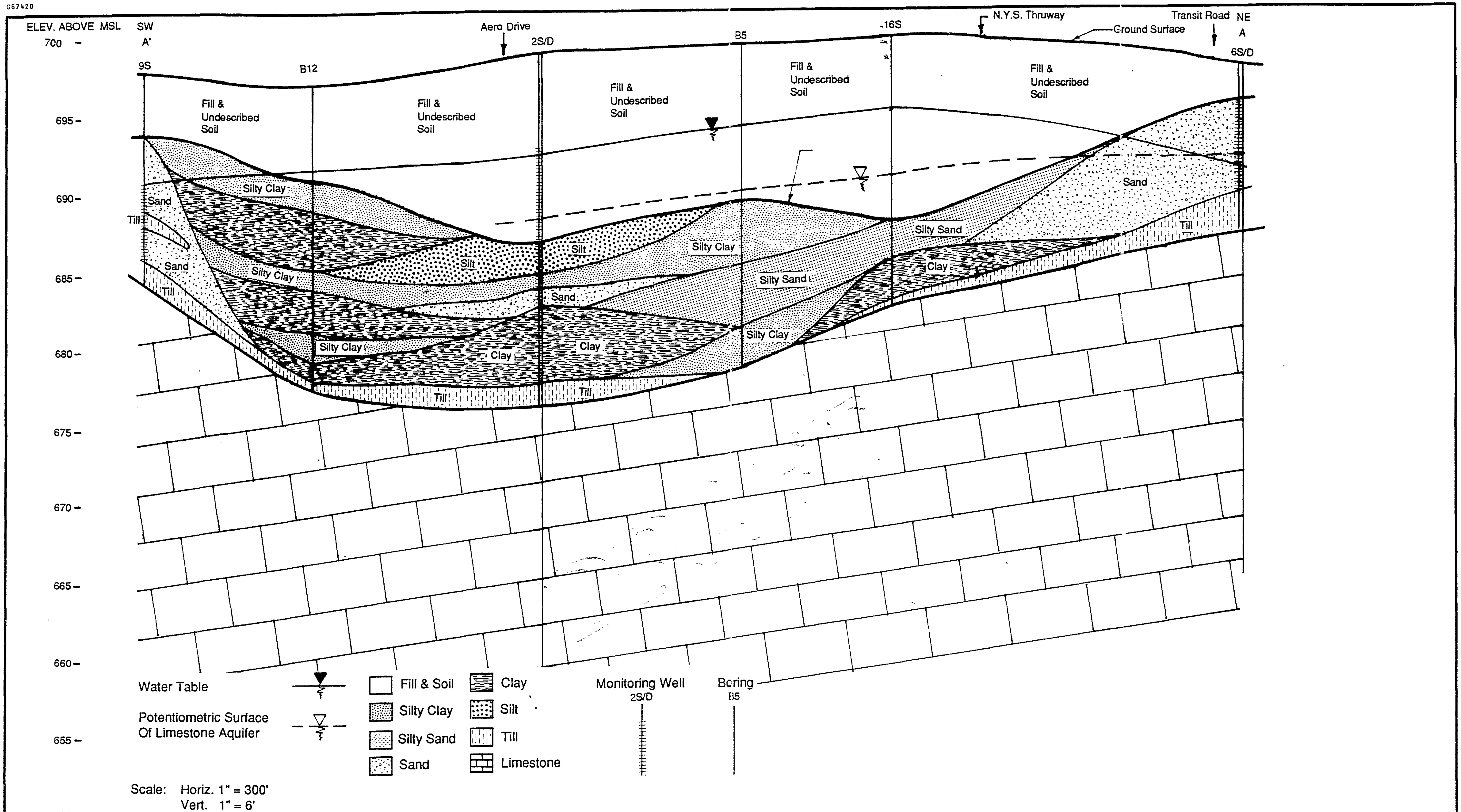

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FIGURE 4-3

Geologic Cross Section A-A'

Pfohl Brothers Landfill, Cheektowaga, New York

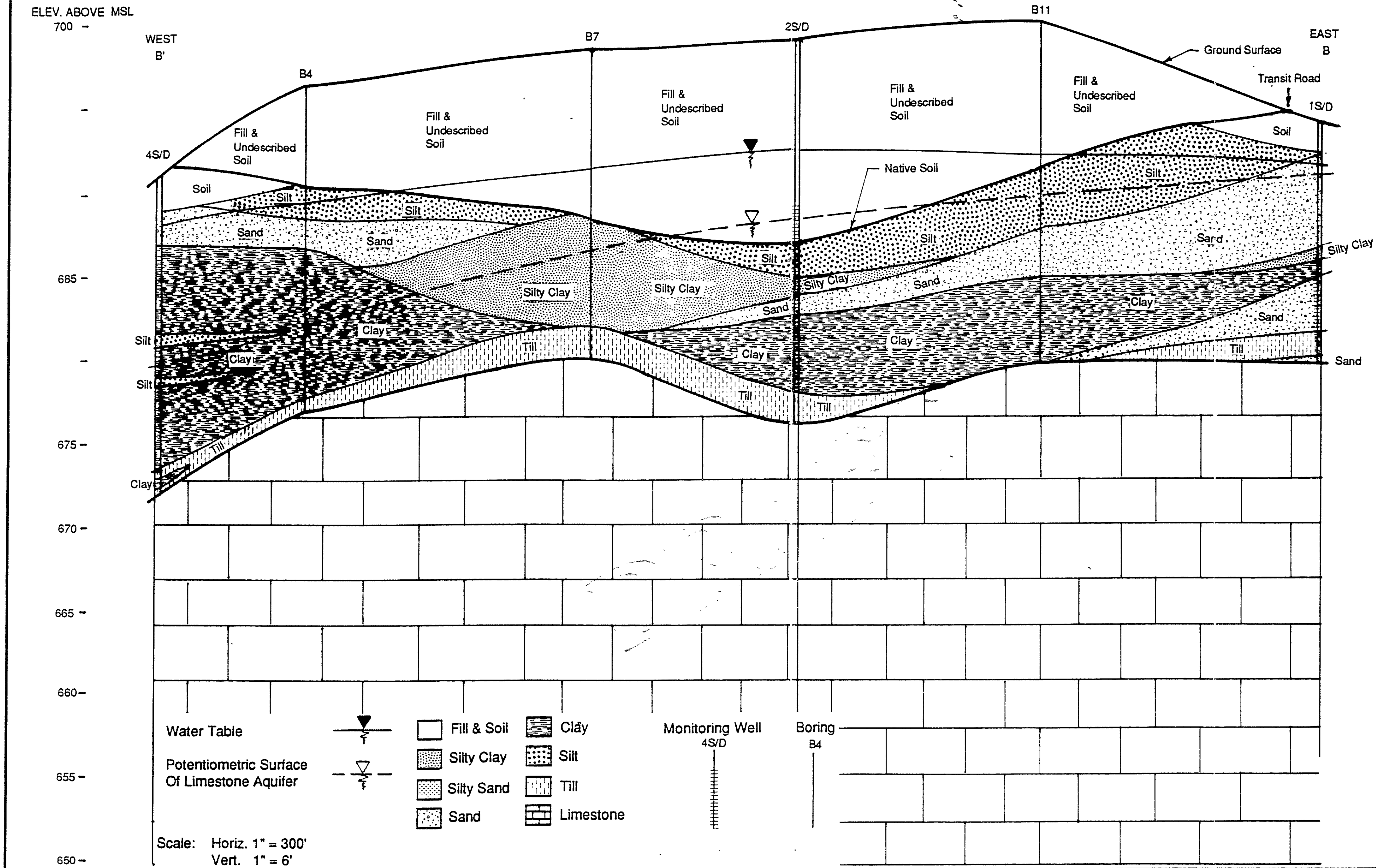

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FIGURE 4-4

Geologic Cross Section B-B'

Pfohl Brothers Landfill, Cheektowaga, New York

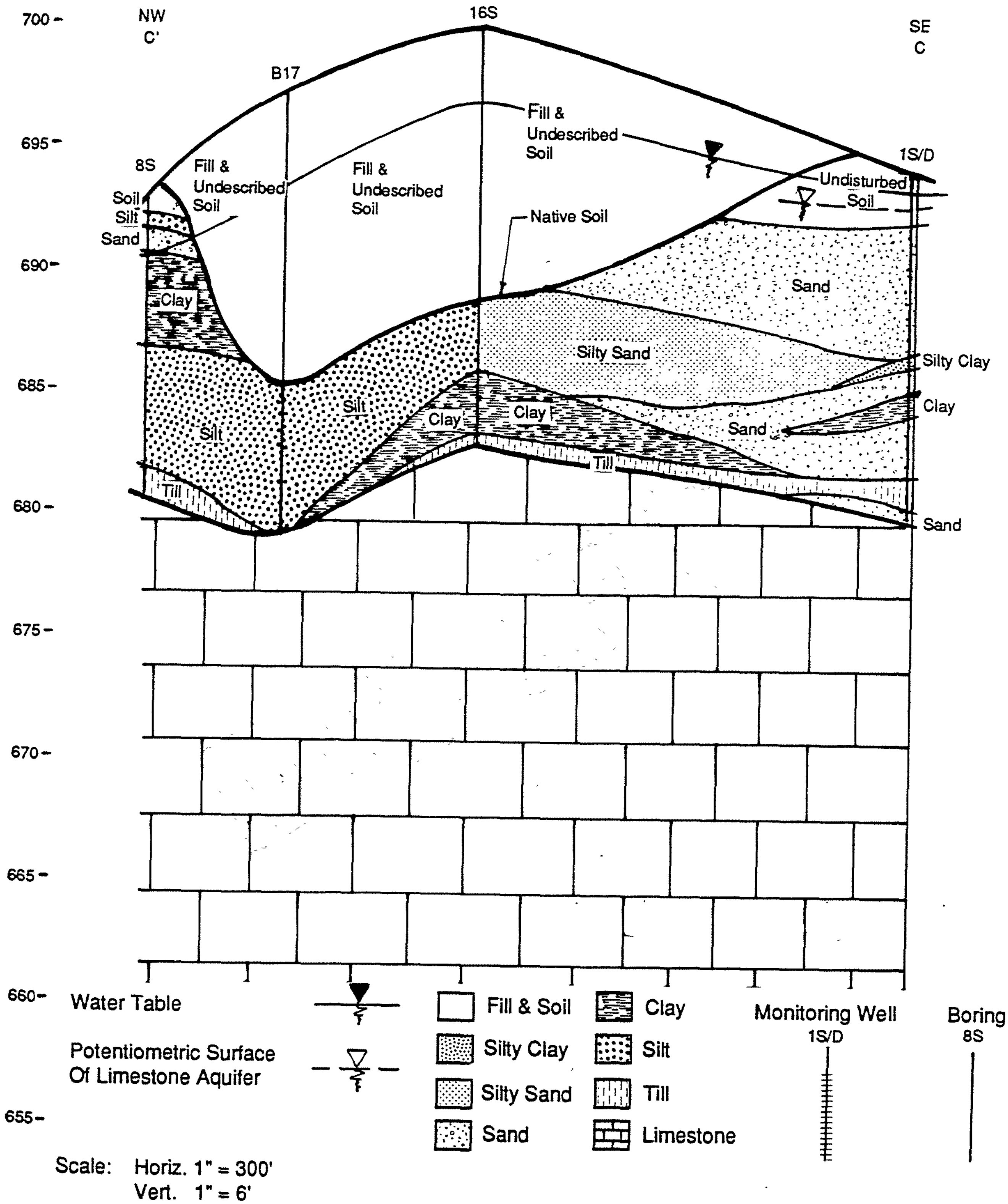

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FIGURE 4-5

Geologic Cross Section C-C'

Pfohl Brothers Landfill, Cheektowaga, New York

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067420

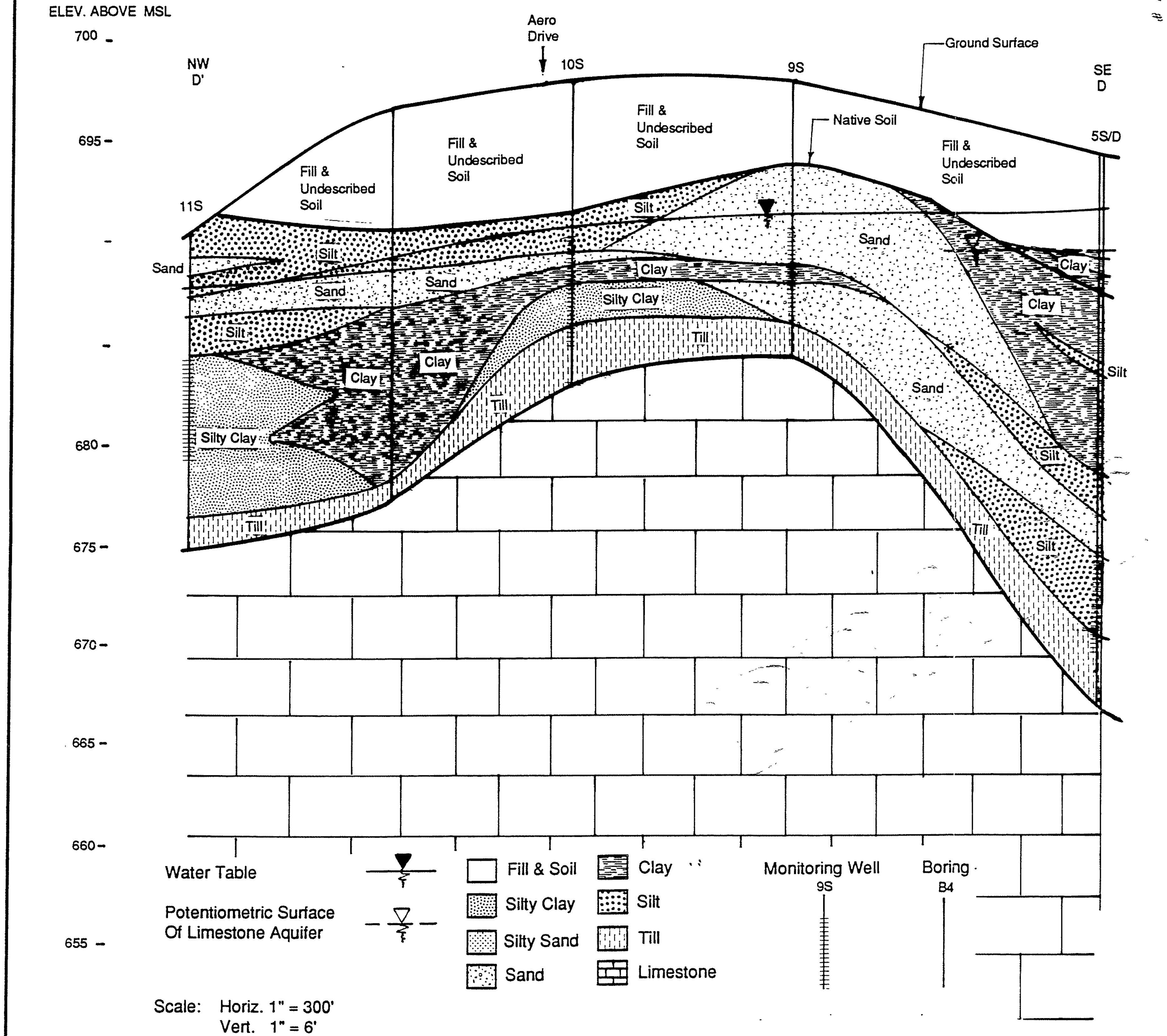

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FIGURE 4-6

Geologic Cross Section D-D'

Pfohl Brothers Landfill, Cheektowaga, New York

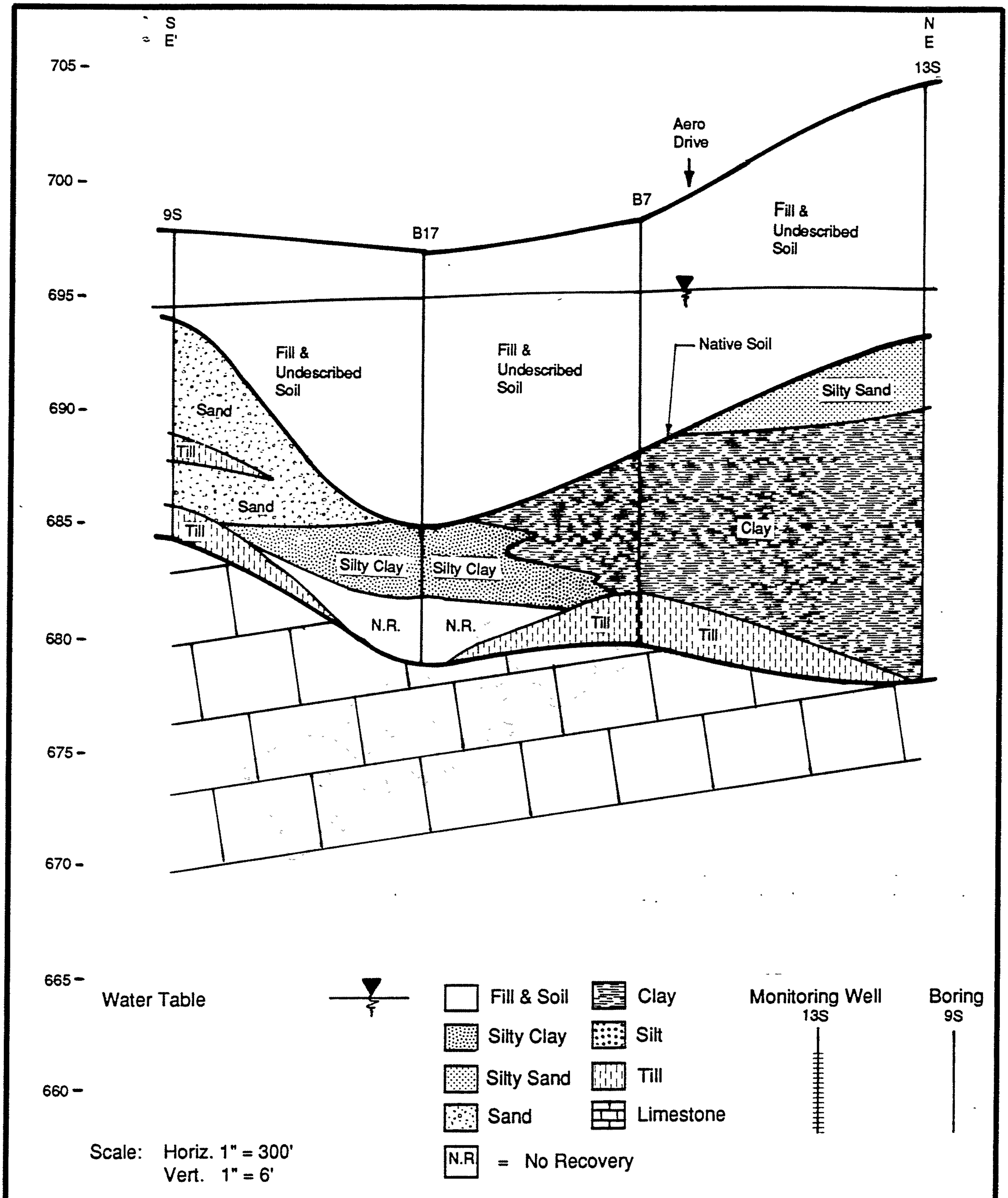

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FIGURE 4-7

Geologic Cross Section E-E'

Pfohl Brothers Landfill, Cheektowaga, New York

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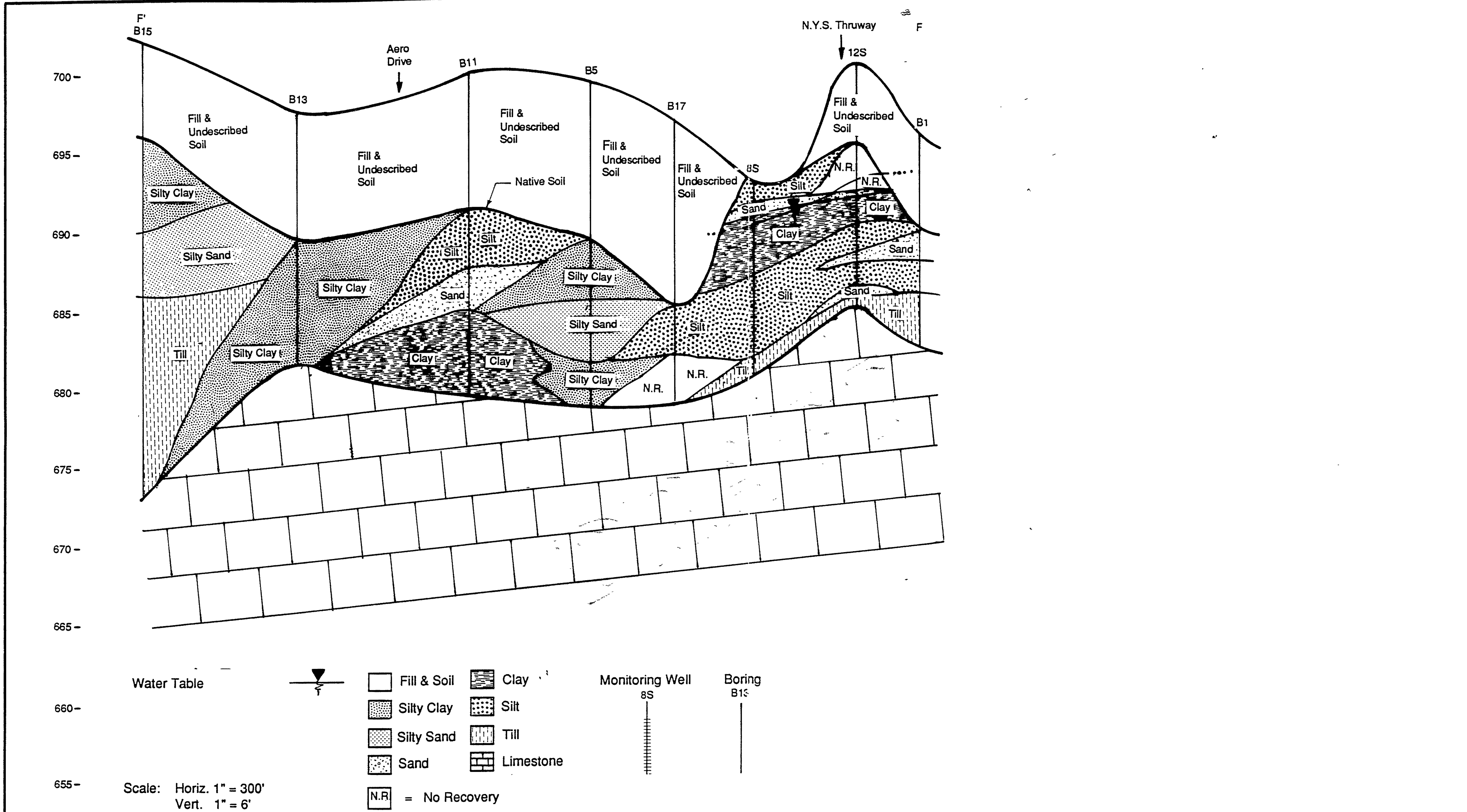

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FIGURE 4-8

Geologic Cross Section F-F'

Pfohl Brothers Landfill, Cheektowaga, New York

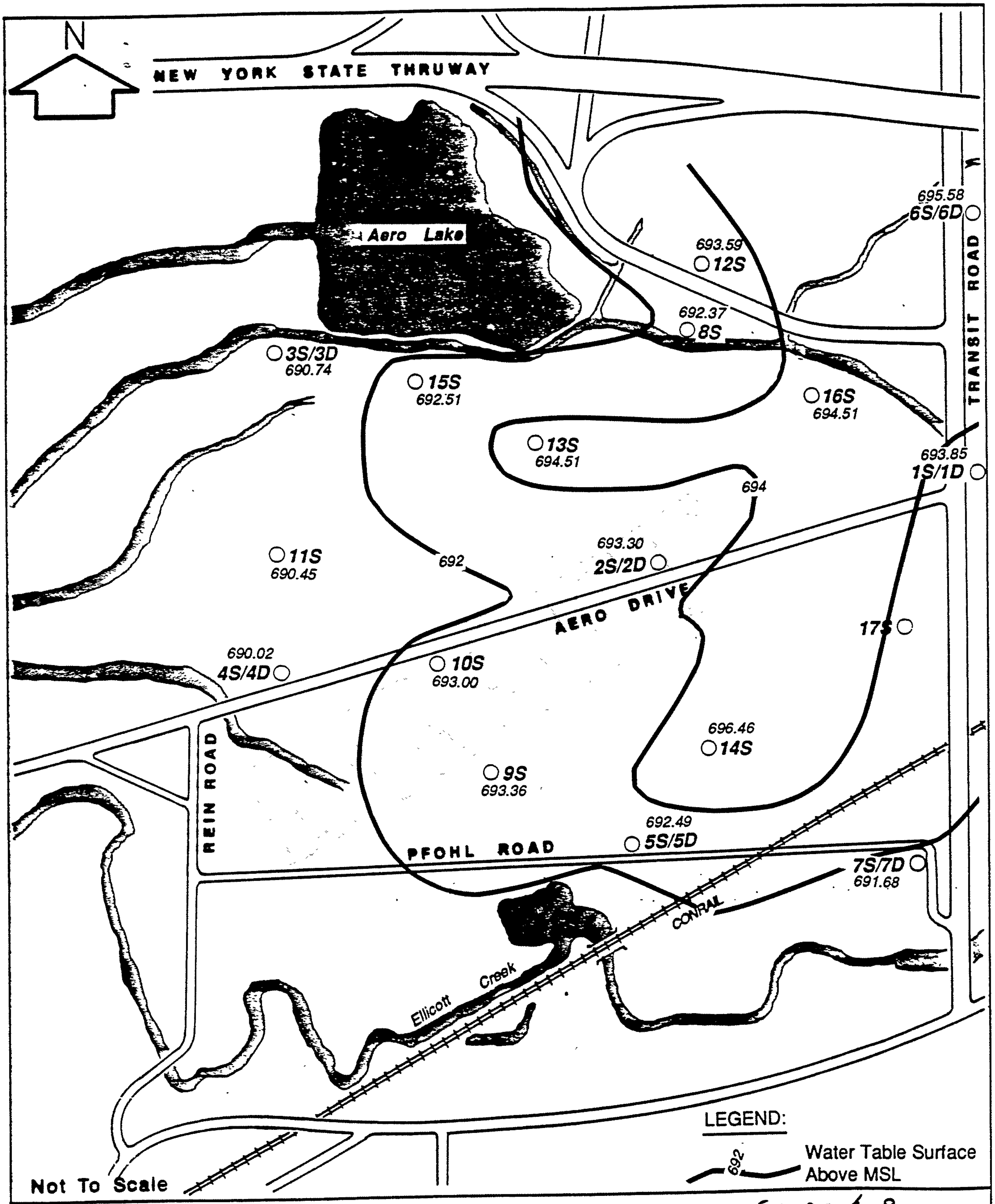

FIGURE 4-9

Water Table Map Of Unconsolidated Aquifer Jan. 1990

Pfohl Brothers Landfill, Cheektowaga, New York

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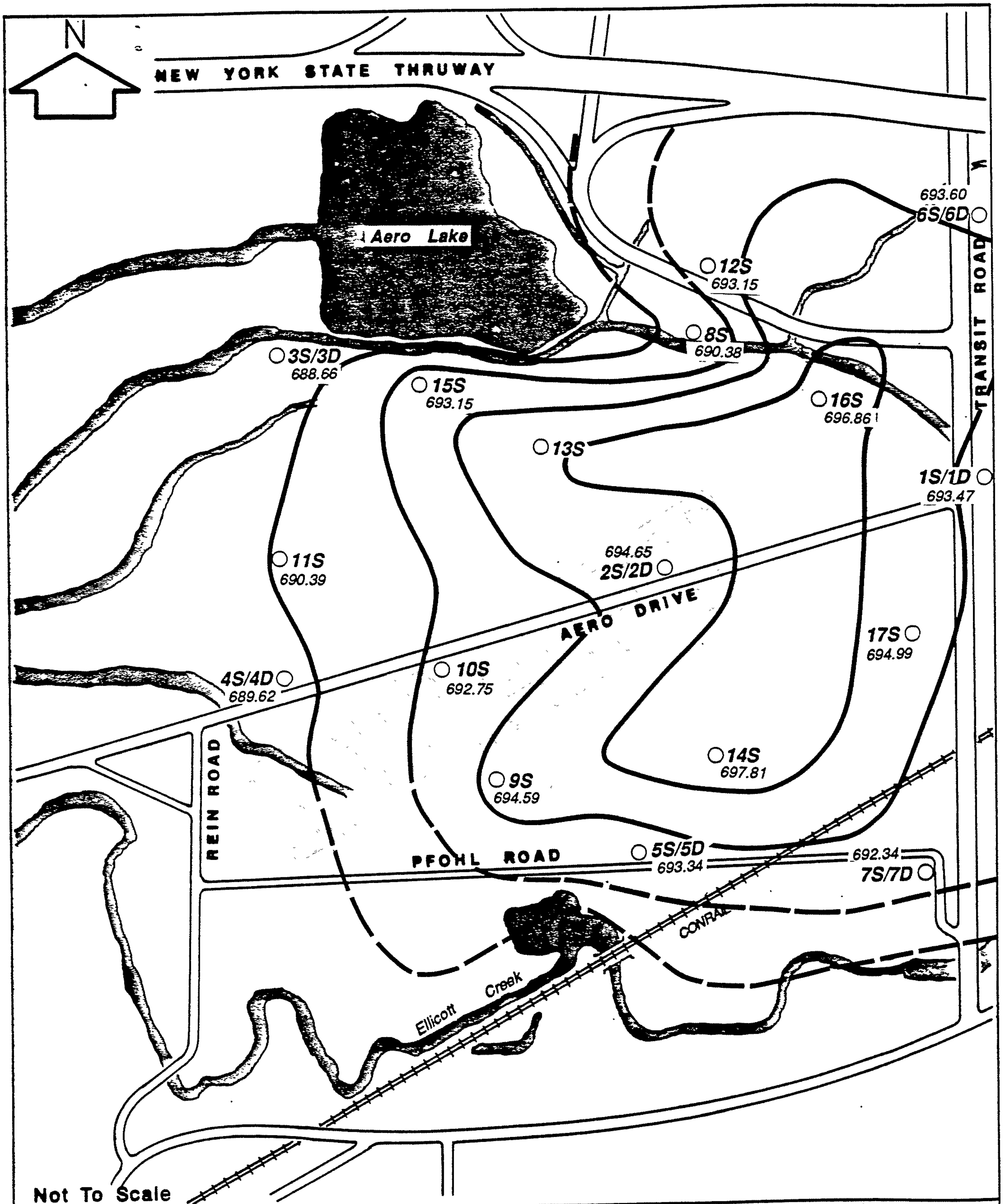

FIGURE 4-10

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Water Table Map Of Unconsolidated Aquifer May 1990

Pfohl Brothers Landfill, Cheektowaga, New York

effects the ground water flow direction. During the month of May, the ground water in the unconsolidated aquifer flows radially from the site. Ground water recharge originates on-site. The January map indicates that there is ground water flow in every direction except to the northeast. The map shows that the recharge area has moved off-site to the northeast.

The gradients observable on both water table maps indicate that there is discharge south into Ellicott Creek and westward into Aero Lake. No wells were available for water level measurements on the south side of Ellicott Creek. Assuming that the gradient is similar to the surface topography, ground water immediately south of Ellicott Creek flows north discharging into Ellicott Creek. Ground water is also locally flowing westward and eastward off the site. The regional discharge direction is westward.

Ground water flowing northwest towards Aero Lake is under a hydraulic gradient of 0.0032. Ground water flowing southwest and southeast towards Ellicott Creek is under a hydraulic gradient of 0.0018 and 0.0007, respectively.

The hydraulic tests conducted in the shallow wells indicate that the aquifer has low permeability. As shown of table 4-1, the values of hydraulic conductivity (K) determined from slug testing ranged from 0.017 ($6.0E^{-6}$ cm/sec) to 57 feet/day ($0.2E^{-1}$ cm/sec), and averaged 6.5 feet/day ($0.23E^{-2}$ cm/sec).

SLUG TEST RESULTS OF SHALLOW WELLS

WELL	K (ft/day)
1S	0.56
2S	57.0
3S	0.085
4S	0.017
5S	0.026
6S	NA

7S	NA
8S	0.24
9S	1.99
10S	1.21
11S	NA
12S	0.31
13S	4.84
14S	8.21
15S	8.12
16S	2.07
17S	NA

The measured hydraulic response of a slug test is a function of hydraulic conductivity, aquifer storage, shape of the well screen and filter pack, and well bore storage. Because of the limited hydraulic stress applied to the aquifer by a slug test, the results reflect near well conditions.

If the wells produced enough water, specific capacity tests were conducted to augment the slug test data. The results of these tests ranged from 0.027 to 0.14 GPM/foot of drawdown. A rough approximation of hydraulic conductivity can be obtained from specific capacity data by the following method (Driscoll, 1986):

$$T = S.C. \times 1500 / 7.48 \text{ (for unconfined aquifers)}$$

and

$$K = T / b$$

Where: T=transmissivity (ft2/day)
S.C.=Specific Capacity (GPM/ft.drawdown)
K=hydraulic conductivity (ft/day)
b=aquifer thickness (ft)

The values as shown on table 4-2 range from 0.95 to 5.54 feet/day, and

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average 2.48 feet/day ($0.3E^{-3}$ to $0.2E^{-2}$ cm/sec).

Specific yield for sandy clay ranges from .03 to 0.20 (Walton, 1985). For the purpose of estimating average linear velocity, it is assumed that the effective porosity is approximately equal to specific yield. The

TABLE 4-2

SPECIFIC CAPACITY TEST RESULTS OF SHALLOW WELLS

WELL	S.C.(GPM/ft)	T (ft^2/day)	b (ft)	K (ft/day)
1S	0.14	28	13	2.15
2S	NA			
3S	0.06	12	9.8	1.22
4S	NA			
5S	NA			
6S	NA			
7S	NA			
8S	0.03	6	6.3	0.95
9S	0.12	24	9.5	2.53
10S	NA			
11S	NA			
12S	0.027	5.4	7	0.77
13S	NA			
14S	NA			
15S	NA			
16S	NA			
17S	NA			

Where: S.C.=specific capacity
T=transmissivity
b=aquifer thickness

average linear velocity was estimated for ground water flowing in a northwest, southwest and southeast direction. Assuming an average effective porosity of 0.12 and a hydraulic conductivity of 6.5 feet/day ($0.23E^{-2}$ cm/sec), ground water is flowing northwest towards Aero Lake at a rate of 0.17 feet/day ($0.1E^{-3}$ cm/sec) and southwest and southeast towards

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Ellicott Creek at 0.10 and 0.04 feet/day (3.5E-5 to 1.4E-5 cm/sec), respectively.

4.1.2 Bedrock Aquifer

The seven bedrock monitoring wells were installed at an average depth of 20 feet below the surface of the Onondaga limestone. As illustrated on the boring logs (Appendix A), fractures were observed in core samples from most wells. The predominant fracture orientation identified in the cores was horizontal, along bedding planes. Considerable drilling fluid (water) was lost to fractures during the installation of wells MW-5D and 3D at 5 and 7 feet below the bedrock surface, respectively. The number of fractures observed in each corehole declined with depth.

Figures 4-11 and 4-12 shows the potentiometric surface of the Onondaga limestone in January and May of 1990. These figures indicate that the potentiometric surface is not significantly effected by seasonal fluctuations. The hydraulic gradient, indicated by the maps suggest that the general direction of ground water flow in the bedrock aquifer is in a southwesterly direction. The hydraulic gradient is approximately 0.0054.

The difference in hydraulic head measured in nested wells ranges from 0.36 to 12.59 feet across the site. Water levels in wells MW-6D, 3D and 1D are at a higher elevation than the corresponding shallow wells 6S, 3S and 1S. An upward vertical hydraulic gradient between the aquifers indicates there is a potential for upward discharge.

Conversely, the water levels in the nested wells located in the southern portion of the site indicate the potential for downward movement of ground water between the unconsolidated and bedrock aquifers.

It does not appear that groundwater within the bedrock aquifer is discharging to Ellicott Creek. The hydraulic head of the bedrock aquifer is approximately 10 feet lower than head in the unconsolidated aquifer along Ellicott Creek. Assuming that Ellicott Creek and the bedrock aquifer are hydraulically connected, the data indicates that Ellicott Creek is

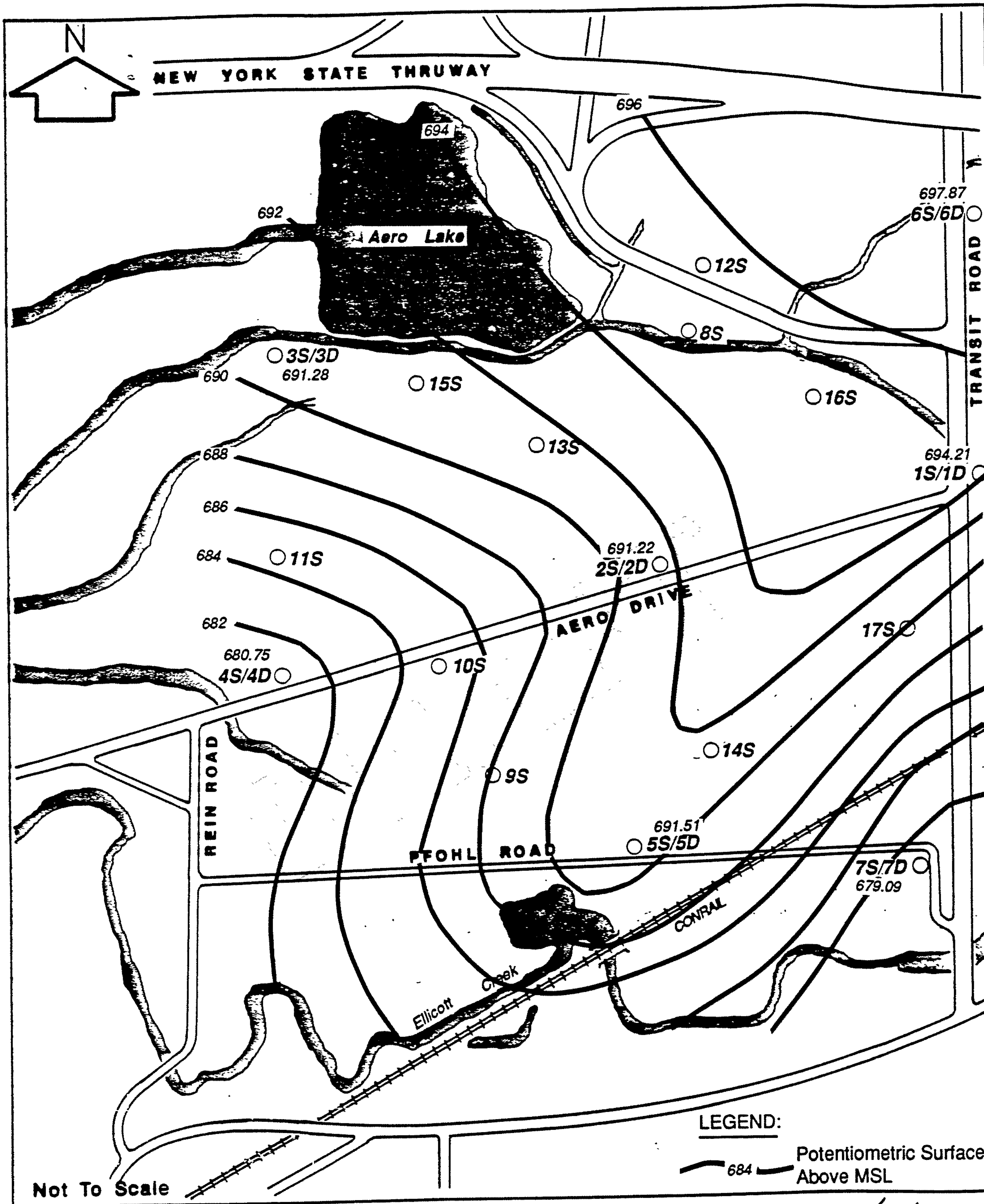

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FIGURE 4-11

Potentiometric Surface Of Limestone Aquifer Jan. 1990

Pfohl Brothers Landfill, Cheektowaga, New York

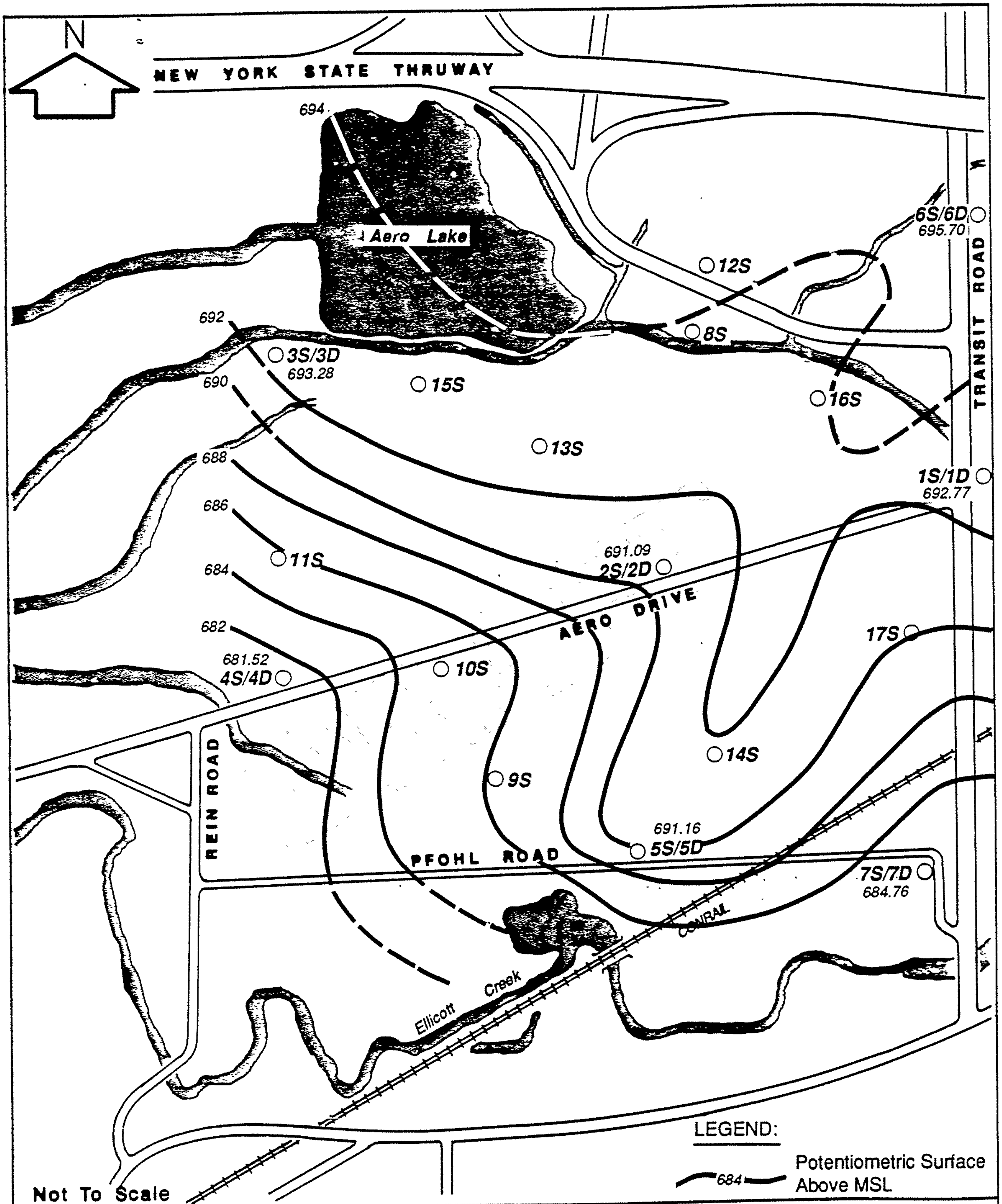

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FIGURE 4-12

Onondaga Limestone Potentiometric Surface May 1990

Pfohl Brothers Landfill, Cheektowaga, New York

discharging (losing) to the bedrock aquifer. In contrast, the equipotential surface of the bedrock aquifer in the northern portion of the site indicates that there is an upward gradient at Aero Lake. Additional hydraulic information is necessary in order to fully evaluate the hydraulic connection between the bedrock and unconsolidated aquifers.

Approximate values of transmissivity were obtained for the bedrock aquifer from slug and specific capacity tests. Only four (MW-1D, 3D, 5D and 6D) of the seven bedrock wells produced a sufficient volume of water for specific capacity measurements. The values of transmissivity, which were derived from specific capacity tests, are presented in table 4-3.

TABLE 4-3

SPECIFIC CAPACITY TEST RESULTS OF DEEP WELLS

WELL	S.C. (ft/day)	T (ft^2/day)
1D	1.56	313
2D	NA	
3D	42.11	8444
4D	NA	
5D	8.33	1670
6D	1.33	267
7D	NA	

These values concur with the report of excessive water loss during the installation of wells MW-3D and 5D. The relatively high productivity of well MW-3D may be the result of a hydraulic interconnection with Aero Lake. However, insufficient data preclude verification of this hypothesis.

With the exception of Well MW-3D, the transmissivity values were within the range (40 to 3342 ft^2/day) reported by La Sala (1969).

As mentioned previously in Section 2.2, traditional slug test theory is based on hydraulic response in granular porous media. The quantitative values derived from applying traditional slug test solution methods to fractured media is somewhat ambiguous. Slug tests can be useful, however, for evaluating the relative permeability of low yielding bedrock wells.

The values of transmissivity determined from slug testing the bedrock wells are illustrated on table 4-4.

TABLE 4-4

SLUG TEST RESULTS OF DEEP WELLS

WELL	T (ft^2/day)
1D	2083
2D	85116
3D	NA
4D	1.2
5D	NA
6D	1937
7D	NA

Some highly transmissive wells (MW-3D and 5D) were impossible to analyze because the aquifer recovered almost instantaneously when displaced by the slug. The values of transmissivity varied more greatly than those approximated from specific capacity testing. In general, the most transmissive wells in descending order are as follows:

MW-2D, 3D and 5D (highest)

MW-1D and 6D (medium)

MW-4D and 7D (lowest)

Calculating realistic values of hydraulic conductivity and average linear velocity in bedrock aquifers is problematic. The problems occur when attempting to determine the effective thickness of the water bearing zones in the aquifer and the associated effective porosity. The stratigraphic thickness of the Onondaga limestone aquifer is approximately 140 feet. However, the effective saturated thickness through which ground water can pass is significantly less. A more realistic value of hydraulic conductivity can be derived by relating the saturated thickness to the depth of observed fractures.

As previously discussed in Section 1.2.2, Dvirka and Bartilucci (1989) hypothesized that the hydraulically effective portion of the aquifer is in a fracture zone within 10 feet of the bedrock surface. Assuming that the saturated thickness is 10 feet, and using the values from table 4-3, the hydraulic conductivity in the wells range in value from 0.12 to greater than 8500 feet/day.

Limestone has a porosity range from 1 to 20 percent (Freeze and Cherry, 1979). Most limestones have virtually no primary porosity; the effective porosity is a result of fracturing. Assuming an average effective porosity of 10 percent, the average linear velocity of ground water flowing to the southwest is approximately 0.0052 to 365.5 feet/day. Ground water that is flowing southeast travels at a rate of 0.0077 to 544.0 feet/day.

Because the degree of anisotropy of the bedrock aquifer is unknown, the values of hydraulic conductivity that were determined from the low-stress hydraulic tests, as well as the principal direction of flow, are suspect. However, the extreme variability of the values is useful for illustrating the effects that fractures have on the velocity of ground water.

4.2 SOIL QUALITY

During the course of the exploratory soil boring program, 54 soil samples from various subsurface horizons were analyzed for contaminants by Keystone Environmental Resources, Inc. laboratory.

Because there are no enforceable ARAR guidelines for soils, or State or Federal contaminant level guidelines for subsurface soil, the evaluation was based on comparison with background levels.

Background Samples

Wells MW-6D and 6S were installed hydraulically up gradient of the landfill in an area undisturbed by landfilling practices. It is assumed that the chemistry of soil samples collected during the installation of well MW-6S represent background soil conditions.

Table 4-5 summarizes the analytical results of these samples.

These samples were taken during the installation of monitoring well 6S. These included sample MW-6S-02 taken at a depth of 2 to 4 feet b.g.s. Sample MW-6S-03 taken at a depth of 4 to 6 feet b.g.s., and a blind duplicate of sample MW-6S-03. The results from the analysis were compared. The highest concentrations detected during analysis are listed below. These concentrations provided the basis for comparison with all soil samples.

Of volatile organic compounds, only acetone was detected at a concentration of 120 ug/kg. However, this value was qualified as acetone was also detected in the method blank. Methylene chloride was detected, but rejected during data validation. Therefore, comparative analyses of any detections of this analyte found in the environmental samples could not be performed.

Several semi-volatile compounds were detected. These included phenanthrene (at an estimated concentration of 200 ug/kg), fluoranthene (estimated at

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-5

BACKGROUND SOIL SAMPLES
Page 01 of 01

05/24/90

	CONCENTRATIONS in ug/kg or mg/kg	
SAMPLE NUMBER -	MW-6S-02	MW-6S-03
VOLATILES		
Acetone	120.0 B	R
SEMI-VOLATILES		
Phenanthrene	130.0 J	200.0 J
Fluoranthene	220.0 J	270.0 J
Pyrene	170.0 J	240.0 J
Benzo(a)Anthracene	97.0 J	120.0 J
Chrysene	85.0 J	110.0 J
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0
Benzo(b)Fluoranthene	91.0 J	190.0 J
Benzo(k)Fluoranthene	70.0 J	390.0 U
Benzo(a)Pyrene	380.0 U	98.0 J
PESTICIDES/PCBs		
INORGANICS		
ALUMINUM	6000.0	4920.0
ARSENIC	3.5	3.0
BARIUM	34.9 B	33.6 B
CALCIUM	28000.0	57900.0
CHROMIUM	6.8	7.8 J
COBALT	2.4 B	3.5 B
COPPER	15.5 J	18.9 J
IRON	7820.0	10500.0
LEAD	30.7	11.8
MAGNESIUM	3660.0	25100.0
MANGANESE	103.0	414.0
NICKEL	6.8 B	8.0 B
POTASSIUM	624.0 B	981.0 B
SODIUM	205.0 B	135.0 B
VANADIUM	16.1	13.8 J
ZINC	61.7 J	73.6

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.

270 ug/kg), pyrene (estimated at 240 ug/kg), benzo(a)anthracene (estimated at 120 ug/kg), chrysene (estimated at 110 ug/kg), bis(2-ethylhexyl) phthalate (470 ug/kg), benzo(b)fluoranthene (estimated at 190 ug/kg), benzo(k)fluoranthene (estimated at 70 ug/kg), and benzo(a)pyrene (estimated at 98 ug/kg). Except for the detection of benzo(k)fluoranthene, all of the higher concentrations were found in the MW-6S-03.

No pesticides or PCBs were detected.

Several inorganic constituents were detected. These included aluminum (6,000 mg/kg), arsenic (3.5 mg/kg), barium (34.9 mg/kg), calcium (57,900 mg/kg), chromium (estimated at 7.8 mg/kg), cobalt (3.5 mg/kg), copper (estimated at 18.9 mg/kg), iron (10,500), lead (30.7 mg/kg), magnesium (25,100 mg/kg), manganese (414 mg/kg), nickel (8 mg/kg), potassium (981 mg/kg), sodium (205 mg/kg), vanadium (estimated at 16.1 mg/kg), and zinc (73.6 mg/kg).

The concentrations of metals found in the background soil sample (6S) were compared to typical inorganic concentrations found in soils in the Eastern United States (Schacklette and Boerngen, 1984). Only aluminum was at a level that exceeded the observed regional range of concentrations.

<u>AREA A (On-site)</u>

Wells MW-8S, 12S; Borings B1, B2:

<u>MW8S</u>

One soil sample (MW8S-5) was taken at a depth of 8-10 feet from the location corresponding to MW-8S. The sample consisted of silt and was collected below the water table, two feet above the bedrock surface. Table 4-6 compares the analytical results for these samples to the background samples.

The only volatiles detected were methylene chloride (at an estimated concentration of 5 ug/kg) and acetone (25 ug/kg). Since the data for

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-6

SOIL SAMPLES - AREA A
Page 01 of 01

05/25/90

	Background		CONCENTRATIONS in ug/kg or mg/kg					
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	MW-8S-05	MW-12S-07	B1-SS-05	B1-SS-06	B2-SS-03	B2-SS-05
VOLATILES								
Methylene Chloride	R	R	5.0 J	18.0	R	R	R	R
Acetone	120.0 B	R	25.0	35.0	R	R	R	R
SEMI-VOLATILES								
Naphthalene	380.0 U	390.0 U		120.0 J (1)				390.0 UJ
Acenaphthylene	380.0 U	390.0 U					75.0 J (1)	390.0 UJ
Phenanthrene	130.0 J	200.0 J	250.0 J (1)	230.0 J (1)			350.0 J (1)	390.0 UJ
Anthracene	380.0 U	390.0 U	320.0 J (1)				72.0 J (1)	390.0 UJ
Fluoranthene	220.0 J	270.0 J	340.0 J (1)	160.0 J			910.0 (1)	390.0 UJ
Pyrene	170.0 J	240.0 J	260.0 J (1)	110.0 J			940.0 (1)	390.0 UJ
Benzo(a)Anthracene	97.0 J	120.0 J	99.0 J				940.0 (1)	390.0 UJ
Chrysene	85.0 J	110.0 J	150.0 J (1)				600.0 (1)	390.0 UJ
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0					3000.0 B (1)	R
Benzo(b)Fluoranthene	91.0 J	190.0 J	170.0 J				610.0 (1)	390.0 UJ
Benzo(k)Fluoranthene	70.0 J	390.0 U					400.0 (1)	390.0 UJ
Benzo(a)Pyrene	380.0 U	98.0 J	92.0 J				390.0 (1)	390.0 UJ
Indeno(1,2,3-cd)Pyrene	380.0 U	390.0 U	65.0 J (1)				270.0 J (1)	390.0 UJ
Dibenz(a,h)Anthracene	380.0 U	390.0 U	31.0 J (1)					390.0 UJ
Benzo(g,h,i)Perylene	380.0 U	390.0 U	68.0 J (1)				230.0 J (1)	390.0 UJ
PESTICIDES/PCBs								
INORGANICS								
ALUMINUM	6000.0	4920.0	10800.0 (1)	8900.0 (1)	11600.0 (1)	9540.0 (1)	5940.0	4620.0
ANTIMONY	12.4 U	13.0 U	12.3 UJ	11.8 UJ	20.3 (1)	12.9 UJ	12.2 UJ	13.4 BJ (1
ARSENIC	3.5	3.0	3.8	2.4	3.1	2.9	3.8	2.2 B
BARIUM	34.9 B	33.6 B	67.6 (1)	93.5 (1)	93.0 (1)	75.0 (1)	35.4 B (1)	37.0 B (1)
BERYLLIUM	0.0 U	0.0 U	0.4 B (1)	0.4 B (1)				
CALCIUM	28000.0	57900.0	43200.0	65800.0 (1)	62900.0 (1)	69100.0 (1)	55200.0	121000.0 (1)
CHROMIUM	6.8	7.8 J	15.8 J (1)	13.2 J (1)	16.0 J (1)	15.1 J (1)	9.6 J (1)	6.5
COBALT	2.4 B	3.5 B	7.4 B (1)	5.0 B (1)	8.0 B (1)	6.7 B (1)	4.3 B (1)	3.1 B
COPPER	15.5 J	18.9 J	16.5	21.3 J (1)	16.5 J	15.8 J	13.9 J	17.8 J
IRON	7820.0	10500.0	17800.0 (1)	13800.0 (1)	18700.0 (1)	16000.0 (1)	11600.0 (1)	7920.0
LEAD	30.7	11.8	16.9 J	10.0	12.8	23.2	49.1 (1)	12.3
MAGNESIUM	3660.0	25100.0	15500.0	24400.0	17400.0	20100.0	13400.0	60000.0 (1)
MANGANESE	103.0	414.0	449.0 (1)	382.0	667.0 (1)	445.0 (1)	339.0	565.0 (1)
MERCURY	0.1 U	0.1 U	0.3 J (1)	0.7 (1)				
NICKEL	6.8 B	8.0 B	17.4 (1)	13.0 (1)	15.6 (1)	14.6 (1)	10.4 (1)	4.5 B
POTASSIUM	624.0 B	981.0 B	2060.0 J (1)	2080.0 (1)	2190.0 (1)	2030.0 (1)	769.0 B	1200.0 (1)
SODIUM	205.0 B	135.0 B	196.0	263.0 B (1)	202.0 B	202.0 B	161.0 B	164.0 B
VANADIUM	16.1	13.8 J	21.0 (1)	19.1 J (1)	21.6 J (1)	20.0 J (1)	14.3 J	10.6 BJ
ZINC	61.7 J	73.6	68.0	97.2 (1)	79.3 (1)	70.4	50.1	70.7

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.
UJ = Indicates analyte was analyzed for but not detected. However, the data is qualified as estimated due to QA/QC.

methylene chloride were rejected in the background samples, it not known if the concentration found in MW8S is above background levels. The concentration of acetone found in MW8S, however, is less than the concentration found in one of the background samples.

Polyaromatic hydrocarbons (PAHs) were the only semi-volatile compounds detected in the sample. Estimated concentrations of benzo(a)anthracene (99 ug/kg), benzo(a)pyrene (92 ug/kg), and benzo(b)fluoranthene (170 ug/kg) were detected in the sample. Estimated concentrations of ideno(1,2,3-cd)pyrene (65 ug/kg), dibenzo(a,h)anthracene (31 ug/kg), benzo(g,h,i)perylene (68 ug/kg), phenanthrene (250 ug/kg), fluoranthene (340 ug/kg), pyrene (260 ug/kg), chrysene (150 ug/kg) and anthracene (320 ug/kg) were detected above background levels.

Eighteen metals were detected in the sample, twelve metals exceeded background levels. These included aluminum; barium; beryllium; iron; vanadium; manganese; mercury; potassium; sodium; and chromium, cobalt, and nickel which all exceeded twice the background levels.

MW12S

One soil sample (MW12S-7) was taken at a depth of 12-14 feet below ground surface (b.g.s) from the location corresponding to MW-12S. The sample consisted of fine sand and silt and was collected from below the water table, approximately one foot above the bedrock surface.

Two volatile organics (VOAs) were detected in the sample including methylene chloride at (18 ug/kg) and acetone at 35 ug/kg.

PAH compounds including fluoranthene (160 ug/kg) and pyrene (110 ug/kg) were detected below background levels at estimated concentrations. Both napthalene (estimated at 120 ug/kg) and phenanthrene (estimated at 230 ug/kg), were detected at concentrations above background levels.

Eighteen metals were detected with fourteen metals found at concentrations above background levels. These included aluminum, beryllium, calcium, chromium, vanadium, cobalt, copper, iron, mercury; nickel sodium and zinc. Both barium and potassium concentrations exceeded twice the background concentrations.

B1

Two soil samples (B1SS-5 and B1SS-6) were collected at depths of 8-10 and 10-12 feet b.g.s., respectively, from soil boring B-1. Sample B1SS-5 consisted of silt and was collected at the water table, approximately 3.5 feet above the bedrock surface. Sample B1SS-6 consisted of till and was collected below the water table, approximately 1.5 feet above the bedrock surface.

No VOAs, BNAs, pesticides, or PCBs were detected in either sample. Data for methylene chloride and acetone were rejected, however, due to method blank contamination.

Seventeen metals were detected in B1SS-5 and sixteen metals were detected in B1SS-6. The shallow sample had several metals exceeding background levels, including aluminum, antimony, calcium, iron, manganese, nickel, vanadium, and zinc. Barium, chromium, cobalt, and potassium exceeded twice the background levels. With the exception of antimony and zinc, these same compounds were also detected at above background concentrations in the deep sample.

B2

Two soil samples (B2SS-3 and B2SS-5) were collected and analyzed from boring B-2 at depths of 4-6 feet b.g.s. and 8-10 feet b.g.s., respectively.

No VOAs were detected in either sample. Data for both methylene chloride and acetone were rejected, however, due to method blank contamination.

Thirteen semi-volatile compounds were detected in the shallow sample at concentrations above background levels; eleven compounds were PAHs. Acenapthylene (estimated at 75 ug/kg), exceeded background levels. The concentration of bis(2-ethylhexyl)phthalate (3000 ug/kg) was greater than six times background levels. This compound was also found in the laboratory blank.

Estimated concentrations of phenanthrene (350 ug/kg), anthracene (72 ug/kg), and benzo(g,h,i)perylene (estimated at 230 ug/kg), fluoranthene (910 ug/kg), pyrene (940 ug/kg), benzo(a)anthracene (940 ug/kg), chrysene (600 ug/kg), all exceeded background levels by a factor greater than two. In addition, benzo(b)fluoranthene (610 ug/kg), benzo(k)fluoranthene (400 ug/kg), benzo(a)pryene (390 ug/kg), and ideno(1,2,3-cd)pyrene (estimated at 270 ug/kg), also exceeded background levels.

No semi-volatile compounds were detected in the deep sample. However, due to holding time exceedances all analytes were flagged with a "J". Data for bis(2-ethylhexyl)phthalate were rejected due to method blank contamination.

No pesticides or PCBs were detected in either of the samples but the data were flagged with a "J" due to holding time exceedances.

Sixteen metals were found in sample B2SS-3 and seventeen metals were found in B2SS-5. In the shallow sample, barium chromium, cobalt, iron, lead, and nickel were detected above background levels. In the deep sample antimony, barium, manganese, and potassium exceeded background levels. Both calcium and magnesium concentrations were greater than twice that of the background samples.

AREA B (On-site)

Wells MW-2S, 13S, 15S & 16S:

MW2S

Two soil samples (MW2S-7 and MW2S-11) that correspond to depths of 12-14 and 20-22 feet below ground surface (b.g.s.) were collected during the installation of MW-2S. Sample MW2S-7 consisted of fill material and was collected above the water table, approximately 7 feet from the bedrock surface. Sample MW2S-11 consisted of clay and layered silt and was collected at the water table, approximately 3 feet above the bedrock surface. Table 4-7 compares the analytical results for these samples to the background samples.

A total of 11 volatile organic compounds (VOC) were detected below the water table in the sampling interval from 12-14′ (MW2S-7). These included chloroethane (45 ug/kg), methylene chloride (estimated at 2700 B ug/kg), 1,1-dichloroethene (estimated at 710 ug/kg), 1,1-dichloroethane (estimated at 2000 ug/kg), 1,1,1-trichloroethane (83000 ug/kg), trichloroethene (30 ug/kg), 1,1,2-trichloroethene (28 ug/kg), tetrachlorothene (31 ug/kg), toluene (estimated at 12 ug/kg), ethylbenzene (62 ug/kg), and total xylenes (350 ug/kg). All with the exception of methylene chloride, compounds found in the shallow sample exceeded background levels.

The deep sample matrix was wet clayey silt, containing a black tarry substance. The sample was collected from below the water table, approximately 9 feet above the bedrock surface. Of the eleven VOC′s detected in the shallow sample, three were also detected in the deeper sampling interval from 20′ - 22′ (MW 2S-11) at concentrations exceeding background levels. These included methylene chloride (130 ug/l), 1,1-dichloroethane (100 ug/l), and 1,1,1-trichloroethane (620 ug/l). Acetone (570 ug/l) was also detected above background levels. Because the data on methylene chloride was rejected in the background sample a comparative analysis to determine the relative contamination of this analyte could not be performed. A total xylene concentration of 7.0 ug/kg was also detected in the sample. The sample matrix was mostly clay which also could explain the reduction of contaminant concentration with depth when compared to the shallower sampling interval.

Phenanthrene (estimated at 5 mg/kg), was the only semi-volatile compound found in the shallow sample at a concentration in exceeding background levels. No pesticides or PCB′s were found in either sample.

Sixteen inorganic constituents were detected in MW2S-7 of which only two inorganics were detected at concentrations above background levels. These

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TABLE 4-7

SOIL SAMPLES - AREA B ONSITE
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	Background		CONCENTRATIONS in ug/kg or mg/kg						
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	MW-2S-07	MW-2S-11	MW-13S-02	MW-13S-06	MW-15S-05	MW-16S-01	MW-16S-03
VOLATILES									
Chloroethane	11.0 U	12.0 U	45.0 (1)						
Methylene Chloride	R	R	2700.0 BJD	130.0 BD	18.0 B	17.0 B	12.0 B	1000.0 B	890.0 B
Acetone	120.0 B	R		570.0 D (1)	21.0	89.0	100.0		
1,1-Dichloroethene	6.0 U	6.0 U	710.0 JD (1)						
1,1-Dichloroethane	6.0 U	6.0 U	2000.0 JD (1)	100.0 (1)					
1,2-Dichloroethene (total)	6.0 U	6.0 U							
1,1,1-Trichloroethane	6.0 U	6.0 U	83000.0 D (1)	620.0 D (1)					
Trichloroethene	6.0 U	6.0 U	30.0 (1)				31.0 (1)		
1,1,2-Trichloroethane	6.0 U	6.0 U	28.0 (1)						
Benzene	6.0 U	6.0 U							
Tetrachloroethene	6.0 U	6.0 U	31.0 (1)						
Toluene	6.0 U	6.0 U	12.0 J (1)						
Chlorobenzene	6.0 U	6.0 U						780.0 (1)	
Ethylbenzene	6.0 U	6.0 U	62.0 (1)						
Xylenes(total)	6.0 U	6.0 U	350.0 (1)	7.0 (1)					
SEMI-VOLATILES									
Phenol	380.0 U	390.0 U							
2-Methylphenol	380.0 U	390.0 U							
4-Methylphenol	380.0 U	390.0 U							
2,4-Dimethylphenol	380.0 U	390.0 U							
Benzoic Acid	1800.0 U	1900.0 U							
Naphthalene	380.0 U	390.0 U							
2-Methylnaphthalene	380.0 U	390.0 U							
Acenaphthene	380.0 U	390.0 U							
Dibenzofuran	380.0 U	390.0 U							
Diethylphthalate	380.0 U	390.0 U							
Fluorene	380.0 U	390.0 U							
Phenanthrene	130.0 J	200.0 J	5.0 J		150.0 J				
Anthracene	380.0 U	390.0 U							
Di-n-Butylphthalate	380.0 U	390.0 U					1400.0 (1)		
Fluoranthene	220.0 J	270.0 J			180.0 J		180.0 J		
Pyrene	170.0 J	240.0 J			150.0 J		190.0 J		
Butylbenzylphthalate	380.0 U	390.0 U					31000.0 D (1)		
Benzo(a)Anthracene	97.0 J	120.0 J							
Chrysene	85.0 J	110.0 J							
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0			120.0 J		100000.0 D (1)	210.0 J	130.0 J
Benzo(b)Fluoranthene	91.0 J	190.0 J							
Benzo(a)Pyrene	380.0 U	98.0 J							
Indeno(1,2,3-cd)Pyrene	380.0 U	390.0 U							
Benzo(g,h,i)Perylene	380.0 U	390.0 U							
PESTICIDES/PCBs									
Aldrin	9.2 U	9.2 U							
Dieldrin	18.0 U	18.0 U							
4,4'-DDE	18.0 U	18.0 U							
Endrin	18.0 U	18.0 U							
4,4'-DDT	18.0 U	18.0 U							320.0 (1)
gamma-Chlordane	92.0 U	92.0 U							
Aroclor-1242	92.0 U	92.0 U							

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TABLE 4-7

SOIL SAMPLES - AREA B ONSITE
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SAMPLE NUMBER -	Background		CONCENTRATIONS in ug/kg or mg/kg						
	MW-6S-02	MW-6S-03	MW-2S-07	MW-2S-11	MW-13S-02	MW-13S-06	MW-15S-05	MW-16S-01	MW-16S-03
INORGANICS									
ALUMINUM	6000.0	4920.0	3490.0	10900.0 (1)	16500.0 (1)	12500.0 (1)	7530.0 (1)	5920.0	10500.0 (1)
ARSENIC	3.5	3.0	1.7 B	3.6	4.4 J (1)	2.6 J	3.3 J	1.7 BJ	5.1 (1)
BARIUM	34.9 B	33.6 B	31.1 B	93.8 (1)	104.0 (1)	98.8 (1)	340.0 (1)	43.9 B (1)	74.9 (1)
BERYLLIUM	0.0 U	0.0 U			1.4 (1)	1.3 (1)			1.2 (1)
CADMIUM	0.8 U	0.9 U					2.0 (1)		
CALCIUM	28000.0	57900.0	58300.0 (1)	54300.0	72900.0 (1)	71200.0 (1)	30900.0	58500.0 (1)	64900.0 (1)
CHROMIUM	6.8	7.8 J	5.8 J	13.8 J (1)	21.4 (1)	16.8 (1)	50.3 (1)	8.3	15.4 J (1)
COBALT	2.4 B	3.5 B	1.0 B	8.8 B (1)	7.4 B (1)	8.5 B (1)	12.8 (1)	3.4 B	7.6 B (1)
COPPER	15.5 J	18.9 J	27.0 J (1)	29.7 J (1)	21.2 (1)	17.4	123.0 (1)	11.5	24.3 (1)
IRON	7820.0	10500.0	8280.0	19600.0 (1)	24500.0 (1)	19300.0 (1)	52800.0 (1)	10000.0	17400.0 (1)
LEAD	30.7	11.8	23.3	12.9	19.0	17.2	110.0 (1)	11.3	18.3
MAGNESIUM	3660.0	25100.0	24100.0	19900.0	24500.0	25000.0	9630.0	24100.0	25100.0
MANGANESE	103.0	414.0	360.0 J	414.0 J	449.0 (1)	516.0 (1)	555.0 (1)	355.0	448.0 (1)
MERCURY	0.1 U	0.1 U		0.1 (1)	0.2 (1)		0.5 (1)		
NICKEL	6.8 B	8.0 B	8.4 B	18.4 (1)	21.2 (1)	19.5 (1)	46.8 (1)	8.0 B	15.8 (1)
POTASSIUM	624.0 B	981.0 B	846.0 B	2510.0 (1)	3330.0 J (1)	3560.0 J (1)	1170.0 BJ (1)	1790.0 J (1)	2710.0 J (1)
SELENIUM	0.5 U	0.6 U							
SILVER	0.7 U	0.7 U					2.9 (1)		
SODIUM	205.0 B	135.0 B	205.0 BJ	200.0 BJ	296.0 B (1)	242.0 B (1)	184.0 BJ	192.0 B	233.0 B (1)
THALLIUM	0.6 U	0.6 U				0.2 B (1)	0.3 B (1)	0.2 B (1)	0.3 B (1)
VANADIUM	16.1	13.8 J	8.1 BJ	18.4 J (1)	31.0 (1)	23.8 (1)	16.8 (1)	14.0	21.4 (1)
ZINC	61.7 J	73.6	73.9 J	63.3 J	76.9 (1)	75.2 (1)	511.0 (1)	76.0 (1)	70.2
CYANIDE	0.6 U	0.6 U							

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.
E = Estimated value due to exceedance of linear calibration range.
UJ = Indicates analyte was analyzed for but not detected. However, the data is qualified as estimated due to QA/QC.

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TABLE 4-7 (contd)

SOIL SAMPLES - AREA B ONSITE
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	Background		CONCENTRATIONS in ug/kg or mg/kg						
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	B3-SS-06	B4-SS-03	B4-SS-10	B5-SS-08	B6-SS-07	B7-SS-06	B8-SS-08
VOLATILES									
Chloroethane	11.0 U	12.0 U							
Methylene Chloride	R	R	80.0 B	5000.0 BD	34.0 B		20.0 J	690.0 J	83.0
Acetone	120.0 B	R		7300.0 BD (1)	950.0 D (1)	110.0	490.0 (1)		330.0 (1)
1,1-Dichloroethene	6.0 U	6.0 U							
1,1-Dichloroethane	6.0 U	6.0 U							
1,2-Dichloroethene (total)	6.0 U	6.0 U							
1,1,1-Trichloroethane	6.0 U	6.0 U							
Trichloroethene	6.0 U	6.0 U							
1,1,2-Trichloroethane	6.0 U	6.0 U							
Benzene	6.0 U	6.0 U	54.0 J (1)	3700.0 D (1)					
Tetrachloroethene	6.0 U	6.0 U							
Toluene	6.0 U	6.0 U		17000.0 D (1)	15.0 JD (1)				
Chlorobenzene	6.0 U	6.0 U	2200.0 (1)	150.0 (1)	18.0 JD (1)				
Ethylbenzene	6.0 U	6.0 U	1300.0 (1)	2400.0 JD (1)				1000.0 (1)	
Xylenes(total)	6.0 U	6.0 U	3100.0 E (1)	11000.0 D (1)	11.0 (1)			1700.0 (1)	
SEMI-VOLATILES									
Phenol	380.0 U	390.0 U		150000.0 (1)	1800.0 (1)				
2-Methylphenol	380.0 U	390.0 U		4400.0 J (1)					
4-Methylphenol	380.0 U	390.0 U							
2,4-Dimethylphenol	380.0 U	390.0 U							
Benzoic Acid	1800.0 U	1900.0 U							
Naphthalene	380.0 U	390.0 U							
2-Methylnaphthalene	380.0 U	390.0 U							
Acenaphthene	380.0 U	390.0 U							210.0 J (1)
Dibenzofuran	380.0 U	390.0 U	1900000 D (1)	2100.0 J (1)	120.0 J (1)		580.0 J (1)		150.0 J (1)
Diethylphthalate	380.0 U	390.0 U							
Fluorene	380.0 U	390.0 U							160.0 J (1)
Phenanthrene	130.0 J	200.0 J	32000.0 J (1)	8300.0 J (1)			690.0 J (1)		1100.0 (1)
Anthracene	380.0 U	390.0 U		1900.0 J (1)			150.0 J (1)		290.0 J (1)
Di-n-Butylphthalate	380.0 U	390.0 U							
Fluoranthene	220.0 J	270.0 J	67000.0 J (1)	17000.0 (1)	140.0 J		1000.0 (1)		1600.0 (1)
Pyrene	170.0 J	240.0 J	49000.0 J (1)	5200.0 J (1)			670.0 J (1)		1100.0 (1)
Butylbenzylphthalate	380.0 U	390.0 U			140.0 J (1)				
Benzo(a)Anthracene	97.0 J	120.0 J	24000.0 J (1)	2900.0 J (1)			550.0 J (1)		790.0 J (1)
Chrysene	85.0 J	110.0 J	25000.0 J (1)				460.0 J (1)		840.0 (1)
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0	34000.0 J (1)		370.0 J	310.0 BJ	1000.0 (1)		
Benzo(b)Fluoranthene	91.0 J	190.0 J	32000.0 J (1)	4100.0 J (1)			480.0 J (1)		960.0 (1)
Benzo(a)Pyrene	380.0 U	98.0 J	21000.0 J (1)						510.0 J (1)
Indeno(1,2,3-cd)Pyrene	380.0 U	390.0 U							390.0 J (1)
Benzo(g,h,i)Perylene	380.0 U	390.0 U							300.0 J (1)
PESTICIDES/PCBs									
Aldrin	9.2 U	9.2 U							
Dieldrin	18.0 U	18.0 U						210.0 B (1)	
4,4'-DDE	18.0 U	18.0 U	560.0 (1)						
Endrin	18.0 U	18.0 U						220.0 B (1)	
4,4'-DDT	18.0 U	18.0 U						230.0 B (1)	
gamma-Chlordane	92.0 U	92.0 U							
Aroclor-1242	92.0 U	92.0 U							

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-7 (contd)

SOIL SAMPLES - AREA B ONSITE
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	Background		CONCENTRATIONS in ug/kg or mg/kg						
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	B3-SS-06	B4-SS-03	B4-SS-10	B5-SS-08	B6-SS-07	B7-SS-06	B8-SS-08
INORGANICS									
ALUMINUM	6000.0	4920.0	9930.0 (1)	1700.0	11200.0 (1)	2290.0	10500.0 (1)	9560.0 (1)	7970.0 (1)
ARSENIC	3.5	3.0	3.9 J	26.2 J (1)	4.7 J (1)	0.8 BJ	8.1 (1)	3.5	3.0
BARIUM	34.9 B	33.6 B	168.0 (1)	304.0 (1)	85.7 (1)	15.7 B	126.0 (1)	77.5 (1)	72.1 (1)
BERYLLIUM	0.0 U	0.0 U	0.6 B (1)		0.5 B (1)		0.5 B (1)	0.6 B (1)	0.3 B (1)
CADMIUM	0.8 U	0.9 U		4.3 (1)			1.3 (1)		
CALCIUM	28000.0	57900.0	36000.0	8040.0	61700.0 (1)	54700.0	6460.0 J	52400.0	57600.0 J
CHROMIUM	6.8	7.8 J	24.0 (1)	82.8 J (1)	15.4 (1)	4.7 J	33.2 (1)	R	17.5 (1)
COBALT	2.4 B	3.5 B	10.9 B (1)	27.1 (1)	7.6 B (1)	2.6 B	12.4 B (1)	9.3 J (1)	6.4 B (1)
COPPER	15.5 J	18.9 J	43.4 (1)	573.0 (1)	17.1	8.3	72.3 (1)	37.9 J (1)	18.2
IRON	7820.0	10500.0	21400.0 (1)	104000.0 (1)	18200.0 (1)	5400.0	55800.0 (1)	17500.0 (1)	13700.0 (1)
LEAD	30.7	11.8	70.5 J (1)	375.0 J (1)	13.4 J	12.6 J	107.0 (1)	52.6 (1)	49.6 (1)
MAGNESIUM	3660.0	25100.0	12800.0	1070.0 B	23400.0	24100.0	3780.0	18300.0	21800.0
MANGANESE	103.0	414.0	244.0 J	728.0 J (1)	453.0 J (1)	294.0 J	770.0 (1)	461.0 J (1)	415.0 (1)
MERCURY	0.1 U	0.1 U	0.3 (1)	1.3 (1)	0.8 (1)		0.7 (1)		
NICKEL	6.8 B	8.0 B	35.3 (1)	173.0 (1)	18.6 (1)	5.6 B	43.9 (1)	19.8 (1)	16.2 (1)
POTASSIUM	624.0 B	981.0 B	1600.0 (1)	189.0 B	2820.0 (1)	659.0 B	1460.0 (1)	R	1820.0 (1)
SELENIUM	0.5 U	0.6 U	0.5 UJ	0.6 BJ (1)	0.5 UJ	0.5 UJ	0.8 B (1)		
SILVER	0.7 U	0.7 U		4.7 (1)			1.7 B (1)		
SODIUM	205.0 B	135.0 B	381.0 B (1)	174.0 B	246.0 B (1)	195.0 B	215.0 B (1)	R	237.0 B (1)
THALLIUM	0.6 U	0.6 U							
VANADIUM	16.1	13.8 J	22.5 (1)		21.4 (1)	7.8 B	21.9 (1)	20.6 (1)	16.4
ZINC	61.7 J	73.6	158.0 (1)	1000.0 (1)	63.2	70.2	669.0 (1)	82.6 (1)	114.0 (1)
CYANIDE	0.6 U	0.6 U	0.7 J (1)	1.6 J (1)	0.6 UJ	1.2 UJ	0.7 (1)	0.6 UJ	0.6 UJ

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.
E = Estimated value due to exceedance of linear calibration range.
UJ = Indicates analyte was analyzed for but not detected. However, the data is qualified as estimated due to QA/QC.

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-7 (contd)

SOIL SAMPLES - AREA B ONSITE
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	Background		CONCENTRATIONS in ug/kg or mg/kg						
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	B9-SS-07	B9-SS-10	B10-SS-02	B10-SS-05	B11-SS-07	B16-SS-08	B16-SS-10
VOLATILES									
Chloroethane	11.0 U	12.0 U							
Methylene Chloride	R	R	30.0	19.0 J			40.0	2300.0 B	12.0
Acetone	120.0 B	R	310.0 (1)	230.0 (1)	14000.0 B (1)	5600.0 BJ (1)	430.0 (1)		37.0
1,1-Dichloroethene	6.0 U	6.0 U							
1,1-Dichloroethane	6.0 U	6.0 U							
1,2-Dichloroethene (total)	6.0 U	6.0 U				4600.0 J (1)			
1,1,1-Trichloroethane	6.0 U	6.0 U						2900.0 (1)	
Trichloroethene	6.0 U	6.0 U							
1,1,2-Trichloroethane	6.0 U	6.0 U							
Benzene	6.0 U	6.0 U							
Tetrachloroethene	6.0 U	6.0 U							
Toluene	6.0 U	6.0 U							
Chlorobenzene	6.0 U	6.0 U							
Ethylbenzene	6.0 U	6.0 U			6900.0 (1)	89000.0 (1)			
Xylenes(total)	6.0 U	6.0 U			90000.0 (1)	110000.0 (1)			
SEMI-VOLATILES									
Phenol	380.0 U	390.0 U							
2-Methylphenol	380.0 U	390.0 U							
4-Methylphenol	380.0 U	390.0 U			36000.0 J (1)				
2,4-Dimethylphenol	380.0 U	390.0 U			110000.0 (1)	65000.0 (1)			
Benzoic Acid	1800.0 U	1900.0 U					1800.0 J (1)		
Naphthalene	380.0 U	390.0 U			7500.0 J (1)	3900.0 J (1)	340.0 J (1)		
2-Methylnaphthalene	380.0 U	390.0 U				9900.0 J (1)			
Acenaphthene	380.0 U	390.0 U							
Dibenzofuran	380.0 U	390.0 U							
Diethylphthalate	380.0 U	390.0 U		150.0 J (1)					
Fluorene	380.0 U	390.0 U							
Phenanthrene	130.0 J	200.0 J				8600.0 J (1)	300.0 J (1)		
Anthracene	380.0 U	390.0 U							
Di-n-Butylphthalate	380.0 U	390.0 U							
Fluoranthene	220.0 J	270.0 J					160.0 J		
Pyrene	170.0 J	240.0 J					190.0 J		
Butylbenzylphthalate	380.0 U	390.0 U		7900.0 E (1)			3400.0 (1)		
Benzo(a)Anthracene	97.0 J	120.0 J							
Chrysene	85.0 J	110.0 J							
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0		380.0 J			1200.0 J (1)		110.0 BJ
Benzo(b)Fluoranthene	91.0 J	190.0 J							
Benzo(a)Pyrene	380.0 U	98.0 J							
Indeno(1,2,3-cd)Pyrene	380.0 U	390.0 U							
Benzo(g,h,i)Perylene	380.0 U	390.0 U							
PESTICIDES/PCBs									
Aldrin	9.2 U	9.2 U			6.9 J (1)				
Dieldrin	18.0 U	18.0 U							
4,4'-DDE	18.0 U	18.0 U							
Endrin	18.0 U	18.0 U							
4,4'-DDT	18.0 U	18.0 U			30.0 BJ (1)				
gamma-Chlordane	92.0 U	92.0 U			4.8 J (1)				
Aroclor-1242	92.0 U	92.0 U					3700.0 (1)		

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-7 (contd)

SOIL SAMPLES - AREA B ONSITE
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05/25/90

	Background		CONCENTRATIONS in ug/kg or mg/kg						
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	B9-SS-07	B9-SS-10	B10-SS-02	B10-SS-05	B11-SS-07	B16-SS-08	B16-SS-10
INORGANICS									
ALUMINUM	6000.0	4920.0	9310.0 (1)	8860.0 (1)	2900.0	1940.0	2630.0	3130.0	9070.0 (1)
ARSENIC	3.5	3.0	3.1	1.9 B	2.7 B	29.7 (1)	1.1 B	1.8 B	2.2 B
BARIUM	34.9 B	33.6 B	76.7 (1)	85.3 (1)	185.0 (1)	5080.0 (1)	39.7 B (1)	29.0 B	92.4 (1)
BERYLLIUM	0.0 U	0.0 U	0.4 B (1)	0.3 B (1)	0.1 B (1)	0.5 (1)			
CADMIUM	0.8 U	0.9 U			5.5 (1)	1.5 (1)			
CALCIUM	28000.0	57900.0	71100.0 J (1)	70500.0 J (1)	5630.0	7160.0	54900.0 J	59100.0 (1)	74700.0 (1)
CHROMIUM	6.8	7.8 J	13.5 (1)	13.6 (1)	28.2 (1)	484.0 (1)	15.6 (1)	4.7 J	11.5 J (1)
COBALT	2.4 B	3.5 B	7.6 B (1)	6.1 B (1)	16.9 J (1)	44.6 J (1)	8.3 B (1)	2.5 B	6.4 B (1)
COPPER	15.5 J	18.9 J	17.6	15.1	512.0 J (1)	268.0 J (1)	27.8 (1)	14.2 J	16.9 J
IRON	7820.0	10500.0	18400.0 (1)	14400.0 (1)	12800.0 (1)	489000.0 (1)	20000.0 (1)	7260.0	14900.0 (1)
LEAD	30.7	11.8	13.0	12.3	431.0 (1)	633.0 J (1)	50.0 (1)	17.7	18.3
MAGNESIUM	3660.0	25100.0	25600.0 (1)	20200.0	1370.0 B	1850.0	23700.0	25000.0	26500.0 (1)
MANGANESE	103.0	414.0	471.0 (1)	454.0 (1)	146.0 J	4430.0 J (1)	351.0	341.0 J	483.0 J (1)
MERCURY	0.1 U	0.1 U	0.2 (1)		0.3 (1)				
NICKEL	6.8 B	8.0 B	16.1 (1)	13.0 (1)	22.6 (1)	193.0 (1)	20.3 (1)		12.0 (1)
POTASSIUM	624.0 B	981.0 B	2550.0 (1)	2370.0 (1)	357.0 B	232.0 B	640.0 B	920.0 B	2440.0 (1)
SELENIUM	0.5 U	0.6 U	1.2 (1)		2.0 (1)				
SILVER	0.7 U	0.7 U			2.1 B (1)	11.2 (1)	4.3 (1)		
SODIUM	205.0 B	135.0 B	280.0 B (1)	300.0 B (1)	262.0 B (1)	837.0 B (1)	269.0 B (1)	193.0 BJ	228.0 BJ(1)
THALLIUM	0.6 U	0.6 U							
VANADIUM	16.1	13.8 J	18.5 (1)	21.3 (1)	6.5 B		8.2 B	8.5 BJ	17.1 J (1)
ZINC	61.7 J	73.6	87.0 (1)	55.7	200.0 (1)	643.0 (1)	472.0 (1)	191.0 J (1)	83.1 J (1)
CYANIDE	0.6 U	0.6 U			1.0 J (1)	1.3 J (1)			

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.
E = Estimated value due to exceedance of linear calibration range.
UJ = Indicates analyte was analyzed for but not detected. However, the data is qualified as estimated due to QA/QC.

included calcium (58,300 mg/kg) and copper (estimated at 27 mg/kg). The deeper sample MW2S-11 contained ten inorganic constituents exceeding background levels. Four metals, barium, cobalt, nickel, and potassium were found in MW 2S-11 to exceed the maximum background concentration by a factor of at least two. The remaining metals exceeding background included aluminum chromium, copper, iron, mercury, and vanadium.

MW13S

Two soil samples (MW13-2 and MW13-6) were collected during construction of well MW-13S. Both samples were taken below the water table at depths of 14-16 and 22-24 feet b.g.s., respectively. The sample matrices consisted of clay and silty clay, approximately 10 feet and 2 feet, respectively, from the bedrock surface.

Two VOC's (acetone and methylene chloride) were detected in both samples; the concentration of acetone in each sample was less than that found in the background sample. Methylene chloride was also detected in the blank sample and may be indicative of laboratory contamination. PAHs, including phenanthrene (estimated at 150 ug/kg), fluoranthene (estimated at 180 ug/kg) and pyrene (estimated at 150 ug/kg) were detected in the shallow sample. Phenanthrene exceeded the concentrations in one of the background samples. Bis(2-ethylhexyl)phthalate (estimated at 120 ug/kg) was also detected but at concentrations less than background levels. No pesticides or PCBs were found in either sample.

Eighteen inorganic constituents were detected in both MW13S-2 and MW13S-6. Seven of the metals in MW13S-2 (aluminum, barium, chromium, cobalt, iron, nickel, and potassium) were found at concentrations at least twice that of the background sample. Nine metals, arsenic, beryllium, calcium, copper, manganese, mercury, sodium, vanadium, and zinc, exceeded background levels. Six of the metals in MW13S-6, aluminum, barium, chromium, cobalt, potassium, and nickel, were found at concentrations at least twice that of the background sample. Nine metals, beryllium, calcium, iron, manganese, sodium, thallium, vanadium, and zinc, also exceeded background levels.

MW15S

One soil sample (MW15S-5) was analyzed from well MW-15S at a depth of 8-10 feet b.g.s. The sample was collected below the water table and approximately 4 feet above the bedrock. The sample consisted of clay and silty clay. The VOC's that were identified include methylene chloride, acetone and trichlorethene. Methylene chloride, however, was detected in the blank sample therefore it's presence may be due to laboratory contamination. Only trichloroethene (31 ug/kg) exceeded background levels.

Five semi-volatile compounds were detected. Fluoranthene (estimated at 180 ug/kg) and pyrene (estimated at 190 ug/kg) were detected in the sample. The concentrations of di-n-butylphthalate (1400 ug/kg), butylbenzylphthalate (estimated at 20000 ug/kg), and bis(2-ethylhexyl)phthalate (estimated at 53,000 ug/kg) exceeded background levels. No pesticides or PCBs were detected in the sample.

Twenty inorganic constituents were detected at concentrations above background levels. The concentration of six of the samples, barium (340 mg/kg), chromium (50.3 mg/kg), copper (123 mg/kg), iron (52,800 mg/kg), nickel (46.8 mg/kg), and zinc (511 mg/kg), exceeded the maximum background level by a factor of at least five. Cobalt and lead exceeded background levels by a factor of three. Aluminum, cadmium, manganese, mercury, potassium, silver, and vanadium also exceeded background levels.

MW16S

Two soil samples (MW16S-1 and MW16S-3) were collected from the borehole during installation of well MW-16S. The samples were taken from 12-14 feet and 16-17.3 feet b.g.s., respectively. A duplicate sample was also taken of MW16S-3. The shallow soil consisted of silty sand, while the deep sample (MW16S-3) was mostly clay. MW16S-1 was collected at the water table, approximately 3 feet from the bedrock surface. MW16S-3 was collected immediately above the bedrock.

Methylene chloride was the only VOC detected in all three samples.

However, this compound was also detected in the blank sample. Chlorobenzene, which was not found in the background sample, was detected in the shallow sample at a concentration of 780 ug/kg. Bis(2-ethylhexyl) phthalate was also detected at estimated concentrations in each sample but at concentrations below background levels. The only pesticide, 4,4′ DDT, was found in the deep sample at concentration of 320 ug/kg.

Seventeen metals were detected in MW16S-1 and eighteen metals were detected in MW16S-3. Six of the metals in the shallow sample and fifteen in the deep sample exceeded background levels. The metals exceeding background in the shallow sample included barium, calcium, chromium, potassium, thallium, and zinc. Three metals, barium, cobalt, and potassium, found in the deep sample were over two times the concentration of these metals found in the background samples. Other metals above background included aluminum, arsenic, beryllium, calcium, chromium, copper, iron, manganese, nickel, sodium, thallium, and vanadium.

B3

One soil sample (B3SS-6) was collected from boring B-3 at a depth of 10-12 feet b.g.s. The sample was composed of silty clay and was collected below the water table, approximatley 4.5 feet above the bedrock surface.

Three volatile organic compounds, benzene (estimated at 54 ug/kg), chlorobenzene (2200 ug/kg), ethylbenzene (1300 ug/kg), and total xylenes (estimated at 3100 ug/kg), exceeded background levels. Methylene chloride was also detected at a level of 80 ug/kg, but was also detected in the laboratory blank. Because detection of methylene chloride was rejected in the analysis of the background sample, the relative level of contamination from this compound can not be determined for boring B-3.

Nine semi-volatile compounds (table__) were also detected in the sample. Seven of these compounds were PAHs which exceeded background levels by at least two orders of magnitude. Dibenzofuran (1,900,000 D ug/kg) and bis (2-ethylhexyl) phthalate (estimated at 34,000 ug/kg), were also detected. One pesticide, 4,4′DDE (560 ug/kg), was also detected in B3SS-6 at

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concentrations exceeding background levels.

Nineteen inorganic constituents were identified in the sample and fifteen were at levels greater than background. Eight metals, barium (168 mg/kg), chromium (24 mg/kg), cobalt (10.9 mg/kg), copper (43.4 mg/kg), iron (21,400 mg/kg), lead (70.5 mg/kg), nickel (35.3 mg/kg), and zinc (158 mg/kg), were at levels two to four times that of the highest background concentration. Aluminum, beryllium, mercury, potassium, sodium, vanadium, and cyanide were also found above background.

B4

Two soil samples (B4SS-3 and B4SS-10) were collected from boring B-4. Samples were taken from 4-6 feet (B4SS-3) and 18-19.5 (B4SS-10) feet b.g.s. The shallow sample consisted of fill material; the deep sample consisted of clay and till. Both samples were collected at or below the water table. The bedrock surface was encountered at 2 feet b.g.s. B4SS-3 was collected 13.5 feet above bedrock; B4SS-10 was collected immediately above the bedrock.

Seven VOC parameters (methylene chloride (5,000 ug/kg), acetone (7,300 ug/kg), benzene (3,700 ug/kg), toluene (17,000 ug/kg), chlorobenzene (150 ug/kg), ethylbenzene (estimated at 2,400 ug/kg) and total xylenes (11,000 ug/kg)) were detected in the shallow sample (B4SS-3). With the exception of methylene chloride, all of the compounds exceeded background levels. In contrast, only five VOCs, methylene chloride (34 ug/kg), acetone (950 ug/kg), chlorobenzene (estimated at 18 ug/kg), toluene (estimated at 15 ug/kg), and total xylenes (11 ug/kg) were detected in the deep sample (B4SS-10) at concentrations above background levels.

Nine semi-volatile compounds (six compounds were PAHs) were detected in the shallow sample above background levels. Phenol was detected in the sample at a concentration of 150,000 ug/kg and 2-methylphenol was detected at an estimated concentration of 4,400 ug/kg. Dibenzofuran was also detected at an estimated concentration of 2,100 ug/kg. Five semi-volatile compounds were detected in the deep sample.

Phenol was detected at a concentration of 1,800 ug/kg. Butylbenzylphthalate (estimated at 140 ug/kg) exceeded background levels. Bis(2-ethylhexyl)phthalate (estimated at 370 ug/kg) was detected below background levels. Fluoranthene was also detected at concentrations below background levels. Dibenzofuran was detected above background levels at an estimated concentration of 120 ug/kg.

Twenty inorganic constituents were found in the shallow sample and all but aluminum, calcium, magnesium, potassium, and sodium exceeded background levels. Cadmium, manganese, mercury, selenium, silver, and cyanide were found at levels exceeding background. The concentrations of nine of the metals were seven to twenty-one times that of the highest background concentrations. These included arsenic (estimated at 26.2 mg/kg), barium (304 mg/kg), chromium (estimated at 82.8 mg/kg), cobalt (27.1 mg/kg), copper (573 mg/kg), iron (104,000 mg/kg), lead (estimated at 375 mg/kg), nickel (173 mg/kg), and zinc (1,000 mg/kg). Fourteen of the eighteen inorganic constituents detected in the deeper sample exceeded background levels. Barium, chromium, cobalt, nickel, and potassium exceeded the maximum background concentration by a factor of at least two.

B5

Sample B5SS-8 was collected from boring B-5 at a depth of 14-16 feet b.g.s. The sample consisted of silty sand and was collected below the water table, approximately 4.5 feet above the bedrock surface.

Acetone (110 ug/kg) and bis(2-ethylhexyl)phthalate (estimated at 310 ug/kg) were the only organic parameters detected in the sample and both were below background levels. Sixteen metals were detected; none exceeded background levels.

B6

One sample (B6SS-7) was collected for analysis from boring B-6. A duplicate sample was also taken at the same interval. Samples were taken from a duplicate sample consisting of silty clay; the top 0.2 feet of the

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sample contained fill material. The sample was collected below the water table at a depth of 12-14 feet b.g.s., approximately 15 feet above bedrock.

Methylene chloride (estimated at 20 ug/kg) and acetone (490 ug/kg) were the only VOC parameters detected in both samples. Acetone exceeded background levels in both samples. Nine semi-volatile compounds were identified in the sample; seven were PAH compounds. All PAHs, including phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, and benzo(b)fluoranthene, exceeded background levels. Dibenzofuran was detected at an estimated concentration of 580 ug/kg. Bis (2-ethylhexyl) phthalate was detected at 1000 ug/kg.

Twenty-two inorganic constituents were found in sample B6SS-7. Nineteen metals in B6SS-7 exceeded background levels. Of these, nine exceeded their respective background sample concentrations by factors ranging from two to nine. These included arsenic (8.1 mg/kg), barium (126 mg/kg), chromium (33.2 mg/kg), cobalt (12.4 mg/kg), copper (72.3 mg/kg), iron (55,800 mg/kg), lead (107 mg/kg), nickel (43.9 mg/kg), and zinc (669 mg/kg). The remaining inorganic constituents exceeding background included aluminum, beryllium, cadmium, manganese, mercury, potassium, selenium, silver, sodium, vanadium, and cyanide.

B7

One soil sample (B7SS-6) was collected in boring B-7 from below the water table at a depth of 10-12 feet b.g.s. The sample was collected at the top of the basal clay, approximately 6.5 feet above the bedrock surface. The sample consisted mostly of silty clay, although a small portion (0.3 feet) of the overlying sand layer was also sampled.

Methylene chloride was detected in B7SS-6 at an estimated concentration of 690 ug/kg. Ethylbenzene was detected at 1000 ug/kg and total xylenes were detected at 1700 ug/kg.

Three pesticides (dieldrin, endrin and 4,4′ DDT) were found in the sample at concentrations of 210 ug/kg, 220 ug/kg, and 230 ug/kg, respectively.

However, the presence of these contaminants is suspect since they were also detected in the laboratory blank.

Fourteen metals were detected in B7SS-6. Seven metals, including aluminum, beryllium, iron, lead, manganese, vanadium, and zinc, were detected at concentrations greater than background levels. Four metals, including barium, cobalt, copper, and nickel, were at least twice the concentration found in the background sample.

B8

One sample from 16-18 feet b.g.s. (B8SS-8) was analyzed from boring B-8. The sample was collected from below the water table within a layer of silty clay approximately 4.5 feet from the bedrock surface.

The VOCs detected in the sample include methylene chloride (83 ug/kg) and acetone (330 ug/kg). The concentration of acetone exceeded background levels by a factor greater than two. Thirteen semi-volatile compounds were also detected above background levels. Seven of the compounds (phenanthrene (1100 ug/kg), fluoranthene (1600 ug/kg), benzo(a)anthracene (estimated at 790 ug/kg), chrysene (840 ug/kg), benzo(b)fluoranthene (960 ug/kg), and benzo(a)pyrene (estimated at 510 ug/kg) were detected at greater than five times the background levels.

Other compounds which were found in boring B-8, but not detected in the background sample, include estimated levels of dibenzofuran (150 ug/kg), anthracene (290 ug/kg), acenaphthene (210 ug/kg), fluorene (160 ug/kg), ideno(1,2,3-cd)pyrene (390 ug/kg), benzo(ghi)perylene (300 ug/kg), and pyrene (1100 ug/kg).

Seventeen metals were detected in the sample. Twelve of the metals, aluminum, barium, beryllium, chromium, cobalt, iron, lead, manganese, nickel, potassium, sodium, and zinc, were detected at levels greater than background. Of these, barium, chromium, and nickel were found at concentrations over two times background levels.

B9

Two samples (B9SS-7 and B9SS-10) were collected and analyzed from boring B-9. The depth to bedrock at this location is approximately 22 feet b.g.s. Both samples were collected within the saturated zone at depths of 12-14 and 20-22 feet b.g.s. The shallow sample (B9SS-7), and a small portion (0.6 feet) of the deeper sample (B9SS-10), consisted of clay. The remaining portion of the deep sample was till.

Methylene chloride (30 ug/kg) and acetone (310 ug/kg) were detected in the shallow sample. The concentration of acetone was in excess of background levels. In the deeper sample, methylene chloride was detected at an estimated concentration of 19 ug/kg. Acetone was detected at 230 ug/kg.

Semi-volatile compounds were only detected in the deeper sample. Diethylphthalate and butylbenzylphthalate were detected at estimated concentrations of 150 ug/kg and 7900 ug/kg, respectively. Both compounds exceeded background levels. Bis(2-ethylhexyl)phthalate was detected at an estimated concentration of 380 ug/kg.

Nineteen metals were detected in the shallow sample. The concentrations of sixteen metals, aluminum, barium, beryllium, calcium, chromium, cobalt, iron, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc were greater than background. Barium, cobalt, nickel, and potassium concentrations exceeded background levels by a factor of at least two.

Of seventeen metals detected in the deep sample, twelve metals, aluminum, barium, beryllium, calcium, chromium, cobalt, iron, manganese, nickel, potassium, sodium, and vanadium, were detected at concentrations greater than background levels. The concentrations of barium and potassium were at least twice that of background.

B10

Two samples (B10SS-2 and B10SS-5) were taken within the fill material from depths of 2-4 and 8-10 feet b.g.s. in boring B-10. The unsaturated samples consisted of soil mixed with ash and cardboard. The soil matrix below the sampling depth consisted of silt and clay to a depth approximately 20.5 feet b.g.s. The water table and bedrock surface was approximately 10 and 20.5 feet b.g.s., respectively.

Elevated levels of acetone (14000 ug/kg), ethylbenzene (6,900 ug/kg), and total xylenes (90,000 ug/kg) were detected in the shallow sample (B10SS-2). Acetone was also detected in the laboratory blank, therefore, its presence may be due to laboratory contamination.

Four VOCs, acetone (estimated at 5,600 ug/kg), ethylbenzene (89,000 ug/kg), total xylenes (110,000 ug/kg), as well as estimated levels of 1,2 dichloroethene (estimated at 4,600 ug/kg) were detected in the deeper sample. The detection of acetone is suspect due to its presence in the laboratory blank.

Three semi-volatiles were found in the shallow sample. Estimated concentrations of 4-methylphenol (36,000 ug/kg) and naphthalene (7,500 ug/kg) were detected. The compound 2,4-dimethylphenol, was also detected at a concentration of 110,000 ug/kg. Estimated concentrations of aldrin (6.9 ug/kg), 4,4'DDT (30 ug/kg), and gamma chlordane (4.8 ug/kg) were also detected. The deeper sample also contained 2,4-dimethylphenol (65,000 ug/kg), as well as estimated quantities of napththalene (3,900 ug/kg), 2 methylnapthalene (9,900 ug/kg) and phenanthrene (8,600 ug/kg). No pesticides or PCBs were detected in this sample.

Twenty-two inorganic constituents were detected in the shallow sample. The concentrations of fifteen inorganic constituents, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, mercury, nickel, selenium, silver, sodium, zinc, and cyanide, were detected at above background levels. Seven metals, barium (185 mg/kg), chromium (28.2 mg/kg), cobalt (estimated at 16.9 mg/kg), copper (estimated at 512 mg/kg), lead (431 mg/kg), nickel (22.6 mg/kg), and zinc (200 mg/kg), were at least two to twenty-seven times the maximum concentrations of the background samples.

There were nineteen inorganic constituents detected in the deeper sample (B10SS-5); fifteen inorganics exceeded background levels. The concentrations of eleven metals, arsenic (29.7 mg/kg), barium (5,080 mg/kg), chromium (484 mg/kg), cobalt (estimated at 44.6 mg/kg), copper (estimated at 268 mg/kg), iron (489,000 mg/kg), lead (estimated at 633 mg/kg), manganese (estimated at 4,430 mg/kg), nickel (193 mg/kg), sodium (837 mg/kg), and zinc (643 mg/kg), were detected at concentrations greater than background by at least a factor of two to 145. Of particular note were barium at 145 times background, chromium at 62 times background, and iron at 46 times background. Cyanide was found in the shallow and deep samples at estimated concentrations of 1.00 and 1.30 mg/kg, respectively.

B11

One sample (B11SS-7) was collected in boring B-11 from below the water table at a depth of 12-14 feet b.g.s. The sample consisted of fine sand. Clay lies below the sand from depth of 15-20 feet b.g.s. The bedrock surface is approximately 20 feet b.g.s.

Acetone (430 ug/kg) and methylene chloride (40 ug/kg) were the only VOCs detected in B11SS-7. Seven semi-volatile compounds were detected above background levels. These include butylbenzylphthalate (3400 ug/kg), benzoic acid (estimated at 1800 ug/kg), phenanthrene (estimated at 300 ug/kg), and bis(2-ethylhexyl)phthalate (estimated at 1200 ug/kg), and napthalene (estimated at 340 ug/kg). Estimated concentrations of fluoranthene (160 ug/kg) and pyrene (190 ug/kg) were also detected in this sample.

The pesticide Aroclor 1242 (3700 ug/kg) was detected above background levels.

Seventeen metals were detected in B11SS-7. Ten of the metals, barium, chromium, cobalt, copper, iron, lead, nickel. silver, sodium, and zinc were found at levels greater than background. Four of these metals (chromium, cobalt lead, and nickel) were found exceeding background levels by at least a factor of two to four. The concentration for zinc (472 mg/kg) exceeded background by a factor of six.

B16

Two samples (B16SS-8 and B16SS-10) were collected from boring B-16 below the water table. The shallow sample, which consisted of silt, was collected from a depth of 14-16 feet b.g.s. The deeper sample was collected at the bedrock surface from a depth of 18-19.5 feet b.g.s. The sample consisted mostly of clay that was partially stained with a black substance.

Methylene chloride was detected in the shallow and deep sample at a concentration of 2300 ug/kg and 12 ug/kg, respectively. The compound 1,1,1-trichloroethane (2900 ug/kg) was also detected in the shallow sample. Acetone was detected only in the deep sample at a concentration of 37 ug/kg. Bis(2-Ethylhexyl)phthalate (estimated at 110 ug/kg) was also found in the deep sample, however, because this compound was also detected in the laboratory blank, its presence in the sample matrix may be the result of laboratory contamination.

Fifteen metals were detected in the shallow sample; sixteen metals were detected in the deep sample. Two metals in the shallow boring exceeded background levels, including calcium and zinc. The concentrations of zinc was greater than background levels by at least a factor of two. Thirteen metals exceeded background levels in the deeper sample. Both barium and potassium exceeded background levels by at least factor of two.

AREA B (Off-site)

Wells MW-1S/D, 3S/D, 4S/D and 11S:

MW1D

Soil sample MW1D-07 was collected from 12-14 feet b.g.s. during the installation of MW1D. No sample was taken for analysis during the installation of MW1S.

This draft document is not for public distribution. All data contained herein are unvalidated. All conclusions are tentative and subject to change pending validation of the data and internal review.

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-8

SOIL SAMPLES - AREA B OFFSITE
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	Background		CONCENTRATIONS in ug/kg or mg/kg					
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	MW-1D-07	MW-3S-04	MW-3S-06	MW-3S-07	MW-4D-10	MW-11S-07
VOLATILES								
Methylene Chloride	R	R	6.0		19.0	12.0	6.0	R
Acetone	120.0 B	R	220.0 D (1)	59.0	79.0	83.0		55.0
2-Butanone	11.0 U	12.0 U	25.0 (1)					
4-Methyl-2-Pentanone	11.0 U	12.0 U	4.0 J (1)					
Toluene	6.0 U	6.0 U	3.0 J (1)				1.0 J (1)	
SEMI-VOLATILES								
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0	140.0 J	1500.0 (1)	250.0 J	130.0 J	140.0 J	
PESTICIDES/PCBs								
INORGANICS								
ALUMINUM	6000.0	4920.0	4240.0 J	9770.0 (1)	6570.0 (1)	8870.0 (1)	13100.0 J (1)	11800.0 (1)
ANTIMONY	12.4 U	13.0 U	4.6 B (1)	5.6 BJ (1)	7.4 BJ (1)	8.6 BJ (1)		
ARSENIC	3.5	3.0	1.6 B	3.9 J	3.1 J	2.9 J	4.9 (1)	3.3
BARIUM	34.9 B	33.6 B	38.8 B (1)	78.4 (1)	63.7 (1)	81.1 (1)	92.0 (1)	94.7 (1)
BERYLLIUM	0.0 U	0.0 U	0.2 B (1)	0.6 B (1)	0.5 B (1)	0.6 B (1)	0.6 B (1)	0.4 B (1)
CALCIUM	28000.0	57900.0	65400.0 (1)	72500.0 (1)	76400.0 (1)	78300.0 (1)	70900.0 (1)	73600.0 (1)
CHROMIUM	6.8	7.8 J	4.5	10.6 (1)	6.5	8.8 (1)	14.0 (1)	16.3 J (1)
COBALT	2.4 B	3.5 B	4.3 B (1)	9.1 B (1)	6.3 B (1)	8.3 B (1)	11.1 B (1)	7.9 B (1)
COPPER	15.5 J	18.9 J	13.4	17.6	13.9	16.8	21.4 (1)	16.2
IRON	7820.0	10500.0	7570.0	15800.0 (1)	11300.0 (1)	14500.0 (1)	21400.0 (1)	17700.0 (1)
LEAD	30.7	11.8	11.9	13.5	13.1	20.8	16.2	15.1 J
MAGNESIUM	3660.0	25100.0	27300.0 J (1)	25200.0 (1)	30100.0 (1)	31900.0 (1)	24900.0 J	23400.0
MANGANESE	103.0	414.0	323.0	506.0 (1)	412.0	459.0 (1)	476.0 (1)	520.0 (1)
MERCURY	0.1 U	0.1 U	0.2 (1)				0.2 (1)	0.1 UJ
NICKEL	6.8 B	8.0 B	10.3 (1)	18.5 (1)	12.9 (1)	17.2 (1)	22.3 (1)	16.7 (1)
POTASSIUM	624.0 B	981.0 B	801.0 B	1940.0 (1)	1450.0 (1)	2070.0 (1)	2640.0 (1)	3010.0 J (1)
SODIUM	205.0 B	135.0 B	155.0 B	184.0 B	177.0 B	193.0 B	233.0 B (1)	239.0 B (1)
VANADIUM	16.1	13.8 J	11.2 B	19.3 (1)	13.6	17.7 (1)	25.2 (1)	21.9 (1)
ZINC	61.7 J	73.6	66.5	92.6 (1)	76.4 (1)	71.3	64.0	70.6

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.
UJ = Indicates analyte was analyzed for but not detected. However, the data is qualified as estimated due to QA/QC.

Methylene chloride (6 ug/kg), acetone (220 ug/kg), 2-butanone (25 ug/kg), 4-methyl-2-pentanone (estimated at 4 ug/kg), and toluene (estimated at 3 ug/kg) were detected in sample MW1D-07. Except for methylene chloride, all of these VOCs exceeded background levels.

Bis(2-ethylhexyl)phthalate (estimated at 140 ug/kg) was the only semi-volatile compound detected in MW-1D-07. No pesticides or PCBs were detected in this sample.

Of the nineteen metals detected in the sample, eight were above background level. These included antimony, barium, beryllium, calcium, cobalt, magnesium, mercury, and nickel.

MW3S

Soil samples MW3S-4, MW3S-6, and MW3S-7 were collected and analyzed from three depths 6-8, 10-12, and 12-14 feet b.g.s. respectively, in boring MW-3S. Table 4-8 compares the analytical results for these samples to the background samples. Each sample was collected from below the water table surface. The soil consisted of clay with interbedded sand layers. The depth to bedrock was 14 feet.

Methylene chloride was detected at concentrations of 6 ug/kg, 19 ug/kg and 12 ug/kg, respectively, in each of the three samples. Acetone was also detected in each of the samples at concentrations of 59 ug/kg, 79 ug/kg, and 83 ug/kg, respectively. Bis (2-ethylhexyl) phthalate was detected in all the samples but exceeded background levels only in the shallow sample.

Of the eighteen inorganic constituents detected in the shallow, mid-depth, and deep samples, fourteen, eleven, and thirteen, respectively, were at levels exceeding background. In general, the concentration of metals were highest in the shallow and deep sample. Three of the metals, barium, cobalt, and nickel, were detected in the shallow and deep samples at twice the concentrations found in the background samples. Potassium exceeded twice the background concentration in the deep sample, as well.

MW4D

One soil sample from 18-20 feet b.g.s. was analyzed from well MW-4D. The sample was collected below the water table from within the till horizon which directly overlies the bedrock. Methylene chloride (6 ug/kg) and toluene (estimated at 1 ug/kg) were the only VOC's detected. Bis 2(ethylhexyl) phthalate was the only semi-volatile compound detected below background levels at an estimated value of 140 ug/kg.

Eighteen metals were detected of which fifteen exceeded background levels. Five metals, aluminum, barium, cobalt, iron, nickel, and potassium, were at levels at least twice the concentrations found in the background samples.

MW11S

One soil sample (MW11S-7) from 12-14 feet b.g.s. was collected at MW-11S. The sampling interval was below the water table, and the sample matrix was mostly clay, approximately 2 feet above bedrock. Acetone (55 ug/kg) was the only VOC identified, but was below the background level. Data for methylene chloride were rejected. No semivolatiles, pesticides, or PCBs were detected.

Seventeen metals were identified in the sample. Twelve of the metals, aluminum, barium, beryllium, calcium, chromium, cobalt, iron, manganese, nickel, potassium, sodium, and vanadium, exceeded background concentrations. Barium, chromium, cobalt, nickel, and potassium exceeded background levels by a factor of at least two.

AREA C (On-site)

Area C monitoring wells (MW) include MW-5S, 9S, 10S, 14S, and 17S. Table 4-9 compares the analytical results for these samples to the background samples.

MW5S

This draft document is not for public distribution. All data contained herein are unvalidated. All conclusions are tentative and subject to change pending validation of the data and internal review.

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-9

SOIL SAMPLES - AREA C ONSITE
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	Background		CONCENTRATIONS in ug/kg or mg/kg						
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	MW-5S-01	MW-9S-06	MW-10S-07	MW-14S-08	MW-14S-12	MW-17S-05	MW-17S-11
VOLATILES									
Methylene Chloride	R	R	18.0	17.0	R	7.0	12.0	1900.0 B	1100.0 B
Acetone	120.0 B	R	39.0	43.0		81.0	120.0		
Carbon Disulfide	6.0 U	6.0 U							
1,1,1-Trichloroethane	6.0 U	6.0 U				6.0 (1)	3.0 J (1)		
SEMI-VOLATILES									
Phenol	380.0 U	390.0 U						3300.0 D (1)	310.0 J (1)
Dibenzofuran	380.0 U	390.0 U						140.0 J (1)	
Fluoranthene	220.0 J	270.0 J							
Pyrene	170.0 J	240.0 J							
Butylbenzylphthalate	380.0 U	390.0 U				120.0 J (1)			
Benzo(a)Anthracene	97.0 J	120.0 J							
Chrysene	85.0 J	110.0 J							
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0		100.0 J	2600.0 (1)	200.0 J			230.0 J
Benzo(b)Fluoranthene	91.0 J	190.0 J							
Benzo(a)Pyrene	380.0 U	98.0 J							
Indeno(1,2,3-cd)Pyrene	380.0 U	390.0 U							
PESTICIDES/PCBs									
INORGANICS									
ALUMINUM	6000.0	4920.0	4450.0	4500.0	10300.0 (1)	4850.0	14300.0 (1)	2570.0	6690.0 (1)
ARSENIC	3.5	3.0	2.1	1.9 B	2.9	1.7 BJ	7.2 J (1)	2.4 BJ	2.6 J
BARIUM	34.9 B	33.6 B	51.7 (1)	33.4 B	79.8 (1)	35.5 B (1)	115.0 (1)	12.6 B	61.0 (1)
BERYLLIUM	0.0 U	0.0 U	0.3 B (1)		0.3 B (1)		1.4 (1)		1.2 (1)
CADMIUM	0.8 U	0.9 U							
CALCIUM	28000.0	57900.0	56800.0 J	52100.0	66000.0 (1)	57000.0	50700.0	53900.0	64500.0 (1)
CHROMIUM	6.8	7.8 J	5.0	7.8 J	15.0 J (1)	7.1	19.9 (1)	4.2	10.3 (1)
COBALT	2.4 B	3.5 B	4.2 (1)	4.1 B (1)	8.4 B (1)	3.3 B	11.5 B (1)	2.3 B	4.6 B (1)
COPPER	15.5 J	18.9 J	22.2 J (1)	14.4	15.0	10.0	25.2 (1)	9.8	15.3
IRON	7820.0	10500.0	8710.0 J	8660.0	16300.0 (1)	9250.0	25100.0 (1)	6250.0	11900.0 (1)
LEAD	30.7	11.8	43.7 (1)	12.0 J	14.1 J	20.2	13.9	12.3	15.2
MAGNESIUM	3660.0	25100.0	23600.0	20900.0	21400.0	23300.0	19100.0	23400.0	25200.0 (1)
MANGANESE	103.0	414.0	358.0 J	329.0	508.0 (1)	357.0	479.0 (1)	343.0	409.0
MERCURY	0.1 U	0.1 U	0.3 (1)		0.3 J (1)				
NICKEL	6.8 B	8.0 B	8.1	8.9 B (1)	15.3 (1)	7.4 B	28.9 (1)	10.6 (1)	10.0 (1)
POTASSIUM	624.0 B	981.0 B	975.0 B	1120.0 (1)	2630.0 J (1)	1160.0 B (1)	3130.0 J (1)	563.0 B	1960.0 J (1)
SELENIUM	0.5 U	0.6 U							
SILVER	0.7 U	0.7 U							
SODIUM	205.0 B	135.0 B	143.0 B	158.0 B	228.0 B (1)	187.0 B	228.0 B (1)	155.0 B	202.0 BJ
THALLIUM	0.6 U	0.6 U					0.5 B (1)		
VANADIUM	16.1	13.8 J	10.4 J	10.8 B	20.6 (1)	11.6	25.3 (1)	8.0 B	15.9
ZINC	61.7 J	73.6	82.0 J (1)	70.8	78.9 (1)	66.1	72.8	153.0 (1)	91.1 (1)
CYANIDE	0.6 U	0.6 U							

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.
UJ = Indicates analyte was analyzed for but not detected. However, the data is qualified as estimated due to QA/QC.

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-9 (contd)

SOIL SAMPLES - AREA C ONSITE
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	Background		CONCENTRATIONS in ug/kg or mg/kg						
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	B12-SS-01	B12-SS-04	B13-SS-04	B13-SS-567	B14-SS-05	B14-SS-13	B15-SS-06
VOLATILES									
Methylene Chloride	R	R	200.0	34.0	100.0		90.0	23.0 J	62.0
Acetone	120.0 B	R	330.0 (1)	280.0 (1)	440.0 (1)	14000.0 BJ (1)	930.0 (1)	210.0 (1)	700.0 (1)
Carbon Disulfide	6.0 U	6.0 U					420.0 (1)		
1,1,1-Trichloroethane	6.0 U	6.0 U							
SEMI-VOLATILES									
Phenol	380.0 U	390.0 U			550.0 (1)				
Dibenzofuran	380.0 U	390.0 U			170.0 J (1)				
Fluoranthene	220.0 J	270.0 J	340.0 J (1)						290.0 J (1)
Pyrene	170.0 J	240.0 J	340.0 J (1)						310.0 J (1)
Butylbenzylphthalate	380.0 U	390.0 U							
Benzo(a)Anthracene	97.0 J	120.0 J							280.0 J (1)
Chrysene	85.0 J	110.0 J							210.0 J (1)
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0			61.0 J		420.0 B	4700.0 B (1)	190.0 J
Benzo(b)Fluoranthene	91.0 J	190.0 J							240.0 J (1)
Benzo(a)Pyrene	380.0 U	98.0 J							170.0 J (1)
Indeno(1,2,3-cd)Pyrene	380.0 U	390.0 U							95.0 J (1)
PESTICIDES/PCBs									
INORGANICS									
ALUMINUM	6000.0	4920.0	10300.0 (1)	12700.0 (1)	5160.0	6670.0 (1)	6630.0 (1)	9240.0 (1)	14900.0 (1)
ARSENIC	3.5	3.0	21.8 J (1)	6.5 J (1)	15.8 J (1)	2.8 J	5.1 J (1)	2.3 BJ	3.0 J
BARIUM	34.9 B	33.6 B	2240.0 (1)	106.0 (1)	35.0 B	68.5 (1)	52.5 (1)	73.9 (1)	106.0 (1)
BERYLLIUM	0.0 U	0.0 U	1.0 B (1)	0.6 B (1)	0.4 B (1)	0.3 B (1)	0.4 B (1)	0.5 B (1)	0.6 B (1)
CADMIUM	0.8 U	0.9 U	5.9 (1)						
CALCIUM	28000.0	57900.0	8450.0	7150.0	51300.0	70900.0 (1)	42400.0	69600.0 (1)	3330.0
CHROMIUM	6.8	7.8 J	37.5 (1)	18.0 (1)	8.4 (1)	9.8 (1)	11.0 (1)	12.4 (1)	21.6 (1)
COBALT	2.4 B	3.5 B	13.5 B (1)	8.1 B (1)	3.9 B	6.5 B (1)	7.0 B (1)	5.7 B (1)	8.7 B (1)
COPPER	15.5 J	18.9 J	337.0 (1)	23.9 (1)	10.4	13.6	23.2 (1)	12.9	20.9 (1)
IRON	7820.0	10500.0	33100.0 (1)	26100.0 (1)	12300.0 (1)	11700.0 (1)	14400.0 (1)	13700.0 (1)	21000.0 (1)
LEAD	30.7	11.8	882.0 J (1)	38.2 J (1)	148.0 J (1)	15.4 J	13.0 J	16.3 J	27.8 J
MAGNESIUM	3660.0	25100.0	1300.0 B	4470.0	22600.0	26000.0 (1)	12400.0	26800.0 (1)	4300.0
MANGANESE	103.0	414.0	275.0 J	386.0 J	412.0 J	451.0 J (1)	311.0 J	458.0 (1)	202.0 J
MERCURY	0.1 U	0.1 U	1.1 (1)	1.2 (1)	0.1 (1)				
NICKEL	6.8 B	8.0 B	34.8 (1)	19.1 (1)	8.7 B (1)	10.6 (1)	18.6 (1)	14.1 (1)	23.1 (1)
POTASSIUM	624.0 B	981.0 B	1170.0 B (1)	1470.0 (1)	1370.0 (1)	1600.0 (1)	1570.0 (1)	2820.0 (1)	2040.0 (1)
SELENIUM	0.5 U	0.6 U	2.0 J (1)	0.6 BJ (1)	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
SILVER	0.7 U	0.7 U	2.4 B (1)						
SODIUM	205.0 B	135.0 B	244.0 B (1)	192.0 B	180.0 B	345.0 B (1)	179.0 B	249.0 B (1)	209.0 B (1)
THALLIUM	0.6 U	0.6 U							
VANADIUM	16.1	13.8 J	36.6 (1)	25.8 (1)	14.5	13.6	14.5	19.6 (1)	25.9 (1)
ZINC	61.7 J	73.6	1150.0 (1)	113.0 (1)	79.8 (1)	86.8 (1)	74.3 (1)	66.9	109.0 (1)
CYANIDE	0.6 U	0.6 U	6.1 J (1)	0.7 UJ	1.2 UJ	1.1 UJ	0.6 UJ	1.2 UJ	0.6 UJ

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.
UJ = Indicates analyte was analyzed for but not detected. However, the data is qualified as estimated due to QA/QC.

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TABLE 4-9 (contd)

SOIL SAMPLES - AREA C ONSITE
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	Background		CONCENTRATIONS in ug/kg or mg/kg
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	B15-SS-13
VOLATILES			
Methylene Chloride	R	R	58.0
Acetone	120.0 B	R	330.0 (1)
Carbon Disulfide	6.0 U	6.0 U	
1,1,1-Trichloroethane	6.0 U	6.0 U	
SEMI-VOLATILES			
Phenol	380.0 U	390.0 U	
Dibenzofuran	380.0 U	390.0 U	
Fluoranthene	220.0 J	270.0 J	
Pyrene	170.0 J	240.0 J	
Butylbenzylphthalate	380.0 U	390.0 U	
Benzo(a)Anthracene	97.0 J	120.0 J	
Chrysene	85.0 J	110.0 J	
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0	510.0 J (1)
Benzo(b)Fluoranthene	91.0 J	190.0 J	
Benzo(a)Pyrene	380.0 U	98.0 J	
Indeno(1,2,3-cd)Pyrene	380.0 U	390.0 U	
PESTICIDES/PCBs			
INORGANICS			
ALUMINUM	6000.0	4920.0	8650.0 (1)
ARSENIC	3.5	3.0	8.4 J (1)
BARIUM	34.9 B	33.6 B	79.9 (1)
BERYLLIUM	0.0 U	0.0 U	0.4 B (1)
CADMIUM	0.8 U	0.9 U	
CALCIUM	28000.0	57900.0	71400.0 (1)
CHROMIUM	6.8	7.8 J	12.0 (1)
COBALT	2.4 B	3.5 B	6.0 B (1)
COPPER	15.5 J	18.9 J	15.0
IRON	7820.0	10500.0	13700.0 (1)
LEAD	30.7	11.8	11.7 B
MAGNESIUM	3660.0	25100.0	28500.0 (1)
MANGANESE	103.0	414.0	428.0 B (1)
MERCURY	0.1 U	0.1 U	0.2 (1)
NICKEL	6.8 B	8.0 B	13.4 (1)
POTASSIUM	624.0 B	981.0 B	2420.0 (1)
SELENIUM	0.5 U	0.6 U	0.4 UJ
SILVER	0.7 U	0.7 U	
SODIUM	205.0 B	135.0 B	228.0 B (1)
THALLIUM	0.6 U	0.6 U	
VANADIUM	16.1	13.8 J	17.3 (1)
ZINC	61.7 J	73.6	61.1
CYANIDE	0.6 U	0.6 U	

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.
UJ = Indicates analyte was analyzed for but not detected. However, the data is qualified as estimated due to QA/QC.

One soil sample (MW5S-1) was collected from MW5S that corresponds to a depth of 14-16 feet b.g.s. The sample consisted of clay and was collected 9.5 feet above bedrock.

Acetone (39 ug/kg) and methylene chloride (18 ug/kg) were the only organic compounds detected in the sample.

Seventeen inorganics were detected in this sample. Seven metals exceeded background levels. These compounds included barium, beryllium, cobalt, copper, lead, mercury, and zinc.

MW-9S

One soil sample (MW9S-6) that corresponds to a depth of 10-12 feet b.g.s. was collected during the installation of MW-9S. The sample consisted of medium (with some fine) sand, approximately 1.5 feet above bedrock.

Acetone (43 ug/kg) and methylene chloride (17 ug/kg) were detected in the sample. The only semi-volatile detected was bis (2-ethylhexyl)phthalate at an estimated concentration below background levels of 100 ug/kg).

Sixteen metals were detected but only three, cobalt, nickel and potassium, were detected above background levels.

MW-10S

One soil sample (MW10S-7) that corresponds to a depth of 12-14 feet b.g.s. was collected during the installation of MW-10S. The sample consisted of mostly silt with till and gravel, approximately one foot above bedrock.

No VOCs were detected in the sample. Data for methylene chloride were rejected.

Bis(2-ethylhexyl)phthalate (2600 ug/kg) was the only semi-volatile compound detected above background levels.

Eighteen metals were detected of which fourteen were above background levels. These included aluminum, beryllium, calcium, chromium, iron, manganese, mercury, nickel, sodium, vanadium, and zinc. Barium, cobalt, and potassium were detected at concentrations at least twice background levels.

MW-14S

Two soil samples (MW14S-8 and MW14S-12) were collected during the construction of MW-14S at depths of 14-16 and 22-24 feet b.g.s., respectively. The samples consisted of silty clay and clay, respectively. Sample 14S-8 was collected eight feet above bedrock. Sample MW14S-12 was collected from directly above the bedrock.

Three VOCs, methylene chloride, acetone, and 1,1,1-trichloroethane, were identified in both samples. Acetone was detected at background levels in the deep sample (120 ug/kg) and at slightly lower concentrations (81 ug/kg) in the shallower sample. The concentrations of 1,1,1-trichloroethane were higher than background levels in both samples.

Two semi-volatile compounds were detected in the shallow sample. Butylbenzylphthalate (estimated at 120 ug/kg) and bis(2-ethylhexyl)-phthalate (estimated at 200 ug/kg) were detected, but at concentrations below background levels.

Sixteen metals were detected in the shallow sample; eighteen metals were detected in the deep sample. Barium and potassium were the only metals detected in the shallow sample that exceeded background levels. However, the deep sample contained fourteen inorganics exceeding background levels. Barium (115 mg/kg), cobalt (11.5 mg/kg), nickel (28.9 mg/kg), and potassium (estimated at 3,130 mg/kg) exceeded three times the concentrations found in the background samples. Aluminum, arsenic, chromium, and iron were detected at concentrations over twice the levels found in the background sample.

MW-17S

Two soil samples (MW17S-5 and MW17-11) were collected at depths of 8-10 feet and 20-22 feet b.g.s. during the installation of MW 17S. The sample consisted of wet silty sand in the shallow sample and silty clay in the deep sample. Sample 17S-5 was collected at 12.2 feet above bedrock. Sample MW17-11 was collected at approximately .5 foot above the bedrock.

Methylene chloride was detected in both samples at concentrations of 1,900 ug/kg and 1,100 ug/kg, respectively. This analyte was also detected in the blank sample. Two semi-volatiles were detected in the shallow sample, including estimated concentrations of phenol (3,300 ug/kg) and dibenzofuran (estimated at 140 ug/kg). Both compounds exceeded background levels.

Phenol was detected in the deep sample as well, at an estimated concentration of 310 ug/kg. Bis(2-ethylhexyl)phthalate was also detected at an estimated concentration of 230 ug/kg.

Sixteen metals were found in the shallow sample. Nickel and zinc were the only metals in the shallow sample which exceeded background levels.

Of the seventeen metals detected in the deep sample, eleven were found at concentrations above background levels. These included aluminum, barium, beryllium, calcium, chromium, cobalt, iron, magnesium, nickel, and zinc. Potassium exceeded background levels by a factor of two.

<u>B-12</u>

Two soil samples (B12SS-1 and B12SS-4) were collected at depths of 0-2 and 6-8 feet b.g.s, respectively, during the installation of boring B-12. The samples consisted of fill material, (top soil and coal ash), and silty clay in the shallow and deep samples, respectively.

Acetone was detected above background levels in both samples. Methylene chloride was detected in both samples (B12SS-1 and B12SS-4) at 200 ug/kg and 34.0 ug/kg, respectively. Two PAH compounds, fluoranthene and pyrene, both detected at estimated concentrations of 340 ug/kg, were the only semi-volatiles detected in the shallow sample above background levels.

Twenty-two and nineteen inorganics were identified in the shallow and deep samples, respectively. Nineteen inorganics including aluminum, beryllium, cadmium, mercury, potassium, sodium, silver and cyanide were detected at concentrations above background levels in the shallow sample.

Arsenic (estimated at 21.8 mg/kg) was detected at over six times background levels; barium (2,240 mg/kg) was detected at sixty-four times background levels, zinc (1,150 mg/kg) at fifteen times background and copper (337 mg/kg) at almost eighteen times background. Chromium (37.5 mg/kg) was detected at almost five times the background concentration. Lead (882 mg/kg) was detected at twenty-eight times the background levels. Cobalt, iron, nickel, and vanadium were detected at two to four times background.

The deeper sample also contained those inorganics found above background levels in the shallow sample, with the exception of cadmium, silver, sodium, and cyanide. Aluminum, barium, chromium, cobalt, iron, and nickel exceeded at least twice the background concentrations.

B-13

Two soil samples (B13SS-4 and B13SS-5-6-7) that correspond to depths of 6-8 and 8-14 feet b.g.s. were collecting during the installation of boring B-13. The samples consisted of silty sand with orange material, then clay and silt for the deeper composite sample. Bedrock was encountered at 15.8 feet.

Acetone was detected above background at 440 ug/kg in the shallow sample and at an estimated concentration of 14,000 ug/kg in the deep sample. Acetone was also detected in the blank of the deep sample. Methylene chloride was also detected at 100 ug/kg in the shallow sample. Phenol was detected at 550 ug/kg in the shallow sample. Dibenzofuran exceeded background levels in the shallow sample at an estimated concentration of 170 ug/kg and bis(2-ethylhexyl)phthalate was also detected at an estimated concentration of 61 ug/kg.

Eighteen and seventeen metals were detected in the shallow and deep samples, respectively. In the shallow sample, concentrations of beryllium, chromium, iron, mercury, nickel, potassium and zinc exceeded background levels. Arsenic and lead exceeded both background levels by a factor of four. However, their concentrations are estimated.

In the deep composite sample, aluminum, barium, beryllium, calcium, chromium, cobalt, iron, magnesium, manganese, sodium, zinc, nickel, and potassium were detected at concentrations above background levels.

B-14

Two soil samples (B14SS-5 and B14SS-13) that correspond to 8-10 and 26-28 feet b.g.s were collected from boring B-14. The sample consisted of clay. Bedrock was encountered at 29.7 feet b.g.s.

Three VOCs were detected in the shallow sample. These include methylene chloride (90 ug/kg), acetone (930 ug/kg), and carbon disulfide (420 ug/kg). Methylene chloride and acetone were also detected in the deep sample at an estimated concentration of 23 ug/kg and 210 ug/kg, respectively.

Bis(2-ethylhexyl)phthalate was the only semi-volatile detected in both the shallow and deep samples. It was also detected in the blank samples. The concentration of this compound exceeded background levels in only the deep sample.

Seventeen metals were detected in both samples. Aluminum, barium, beryllium, chromium, cobalt, iron, nickel and potassium exceeded background levels in the both samples. Arsenic, copper and zinc were detected above background levels only in the shallow samples. Cobalt and nickel were over two times background levels in the shallow sample.

In addition to those metals common to the shallow sample, calcium, magnesium, manganese, sodium, and vanadium exceeded background levels in the deep sample. Barium and potassium exceeded background levels by a factor of two.

B-15

Two soil samples (B15SS-6 and B15SS-13) were collected at depths of 10-12 and 25-27 feet b.g.s. from boring B-15. The sample consisted of clay or till with stiff clay in the shallow or deep samples, respectively. Bedrock was encountered at 29 feet b.g.s.

Acetone and methylene chloride were detected in both samples. Acetone exceeded background levels in both samples. The shallow sample contained 62 ug/kg of methylene chloride and 700 ug/kg of acetone. The deeper sample contained 58 ug/kg of methylene chloride and 330 ug/kg of acetone.

Several semi-volatiles were detected in the shallow sample while only bis(2-ethylhexyl)phthalate exceeded background levels in the deep sample at an estimated concentration of 510 ug/kg. Bis(2 ethylhexyl)phthalate was also detected in the shallow sample below background levels at an estimated concentration of 190 ug/kg. Estimated concentrations of fluoranthene (290 ug/kg) and pyrene (310 ug/kg) were detected above background levels in the shallow sample. Estimated concentrations of benzo(a)anthracene (280 ug/kg), chrysene (210 ug/kg), benzo(b)fluoranthene (240 ug/kg), benzo(a) pyrene (170 ug/kg), and ideno(1,2,3-cd)pyrene (95 ug/kg) were all detected at concentrations above background levels.

Seventeen metals were detected in the shallow sample; eighteen metals were detected in the deep sample. Aluminum, barium, chromium, cobalt, iron, nickel, and potassium were all found at concentrations over two times background in the shallow sample. Beryllium, copper, sodium, vanadium and zinc were detected at concentrations exceeding background levels.

In the deep sample, aluminum, beryllium, calcium, chromium, cobalt, iron, magnesium, manganese, mercury, nickel, sodium, and vanadium were all found at concentrations above those found in the background sample. Arsenic, barium and potassium exceeded background levels by a factor of two.

AREA C (Off-site)

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TABLE 4-10

SOIL SAMPLES - AREA C OFFSITE
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	Background		CONCENTRATIONS in ug/kg or mg/kg
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	MW-7S-15
VOLATILES			
Methylene Chloride	R	R	7.0
SEMI-VOLATILES			
Fluoranthene	220.0 J	270.0 J	190.0 J
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0	150.0 J
INORGANICS			
ALUMINUM	6000.0	4920.0	4200.0
ARSENIC	3.5	3.0	3.7
BARIUM	34.9 B	33.6 B	29.3 B
BERYLLIUM	0.0 U	0.0 U	0.2 B (1)
CALCIUM	28000.0	57900.0	55400.0
CHROMIUM	6.8	7.8 J	7.3 J
COBALT	2.4 B	3.5 B	3.9 B
COPPER	15.5 J	18.9 J	7.8 J
IRON	7820.0	10500.0	7770.0
LEAD	30.7	11.8	18.5
MAGNESIUM	3660.0	25100.0	21800.0
MANGANESE	103.0	414.0	321.0
MERCURY	0.1 U	0.1 U	0.4 (1)
NICKEL	6.8 B	8.0 B	6.1 B
POTASSIUM	624.0 B	981.0 B	1270.0 (1)
SODIUM	205.0 B	135.0 B	169.0 B
VANADIUM	16.1	13.8 J	11.6 BJ
ZINC	61.7 J	73.6	78.1 (1)

FOOTNOTES :
(1) Value exceeds background.
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank.
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.

One soil sample (MW7S-15) that corresponds to a depth of 28-30 feet b.g.s. was taken during the installation of MW-7S. The sample consisted of silt with some very fine sand and gravel, approximately 5.5 feet above bedrock.

Methylene chloride (7 ug/kg) was the only volatile organic detected in the sample. Data for acetone were rejected.

Estimated concentrations of bis(2-ethylhexyl)phthalate (150 ug/kg) and fluoranthene (190 ug/kg) were the only two semi-volatiles detected in the sample.

The pesticide 4,4'DDT was detected at 35 ug/kg and exceeded background levels.

Eighteen metals were detected in the sample. Four metals exceeded background levels. These include mercury, potassium, beryllium, and zinc.

4.2.2 GROUND WATER QUALITY

Ground water samples of the unconsolidated and bedrock aquifers were collected from 15 wells as part of a hydrogeologic appraisal of aquifers in Erie County, New York (Miller and Staubitz, 1985). The samples were collected in the Clarence-Lancaster-Newstead area, more than 5 miles east of the landfill. The results of their chemical analysis are presented in Table ___ and are included as a reference point for comparison to other background samples generated during this study.

4.2.2.2 Local Ground Water Quality

Two rounds of ground water sampling were performed. The first round (Round 1) of ground water samples were collected from wells 8S, 7S/D, 1S/D, 6S, 12S, 10S, 4S/D, 5S/D, 6S/D, 9S, and 3S/D between August 7, 1989 and August 16, 1989. A second round (Round 2) of ground water samples were collected from all 24 monitoring wells from December 5, 1989 through December 21, 1989.

4.2.3 Ground water Sampling

4.2.3.1 Background Water Quality Samples

The background water quality samples in rounds 1 and 2 were collected from wells 6S and 6D. Table 4-12 presents the analytical results for these samples and the chemical-specific ARARs.

Round 1

6S/6D

No volatile organic compounds, pesticides, or PCBs were detected in wells 6S or 6D. The only semivolatile organic compound that was detected in background wells 6S was bis(2-ethylhexyl)phthalate at a concentration of 25 ug/l. Data for this compound was rejected for Well 6D due to unacceptable surrogate spike recovery.

Semivolatile acid/phenol compounds were qualified "J" due to poor surrogate recovery. Many of the semi-volatile organic compounds in 6D were also rejected due to unacceptable surrogate recovery.

Manganese exceeded ARARs in well 6S.

The only inorganic constituent exceeding ARARs in well 6D was iron.

Round 2

Bis(2-ethylhexyl)phthalate was detected at an estimated concentration of 3.0 ug/l in 6D.

Iron, magnesium, and manganese concentrations exceeded ARARs in Well 6S.

Iron concentrations in Well 6D exceeded ARARs.

4.2.3.2 AREA A (On-site)

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TABLE 4-12

BACKGROUND SAMPLE ANALYTICAL RESULTS
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SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-6D-01	GW-6D-02
		CONCENTRATIONS in ug/l			
VOLATILES					
SEMI-VOLATILES					
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	3.0 J
PESTICIDES/PCBs					
INORGANICS					
ALUMINUM		90.9 B	227.0	162.0 B	326.0
ANTIMONY		53.1 U	24.0 U	53.1 U	30.4 B
ARSENIC	25 a	1.9 U	2.1 B	1.9 U	2.0 U
BARIUM	1000 a	35.5 B	30.7 B	48.3 B	60.0 B
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	2.3 B
CALCIUM		111000.0	116000.0	68600.0	118000.0
CHROMIUM		3.0 U	1.0 U	23.0	191.0
COPPER	1000 a	14.8 B	10.6 B	10.4 B	13.0 B
IRON	300 a	201.0	2140.0 (2)	424.0 (2)	1200.0 (2)
LEAD	25 a	5.9	3.3	2.0 U	2.2 B
MAGNESIUM	35000 b	32400.0	35600.0 (2)	20900.0	26700.0
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	17.3	39.5
NICKEL		13.1 B	20.0 U	33.0 B	20.0 U
POTASSIUM		1960.0 B	3350.0 B	5110.0	1850.0 B
SODIUM		84000.0 B	130000.0	127000.0	76900.0
VANADIUM		3.2 U	1.4 B	3.2 U	1.0 U
ZINC	5000 a	9.9 B	8.8 B	R	12.3 B

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable ground water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs.
(3) Value exceeds both background and ARARs.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.

The Area A on-site wells in rounds 1 and 2 include 8S and 12S. Table 4-13 compares the analytical results for these samples to the background samples and the chemical-specific ARARs.

8S

Round 1

No volatile organic compounds were detected in well 8S. The semivolatile compounds butylbenzylphthalate and di-n-octylphthalate were detected at estimated concentrations of 150 ug/l and 43 ug/l, respectively. Data from a number of phenol compounds were rejected due to unacceptable surrogate recovery. Data for bis(2-ethylhexyl)phthalate were also rejected due to blank contamination.

Aluminum, arsenic, barium, calcium, chromium, cobalt, lead, nickel, potassium and vanadium exceeded background levels. Data for zinc were rejected due to serial dilution results. Iron and magnesium exceeded both background levels and ARARs. Manganese concentrations exceeded ARARs.

Round 2

No volatile organic compounds were detected in well 8S. Bis(2-ethylhexyl)phthalate was detected at an estimated concentration of 9.0 ug/l.

Barium, calcium, chromium, cobalt, nickel, silver, vanadium and zinc concentrations exceeded background levels.

Iron and manganese concentrations exceeded ARARs. Magnesium exceeded both background levels and ARARs.

12S

Round 1

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-13

GROUND WATER SAMPLES - AREA A
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05/22/90

		Background		CONCENTRATIONS in ug/l			
SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-8S-01	GW-8S-02	GW-12S-01	GW-12S-02
VOLATILES							
1,1-Dichloroethane	50 b	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.6 (1)
1,1,1-Trichloroethane	50 b	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	26.0 (1)
SEMI VOLATILES							
Butylbenzylphthalate		R	10.0 U	150.0 J	10.0 U	10.0 U	10.0 U
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	9.0 J (1)	R	5.0 J (1)
Di-n-Octyl Phthalate		R	10.0 U	43.0 J	10.0 U	10.0 U	10.0 U
PESTICIDES/PCBs							
INORGANICS							
ALUMINUM		90.9 B	227.0	3960.0 (1)	224.0	311.0 (1)	606.0 (1)
ARSENIC	25 a	1.9 U	2.1 B	2.7 B (1)	2.0 U	1.9 U	2.0 U
BARIUM	1000 a	35.5 B	30.7 B	141.0 B (1)	102.0 B (1)	76.4 B (1)	80.8 B (1)
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	3.3 B	3.6 U	3.5 B
CALCIUM		111000.0	116000.0	124000.0 (1)	117000.0 (1)	345000.0 (1)	343000.0 (1)
CHROMIUM		3.0 U	1.0 U	21.1 (1)	10.0 B (1)	3.0 U	196.0 (1)
COBALT		4.2 U	2.0 U	4.5 B (1)	2.0 B (1)	4.2 U	2.0 U
COPPER	1000 a	14.8 B	10.6 B	14.4 B	4.8 B	6.8 B	8.8 B
IRON	300 a	201.0	2140.0 (2)	5650.0 (3)	327.0 (2)	547.0 (3)	1270.0 (2)
LEAD	25 a	5.9	3.3	9.6 (1)	2.7 B	6.6 (1)	5.2 (1)
MAGNESIUM	35000 b	32400.0	35600.0 (2)	61200.0 (3)	62900.0 (3)	188000.0 (3)	203000.0 (3)
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	520.0 (2)	341.0 (2)	451.0 (2)	1130.0 (2)
MERCURY	2 a	0.2 U	0.2 U	0.2 U	0.2 U	3.2 (3)	0.2 U
NICKEL		13.1 B	20.0 U	113.0 (1)	32.6 B (1)	10.7 U	180.0 (1)
POTASSIUM		1960.0 B	3350.0 B	3100.0 B (1)	1770.0 B	839.0 B	1710.0 B
SILVER	50 a	2.8 U	2.0 U	2.8 U	2.8 B (1)	2.8 U	2.0 U
SODIUM		84000.0 B	130000.0	21500.0	35500.0	206000.0 (1)	287000.0 (1)
VANADIUM		3.2 U	1.4 B	7.4 B (1)	8.1 B (1)	3.2 U	6.1 B (1)
ZINC	5000 a	9.9 B	8.8 B	R	11.8 B (1)	7.8 B	17.2 B (1)

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable ground water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs.
(3) Value exceeds both background and ARARs.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.

No organic compounds were detected in well 12S. Data for bis(2-ethylhexyl)phthalate was rejected due to method blank contamination.

Well 12S contained sodium concentrations exceeding background levels.

As in Well 8S, aluminum, barium, calcium, lead and sodium concentrations exceeded background levels. Iron, magnesium and mercury exceeded both background levels and ARARs. Manganese exceeded ARARs.

<u>Round 2</u>

Two organic compounds were detected in shallow well 12S, including 1,1 dichloroethane and 1,1,1-trichloroethane at concentrations above background levels of 5.6 ug/l and 26 ug/l, respectively. Bis 2(ethylhexyl)phthalate was detected at an estimated concentration above background levels of 5.0 ug/l.

Consistent with Round 1 results, aluminum, barium, calcium, lead, and sodium concentrations exceeded background levels. In addition, chromium, nickel, vanadium and zinc also exceeded background levels.

Iron and manganese concentrations exceeded ARARs. Magnesium exceeded both background levels and ARARs.

4.2.3.3. <u>AREA B (Onsite)</u>

The Area B on-site wells in Round 2 include 13S, 15S, 16S, 2S and 2D. Table 4-18 compares the analytical results for these samples to the background samples and the chemical-specific ARARs.

Four chlorinated hydrocarbons (chloroethanes) were detected in 2S; two of these same compounds were detected in 2D at concentrations 2-3 orders of magnitude lower.

Benzene, chlorobenzene and xylenes were detected in 16S.

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TABLE 4-15

GROUND WATER - AREA B ONSITE
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SAMPLE NUMBER :	GW ARARs	Background GW-6S-02	Background GW-6D-02	CONCENTRATIONS in ug/l GW-2S-02	GW-2D-02	GW-13S-02	GW-15S-02	GW-16S-02
VOLATILES								
Chloroethane		5.9 U	5.9 U	900.0 (1)	3.7 (1)	5.9 U	5.9 U	5.9 U
1,1-Dichloroethene	0.07 b	1.8 U	1.8 U	240.0 (3)	1.8 U	1.8 U	1.8 U	1.8 U
1,1-Dichloroethane	50 b	1.1 U	1.1 U	4900.0 (3)	4.1 (1)	1.1 U	1.1 U	1.1 U
trans 1,2-Dichloroethylene		1.6 U	1.6 U	1.6 U	9.2 (1)	1.6 U	1.6 U	1.6 U
1,1,1-Trichloroethane	50 b	1.3 U	1.3 U	15000.0 J (3)	1.3 U	1.3 U	1.3 U	1.3 U
Benzene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	290.0 (1)
Chlorobenzene	20 b	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	1200.0 J (3)
m-Xylene		6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	200.0 J (1)
p-Xylene		6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	200.0 J (1)
SEMI-VOLATILES								
2-Chlorophenol		10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	13.0 J (1)
1,3-Dichlorobenzene		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	82.0 (1)
1,4-Dichlorobenzene	4.7 a	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	240.0 J (3)
1,2-Dichlorobenzene	4.7 a	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	4.0 J (1)
2,4-Dimethylphenol		10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	940.0 D (1)
bis(2-Ethylhexyl)Phthalate	4200 a	10.0 U	3.0 J	10.0 U	12.0 (1)	3.0 J (1)	26.0 (1)	20.0 U
PESTICIDES/PCBs								
Aldrin		0.1 U	0.1 U	0.1 U	0.1 J	0.5 U	0.5 U	0.1 U
Aroclor-1232		0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	110.0 (1)	0.5 U
INORGANICS								
ALUMINUM		227.0	326.0	728.0 (1)	1630.0 (1)	1750.0 (1)	323.0 (1)	51600.0 (1)
ANTIMONY		24.0 U	30.4 B	24.0 U	24.0 U	24.0 U	24.0 U	33.0 B (1)
ARSENIC	25 a	2.1 B	2.0 U	3.7 B (1)	2.4 B (1)	3.3 B (1)	2.4 B (1)	22.3 (1)
BARIUM	1000 a	30.7 B	60.0 B	111.0 B (1)	49.7 B	778.0 (1)	1840.0 (3)	1220.0 (3)
BERYLLIUM	3 b	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7 B (1)
CADMIUM	10 a	4.0 B	2.3 B	1.0 U	2.3 B	1.0 U	1.0 U	5.1 (1)
CALCIUM		116000.0	118000.0	344000.0 (1)	125000.0 (1)	206000.0 (1)	164000.0 (1)	463000.0 (1)
CHROMIUM		1.0 U	191.0	9.5 B (1)	32.7	5.1 B (1)	11.1 (1)	99.7 (1)
COBALT		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	46.9 B (1)
COPPER	1000 a	10.6 B	13.0 B	40.1 (1)	17.6 B (1)	6.0 B	2.7 B	3060.0 (3)
IRON	300 a	2140.0 (2)	1200.0 (2)	39100.0 (3)	2410.0 (3)	38000.0 (3)	26300.0 (3)	176000.0 (3)
LEAD	25 a	3.3	2.2 B	74.9 (3)	6.2 (1)	39.1 (3)	17.1 (1)	331.0 (3)
MAGNESIUM	35000 b	35600.0 (2)	26700.0	60900.0 (3)	16300.0	52500.0 (3)	79000.0 (3)	140000.0 (3)
MANGANESE	300 a	1670.0 (2)	39.5	2100.0 (3)	59.5 (1)	316.0 (2)	183.0	2710.0 (3)
MERCURY	2 a	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	3.3 (3)
NICKEL		20.0 U	20.0 U	20.0 U	26.4 B (1)	20.0 U	20.0 U	141.0 (1)
POTASSIUM		3350.0 B	1850.0 B	21000.0 (1)	8200.0 (1)	38300.0 (1)	83500.0 (1)	28400.0 (1)
SILVER	50 a	2.0 U	2.0 U	4.6 B (1)	2.0 B (1)	2.0 U	2.0 U	23.7 (1)
SODIUM		130000.0	76900.0	63700.0	68200.0	60700.0	97500.0	31100.0
VANADIUM		1.4 B	1.0 U	5.4 B (1)	35.3 B (1)	2.8 B (1)	2.8 B (1)	96.5 (1)
ZINC	5000 a	8.8 B	12.3 B	182.0 (1)	44.0 (1)	80.0 (1)	78.8 (1)	1490.0 (1)
CYANIDE	200 a	10.0 U	10.0 U	30.0 (1)	10.0 U	20.0 U	20.0 U	20.0 U

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable ground water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs.
(3) Value exceeds both background and ARARs.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.

Five semi-volatiles (benzenes and phenols) were detected in 16S. Bis (2-ethylhexyl)phthalate was found in many of the wells.

There was one detection of the PCB Arochlor 1232 in 15S and one detection of the pesticide aldrin in 2D.

In general, aluminum, arsenic, calcium, iron, lead, potassium, vanadium, and zinc exceeded background levels in all wells for both rounds of sampling. Barium, chromium and magnesium exceeded background levels in only the shallow wells. Barium also exceeded ARARs in 15S and 16S. Lead exceeded ARARs in 2S, 13S, and 16S; magnesium exceeded ARARs in all the shallow wells.

Iron exceeded both background levels and ARARs in all the wells. Manganese exceeded background levels in 2D and ARARs in 13S and both background and ARARs in 2S and 16S. Cyanide was detected only once in Well 2S.

2S/2D

Wells 2S and 2D both contained chloroethane and 1,1 dichloroethane. The concentrations of these compounds were 2 to 3 orders of magnitude higher in the shallow well. Well 2S contained 900 ug/l of chloroethane and 4900 ug/l of dichloroethane. The concentration of 1,1 dichloroethane exceeded both background levels and ARARs; compared to 3.7 ug/l and 4.1 ug/l, respectively, in well 2D.

Both 1,1 dichloroethene and 1,1,1-trichloroethane were detected in well 2S at concentrations of 240 ug/l and 15,000 ug/l, respectively. Both compounds exceeded background levels and ARARs. These two compounds were not detected in the deeper well.

Bis (2-Ethylhexyl) phthalate was the only semi-volatile compound detected above background levels at 12.0 ug/l in well 2D. The pesticide aldrin was also detected in 2D at an estimated concentration of 0.1 ug/l.

In addition to those inorganics common to all wells, well 2S contained copper and silver at concentrations exceeding background levels. Lead, iron, magnesium, and manganese concentrations exceeded both background levels and ARARs.

Well 2D also contained those inorganics common to all wells, in addition to copper, manganese, nickel, and silver at concentrations above background levels. Iron was the only inorganic that exceeded both background levels and ARARs. Cyanide was detected above background levels at 30 ug/l.

13S

The only organic compound detected above background levels in 13S was bis(2-ethylhexyl)phthalate at an estimated concentration of 3 ug/l.

Well 13S contained the inorganics common to all wells, in addition to barium and chromium at concentrations above background levels. Manganese concentrations exceeded ARARs.

15S

Well 15S contained bis (2-ethylhexyl)phthalate above background levels of 26.0 ug/l.

Arochlor-1232 was detected at a concentration above background levels of 110 ug/l.

In addition to the inorganics common to all wells, Well 15S contained chromium at concentrations exceeding background levels. Barium was detect at concentrations above both background levels and ARARs.

16S

Well 16S contained benzene (290 ug/l) above background levels and chlorobenzene (estimated at 1200 ug/l) above both background levels and ARARs.

This draft document is not for public distribution. All data contained herein are unvalidated. All conclusions are tentative and subject to change pending validation of the data and internal review.

The semi-volatiles exceeding background levels include 2-chlorophenol (estimated at 13.0 ug/l), 1,3-dichlorobenzene (estimated at 82 ug/l), and 2,4-dimethylphenol (estimated at 940 ug/l) and 1,2 cichlorbenzene (estimated at 4 ug/l) were also detected in sample 16S. The compound 1,4-dichlorobenzene (estimated at 240 ug/l) exceeded both background levels and ARARs.

Well 16S was the only well containing cobalt, antimony, cadmium, beryllium, chromium, cobalt, nickel and silver at concentrations above background levels. Barium, manganese, mercury and copper exceeded both background levels and ARARs.

Of the 20 inorganic constituents that exceeded background levels in the unfiltered samples, 9 inorganics remained above background levels on the filtered samples. All metal concentrations in the filtered samples were less than their unfiltered counterpart. Arsenic, barium, cadmium, calcium, lead, nickel, potassium and silver remained above background levels. Iron concentrations remained above background levels and ARARs.

AREA B (Off-Site)

The Area B off-site wells in Rounds 1 and 2 include 1S/D, 3S/D and 4S/D. Well 11S was included only in Round 2. Table 4-14 compares the analytical results for these samples to the background samples and the chemical-specific ARARs.

No volatile organic compounds were detected in any of the off-site monitoring wells in the first round of sampling. However, benzene and toluene were detected in wells 3S and 3D in the second round of sampling. Bis (2-ethylhexyl)phthalate was detected in all the wells where data were obtained.

No pesticides or PCBs were detected in any of the wells. However, since the holding times for samples from 3S/D and 4D exceeded holding times, it is possible that the analytes degraded to some degree. Therefore, the actual detection limits may be slightly higher than the reported values and the

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TABLE 4-14

GROUND WATER - AREA B OFFSITE
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		Background				CONCENTRATIONS in ug/l			
SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-6D-01	GW-6D-02	GW-1S-01	GW-1S-02	GW-1D-01	GW-1D-02
VOLATILES									
Benzene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Toluene		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
SEMI-VOLATILES									
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	3.0 J	R	4.0 J (1)	R	3.0 J
PESTICIDES/PCBs									
INORGANICS									
ALUMINUM		90.9 B	227.0	162.0 B	326.0	97.6 B (1)	1210.0 (1)	56.1 B	89.0 B
ANTIMONY		53.1 U	24.0 U	53.1 U	30.4 B	53.1 U	51.0 U	53.1 U	35.1 B (1)
ARSENIC	25 a	1.9 U	2.1 B	1.9 U	2.0 U	6.2 B (1)	5.1 B (1)	1.9 U	2.0 U
BARIUM	1000 a	35.5 B	30.7 B	48.3 B	60.0 B	77.9 B (1)	107.0 B (1)	24.9 B	34.2 BJ
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	2.3 B	3.6 U	4.0 U	3.9 B (1)	4.2 B (1)
CALCIUM		111000.0	116000.0	68600.0	118000.0	213000.0 (1)	257000.0 (1)	30300.0	70700.0
CHROMIUM		3.0 U	1.0 U	23.0	191.0	3.1 B (1)	15.0 (1)	5.6 B	2.4 BJ
COBALT		4.2 U	2.0 U	4.2 U	2.0 U	4.2 U	5.0 U	4.2 U	2.0 U
COPPER	1000 a	14.8 B	10.6 B	10.4 B	13.0 B	10.0 B	12.1 B (1)	2.6 U	5.7 BJ
IRON	300 a	201.0	2140.0 (2)	424.0 (2)	1200.0 (2)	5070.0 (3)	9120.0 (3)	272.0	185.0
LEAD	25 a	5.9	3.3	2.0 U	2.2 B	2.8 B	4.7 (1)	2.0 U	2.0 U
MAGNESIUM	35000 b	32400.0	35600.0 (2)	20900.0	26700.0	41700.0 (3)	56500.0 (3)	7180.0	26300.0
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	17.3	39.5	1580.0 (3)	1390.0 (2)	5.9 B	33.3 J
MERCURY	2 a	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
NICKEL		13.1 B	20.0 U	33.0 B	20.0 U	13.7 B (1)	23.0 U	17.4 B	20.0 U
POTASSIUM		1960.0 B	3350.0 B	5110.0	1850.0 B	1800.0 B	2050.0 B	5330.0 (1)	3000.0 B (1)
SODIUM		84000.0 B	130000.0	127000.0	76900.0	70100.0	86000.0	38800.0	41400.0
VANADIUM		3.2 U	1.4 B	3.2 U	1.0 U	3.2 U	4.0 U	3.2 U	1.0 U
ZINC	5000 a	9.9 B	8.8 B	R	12.3 B	12.3 B (1)	37.7 (1)	4.9 B	1.1 BJ

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable ground water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs.
(3) Value exceeds both background and ARARs.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.

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TABLE 4-14 (contd)

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		Background				CONCENTRATIONS in ug/l			
SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-6D-01	GW-6D-02	GW-3S-01	GW-3S-02	GW-3D-01	GW-3D-02
VOLATILES									
Benzene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	26.0 (1)	2.0 U	23.0 (1)
Toluene		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	41.0 (1)	3.0 U	3.0 (1)
SEMI-VOLATILES									
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	3.0 J	R	66.0 (1)	R	24.0 (1)
PESTICIDES/PCBs									
INORGANICS									
ALUMINUM		90.9 B	227.0	162.0 B	326.0	4460.0 (1)	653.0 (1)	78.1 B	82.4 B
ANTIMONY		53.1 U	24.0 U	53.1 U	30.4 B	53.1 U	24.0 U	53.1 U	24.0 U
ARSENIC	25 a	1.9 U	2.1 B	1.9 U	2.0 U	3.9 B (1)	2.3 B (1)	4.6 B (1)	3.6 B (1)
BARIUM	1000 a	35.5 B	30.7 B	48.3 B	60.0 B	79.5 B (1)	82.8 B (1)	64.6 B (1)	81.5 B (1)
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	2.3 B	3.6 U	1.3 B	3.6 U	4.0 B (1)
CALCIUM		111000.0	116000.0	68600.0	118000.0	80700.0	64600.0	90700.0 (1)	121000.0 (1)
CHROMIUM		3.0 U	1.0 U	23.0	191.0	21.2 J (1)	4.9 B (1)	131.0 J (1)	36.0
COBALT		4.2 U	2.0 U	4.2 U	2.0 U	4.2 U	2.0 U	4.2 U	2.0 U
COPPER	1000 a	14.8 B	10.6 B	10.4 B	13.0 B	45.8 (1)	4.1 B	3.7 B	28.4 (1)
IRON	300 a	201.0	2140.0 (2)	424.0 (2)	1200.0 (2)	7360.0 (3)	1160.0 (2)	4510.0 (3)	2510.0 (3)
LEAD	25 a	5.9	3.3	2.0 U	2.2 B	11.3 (1)	3.4 (1)	3.1 B (1)	3.0 (1)
MAGNESIUM	35000 b	32400.0	35600.0 (2)	20900.0	26700.0	44600.0 (3)	48100.0 (3)	17400.0	23100.0
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	17.3	39.5	1620.0 (3)	580.0 (2)	234.0 (1)	428.0 (3)
MERCURY	2 a	0.2 U	0.2 U	0.2 U	0.2 U	R	0.2 U	R	0.2 U
NICKEL		13.1 B	20.0 U	33.0 B	20.0 U	26.6 B (1)	20.0 U	52.0 (1)	39.4 B (1)
POTASSIUM		1960.0 B	3350.0 B	5110.0	1850.0 B	3860.0 B (1)	2280.0 B	2670.0 B	3110.0 B (1)
SODIUM		84000.0 B	130000.0	127000.0	76900.0	22400.0	12700.0	67900.0	85800.0 (1)
VANADIUM		3.2 U	1.4 B	3.2 U	1.0 U	8.4 B (1)	1.0 U	3.2 U	1.0 U
ZINC	5000 a	9.9 B	8.8 B	R	12.3 B	51.7 (1)	13.4 B (1)	10.7 B	15.5 B (1)

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable ground water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs.
(3) Value exceeds both background and ARARs.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
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TABLE 4-14 (contd)

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		Background				CONCENTRATIONS in ug/l			
SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-6D-01	GW-6D-02	GW-4S-01	GW-4S-02	GW-4D-01	GW-4D-02
VOLATILES									
Benzene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Toluene		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
SEMI-VOLATILES									
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	3.0 J	R	3.0 J (1)	12.0	8.0 J (1)
PESTICIDES/PCBs									
INORGANICS									
ALUMINUM		90.9 B	227.0	162.0 B	326.0	1050.0 (1)	106.0 B	146.0 B	316.0
ANTIMONY		53.1 U	24.0 U	53.1 U	30.4 B	53.1 U	24.0 U	53.1 U	24.0 U
ARSENIC	25 a	1.9 U	2.1 B	1.9 U	2.0 U	2.5 B (1)	3.5 B (1)	1.9 U	2.0 U
BARIUM	1000 a	35.5 B	30.7 B	48.3 B	60.0 B	62.0 B (1)	73.5 B (1)	34.4 B	28.9 B
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	2.3 B	3.6 U	4.6 B (1)	3.6 U	4.2 B (1)
CALCIUM		111000.0	116000.0	68600.0	118000.0	39100.0	34100.0	55600.0	81000.0
CHROMIUM		3.0 U	1.0 U	23.0	191.0	6.8 B (1)	1.0 U	728.0 J (1)	11.5
COBALT		4.2 U	2.0 U	4.2 U	2.0 U	4.2 U	4.1 B (1)	7.1 B (1)	2.0 U
COPPER	1000 a	14.8 B	10.6 B	10.4 B	13.0 B	5.3 B	5.6 B	3.9 B	1.0 U
IRON	300 a	201.0	2140.0 (2)	424.0 (2)	1200.0 (2)	1720.0 (3)	269.0	2260.0 (3)	594.0 (2)
LEAD	25 a	5.9	3.3	2.0 U	2.2 B	2.9 B	3.5 (1)	2.3 B (1)	2.6 B (1)
MAGNESIUM	35000 b	32400.0	35600.0 (2)	20900.0	26700.0	21500.0	20400.0	29500.0 (1)	34700.0 (1)
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	17.3	39.5	591.0 (2)	263.0	47.6 (1)	45.4 (1)
MERCURY	2 a	0.2 U	0.2 U	0.2 U	0.2 U	0.4 (1)	0.2 U	R	0.2 U
NICKEL		13.1 B	20.0 U	33.0 B	20.0 U	28.0 B (1)	20.0 U	198.0 (1)	30.0 B (1)
POTASSIUM		1960.0 B	3350.0 B	5110.0	1850.0 B	1330.0 B	933.0 B	15600.0 (1)	3350.0 B (1)
SODIUM		84000.0 B	130000.0	127000.0	76900.0	19400.0	18900.0	41100.0	34300.0
VANADIUM		3.2 U	1.4 B	3.2 U	1.0 U	3.2 U	4.1 B (1)	6.8 B (1)	1.4 B (1)
ZINC	5000 a	9.9 B	8.8 B	R	12.3 B	R	11.8 B (1)	13.9 B	12.4 B (1)

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable ground water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs.
(3) Value exceeds both background and ARARs.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.

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TABLE 4-14 (contd)

GROUND WATER - AREA B OFFSITE
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		Background				CONCENTRATIONS in ug/l
SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-6D-01	GW-6D-02	GW-11S-02
VOLATILES						
Benzene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Toluene		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
SEMI-VOLATILES						
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	3.0 J	4.0 J (1)
PESTICIDES/PCBs						
INORGANICS						
ALUMINUM		90.9 B	227.0	162.0 B	326.0	76.9 B
ANTIMONY		53.1 U	24.0 U	53.1 U	30.4 B	24.0 U
ARSENIC	25 a	1.9 U	2.1 B	1.9 U	2.0 U	2.6 B (1)
BARIUM	1000 a	35.5 B	30.7 B	48.3 B	60.0 B	176.0 B (1)
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	2.3 B	1.0 U
CALCIUM		111000.0	116000.0	68600.0	118000.0	93900.0
CHROMIUM		3.0 U	1.0 U	23.0	191.0	3.8 B (1)
COBALT		4.2 U	2.0 U	4.2 U	2.0 U	2.0 U
COPPER	1000 a	14.8 B	10.6 B	10.4 B	13.0 B	4.8 B
IRON	300 a	201.0	2140.0 (2)	424.0 (2)	1200.0 (2)	160.0
LEAD	25 a	5.9	3.3	2.0 U	2.2 B	2.3 B
MAGNESIUM	35000 b	32400.0	35600.0 (2)	20900.0	26700.0	46600.0 (3)
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	17.3	39.5	66.4
MERCURY	2 a	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
NICKEL		13.1 B	20.0 U	33.0 B	20.0 U	34.2 B (1)
POTASSIUM		1960.0 B	3350.0 B	5110.0	1850.0 B	3890.0 B (1)
SODIUM		84000.0 B	130000.0	127000.0	76900.0	53200.0
VANADIUM		3.2 U	1.4 B	3.2 U	1.0 U	4.1 B (1)
ZINC	5000 a	9.9 B	8.8 B	R	12.3 B	7.5 B

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable ground water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs.
(3) Value exceeds both background and ARARs.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.

data are qualified with a "UJ".

In general, arsenic, barium, chromium, nickel, potassium and zinc were most frequently detected at concentrations exceeding background levels. Iron exceeded both background and ARARs in many of the wells. Magnesium, and to a lesser degree, manganese, exceeded backgaround levels and/or ARARs in at least half of the samples.

1S/1D

Round 1

Well 1D had the fewest number of inorganic constituents (cadmium and potassium) exceeding background levels. No ARARs were exceeded in the ground water from this well. Its counterpart, 1S, however, had a number of constituents exceeding background levels. These included aluminum, arsenic, barium, calcium, chromium, nickel, and zinc. Iron, magnesium, and manganese exceeded background levels and ARARs in 1S.

Round 2

Well 1S contained aluminum, arsenic, barium, calcium, chromium, copper, lead and zinc at concentrations exceeding background levels. Manganese exceeded ARARs; Iron and magnesium exceeded both background levels and ARARs.

Cadmium, potassium, and antimony concentrations in well 1D exceeded background levels.

3S/3D

Round 1

Data on bis(2-ethylhexyl)phthalate were rejected due to method blank contamination.

This draft document is not for public distribution. All data contained herein are unvalidated. All conclusions are tentative and subject to change pending validation of the data and internal review.

A wide range of inorganic constituents were found in 3S that exceeded background levels. These included aluminum, arsenic, barium, chromium, copper, lead, nickel, potassium, vanadium, and zinc. Data on mercury were rejected due to unacceptable matrix spike results. Iron, magnesium, and manganese exceeded both background levels and ARARs. Well 3D contained arsenic, barium, calcium, chromium, lead, manganese and nickel at concentrations exceeding background levels. Iron exceeded both background levels and ARARs.

Round 2

Both benzene and toluene were detected in Well 3S at concentrations above background levels of 26 ug/l and 41 ug/l, respectively. Well 3D contained the same compounds, with benzene and toluene above background levels at 23 ug/l and 3.0 ug/l, respectively.

Well 3S contained aluminum, arsenic, barium, chromium, lead and zinc at concentrations exceeding background levels. Manganese and iron concentrations also exceeded ARARs; magnesium exceeded both background levels and ARARs.

Arsenic, barium, cadmium, calcium, copper, lead, nickel, potassium, sodium, and zinc exceeded background levels in well 3D. Iron and manganese concentrations exceeded both background levels and ARARs.

4S/4D

Round 1

Data on bis(2-ethylhexyl)phthalate and zinc were rejected due to method blank contamination.

The shallow well 4S contained a number of inorganic constituents exceeding background levels. These included aluminum, arsenic, barium, chromium, mercury, and nickel. Manganese exceeded ARARs and iron exceeded both background levels and ARARs.

Of the inorganics exceeding background and/or ARARs in 4S, chromium, manganese, and nickel were also found in the deeper well at concentrations exceeding background levels. Iron was also detected in 4D at concentrations exceeding both background levels and ARARs. In addition, cobalt, lead, magnesium, potassium, and vanadium all exceeded background levels in 4D.

Round 2

Bis (2-ethylhexyl)phthalate was detected above background levels (estimated at 3.0 ug/l) in 4S. Bis (2-ethylhexyl)phthalate was also detected above background levels at an estimated concentration of 8.0 ug/l in 4D.

Well 4S contained arsenic, barium, cadmium, cobalt, lead, vanadium and zinc at concentrations exceeding background levels. Of these constituents, well 4D also contains cadmium, lead, and vanadium exceeding background levels. Additional constituents detected in 4D include magnesium, manganese, nickel, potassium and vanadium at concentrations exceeding background levels. Iron concentrations exceed ARARs in well 4D.

Round 2

11S

Bis (2-ethylhexyl)phthalate was detected above background levels at an estimated concentration of 4 ug/l.

Arsenic, barium, chromium, nickel, potassium, and vanadium were detected at concentrations exceeding background levels. Magnesium concentrations exceeded both background levels and ARARs.

4.2.3.4. AREA C (On-Site)

The Area C on-site wells in Round 1 include 9S, 10S and 5S/D. The Area C on-site wells in Round 2 include those wells from Round 1, as well as 14S and 17S. Table 4-16 compares the analytical results for these samples to

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TABLE 4-16

GROUND WATER - AREA C ONSITE
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SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-6D-01	GW-6D-02	GW-5S-01	GW-5S-02	GW-5D-01	GW-5D-02
		Background				CONCENTRATIONS in ug/l			
VOLATILES									
Benzene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	*	2.0 U	2.0 U
Toluene		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U		3.0 U	3.0 U
SEMI-VOLATILES									
Phenol	1 a	R	10.0 U	R	10.0 U	R	10.0 U	10.0 U	10.0 U
1,4-Dichlorobenzene	5 a	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10.0 U	5.0 U	5.0 U
2-Methylphenol		R	10.0 U	R	10.0 U	R	10.0 U	10.0 U	10.0 U
4-Methylphenol		R	10.0 U	R	10.0 U	R	10.0 U	10.0 U	10.0 U
2,4-Dimethylphenol		R	10.0 U	R	10.0 U	R	10.0 U	10.0 U	10.0 U
Benzoic Acid		R	50.0 U	R	50.0 U	3.0 J	50.0 U	50.0 U	50.0 U
Dibenzofuran		R	10.0 U	10.0 UJ	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Di-n-Butylphthalate		R	10.0 U	10.0 UJ	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	3.0 J	R	21.0 (1)	R	7.0 J (1)
Di-n-Octyl Phthalate		R	10.0 U	10.0 UJ	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
PESTICIDES/PCBs									
Endosulfan II		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor-1232		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
INORGANICS									
ALUMINUM		90.9 B	227.0	162.0 B	326.0	59.5 B	521.0 (1)	108.0 B	234.0
ANTIMONY		53.1 U	24.0 U	53.1 U	30.4 B	53.1 U	24.0 U	53.1 U	24.0 U
ARSENIC	25 a	1.9 U	2.1 B	1.9 U	2.0 U	9.8 B (1)	10.1 (1)	4.7 B (1)	3.0 B (1)
BARIUM	1000 a	35.5 B	30.7 B	48.3 B	60.0 B	73.2 B (1)	52.2 B (1)	174.0 B (1)	240.0 (1)
BERYLLIUM	3 b	0.1 U	1.0 U	0.1 U	1.0 U	0.1 U	1.0 U	0.1 U	1.0 U
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	2.3 B	3.6 U	3.2 B	3.6 U	1.1 B
CALCIUM		111000.0	116000.0	68600.0	118000.0	28200.0	28700.0	115000.0 (1)	138000.0 (1)
CHROMIUM		3.0 U	1.0 U	23.0	191.0	3.0 U	10.8 (1)	41.6 (1)	1.0 U
COBALT		4.2 U	2.0 U	4.2 U	2.0 U	4.2 U	2.0 U	4.2 U	2.0 U
COPPER	1000 a	14.8 B	10.6 B	10.4 B	13.0 B	10.2 B	16.3 B (1)	12.4 B (1)	1.0 U
IRON	300 a	201.0	2140.0 (2)	424.0 (2)	1200.0 (2)	2370.0 (3)	2530.0 (3)	5270.0 (3)	1250.0 (3)
LEAD	25 a	5.9	3.3	2.0 U	2.2 B	2.0 U	4.7 (1)	2.0 U	2.0 U
MAGNESIUM	35000 b	32400.0	35600.0 (2)	20900.0	26700.0	20400.0	20300.0	36800.0 (3)	44400.0 (3)
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	17.3	39.5	576.0 (2)	845.0 (2)	82.7 (1)	124.0 (1)
MERCURY	2 a	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.9 (1)	0.2 U	0.5 (1)
NICKEL		13.1 B	20.0 U	33.0 B	20.0 U	10.7 U	20.0 U	21.1 B	20.0 U
POTASSIUM		1960.0 B	3350.0 B	5110.0	1850.0 B	761.0 B	926.0 B	6700.0 (1)	12400.0 (1)
SILVER	50 a	2.8 U	2.0 U	2.8 U	2.0 U	2.8 U	2.0 U	2.8 U	2.0 U
SODIUM		84000.0 B	130000.0	127000.0	76900.0	27700.0	27300.0	131000.0 (1)	354000.0 (1)
VANADIUM		3.2 U	1.4 B	3.2 U	1.0 U	3.2 U	2.8 B (1)	3.2 U	1.0 U
ZINC	5000 a	9.9 B	8.8 B	R	12.3 B	12.8 B (1)	33.6 (1)	11.9 B	2.1 B

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable groung water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs or guidance values.
(3) Value exceeds both background and ARARs or guidance values.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
* Due to laboratory error, sample was not analyzed for volatile organic compounds.

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TABLE 4-16 (contd)

GROUND WATER - AREA C ONSITE
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		Background				CONCENTRATIONS in ug/l			
SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-6D-01	GW-6D-02	GW-9S-01	GW-9S-02	GW-10S-01	GW-10S-02
VOLATILES									
Benzene		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.8 (1)	2.0 U	2.0 U
Toluene		3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	4.1 (1)	3.0 U	3.0 U
SEMI-VOLATILES									
Phenol	1 a	R	10.0 U	R	10.0 U	50.0 U	10.0 U	R	20.0 U
1,4-Dichlorobenzene	5 a	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Methylphenol		R	10.0 U	R	10.0 U	50.0 U	10.0 U	R	20.0 U
4-Methylphenol		R	10.0 U	R	10.0 U	50.0 U	10.0 U	R	20.0 U
2,4-Dimethylphenol		R	10.0 U	R	10.0 U	50.0 U	10.0 U	R	20.0 U
Benzoic Acid		R	50.0 U	R	50.0 U	250.0 U	50.0 U	R	100.0 U
Dibenzofuran		R	10.0 U	10.0 UJ	10.0 U	50.0 U	10.0 U	10.0 U	20.0 U
Di-n-Butylphthalate		R	10.0 U	10.0 UJ	10.0 U	2.0 J	10.0 U	10.0 U	20.0 U
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	3.0 J	R	10.0 U	R	20.0 U
Di-n-Octyl Phthalate		R	10.0 U	10.0 UJ	10.0 U	30.0 J	10.0 U	10.0 U	20.0 U
PESTICIDES/PCBs									
Endosulfan II		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor-1232		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
INORGANICS									
ALUMINUM		90.9 B	227.0	162.0 B	326.0	2120.0 (1)	1850.0 (1)	1850.0 (1)	603.0 (1)
ANTIMONY		53.1 U	24.0 U	53.1 U	30.4 B	53.1 U	24.0 U	53.1 U	24.0 U
ARSENIC	25 a	1.9 U	2.1 B	1.9 U	2.0 U	2.6 B (1)	2.0 U	1.9 U	2.0 U
BARIUM	1000 a	35.5 B	30.7 B	48.3 B	60.0 B	271.0 (1)	269.0 (1)	107.0 B (1)	122.0 B (1)
BERYLLIUM	3 b	0.1 U	1.0 U	0.1 U	1.0 U	0.1 U	1.0 U	0.1 U	1.0 U
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	2.3 B	3.6 U	4.0 B	3.6 U	2.1 B
CALCIUM		111000.0	116000.0	68600.0	118000.0	156000.0 (1)	141000.0 (1)	178000.0 (1)	221000.0 (1)
CHROMIUM		3.0 U	1.0 U	23.0	191.0	8.7 B (1)	4.6 B (1)	11.2 (1)	2.0 B (1)
COBALT		4.2 U	2.0 U	4.2 U	2.0 U	4.2 U	2.0 U	4.2 U	2.0 U
COPPER	1000 a	14.8 B	10.6 B	10.4 B	13.0 B	11.8 B	10.0 B	7.0 B	13.6 B (1)
IRON	300 a	201.0	2140.0 (2)	424.0 (2)	1200.0 (2)	13200.0 (3)	7240.0 (3)	2740.0 (3)	1170.0 (2)
LEAD	25 a	5.9	3.3	2.0 U	2.2 B	10.4 (1)	6.0 (1)	5.8	4.7 (1)
MAGNESIUM	35000 b	32400.0	35600.0 (2)	20900.0	26700.0	41400.0 (3)	45600.0 (3)	150000.0 (3)	97000.0 (3)
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	17.3	39.5	2280.0 (3)	1920.0 (3)	391.0 (2)	375.0 (2)
MERCURY	2 a	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.0 (1)	0.2 U
NICKEL		13.1 B	20.0 U	33.0 B	20.0 U	20.5 B (1)	24.9 B (1)	14.3 B (1)	32.6 B (1)
POTASSIUM		1960.0 B	3350.0 B	5110.0	1850.0 B	42700.0 (1)	41700.0 (1)	1970.0 B (1)	30700.0 (1)
SILVER	50 a	2.8 U	2.0 U	2.8 U	2.0 U	2.8 U	2.5 B (1)	2.8 U	2.1 B (1)
SODIUM		84000.0 B	130000.0	127000.0	76900.0	30400.0	31400.0	126000.0 (1)	183000.0 (1)
VANADIUM		3.2 U	1.4 B	3.2 U	1.0 U	3.5 B (1)	8.1 B (1)	6.3 B (1)	1.4 B
ZINC	5000 a	9.9 B	8.8 B	R	12.3 B	R	31.7 (1)	R	17.1 B (1)

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable groung water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs or guidance values.
(3) Value exceeds both background and ARARs or guidance values.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.

TABLE 4-16 (contd)

GROUND WATER - AREA C ONSITE
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		Background				CONCENTRATIONS in ug/l	
SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-6D-01	GW-6D-02	GW-14S-02	GW-17S-02
VOLATILES							
Benzene		2.0 U	2.0 U	2.0 U	2.0 U	2.7 (1)	2.0 U
Toluene		3.0 U	3.0 U	3.0 U	3.0 U	43.0 (1)	3.0 U
SEMI-VOLATILES							
Phenol	1 a	R	10.0 U	R	10.0 U	6.0 J (3)	4000.0 D (3)
1,4-Dichlorobenzene	5 a	5.0 U	5.0 U	5.0 U	5.0 U	2.0 J (1)	5.0 U
2-Methylphenol		R	10.0 U	R	10.0 U	10.0 U	72.0 J (1)
4-Methylphenol		R	10.0 U	R	10.0 U	10.0 U	75.0 J (1)
2,4-Dimethylphenol		R	10.0 U	R	10.0 U	10.0 U	630.0 (1)
Benzoic Acid		R	50.0 U	R	50.0 U	50.0 U	500.0 U
Dibenzofuran		R	10.0 U	10.0 UJ	10.0 U	20.0 (1)	100.0 U
Di-n-Butylphthalate		R	10.0 U	10.0 UJ	10.0 U	10.0 U	100.0 U
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	3.0 J	10.0 U	100.0 U
Di-n-Octyl Phthalate		R	10.0 U	10.0 UJ	10.0 U	10.0 U	100.0 U
PESTICIDES/PCBs							
Endosulfan II		0.1 U	0.1 U	0.1 U	0.1 U	0.7 (1)	1.0 U
Aroclor-1232		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	110.0 (1)
INORGANICS							
ALUMINUM		90.9 B	227.0	162.0 B	326.0	74000.0 (1)	13300.0 (1)
ANTIMONY		53.1 U	24.0 U	53.1 U	30.4 B	24.0 U	24.4 B (1)
ARSENIC	25 a	1.9 U	2.1 B	1.9 U	2.0 U	9.5 B (1)	4.3 B (1)
BARIUM	1000 a	35.5 B	30.7 B	48.3 B	60.0 B	1220.0 (3)	1530.0 (3)
BERYLLIUM	3 b	0.1 U	1.0 U	0.1 U	1.0 U	1.6 B (1)	1.0 U
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	2.3 B	1.8 B	12.0 (3)
CALCIUM		111000.0	116000.0	68600.0	118000.0	593000.0 (1)	302000.0 (1)
CHROMIUM		3.0 U	1.0 U	23.0	191.0	115.0 (1)	25.4 (1)
COBALT		4.2 U	2.0 U	4.2 U	2.0 U	44.1 B (1)	10.3 B (1)
COPPER	1000 a	14.8 B	10.6 B	10.4 B	13.0 B	258.0 (1)	89.5 (1)
IRON	300 a	201.0	2140.0 (2)	424.0 (2)	1200.0 (2)	131000.0 (3)	32500.0 (3)
LEAD	25 a	5.9	3.3	2.0 U	2.2 B	369.0 (3)	50.6 (3)
MAGNESIUM	35000 b	32400.0	35600.0 (2)	20900.0	26700.0	173000.0 (3)	175000.0 (3)
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	17.3	39.5	3450.0 (3)	1320.0 (2)
MERCURY	2 a	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
NICKEL		13.1 B	20.0 U	33.0 B	20.0 U	118.0 (1)	136.0 (1)
POTASSIUM		1960.0 B	3350.0 B	5110.0	1850.0 B	30800.0 (1)	35000.0 (1)
SILVER	50 a	2.8 U	2.0 U	2.8 U	2.0 U	9.6 B (1)	2.0 U
SODIUM		84000.0 B	130000.0	127000.0	76900.0	47500.0	201000.0 (1)
VANADIUM		3.2 U	1.4 B	3.2 U	1.0 U	124.0 (1)	26.4 B (1)
ZINC	5000 a	9.9 B	8.8 B	R	12.3 B	780.0 (1)	594.0 (1)

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable ground water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs.
(3) Value exceeds both background and ARARs.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.

the chemical-specific ARARs.

No volatile organics were detected in any of the wells in Round 1. Both benzene and toluene were detected in 9S and 14S in Round 2. Samples 14S and 17S contained the widest variety of contaminants at concentrations exceeding background levels and/or ARARs.

Well 14S was found to contain phenol, dichlorobenzene, and dibenzofuran. The pesticide Endosulfan II was also detected above background levels. Well 17S contained a variety of phenolic compounds. The PCB arochlor-1232 was detected above background levels in Well 17S. Relative to all the other samples analyzed in Area C, both 14S and 17S contained the widest variety of inorganic constituents exceeding background levels and/or ARARs.

A number of semi-volatile compounds were rejected due to unacceptable surrogate spike recoveries, therefore it is not known if these compounds are actually present in the sample. Bis(2-ethylhexyl)phthalate was found above background levels in 5S/5D. Other phthalates were detected at estimated concentrations in 9S. Benzoic acid was detected only once in sample 5S.

Barium, calcium chromium and potassium were detected above background levels in the majority of wells. Iron and magnesium frequently exceeded both background levels and ARARs. Lead and manganese also exceeded background levels and/or ARARs in many of the samples. Nickel, vanadium, zinc, copper and sodium exceeded background levels in at least half of the samples.

<u>5S/5D</u>

Acid and phenol semi-volatiles were rejected in sample 5S due to low surrogate recovery. Data for bis(2-ethylhexyl)phthalate was rejected in both samples due to method blank contamination. Benzoic acid was detected at an estimated concentration of 3 ug/l.

Arsenic, barium, and zinc exceeded background levels in Well 5S. Manganese exceeded only ARARs; iron exceeded both background levels and ARARs.

Arsenic, barium, calcium, chromium, copper, manganese, potassium, and sodium, exceeded background levels in 5D. Iron and magnesium exceeded both background levels and ARARs.

Round 2

Due to a laboratory error, the volatile organic fraction was not analyzed for 5S in Round 2.

Well cluster 5S/D contained only bis(2-Ethylhexyl) phthalate. Well 5S contained 21.0 ug/l above background levels and 5D contained an estimated 7.0 ug/l above background levels.

Well 5S contained aluminum, arsenic, barium, chromium, copper, lead, mercury, vanadium and zinc above background levels.
Of these, only aluminum, chromium, copper, lead, vanadium and zinc were not detected in the deeper sample at concentrations exceeding background levels. Well 5S exceeded background levels and ARARs for iron and manganese exceeds ARARs. Its deeper counterpart, 5D, exceeded background levels and ARARs for iron and magnesium. Well 5D also exceeded background levels for calcium, potassium, and sodium.

9S

Round 1

Di-n-butylphthalate (estimated at 2.0 ug/l), and di-n-octylphthalate (estimated at 30.0 ug/l) were detected in well 9S.

Aluminum, arsenic, barium, calcium, chromium, lead, nickel, potassium, and vanadium all exceeded background levels in Well 9S. Iron, magnesium and manganese concentrations exceeded both background levels and ARARs. Data on zinc were rejected due to unacceptable serial dilution results.

Round 2

Well 9S contained both benzene and toluene at concentrations above background levels of 2.8 ug/l and 4.1 ug/l, respectively.

A number of inorganic constituents exceeded background levels in well 9S. These included aluminum, barium, calcium, chromium, lead, nickel, potassium, silver, vanadium, and zinc. Iron, magnesium, and manganese exceeded both background levels and ARARs.

Of the 13 inorganics that exceeded background levels in the unfiltered sample, 8 inorganics remained above background levels in the filtered samples.

With the exception of cadmium, the concentration of metals in the filtered samples were less than their unfiltered counterpart. However, barium, calcium, potassium and vanadium concentrations remained above background levels. Cadmium revealed a slight increase in concentration from 4 ug/l in the unfiltered sample to 5.5 ug/l in the filtered sample. Iron, magnesium and manganese concent remained above both background level and ARARs.

10S

Round 1

No semi-volatile compounds were detected in 10S. However, data on acid and phenol were rejected in Round 1 due to low surrogate recovery.

Aluminum, barium, calcium, chromium, mercury, nickel, potassium, sodium, and vanadium exceeded background levels in Well 10S. Manganese exceeded only ARARs. Iron and magnesium exceeded both background levels and ARARs. Data on zinc were rejected.

Round 2

Many of the same inorganic constituents exceeding background levels in well

9S also exceeded background levels in 10S. These included aluminum, barium, calcium, chromium, copper, lead, nickel, potassium, silver, sodium, and zinc. Magnesium also exceeded both background levels and ARARs. Iron and manganese exceeded ARARs.

<u>10S</u>

Of the 12 inorganic constituents that exceeded background levels in the unfiltered sample, 8 inorganics remained above background levels in the filtered samples. With the exception of calcium, magnesium and vanadium, the concentration of metals in the filtered samples were less than than their unfiltered counterpart. Barium, copper, potassium, sodium and zinc concentrations were reduced but remained above background levels.

<u>Round 2</u>

<u>14S</u>

Both benzene and toluene were detected at 2.7 ug/l and 43 ug/l, respectively, in Well 14S. Phenol was detected at an estimated concentration of 6 ug/l, exceeding both background levels and ARARs. The compound 1,4-dichlorobenzene was detected above background levels at an estimated concentration of 2 ug/l, and dibenzofuran was detected above background levels at a concentration of 20 ug/l. The pesticide Endosulfan II was detected above background levels at 0.7 ug/l.

Well 14S contained a number of inorganic constituents exceeding background levels and/or ARARs. Barium, iron, lead, magnesium, and manganese concentrations exceeded background levels and ARARs.

Aluminum, arsenic, beryllium, calcium, cobalt, copper, nickel, potassium, silver, vanadium, chromium and zinc concentrations exceeded background levels.

Of the 17 inorganic constituents that exceeded background levels in the unfiltered sample, 7 inorganics remained above background levels in the filtered samples. With the exception of cadmium, the concentration of metals in the filtered samples were less than their unfiltered counterpart. Barium concentrations were reduced to levels below ARARs but remained above background. Iron and magnesium concentrations were reduced but remained above both background levels and ARARs. Calcium, potassium, silver and vanadium also remained above background levels.

The duplicate sample 18S contained 18 inorganics constituents exceeding background levels in the unfiltered sample. Six inorganics remained above background levels in the filtered samples. The concentration of metals in the filtered sample were consistently less than their unfiltered counter-part. Barium, calcium, potassium, and vanadium remained above background levels. Iron, and magnesium concentrations remained above both background levels and ARARs. Manganese concentrations were less than background levels but exceeded ARARs.

17S

Well 17S contained phenol at an estimated concentration of 4000 ug/l, exceeding both background levels and ARARs. The compounds 2-methylphenol (estimated at 72 ug/l), 4-methylphenol (estimated at 75 ug/l), and 2,4 dimethylphenol(630 ug/l) exceeded background levels. Aroclor-1232 was also detected at 110 ug/l above background levels.

As with 14S, this well contained a number of inorganic constituents exceeding background levels and/or ARARs. Barium, cadium, iron, lead, and magnesium concentrations exceeded background levels and ARARs.

Aluminum, antimony, arsenic, calcium, chromium, cobalt, copper, nickel, potassium, sodium, vanadium, and zinc concentrations exceeded background levels. Manganese exceeded ARARs.

4.2.3.5 AREA C (Off-Site)

The Area C off-site wells in rounds 1 and 2 include 7S and 7D. Table 4-17 compares the analytical results for these samples to the background samples

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE 4-17

GROUND WATER - AREA C OFFSITE
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05/23/90

		Background				CONCENTRATIONS in ug/l			
SAMPLE NUMBER :	GW ARARs	GW-6S-01	GW-6S-02	GW-6D-01	GW-6D-02	GW-7S-01	GW-7S-02	GW-7D-01	GW-7D-02
VOLATILES									
SEMI-VOLATILES									
Phenol	1 a	R	10.0 U	R	10.0 U	R	10.0 U	16.0 (2)	10.0 U
Benzoic Acid		R	50.0 U	R	50.0 U	R	50.0 U	8.0 J	50.0 U
bis(2-Ethylhexyl)Phthalate	4200 a	25.0	10.0 U	R	3.0 J	R	10.0 U	11.0	42.0 (1)
Di-n-Octyl Phthalate		R	10.0 U	10.0 UJ	10.0 U	73.0 J	10.0 U	10.0 U	10.0 U
PESTICIDES/PCBs									
INORGANICS									
ALUMINUM		90.9 B	227.0	162.0 B	326.0	257.0 (1)	610.0 (1)	559.0 (1)	1590.0 (1)
ANTIMONY		53.1 U	24.0 U	53.1 U	30.4 B	53.1 U	24.0 U	53.1 U	24.0 U
ARSENIC	25 a	1.9 U	2.1 B	1.9 U	2.0 U	1.9 U	2.6 B (1)	1.9 U	2.0 U
BARIUM	1000 a	35.5 B	30.7 B	48.3 B	60.0 B	332.0 (1)	277.0 (1)	97.3 B (1)	59.6 B
CADMIUM	10 a	3.6 U	4.0 B	3.6 U	2.3 B	3.6 U	1.0 U	3.6 U	1.0 U
CALCIUM		111000.0	116000.0	68600.0	118000.0	46800.0	44200.0	244000.0 (1)	156000.0 (1)
CHROMIUM		3.0 U	1.0 U	23.0	191.0	3.0 U	26.8 (1)	5.6 BJ	18.4
COPPER	1000 a	14.8 B	10.6 B	10.4 B	13.0 B	10.0 B	8.1 B	11.2 B (1)	6.5 B
IRON	300 a	201.0	2140.0 (2)	424.0 (2)	1200.0 (2)	429.0 (3)	1060.0 (2)	161.0	933.0 (2)
LEAD	25 a	5.9	3.3	2.0 U	2.2 B	4.4 B	3.7 (1)	2.9 B (1)	6.8 (1)
MAGNESIUM	35000 b	32400.0	35600.0 (2)	20900.0	26700.0	31500.0	31500.0	156.0 B	1210.0 B
MANGANESE	300 a	1080.0 (2)	1670.0 (2)	17.3	39.5	62.1	248.0	0.5 U	45.5 (1)
NICKEL		13.1 B	20.0 U	33.0 B	20.0 U	11.8 B	20.0 U	10.7 U	20.0 U
POTASSIUM		1960.0 B	3350.0 B	5110.0	1850.0 B	1900.0 B	3090.0 B	23300.0 (1)	20800.0 (1)
SODIUM		84000.0 B	130000.0	127000.0	76900.0	24000.0	28500.0	58000.0	55000.0
VANADIUM		3.2 U	1.4 B	3.2 U	1.0 U	3.2 U	1.0 U	3.2 U	1.4 B (1)
ZINC	5000 a	9.9 B	8.8 B	R	12.3 B	10.8 B (1)	14.6 B (1)	21.4	11.2 B

FOOTNOTES :
a = ARARs are NYS Class GA standards for potable ground water (ug/l).
b = ARARs are NYS Class GA TOGS guidelines for potable ground water (ug/l).
(1) Value exceeds background.
(2) Value exceeds ARARs.
(3) Value exceeds both background and ARARs.
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.

and the chemical-specific ARARs.

Round 1

No volatiles, pesticides or PCBs, were detected in wells 7S/D. The reported detection limits for phenolic compounds in 7S, however, were rejected due to unacceptable surrogate recoveries.

Di-n-octyl phthalate was detected at an estimated concentration of 73 ug/l in 7S.

Phenol and bis(2-Ethylhexyl)pthalate were detected in Well 7D at 16 ug/l and 11 ug/l, respectively. Benzoic acid was detected at an estimated concentration of 8 ug/l.

Well 7S contained only a few inorganics exceeding background levels, including aluminum, barium, and zinc. Iron exceeded both background levels and ARARs. The deeper well also contained aluminum and barium at concentrations above background levels. In addition, calcium, copper, lead, and potassium exceeded background levels. No inorganic constituents exceeded ARARs.

Round 2

No volatiles, pesticides or PCBs, were detected in wells 7S/D.

Bis(2-ethylhexyl)phthalate (42 ug/l) was detected above background levels in 7D.

Aluminum, and lead exceeded background levels in both the deep and shallow aquifers (7S/7D) off-site of Area C. Iron exceeded ARARs in both wells. Arsenic, barium, chromium, and zinc also exceeded background levels in 7S. Calcium, lead, manganese, potassium, and vanadium were also found in concentrations exceeding background levels in 7D.

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5

5

5.0 NATURE AND EXTENT OF CONTAMINATION

5.1 SOILS

5.1.1 Inorganic Contaminants

AREA A (on-site)

All soil samples that were analyzed contained metals at concentrations above background levels. The deeper samples showed contaminants at concentrations within the range of those in the shallow sample. Contamination was found throughout the entire thickness of the glacial deposits. Contamination was also found in the basal till.

AREA B (on-site)

All soil samples that were analyzed contained inorganic contaminants at levels above background.

Inorganic contaminants appear to be equally distributed throughout the thickness of glacial deposits. Samples were taken from multiple depths in seven of the borings. Three (MW-2S, MW-16S and B16) of the seven borings contained more contaminants in the deeper sample that exceeded background levels than in the shallow sample. The lack of any "hot spots" or contaminant concentration gradients suggests that the contaminants are widespread both laterally and vertically and that inorganic soil concentrations are in equilibrium with source levels of inorganic contaminants. The relatively even vertical distribution of contaminants in the glacial deposits also indicates that the migration of contaminants has not been significantly affected by the clay or till layers, as evidenced in 15S where 15 inorganics exceeded background levels.

AREA B (off-site)

Wells MW-1D, 3S, 4D, and 11S are hydraulically located down gradient of the landfill. Soil samples that were collected from these wells from below the water table consisted mostly of clay or till. All the samples collected at these locations contained inorganics at concentrations exceeding background. The number of exceedances of background in these samples range from 8 at 1D to 15 at 4D.

Samples that were collected at the bedrock surface in monitoring wells MW-3S, 4D and 11S were composed of mostly till and clay. At least half of the inorganics analyzed for were detected above background levels.

AREA C (on-site)

Soil samples collected for analysis from each monitoring well boring and each soil boring contained inorganic contaminants at levels exceeding background. No apparent pattern of contaminant distribution was evidenced. The concentration and lateral distribution of contaminants on-site appears widespread throughout Area C.

Samples from borings 14S, 17S, B13, and B14, reveal an increase in the number of exceedances of background levels with depth. However, this trend of increasing exceedances with depth is reversed at boring B12, where the number of exceedances is greater in the surficial sample (18 exceedances) than at depth (15 exceedances).

AREA C (off-site)

The monitoring well boring 7S was the only off-site sampling location for Area C. The sample, consisting of silt, sand and gravel, was collected from below the water table and contained four inorganics exceeding background levels.

Results of the soil sample analyses reveal the widespread distribution of inorganics in the on- and off-site soils for all areas of the site. Many of these inorganics were detected at concentrations in excess of background, as determined at MW-6S, indicating that soil contamination has likely resulted from site contamination.

Additionally, the distribution of inorganics was found to be relatively uniform both on and off-site suggesting that the soils were essentially in equilibrium with source levels of inorganics. Several borings showed increasing exceedances of background with depth. This trend may be related to effects from changing soil geochemical properties with depth in the clay and till, but additional soil background analytical data for these formations would be required to make a more direct comparison.

5.1.2 Organic Contaminants

AREA A (on-site)

Other than methylene chloride and acetone, no volatile organic compounds (VOC) were detected in the on-site soil samples from area A. Methylene chloride and acetone, two common field and laboratory contaminants, were detected in nearly every soil sample collected from monitoring wells and soil borings throughout the site, regardless of other contaminants detected. It is possible that the detection of methylene chloride and acetone in the soil samples is a result of field and/or laboratory contamination due to the following:

- acetone was used as a decontamination solvent for the field sampling equipment,
- the laboratory exhibited methylene chloride and acetone contamination of method blanks,
- the detection of methylene chloride and acetone, at generally constant levels in nearly all the soil samples throughout the site, regardless of sample location or other contaminants detected, is consistent with field and/or laboratory contamination problems.

However, some of the samples exhibited concentrations of methylene chloride and acetone that are outside the typical range of laboratory contamination (within approximately 10 times the detection limits of 5 and 10 ug/kg, respectively). As a result, it is difficult to assess the extent of low-level environmental contamination by these two compounds.

The only other organic contaminants detected in Area A were polycyclic aromatic hydrocarbons (PAH) and bis(2-ethylhexyl)phthalate. PAHs were not limited to Area A, but were detected in all areas of the landfill. Out of 49 soil samples collected (excluding duplicates and QA/QC samples), one or more PAHs were detected in 15 of the samples.

Table 5-1 presents the PAHs detected, and their distribution in areas A, B, and C. Other than having contaminants common in the other areas of the site, the PAHs detected in area A (on-site) do not exhibit any trends in lateral or vertical distribution or concentration. Boring B2 indicates more surficial contamination by PAHs since they were detected in the 4 to 6 ft. below grade (b.g.) interval but not at 8 to 10 ft. b.g. However, the only sample collected at the monitoring well boring MW-8S, from 8 to 10 ft. b.g.s., showed contamination by PAHs. Because PAHs are large, non-polar, organophilic compounds, they are generally adsorbed onto soils, sediments, or particulates and are relatively immobile in saturated and unsaturated soils. Because there are no trends in PAH distribution or concentrations in this area, the contamination appears isolated and heterogeneous.

AREA B (on-site)

The organic compounds detected on-site in Area B included VOCs, phenols, PAHs, phthalates, dibenzofuran, and benzoic acid (1 detection only). There are no trends evident in the lateral distribution of contaminants or of contaminant concentrations. The detection of different groups of compounds (VOCs, phenols, PAHs, phthalates, and dibenzofuran) do not appear related. Table 5-2 shows the detection frequency for these groups in Area B. Phthalates, methylene chloride, and acetone are the most common on-site contaminants in Area B. Contamination by these organics are widespread in the area. Similarly, contamination by PAHs is widespread in the area. VOC contamination, except for methylene chloride and acetone, is also widespread over the area in that it is not localized in any one section, but the detection of VOCs is less frequent than for the phthalates or PAHs. Dibenzofuran was only found in sample locations from the western half of Area B at borings B3, B4, B6 and B8. Phenols were detected at four soil borings, B4, B10, and B13, and monitoring well boring MW-17S. However,

TABLE 5-1

FREQUENCY OF DETECTION OF PAHS
IN SOILS

Contaminant (total no. of samples)	No. of Detections On-Site Area A (4)*	Area B (21)	Area C (15)	Total
Napthalene	1	3	0	4
2-Methylnapthalene	0	1	0	1
Acenapthene	0	1	0	1
Acenapthalyene	1	0	0	1
Fluorene	0	1	0	1
Phenanthrene	3	7	0	10
Anthracene	2	3	0	5
Flouranthene	3	8	2	13
Pyrene	3	7	2	12
Benzo(a)anthracene	2	4	1	7
Chrysene	2	3	1	6
Benzo(b)flouranthene	2	4	1	7
Benzo(k)flouranthene	1	0	0	1
Benzo(a)pyrene	2	2	1	5
Indeno(1,2,3-cd)pyrene	2	1	1	4
Dibenzo(a,h)anthracene	1	0	0	1
Benzo(g,h,i)perylene	2	1	0	3

* - Out of the 6 samples collected from Area A, only 4 samples were analyzed for SVOAs by the laboratory.

TABLE 5-2

FREQUENCY OF DETECTION OF VOCs[a], PHENOLS, PAHs, PHTHALATES, AND DIBENZOFURAN FOR AREA B (on-site) SOILS

Contaminant Group	No. of Detections (Total No. of samples = 21[b])
VOCs[a]	11
Phenols	4
PAHs	11
Phthalates	9
Dibenzofuran	5

Notes:

[a] Denotes total VOCs excluding methylene chloride and acetone which are relatively ubiquitous to the site.

[b] Total No. of samples excluding duplicates and QA/QC samples.

three of these locations (B3 and B10) also exhibited the highest concentrations of total VOCs and PAHs in Area B.

Overall, where samples were collected at depth, these groups of contaminants, VOCs, phenols, PAHs, phthalates, and dibenzofuran, exhibited decreasing total concentrations with depth. The only exception to this trend is at boring B10 where total concentrations of VOCs and PAHs were more than 2 times higher in the 8-10 ft. interval than in the 2-4 ft. interval. However, this may be due to contaminant losses in the 2-4 ft. sample from volatilization, plant tissue uptake, and bacterial decomposition (White and Vanderslice, 1980).

It is important to note that as part of the soil sampling/analysis effort in Area B, pure VOC product (86,282 mg/kg = 8.6 wt. % total VOCs) was found in the 12-14 ft. interval sample from monitoring well boring MW-2S. The main contaminant in this sample was 1,1,1-trichloroethane at 83,000 mg/kg (8.3 wt %). The sample was noted as having a black tarry substance. This sample was collected in a layer of silty sand below the fill. The 20-22 ft. interval sample at 2S was collected in the glacial till directly overlying the bedrock, and is separated from the layer of silty sand from the 12-14 ft. sample by an approximate 5 ft. layer of silt and clay. Although the level of total VOCs in this deep sample (1,311 ug/kg) was much less than the 12-14 ft. sample, detection of VOCs at depth indicates that the clay is not confining the contamination at this location.

AREA B (off-site)

The only organics detected in the off-site soils for Area B were VOCs and bis(2-ethyhexyl)phthalate. Like the on-site locations in Area B, the detection of phthalate, methylene chloride, and acetone were generally ubiquitous. In samples from monitoring well borings, MW-3S and 11S, along the western perimeter of Area B, the only volatiles detected were acetone and methylene chloride. Samples collected at depth from MW-3S indicated relatively constant VOC concentrations with depth. The sample collected from MW-4D (at 19 ft.) also contained a trace level of toluene (1 J ug/kg). Toluene had also been detected in, and was one of the major contaminants in

Toluene had also been detected in, and was one of the major contaminants in boring B4, hydraulically upgradient of MW-4S.

Off-site of area B to the east, at monitoring well boring MW-10, 2-butanone, 4-methyl-2-pentanone, and toluene were detected in addition to methylene chloride, acetone, and bis(2-ethylhexyl)phthalate. This was the only soil sample for the whole site in which 2-butanone and 4-methyl-2-pentanone were detected. These two contaminants do not appear related to the site.

AREA C (on-site)

Soil contamination by organics in area C was limited to VOCs, phenols, PAHs, and phthalates. Like the other areas of the site, methylene chloride and acetone were ubiquitous. The only other VOC detected in Area C was 1,1,1-trichloroethane at monitoring well boring MW-14S. Phenol was detected in monitoring well boring MW-17S. The PAHs detected were consistent with those found in the other areas of the site. Like the rest of the site there were no trends evident in the lateral distribution of the contaminants.

AREA C (off-site)

Monitoring well boring MW-7S was found to contain fluoranthene (a PAH) and bis(2-ethylhexyl)phthalate. This is not consistent with other samples from area C, in that no other samples collected in the glacial till from Area C contained PAHs.

5.2 GROUND WATER

5.2.1 Inorganic Contaminants

BACKGROUND

The inorganic results for ground water from the background wells, MW-6S and 6D, was generally consistent with regional ground water quality. Table 5-3 presents a comparison of regional ground water quality with the results from the background wells for inorganic constituents. It should be noted that the regional quality data is for dissolved metals, while the site background well data is for total (i.e., dissolved and suspended) metals. Although the regional and site background data are not equivalent, they may be compared with the caveat that the background concentrations represent maximum possible dissolved metals concentrations. Actual dissolved metals concentrations are probably less, as exhibited by the results of filtered and non-filtered analyses for inorganics at MW-9S, 10S, and 14S.

The mean concentrations of inorganics in the unconsolidated aquifer at MW-6S were within the range of concentrations exhibited regionally, and therefore represent true background concentrations. Seven constituents (cadmium, calcium, iron, magnesium, manganese, potassium, and sodium) exceeded the mean regional concentrations, but were less than the maximum regional concentrations.

In the bedrock aquifer, the mean concentrations of inorganics at MW-6D were within the range of concentrations exhibited regionally, except those for chromium, iron, and potassium. The concentration of these three inorganics exceeded the maximum observed regional dissolved concentrations. However, it is unknown whether the actual dissolved concentrations of these constituents are within the regional values. If the dissolved concentrations of these three inorganics were above the regional values, it might indicate upgradient contamination of the bedrock aquifer. Four other inorganics (cadmium, calcium, manganese, and iron) exceeded the mean regional concentrations, but were less than the maximum regional concentrations.

Overall, except for chromium, iron and potassium in the bedrock aquifer, the site background ground water quality as determined at MW-6S, and 6D is

TABLE 5-3

COMPARISON OF REGIONAL GROUND WATER QUALITY FOR INORGANIC CONSTITUENTS WITH SITE BACKGROUND CONCENTRATIONS FOR BOTH THE UNCONSOLIDATED AND BEDROCK AQUIFERS

	UNCONSOLIDATED AQUIFER (a)						ONONDAGA LIMESTONE (BEDROCK) AQUIFER (a)					
	REGIONAL (b)			SITE BACKGROUND			REGIONAL (b)			SITE BACKGROUND		
CONSTITUENT	Minimum	Maximum	Mean	6S-01	6S-02	6S Mean	Minimum	Maximum	Mean	6D-01	6D-02	6D Mean
Aluminum	NA	NA	NA	91	227	159	NA	NA	NA	162	326	244
Antimony	NA	NA	NA	ND	ND	ND	NA	NA	NA	ND	30	30
Arsenic	< 20	< 20	< 20	ND	2	2	< 20	< 20	< 20	ND	ND	ND
Barium	< 200	700	250	36	31	33	< 200	400	230	48	60	54
Cadmium	< 1	5	2	ND	4	4	< 1	2	1	ND	2	2
Calcium (c)	16	183	87	111	116	114	2.1	258	88	69	118	93
Chromium	< 10	< 10	< 10	ND	ND	ND	< 10	< 10	< 10	23	191	107
Copper	< 20	60	23	15	11	13	< 20	210	41	10	13	12
Iron	< 50	4,700	520	201	2,140	1,171	< 50	310	77	424	1,200	812
Lead	< 10	200	24	6	3	5	< 10	20	10	ND	2	2
Magnesium (c)	8.1	84	31	32	36	34	0.1	56	28	21	27	24
Manganese	< 10	1,700	210	1,080	1,670	1,375	< 10	80	25	17	40	28
Nickel	NA	NA	NA	13	ND	13	NA	NA	NA	33	ND	33
Potassium (c)	1	7.1	2.4	2	3	3	0	3.2	1.4	5	2	3
Sodium (c)	1	476	98	84	130	107	4	430	32	127	77	102
Vanadium	NA	NA	NA	ND	1	1	NA	NA	NA	ND	ND	ND
Zinc	< 20	2,100	210	10	9	9	< 20	220	60	R	12	12

Notes:

a. Unless otherwise noted, all units are in ug/l.
b. Values for regional ground water quality represent dissolved concentrations of inorganic constituents in the unconsolidated and bedrock aquifers for Clarence, N.Y. (Source: Miller and Staubitz, 1985) Site background concentrations represent total (dissolved and suspended) metals.
c. Units for this constituent are in mg/l.
d. NA denotes no data available.
e. ND denotes not detected.

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typical of regional ground water. Therefore, it is valid to use the results from these wells as being representative of background levels.

Areas A, B, and C (on and off-site)

Inorganics are a natural constituent of ground water. However most of the inorganics detected in the ground water at this site were in excess of background levels (as measured at MW-6S and 6D) and/or ARARs.

Table 5-4 presents a summary of the inorganic contaminants detected in excess of background levels, ARARs, or both background levels and ARARs for areas A, B, and C, both on and off-site. As indicated by the table, most of the inorganic contaminants were detected in excess of background and/or ARARs regardless of area. However, area C (off-site) for the unconsolidated aquifer (MW-7S), exhibited fewer inorganics in exceedance than other areas for either aquifer. Overall, ground water from the bedrock aquifer exhibited fewer inorganics in exceedance than the unconsolidated aquifer, indicating a lessened effect of site contamination on the bedrock aquifer as compared to the unconsolidated aquifer.

Tables 5-5 and 5-6 present the frequency of contaminant levels exceeding background and/or ARARs in each area for both aquifers. Contaminants which generally exceeded both background levels and ARARs in the highest frequency include iron, magnesium, and only 16% in deep aquifer (1/6).

No trends were evident in the distribution of contaminants or contaminant concentrations to define a plume of inorganics. Additionally, the ground water inorganics results do not bear any relationship to organic contaminant results. The inorganics were ubiquitous to the site ground water, while the organics were isolated and disparate in composition between locations.

Results of filtered versus unfiltered analysis of ground water samples at MW-9S, 10S, 14S, (18S-a duplicate of 14S), and 16S showed that substantial quantities of certain inorganics were removed by filtration, indicating that those contaminants are in suspended form, rather than dissolved in the

Table 5-4

Inorganics Detected In Excess Of Background Levels, ARARs, Or Both Background Levels And ARARs

Inorganic Contaminant	Unconsolidated Aquifer Wells (By Area)					Bedrock Aquifer Wells (By Area)			
	A	B On-Site	B Off-Site	C On-Site	C Off-Site	B On-Site	B Off-Site	C On-Site	C Off-Site
Aluminum	x	x	x	x	x	x			x
Antimony		x					x		
Arsenic	x	x	x	x	x	x	x	x	
Barium	x	x	x	x	x		x	x	x
Beryllium		x		x					
Cadmium		x	x	x			x		
Calcium	x	x	x	x		x	x	x	x
Chromium	x	x	x	x	x		x	x	
Cobalt	x	x	x	x			x		
Copper		x	x	x		x	x	x	x
Iron	x	x	x	x	x	x	x	x	x
Lead	x	x	x	x	x	x	x		x
Magnesium	x	x	x	x			x	x	
Manganese	x	x	x	x		x	x	x	x
Mercury	x	x	x	x				x	
Nickel	x	x	x	x		x	x		
Potassium	x	x	x	x		x	x	x	x
Silver	x	x		x		x			
Sodium	x			x			x	x	
Vanadium	x	x	x	x		x	x		x
Zinc	x	x	x	x	x	x	x		

Table 5-5

Frequency Of Detection Of Inorganics In Excess Of Background Levels, ARARs, Or Both Background Levels And ARARs For Wells In The Unconsolidated Aquifer

Inorganic Contaminant	A [4]*			B On-Site [4]			B Off-Site [7]			C On-Site [8]			C Off-Site [2]		
	*1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Aluminum	3			4			5			7			2		
Antimony				1											
Arsenic	1			4			7			5			1		
Barium	4			2		2	7			6		2	2		
Beryllium				1						1					
Cadmium				1			1					1			
Calcium	4			4			2			6					
Chromium	3			4			6			7			1		
Cobalt	1			1			1			2					
Copper				1		1	2			4					
Iron		2	2			4		1	4		1	7		1	1
Lead	3			1		3	4			4		2		1	
Magnesium			4			4			5			6			
Manganese		4			1	2		3	2		4	4			
Mercury			1			1	1			2					
Nickel	3			1			4			6					
Potassium	1			4			2			6					
Silver	1			2						3					
Sodium	2									3					
Vanadium	3			4			2			6					
Zinc	2			4			5			6			2		

*FOOTNOTES:

1 - Contaminant detected in the ground water at levels exceeding background.
2 - Contaminant detected in the ground water at levels exceeding ARARs or guidance values.
3 - Contaminant detected in the ground water at levels exceeding both background and ARARs or guidelines.
[4] - Total number of environmental samples.

Table 5-6

Frequency Of Detection Of Inorganics In Excess Of Background Levels, ARARs, Or Both Background Levels And ARARs For Wells In The Bedrock Aquifer

Inorganic Contaminant	B On-Site [1]*			B Off-Site [6]			C On-Site [2]			C Off-Site [2]		
	*1	2	3	1	2	3	1	2	3	1	2	3
Aluminum	1									2		
Antimony				1								
Arsenic	1			2			2					
Barium				2			2			1		
Beryllium												
Cadmium				4								
Calcium	1			2			2			2		
Chromium				2			1					
Cobalt				1								
Copper	1			1			1			1		
Iron			1		1	3			2		1	
Lead	1			4						2		
Magnesium				2					2			
Manganese	1			3		1	2			1		
Mercury							1					
Nickel	1			4								
Potassium	1			5			2			2		
Silver	1											
Sodium				1			2					
Vanadium	1			2						1		
Zinc	1			2								

*FOOTNOTES:

1 - Contaminant detected in the ground water at levels exceeding background.
2 - Contaminant detected in the ground water at levels exceeding ARARs or guidance values.
3 - Contaminant detected in the ground water at levels exceeding both background and ARARs or guidelines.
[1] - Total number of environmental samples.

water. For these three wells, the following contaminants were removed approximately 90 percent or more by filtration:

MW-9S: Aluminum

MW-10S: Aluminum and iron

MW-14S: Aluminum, chromium, cobalt, copper, lead, vanadium and zinc.

MW-16S: Aluminum, arsenic, chromium, cobalt, copper, lead, vanadium and zinc.

5.2.2 ORGANIC CONTAMINANTS

AREA A (on-site)

The only organic contaminants detected in the ground water in either sampling round 1 (August 1989) or 2 (December 1989) for Area A were two VOCs, 1,1-dichloroethane (1,1-DCA), and 1,1,1-trichloroethane (1,1,1-TCA), and three phthalates (di-n-octylphthalate, butylbenzylphthalate and bis(2 ethylhexyl)phthalate). Unlike the results of soil samples from the soil borings and monitoring well borings, neither methylene chloride, phenols, nor PAHs were detected in the ground water in area A. In fact, neither methylene chloride nor PAHs were detected in any of the ground water samples for the entire site in either round.

The two VOCs detected in area A (1,1-DCA and 1,1,1-TCA at 5.6 and 26 ug/l, respectively) were only found in the sample from MW-12S collected during the December 1989 sampling event. The VOCs, however, were not detected during the August 1989 sampling event. This inconsistency may indicate that either the ground water contaminants had migrated to within MW-12 during the time between the two sampling events, or laboratory/field problems had caused false positive or false negative analytical results. Possible laboratory or field problems which can lead to false positive or negative results include the following:

1. Organic contaminants (e.g., 1,1-DCA at 5.6 ug/l) present at or near their detection limits (1.1 ug/l for 1,1-DCA) are typically difficult to quantitate and generally exhibit poor

analytical precision. Therefore if given the same 1,1-DCA concentration in the August 1989 round, the contaminant may not have been detected due to poor precision.

2. VOCs may be lost from water samples by aeration during sampling, diffusion through septa during transport, or from aeration during analysis/sample preparation.

3. Wells installed prior to the August 1989 sampling round, were developed by the air-lift technique. Inadequate well evacuation prior to sampling may have resulted in false negative results for this first round.

4. Contaminant carry-over in the laboratory analysis of contaminated samples could result in false positive detections.

This inconsistency in the detection of VOCs between the August and December sampling rounds also occurred in other areas of the site.

The VOCs detected in MW-12S were detected in the ground water from other areas of the site at MW-2S and 2D, in the soil samples from the monitoring well boring for 2S, 14S (1,1,1-TCA only), and in soil boring B16 (1,1,1-TCA only). Although the piezometric surface for the unconsolidated aquifer from the May 1990 water level measurements shows that MW-12S was receiving a component of ground water flow from Area B near MW-16S, the contamination at MW12S may not be related to site contamination from Area B because these contaminants were not detected in the ground water from adjacent monitoring wells MW-8S and 16S. If the organic contamination at MW-12S had been related to contaminated ground water migrating from Area B, one would have expected to find the same contaminants in MW-8S and 16S. This was not the case.

The phthalates in the ground water from Area A, were detected in 17 out of the 22 monitoring wells from the site. However, the same phthalates were not consistently detected at the same wells between rounds, nor was there any consistent trend between unconsolidated and bedrock wells. Except for the detection of butylbenzylphthalate at MW-8S (December 1989 round only) the concentrations of phthalates, which were primarily bis(2-ethylhexyl)-phthalate, were generally within the normal range of field or laboratory contamination (within 10 times the detection limit) and have been attributed to laboratory or field contamination.

AREA B (on-site)

VOCs, dichlorobenzenes, phenols, bis(2-ethylhexyl)phthalate, aldrin (a pesticide), and aroclor-1232 (a PCB) were detected in the ground water from monitoring wells on-site in Area B. The bis(2-ethyhexyl)phthalate appears to be attributable to field/laboratory contamination. Aldrin was only detected in the bedrock well 2D, not in the unconsolidated aquifer well 2S, and was quantified at the detection limit (0.05 ug/l) at an estimated (J) value. The only other detection of aldrin in either soil or ground water was from the 2-4 ft. soil sample from boring B10. Again the aldrin was quantified at an estimated level (6.9 ug/kg) this time below the detection limit (of 37 ug/kg). Therefore, aldrin does not appear to be a significant site contaminant in either media.

The primary organics for the ground water in area B were the VOCs, dichlorobenzenes, and phenols. The VOCs were detected in ground water from both the unconsolidated and bedrock aquifers, wells MW-2S and 2D respectively, at generally decreasing concentration with depth. The contaminants detected at MW-2S and 2D were the same as those detected in the pure product contained in the 12-14 ft. soil sample at MW-2S, indicating that the product in the soil at this location had contaminated both aquifers. This is further substantiated by the high 1,1,1-TCA concentration in ground water from MW-2S (15,000 ug/l), which was the contaminant present in the soil sample in highest concentration (8.3 wt. %).

Aromatic organics, consisting of VOCs, dichlorobenzenes (ortho, meta, and para dichlorobenzene are characterized as semivolatiles rather than VOCs by EPA-CLP TCL analysis and considered here separately from the VOCs) and phenols, were detected in the ground water sample from MW-16S. In the soils from this same location, chlorobenzene was detected in the monitoring well boring MW-16S, and ethylbenzene, xylene, 1,2-dichloroethene, and phenols were detected in boring B10. Presence of these aromatics in the soils and ground water at this location indicate that contaminants in the soil have contaminated the unconsolidated aquifer at MW-16S. The lack of dichlorobenzene detections in the soils may have been due to elevated detection limits from the high concentrations of other contaminants.

Unlike the soil and monitoring well boring results, PAHs which were prevalent in the on-site soils from Area B, were not detected in any of the ground water samples from Area B or any other area of the site. This was as expected due to the preference of PAHs to adsorb onto soils and particulate matter rather than to leach into ground water.

AREA B (off-site)

The wells off-site to the west of area B (MW-3S, 3D, 11S, 4S, and 4D) were relatively free of organic contamination. Bis(2-ethylhexyl)phthalate was detected in all these wells, but was detected at levels indicative of field or laboratory contamination. The only other organics detected were benzene and toluene in wells MW-3S and 3D. Benzene was detected at 26 and 23 ug/l and toluene at 41 and 3 ug/l for the shallow (S) and deep (D) wells, respectively, during the December 1989 sampling round. No organics were detected in MW-3S or 3D during the August 1989 sampling round.

With the exception of bis(2-ethylhexyl)phthalate, the wells off-site to the east of area B (MW-1S and 1D) were free of organic contaminants.

AREA C (on-site)

Other than phthalates, the organics detected in the ground water from monitoring wells in Area C were VOCs, phenols, dibenzofuran, benzoic acid and endosulfan. Benzoic acid was detected at MW-5S and 7D (off-site) at estimated levels of 3 and 8 ug/l, below the detection limit of 50 ug/l, and was not detected consistently between the two sampling rounds. As a result, benzoic acid is not considered a significant site contaminant.

VOCs were detected in MW-9S (benzene and toluene) and in the duplicate sample for MW-14S (benzene and toluene) for the December 1989 sampling event. The results for MW-9S were inconsistent between the two rounds because only phthalates were detected in the August 1989 round while only VOCs, not phthalates, were detected in the December 1989 round.

The analytical results for VOCs, endosulfan II and phenol at MW-14S must be regarded as suspect due to contradictory sample and duplicate sample results. As shown below, benzene, toluene, and 1,4-dichlorobenzene were detected in the duplicate but not the sample, while endosulfan was detected in the sample but not the duplicate.

Contaminant	Concentration (ug/l) MW-14S	MW-14S-Duplicate
Dibenzofuran	20	15
Endosulfan	0.7	0.1 U
Benzene	2.0 U	2.7
Toluene	3.0 U	43
1,4-Dichlorobenzene	5.0 U	2 J
Phenol	20 U	6 J

Although, dibenzofuran had been detected in soil samples from MW-17S and B13 in Area C, and B3, B4, B6, and B8 in area B, monitoring well MW-14S was the only location at which this contaminant was detected in the ground water.

Phenols (phenol, 2-methyphenol, 4-methylphenol, and 2,4-dimethylphenol) were detected in the ground water at MW-17S. This was the only other location on the site (excluding the duplicate sample at MW-14S), and the only location in Area C, where phenols had been detected in the ground water. However, it should be noted that the results for 8 out of the 17 environmental samples from the August sampling round failed QA/QC for the phenols and were qualified with an R (rejected). Phenols (chlorophenol and 2,4-dimethylphenol) had also been detected in the ground water at MW-16S in area B. Contamination of the ground water in the unconsolidated aquifer at MW-17S by phenols is likely due to the leaching of these contaminants from the soils at or in the vicinity of MW-17S. Phenol was detected in the soil samples from MW-17S in the 8-10 ft. (3,300 ug/kg) and the 20-22 ft. (estimated at 310 ug/kg) sample intervals. The decreasing contaminant concentration in the soil with depth, and the detection in the ground water confirms that phenol is being leached into the unconsolidated aquifer from contaminated soils at or in the vicinity of MW-17S. It is unlikely that phenolic contamination of the unconsolidated aquifer at MW-17S resulted from the migration of the phenolic contaminants from MW-16S, because 17S is not hydraulically downgradient of 16S, and migration of phenols from 16S would have been accompanied by VOCs.

AREA C (off-site)

At the only off-site monitoring well locations for area C, MW-7S and 7D, the only organic contaminants detected were phthalates and benzoic acid. As discussed previously, these contaminants were not considered related to site contamination.

SUMMARY

Similar to the organic contaminant results of the soil investigation, the organic contaminant results of the ground water investigation do not exhibit any general trends in the spatial distribution of contaminants or in their concentrations. The ground water results only show areas of contamination. No plume delineation is possible due to the inconsistencies in contaminants and contaminant concentrations from one location to another.

The primary organic contaminants identified in the ground water from monitoring wells on-site are as follows:

Contaminant/Type	AREA A	B	C
<u>Volatiles:</u>			
Chloroethane		x	
1,1-Dichloroethane	x	x	

1,1-Dichloroethene		x	
Trans-1,2-Dichloroethene		x	
1,1,1-Trichloroethane	x	x	
Benzene		x	
Chlorobenzene		x	
Toluene			x
m-Xylene		x	
p-Xylene		x	
Dichlobenzenes:			
ortho (1,2)		x	
meta (1,3)		x	
para (1,4)		x	
Phenols:			
Phenol			x
2-Chlorophenol		x	
2-Methylphenol			x
4-Methylphenol			x
2,4-Dimethylphenol		x	x
Other:			
Dibenzofuran			x
Aroclor (PCB)-1232			x

Other contaminants which were detected in the ground water but that were not considered attributable to site contamination due to suspected field/laboratory contamination or data inconsistencies include the following: bis(2-ethylhexyl)phthalate, benzoic acid, aldrin, and endosulfan.

Organic ground water contamination in the form of VOCs (benzene and toluene) was detected off-site only at monitoring wells MW-3S and 3D, indicating off-site migration of contaminants at the northwest corner of area B. No plumes of organic contamination were detected at any of the other off-site monitoring wells (MW-4S, 4D, 11S, 1S, 1D, 7S, and 7D). This does not necessarily mean that organic contaminants are not migrating off site along the other site boundaries. Rather, because of the radial flow pattern of ground water in the unconsolidated aquifer, it is likely that organic contaminants have migrated off-site at the southern and eastern site boundaries and that additional off-site wells are required to identify and delineate any off-site plumes.

Contamination of both the unconsolidated and the bedrock aquifers by organics was found. Evidence of contamination of the unconsolidated aquifer by organics was given by the results from wells MW-3S, 2S, 9S, 12S, 14S, 16S, and 17S. Evidence of contamination of the bedrock aquifer by organics was given by the results from wells MW-3D and 2D. The combined analytical results of soil and ground water samples at MW-2S indicated that contamination of site soils has leached into the ground water of the unconsolidated aquifer. Similar conclusions can be made at MW-16S and 17S, where ground water contaminants corresponded to soil contaminants present.

5.3 CONCEPTUAL MODEL OF CONTAMINATION

The results of inorganic and organic contaminant analyses for the soil and ground water samples indicates that the site contamination problem is closely related to the disposal practices historically used at this site. According to Mr. Lavocat, a former landfill bulldozer operator, disposal in areas B and C was performed in a cut-and-fill operation with overland dumping

Wastes were probably not segregated in this operation resulting in the heterogeneous distribution of waste material over the site. This would account for the somewhat random distribution of organic contaminants and contaminant concentrations in the on-site soils. The ubiquitous nature of the inorganics found in the site soils and ground water for areas B and C reflect the large quantities of metal wastes (empty drums, full drums, scrap metal) distributed throughout the site as witnessed on the ground surface and as identified by the geophysical investigation.

Results of soil sample analysis for Area A, north of the thruway entrance ramp, confirm that the area was not used for the disposal of wastes. However, organic contamination of the soils collected at MW-8S, south of the entrance ramp, indicates that disposal, as part of Area B, extended further north than previously expected.

The soil results indicate that soil contamination by organics is most prevalent and widespread in area B. Contamination by organics includes

VOCs, PAHs, phenols, and dibenzofuran. These organic contaminants have leached into the ground water of the unconsolidated aquifer as demonstrated by the relationship between soil and ground water contamination at locations MW-2S/D, 16S, and 17S. Additionally, the organic contamination has further migrated into the bedrock aquifer as shown by the relationship between contaminants and contaminant concentrations at MW-2S and 2D.

The flow direction in the unconsolidated deposits generally correspond to the land surface elevation contours. Perched water may occur in areas where relatively sandy soils are underlain by nearly impermeable lacustrine deposits. The ground water continues to flow laterally until the underlying deposits coarsen enough to allow vertical movement down to the bedrock surface.

Ground water contamination off-site by organics was only detected to the northwest of the site at MW-35 and 3D. However, because of the radial nature of the ground water flow in the unconsolidated aquifer and the contaminants detected in this water on-site, it is expected that contamination is migrating off-site in this aquifer. The presence of inorganics in excess of background levels, which are more mobile than organics, in the saturated zone, confirm that the site contamination has impacted the ground water on and off-site.

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6.0 RECOMMENDATIONS

In order to develop a conceptual model of contaminant transport, several data gaps need to be addressed:

1. **The degree of aquifer anisotropy must be determined in order to confirm the principal direction of flow in the limestone aquifer. This is a paramount requirement to the design and layout of additional monitoring wells.**

This can be accomplished by conducting pumping tests at several locations in the limestone aquifer. In order to perform the necessary hydraulic analysis, three observation wells must be installed in the bedrock aquifer around each pumping well. The observation wells must be installed along three different radial directions at different distances from the pumping well.

Pumping tests should be conducted in wells that are located along the suspected flow directions. The wells that are pumped should produce enough water so that the pumping test can be run at a reasonable rate and duration in order to create an observable hydraulic stress in all three observation wells.

Based on the specific capacity data and well location, pumping tests conducted at wells 1D, 3D, and 5D would satisfy these requirements. The ground water withdrawn from the aquifer could be discharged directly into Ellicott Creek, Aero Lake and/or indirectly through drainage ditches.

The pumping tests data would also provide a realistic estimate of the hydraulic parameters of the aquifer. This data is necessary to evaluate the advective mass transport of contaminants.

Azimuthal surface resistivity surveys are also recommended to augment the pumping test data. The surveys would be conducted at several locations outside the boundary of the landfill to determine the orientation of vertical joints and fractures in the limestone aquifer.

2. **The hydraulic connection between the unconsolidated and bedrock aquifers should be evaluated in order to fully develop the conceptual model of contaminant migration.**

The hydraulic interaction between the two aquifers could be evaluated by conducting short term (1-2 hour) pumping tests in the existing bedrock wells. The hydraulic connection would be verified upon the observation of drawdown in the nearby unconsolidated well.

Because of the apparent seasonal variation of the water table surface, water level measurements should be collected on a seasonal basis from all wells to evaluate the vertical and horizontal gradients between the two aquifers. This should also include stage measurements of Ellicott Creek and surface water levels of Aero Lake.

The hydraulic significance of Ellicott Creek should be evaluated thoroughly. As previously mentioned, in sections 1.0 and 4.0, the Creek acts as a local hydraulic sink for flow in the unconsolidated aquifer and the upper portion of the bedrock aquifer.

A cluster of nested wells should be installed on the south side of Ellicott Creek to evaluate its potential as a no flow boundary. The well nest should consist of one well installed in the unconsolidated aquifer and two wells, one shallow and one deep, installled in the bedrock aquifer. A deep well should also be installed on the north side of the Creek. The purpose of the deep wells is to evaluate the flow and chemical characteristics of the regional flow system.

3. **It is necessary to determine the nature and extent of off-site contaminant migration.**

This task would consist of installing additional nested monitoring wells downgradient of the landfill. The degree of aquifer anisotropy must be determined, however, before an effective monitoring system can be designed (See #1 above).

7

7.0 REFERENCES

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(PBLF3/14)OG

Appendix A

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BORING NUMBER: B1

Log of Boring

Project: Pfohl Bros | Location: N/S Area | Job. No: 897-12-RL-WELL

Date Drilled: 7/21/89 | Drilling Co.: Rochester Drilling Company

Total Depth: 13'6" | Method Used: 6 1/4" Auger

Inspector: C. Wenczel | Organic Vapor Instruments Used: HNu | Water Table Depth: ≃8'0"

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	9	0'0" to 2'0"	24'/12"	Bkd	12" Organic soil horizon; gravel and sand		0800
	1	10	"	"	"			
1	1	15	"	"	"			
	1	24	"	"	"			
2	2	18	2'0" to 4'0"	24'/12"	Bkd	12" Organic soil, gravel and sand.		
	2	19	"	"	"			
3	2	13	"	"	"			
	2	10	"	"	"			
4	3	32	4'0" to 6'0"	24"/4"	"	4" Fill, concrete		
	3	19	"	"	"			
5	3	28	"	"	"			
	3	73	"	"	"			
6	4	18	6'0" to 8'0"	24"/6"	"	SAND, medium; little fine; little very fine; trace silt; black and orange		Native soil
7	4	47	"	"	"			

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BORING NUMBER: B1

Log of Boring

Project: Pfohl Bros Location: N/s Area A Job. No: 897-12-RC-WELL
Date Drilled: 7/21/89 Drilling Co.: Rochester Drilling Company
Total Depth: 13' 6" Method Used: 6 1/4" Auger
Inspector: C. Wenczel Organic Vapor Instruments Used: HNu Water Table Depth: ≥ 8' 0"

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	4	59	6'0" to 8'0"	24"/6"	Bkd			
	4	89	"	"	"			
8	5	7	8'0" to 10'0"	24"/24"	"	24" SILT, brown to pink	8	
	5	9	"	"	"			
9	5	12	"	"	"		9	
	5	13	"	"	"			
10	6	10	10'0" to 12'0"	24"/24"	"	24" Till, clay and silt 1" gravel	10	
	6	13	"	"	"			
11	6	12	"	"	"		11	
	6	10	"	"	"			
12	7	18	12'0" to 14'0"	18"/18"	"	24" Till, clay and silt, 1" gravel.	12	
	7	23	"	"	"			
13	7	27	"	"	"		13	
	7		"			Rock at 13'6"		0915
14							14	

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Elev. 702

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BORING NUMBER: B2

Log of Boring

Project: Pfohl Bros. Location: S/S Area A Job. No: 897-12-RC-WELL

Date Drilled: 7/20/89 Drilling Co.: Rochester Drilling Company

Total Depth: 13' 2" Method Used: 6 1/4" Auger

Inspector: C. Wenczel Organic Vapor Instruments Used: HNu Water Table Depth: ≤ 8'0"

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	4	0'0" to 2'0"	24"/16"	Bkd	16" Fill, 3" organic soil rocks, brick, clay, sand. dry		1615
	1	15	"	"	"			
1	1	35	"	"	"			
	1	40	"	"	"			
2	2	6	2'0" to 4'0"	24"/12"	"	12" Fill, rocks, brick, clay, sand dry.		
	2	29	"	"	"			
3	2	11	"	"	"			
	2	8	"	"	"			
4	3	6	4'0" to 6'0"	24"/12"	"	12" Fill, rocks, brick, clay, sand, dry		
	3	2	"	"	"			
5	3	1	"	"	"			
	3	5	"	"	"			
6	4	4	6'0" to 8'0"	24"/19"	"	19" Interlayered SILTS and CLAYS 1/8" to 1/4"		
	4	6	"	"	"			
7								

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BORING NUMBER: B2

Log of Boring

Project: Pohl Bros. Location: S/s Area A Job. No: 897-12-RC-WELL

Date Drilled: 7/20/89 Drilling Co.: Rochester Drilling Company

Total Depth: 13'2" Method Used: 6 1/4" Auger

Inspector: C. Wenczel Organic Vapor Instruments Used: HNu Water Table Depth: ≅8'0"

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	4	8	6'0" to 8'0"	24"/19"	"			
	4	10	"	"	"			
8	5	8	8'0" to 10'0"	24"/24"	"	24" Interlayered CLAY and SILTS, 1/8" to 1/4" layers		
	5	10	"	"	"			
9	5	12	"	"	"			
	5	8	"	"	"			
10	6	10	10'0" to 12'0"	24"/24"	"	24" TILL, pink some 1" rocks, very tight		
	6	22	"	"	"			
11	6	38	"	"	"			
	6	13	"	"	"			
12	7	10	12'0" to 14'0"	12"/12"	"	12" TILL, pink some 1" rocks, very tight.		
	7	18	"	"	"			
13	7	R	"	"	"	Rock at 13'2"		
	7		"					
14								

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BORING NUMBER: B-3

Page 1 of 1

Log of Boring

Project PBF Location B-3 Job. No

Date Drilled 11-15-89 Drilling Co.

Total Depth Method Used Hollow Stem Auger

Inspector Organic Vapor Instruments Used Water Table Depth

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
2	SS 1	2 2 1 2	0-2	2'/0.6		Fill - wood, plastic glass silty soil	FILL	
4	2	3 2 2 4	2-4	2'/0.7		Fill - wood, white flakey material - coal ash black stained soil		
6	3	20 14 14 10	4-6	2'/0		Wood - plastic in tip		
8	4	7 7 2 3	6-8	2'/0		silty black material in tip of spoon		OVA down hole - 15ppm
10	5	5 4 4 2	8-10	2'/0		Oily sheen on outside of spoon. black silty sand		OVA down hole >1000ppm 0 in breath. zone
12	6	5 4 2 2	10-12	2'/0.5		Black stained silt - little ~~clay brown~~ clay gray		OVA down hole 80 ppm 0-1 in BZ
14	7	6 8 10 10	12-14	2'/1.0'		2" - gray clay 10" - red brown clay with silt.		
16			14-16	2'/2'		SHELBY TUBE		
18	8	6 25/6				0.2' - red/brown clay 0.3' - fill - gray		OVA 240ppm in hole 3ppm in BZ
20						rock at 16.5'		

NY-1

Elev. 696.5

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BORING NUMBER: B-4

Log of Boring

Project Pfohl Bros Location Buffalo NY Job. No 897-12-RC-S08S

Date Drilled 11/9/89 Drilling Co. Rochester Drilling

Total Depth 19' 6" Method Used Hollow stem auger

Inspector B. Alter Organic Vapor Instruments Used OVA / HNu Water Table Depth 4'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
					in breathing zone			
0	1	5	0'/2'	2'/0'		Some wood & paper in shoe		0950
	1	4	↓	↓				
1	1	2						
	1	1						
2	2	1	2'/4'	2'/.2'	0	Soil, fill with wood, black stained material, and porcelain	soil	0955 LEL=0 at hole OVA=20 at hole
	2	1	↓	↓	↓			
3	2	2						
	2	1						
4	3	1	4'/6'	2'/.3'		Black stained soil and paper wet and tarry		1000 OVA=40 on sample LEL=0 at hole
	3	1	↓	↓				
5	3	12						
	3	13						
6	4	1	6'/8'	2'/.2'		Brown clayey silt, probably native in shoe. Spoon contains black, wet tarry substance	silt	1010 OVA=4 on sample.
	4	1	↓	↓				
7								

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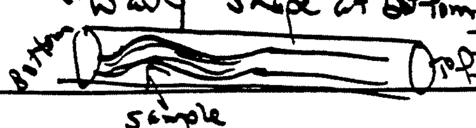
Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7					in breathing zone			
	4	5	6'/8'	2'/.2'		Brown clayey silt. Black, wet, tarry substance	Silt	1010
	4	4						
8	5	2	8'/10'	2'/1'	0	.4' Medium sand, brown w/some silt. Stained		1020 RAINING, WINDY
	5	5				.6' Very coarse brown sand. NOT stained	Sand	OVA=0 in hole
9	5	14						
	5	14				.2' Reddish brown, stiff clay in shoe		
10	6	41	10'/12'	2'/0'	0	No recovery		1035
	6	10						
11	6	15						
	6	18						
12	7	8	12'/14'	2'/1.2'	0	Reddish brown clay, fairly stiff	Clay	1050
	7	12						OVA=0 at hole, on sample
13	7	18						
	7	35						1055-Rain Stopped
14	8	9	14'/16'	2'/1.2'		Reddish-brown clay, less stiff than before "wavy" shape at bottom		1105
	8	14						
15								



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BORING NUMBER: B-4

Log of Boring Pfohl Bros.

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
					in breathing zone			
15	8	25	14'/16'	2'/1.2'		Reddish-brown clay	clay	1105
	8	23	↓	↓				
16	9	18	16'/18'	2'/0'	0	No recovery		1115
	9	18						
17	9	20						
	9	23						
18	10	24	18'/19.5'	1.5'/1.4'	0			1130
	10	40				.8' Brown, fairly stiff clay		
19	10	85	↓	↓		.6' Brown, dense, till	till	
	10	16		0"/0"	↓		Bedrock	

NY-2

Elev. 699.5

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BORING NUMBER: B-5

Log of Boring

Project ______ Location B-5 Job. No ______

Date Drilled / - Drilling Co. ______

Total Depth ______ Method Used ______

Inspector ______ Organic Vapor Instruments Used ______ Water Table Depth ______

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	SS 1	1 1 1 2	0-2'	2'/0.1		Silty organic soil, rocks, plastic fill.		
2	2	1 14 40 55	2-4'	2'/0.1		Tile, wood, rubber, pieces of rock - Fill		
4	3	2 1 16 70	4-6'	2'/0.5		Fill - rubber, wood painted orange, large cobble		
6	4	4 12 14 19	6-8	2'/0.1		Fill - large chunk of wood some cobble		OVA downhole 200ppm. 0ppm in BZ
8	5	6 2 4 5	8-10	2'/0.1	100ppm	Wood, stained with black silty material	▽	WET
10	6	9 5 24 7	10-12	2'/0.05		Brown silty clay in tip of shoe.		OVA 1000 ppm downh.
12	7	12 12 19 40	12-14	2'/1.1		Brown silty clay.		
14	8	14 30 35 45	14-16	2'/1.5'		Brown silty sand, little, v. fine sand.		
16	9	15 25 27 20	16-18	2'/1.1		0-1.0'. Brown silty sand little v. fine sand 1.0-1.1' - Brown silty clay, very stiff		OVA downhole 200-300 ppm
18	10	8 10 10 11	18-20'	2'/1.6		Brown silty clay, stiff		
20	11	15 22/3"	20-21	8"/0				
22						Rock at 20.7'		
						Sent sample SS-8 to lab		

NY-1

Elev. 702.5

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BORING NUMBER: B-6

Log of Boring

Project Pfohl Bros Location Buffalo NY Job. No 897-12-RC-5085

Date Drilled 11/8/89 Drilling Co. Rochester Drilling

Total Depth 29' 0" Method Used Hollow stem auger

Inspector B. Alter Organic Vapor Instruments Used OVA/HNu Water Table Depth 10'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0	1	1	0'/2'	2'/.2'		Fill with glass, plastic, black stained material	Fill	1105
	1	1						
1	1	2						
	1	1						
2	2	2	2'/4'	2'/.3'		Fill with glass, brick, & plastic		1110
	2	3						
3	2	5						
	2	12						
4	3	6	4'/6'	2'/.3'		Fill with wood, plastic, brick. Very silty soil		1117
	3	5						Punching through rubber
5	3	Drive						
	3							
6	4	Drive	6'/8'	2'/.2'		Fill with plastic, wood, rubber		1125 Troubles augering through rubber
	4							
7								

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Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7					in breathing zone			
	4	Drive	6'/8'	2'/.2'		Fill with plastic, wood, rubber		1125
	4		↓	↓				
8	5	Drive	8'/10'	2'/.3'		Silty soil with fill, black stained wood, rubber		1140
	5							
9	5							
	5		↓	↓				
10	6	Drive	10'/12'	2'/.3'	0	Wet Fill with badly stained wood and plastic	Fill	1150 OVA=0 in hole
	6							
11	6							
	6		↓	↓	↓			
12	7	8	12'/14'	2'/.8'	0	.2' Fill with hard black rubber		1200 OVA>100 in hole
	7	9				.5' greenish clay	clay	HNu=0 in hole
13	7	11				.1' silty gray sand		Collect double samples to bottom
	7	14	↓	↓	↓			
14	8	10	14'/16'	2'/.8'		.1' silty gray sand	Sand	1210
	8	11	↓	↓		.7' reddish brown, stiff clay	clay	
15								

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BORING NUMBER: B-6

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
					in breathing zone			
15	8	14	14'/16'	2'/.8'		.7' reddish brown, stiff clay		1210
	8	16	↓	↓				
16	9	10	16'/18'	2'/.8'	0			1220 Plastic baggings brought up by augers
	9	10	↓	↓	↓	Stiff, reddish-brown clay		OVA=0 at hole
17	9	14						
	9	21						
18	10		18'/20'	2'/.4'	0	Stiff, reddish-brown clay		1235 OVA-0 at hole
	10		↓	↓	↓		Clay	
19	10							
	10							
20	11	12	20'/22'	2'/.2'	0	Stiff, reddish-brown clay in shoe		1300
	11	14	↓	↓	↓			
21	11	16						
	11	17						
22	12	12	22'/24'	2'/1.6'	0	Reddish-brown clay, less stiff than before		1320
23	12	11	↓	↓	↓			

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
23					in breathing zone			
	12	29	22'/24'	2'/1.6'	0	Reddish-brown clay	Clay	1320
	12	30	↓	↓	↓			
24	13	7	24'/26'	2'/1.4'	0	Reddish-brown clay some parts stiffer than others.		1335 OVA=0 at hole
	13	14	↓	↓	↓			
25	13	13						
	13	18						
26	14	4	26'/28'	2'/1.5'	0	Brown clay with some sandier, coarser material. Less stiff than before		1350 OVA=0 in hole, on sample
	14	4	↓	↓	↓			
27	14	8						
	14	11						
28	15	20	28'/29'	1'/0'	0	No recovery- till?	?	1415 OVA=0 at hole
	15	40	↓	↓	↓			
29	15	25		0"/6"			Bedrock	

NY-2

Elev. 698.5

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BORING NUMBER: B-7

Log of Boring L24 240'N

Project Pfohl Bros Location Buffalo, NY Job. No 897-12-RC-5085

Date Drilled 11/2/89 Drilling Co. Rochester Drilling

Total Depth 18.5' Method Used Hollow stem auger

Inspector B. Alter Organic Vapor Instruments Used OVA/HNu Water Table Depth 6'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0								08:15
	1	1	0'/2'	24"/24"				
	1	1				Soil		
1	1	1						
	1	1						
2	2	1	2'/4'	24"/24"				08:30
	2	2				Soil		
3	2	2					Soil	
	2	1						
4	3	1	4'/6'	24"/24"		Black soil with garbage		0840
	3	2						
5	3	2						
	3	2				Black soil with garbage - fill plastic, brick particles		0845 wet
6	4		6'/8'	24"/24"				
	4							
7								

NY-1

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BORING NUMBER: B-7

Log of Boring

Project: Pfohl Bros Location: Buffalo NY Job. No:

Date Drilled: Drilling Co.:

Total Depth: Method Used:

Inspector: Organic Vapor Instruments Used: Water Table Depth: 6'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
7								
	4		6'/8'			Black soil with garbage		wet
	4							
8	5		8'/10'	24"/2"	0	wet black soil with garbage	soil	0850 OVA=0 in breathing zone; 80 over hole HNu=0 over hole Probably methane.
9	5							
	5							
	5							
10	6	26	10'/12'	2'/1.2'		.3' Black stained sand wet, some fill	sand	0900
						Brown, very compacted clay; very silty		HNu=0
11	6							Sample 6 sent to lab.
	6							
	6							0930
12	7	64	12'/14'	2'/1.5'		Brown clay with silt	clay	OVA over hole =20 HNu over hole = 0
	7							Sample HNu =1
13	7							
	7							
14								

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Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
								0940
14	8	50	14'/16'	2'/.7'		Brown clay with silt	Clay	HNu on sample = 0
	8	↓	↓	↓				
15	8	↓	↓	↓				
	8	↓	↓	↓				
16	9	50	16'/18'	2'/2'		.3' Brown clay		1000
	9	↓	↓	↓		Brown sand and gravel with silt & clay – probably till	Till	HNu at hole = 0
17	9	↓	↓	↓				
	9	↓	↓	↓				
18	10	18	18'/18.5'	.5'/.3'		mostly till		
							Bedrock	
19								
20								
21								
22								

Elev. 700.0

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BORING NUMBER: B-8

Log of Boring

Project Pfohl Bros Location Buffalo NY Job. No 897-12-RC-SOBS

Date Drilled 11/7/89 Drilling Co. Rochester Drilling

Total Depth 22' 8" Method Used Hollow stem auger

Inspector B. Alter Organic Vapor Instruments Used OVA/HNu Water Table Depth 8'

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
					in breathing zone			
0	1	1	0'/2'	2'/.2'		Soil with cardboard		1345 Raining
	1	2	↓	↓				
1	1	2						
	1	5	↓	↓				
2	2	1	2'/4'	2'/.2'		Fill with cardboard + wood		1355
	2	2	↓	↓				
3	2	2					Fill	
	2	1	↓	↓				
4	3	1	4'/6'	2'/.2'		Fill with cardboard and wood		1405
	3	2	↓	↓				
5	3	1						
	3	1	↓	↓				
6	4	1	6'/8'	2'/.2'	0	Fill with cardboard, wood, + brick		1410 OVA=10 at hole
	4	2	↓	↓	↓			
7								

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BORING NUMBER: B-8

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
					in breathing zone			
7	4	3	6'/8'	2'/.2'	0	Fill with cardboard, wood + brick	fill	OVA=10 at hole
	4	4	↓	↓	↓			
8	5	1	8'/10'			wet. Black sand with some coarse grains.		1420
	5	4	↓					
9	5	7					Sand	
	5	4						
10	6	1	10'/12'	2'/1'		.3' Black sand with some coarse grains		1430
	6	4	↓	↓				
11	6	6				.7' Brown clay		
	6	7						
12			12'/14'	2'/1.4'	0	1.4' probably brown clay		1435 Shelby pushed into hole
	Shelby (S)		↓	↓	↓			
13						.6' which fell out might be sand.	Clay	OVA=0 at hole, Shelby
14	7	3	14'/16'	2'/1.6'		.8' Brown clay		1455
15	7	4	↓	↓				

NY-2

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BORING NUMBER: B-8

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15	7	12	14'/18'	2'/1.6'		.8' Silty sand	Sand	1455
	7	16	↓	↓				
16	8	5	16'/18'	2'/1.8'		.8' Silty clay	clay	1500 OVA = 0 on spoon, sample
	8	15						
17	8	20				1' Brown clayey silt		
	8	50	↓	↓				
18	9	15	18'/20'	2'/1.8'		Brown silty clay, fairly loose	silty clay	1525 OVA = 0 on spoon, sample
	9	4						
19	9	7						
	9	10	↓	↓				
20	10	8	20'/22'			Brown clay with lots of silt.		1540
	10	6						
21	10	8	↓					
	10	10						
22	11	10	22'/22'	8"/6"		Dark gray till with coarse material & silt	Till	1600
	11	8	↓	↓			Bedrock	

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BORING NUMBER: B-9

Log of Boring

Project Pfohl Bros Location Buffalo NY Job. No 847-12-RCSDBS

Date Drilled 11/6-7/89 Drilling Co. Rochester Drilling

Total Depth 22' 0" Method Used Hollow Stem Auger

Inspector B. Alter Organic Vapor Instruments Used OVA / HNu Water Table Depth 6'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
					in breathing zone			
0	1	2	0'/2'	2'/1'		Surface soil		1630
	1	↓	↓	↓				
1	1							
	1							
2	2	2	2'/4'	2'/.2'		Fill w/ soil, glass, and wood		1635
	2	4	↓	↓			Soil	
3	2	7						
	2	8						
4	3	2	4'/6'	2'/.2'	0	Organic soil w/ roots, possibly black stained Rocks & cobbles		1640 OVA=0 @ hole
	3	1	↓	↓	↓			Straightening rig
5	3	2						
	3	2						
6	4	6	6'/8'	2'/.4'		Wet spoon. Fine black sand w/ coarse grains	Sand	1710 OVA=0 on Sample
	4	4	↓	↓				
7								

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Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7					in breathing zone			
	4	5	6'/8'	2'/.4'		Fine black sand with coarse grains	Sand	
	4	1	↓	↓				
8	5	1	8'/10'	2'/.1'	0	Black stained organic material		1715 OVA=0 in hole
	5	1						
9	5	5						
	5	4	↓	↓	↓			
10	6	2	10'/12'	2'/0'	0	No recovery		1725 OVA<40 at hole
	6	2						
11	6	1						
	6	1	↓	↓	↓			Shut down for evening
12	7	5	12'/14'	2'/1.2'		Stiff brown clay with little silt.	Clay	0750
	7	7						
13	7	11						
	7	21	↓	↓				
14	8		14'/16'	2'/2'	0	Outside looks like brown clay		0800 Shelby tube pushed through tube.
	8		↓	↓	↓			OVA<200 in hole
15								

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Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
					in breathing zone			
15			14'/16'	2'/2'	0	Probably brown clay	clay	Oily water dripping out of shelby OVA=0
16	8	4	16'/18'	2'/1.7'		.6' Brown clay grading into brown clayey silt	Silty layer	0825
	8	5						
17	8	17						~~0810~~
	8	31				Brown, stiff clay; silty on top	clay	
18	9	8	18'/20'					0840
	9	12						
19	9	15						
	9	21						
20	10	4	20'/22'	2'/1.6'		.6' Brown, stiff clay		0900
	10	14					till	OVA = 0 at hole
21	10	16				1' Dark gray till with sand and gravel; very brittle		HNU = 0 at hole
	10	17						
22							Bedrock	

NY-2

Elev. 7[illegible]

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BORING NUMBER: B-~~8~~10

Log of Boring

L39 675'N

Project Pfohl Bros Location Buffalo NY Job. No 897-12-RC-508S

Date Drilled 11/2-3/89 Drilling Co. Rochester Drilling

Total Depth 20' 2" Method Used Hollow Stem Auger

Inspector B. Alter Organic Vapor Instruments Used OVA/HNu Water Table Depth 10'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
					in breathing zone			
0	1	5	0'/2'	2'/.3'	0	Dried peat with decayed cardboard		1540
	1	↓	↓	↓	↓			
1	1							HNu @ hole = 0
	1							OVA @ hole = 4 OVA in breathing zone = 0
2	2	15	2'/4'	2'/.8'	0	3" black peat		1547
	2	↓	↓	↓	↓	6" yellow cardboard		
3	2						Soil	
	2							
4	3	15	4'/6'	2'/.6'		Black peat with cardboard		1552 HNu=40 on sample OVA=60 on sample
	3	↓	↓	↓				HNu=100 in shoe
5	3							Plastic in shoe
	3							OVA=20 in hole
6	4	6	6'/8'	2'/1.3'	0	Black and brown peat with yellow cardboard. Black flaky, dry material, either soil or ash.		1605
	4	10	↓	↓	↓			HNu=200 in peat HNu=100 in a[illegible]
7								

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BORING NUMBER: B-10

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7					in breathing zone			
	4	10	6'/8'	2'/1.3'	0	Black & brown peat with yellow cardboard. Black dry, flaky material, may be ash.		HNu≥200 in peat HNu=100 in ash(?)
8	4	6						
	5	15	8'/10'	2'/.5'	3			1615 HNu=100 in sample OVA=150 in sample
9	5					Black & brown peat with decayed newspaper		No detectable odor in breathing zone
	5							
	5							
10	6	2	10'/12'	2'/.5'	0	Wet sample	fill	1620
	6	3				Black, wet soil with glass and newspaper.		HNu≥200 on sample Couldn't duplicate w/ OVA.
11	6	4						
	6	13				2" Black stained peat at bottom		1635
12	7	12	12'/14'	2'/.6'	0	Black stained fill, possibly more newspaper		OVA @ hole =14 HNu @ hole =0 OVA = 52 over sample
	7	7						
13	7	6				2" brown wet, clayey silt	silt	HNu= 20 over sample
	7	32						1650
14	8	13	14'/16'	2'/.8'		Wet brown clayey silt		OVA=22 on sample HNu=0 on sample
	8	23				.2' black stained paper		
15								

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BORING NUMBER: B-10

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15					in breathing zone			
	8	13	14'/16'	2'/.8'		Wet brown clayey silt w/ .2' black stained paper	silt	
	8	14	↓	↓				
16	9	9	16'/18'	2'/1.3'		.2' black stained fill		1710
	9	13				Very stiff brown silty clay		OVA=100 on sample HNu=2 on sample
17	9	25						
	9	22	↓	↓				
18	10	16	18'/20'	2'/0'	0	Fill+clay in shoe	clay	1725 OVA > 100 at hole
	10	19						
19	10	24					maybe till	
	10	4	↓	↓	↓	Silty till, trace gravel, dark gray clay		Shut down for evening 0820
20	11	100	20'/20.2'	.2'/0			Till	0822
							Bedrock	

NY-2

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Log of Boring

Project: Pfohl Bros Location: Buffalo NY Job. No 897-12-RC-SOBS
Date Drilled: 11/6/89 Drilling Co.: Rochester Drilling
Total Depth: 20' 4" Method Used: Hollow Stem Auger
Inspector: B. Alter Organic Vapor Instruments Used: OVA/HNu Water Table Depth: 6'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0								
	1	1	0'/2'	2'/.2'		Brown sand with some silt		0910
	1	2	↓	↓				
1	1	2						~~0~~
	1	2				~~Fill~~ ~~Fill with~~		
2	2	3	2'/4'	2'/.2'		Fill with glass, paper & plastics	Fill	0920
	2	5	↓	↓				
3	2	2						
	2	2						
4	3	2	4'/6'	2'/.4'		Fill and glass mixed with fine brown soil		0930
	3	1	↓	↓				
5	3	1						
	3	1						0940
6	4	1	6'/8'	2'/0'		Shoe has brown silty material with some coarser grains, some gravel, & wood		wet
	4	1	↓	↓				
7								

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BORING NUMBER: B-11

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" ___ lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7					in breathing zone			
	4	1	6'/8'	2'/0'		Fill + silt		0940
	4	5	↓	↓				
8	5	3	8'/10'	2'/0'		Shoe has glass, plastic, wood, some brown silt.	Silt	0945 OVA not working HNu = 0 near hole
	5	1						
9	5	1						
	5	1	↓	↓				
10	6	2	10'/12'	2'/0'	0	Shoe has wood and very silty sand		0950 OVA working OVA = 30 over hole
	6	4						
11	6	5						
	6	5	↓	↓	↓			
12	7	20	12'/14'	2'/2'	0	.2' wet Fill + silt		1007
	7	23				1.8' Fine – very fine light gray sand	Sand	OVA and HNu = 0 at hole.
13	7	26						
	7	40	↓	↓	↓	~~Fine – very fine light gray~~		
14	8	14	14'/16'	2'/1.3'	0	1': Fine – very fine light gray sand		1020 HNu, OVA = 0 @ hole
	8	22	↓	↓	↓			
15								

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15	8	17	14'/16'	2'/1.3'	0			
	8	13	↓	↓	↓	Bottom .3' - reddish brown clay; silty + compact		
16			16'/18'		0			1030 Shelby tube through to clay
					0			
17								
			↓			Tube hit something hard at 17.5'	Clay	OVA=10 @ hole.
18	9	4	18'/20'	2'/.7'	0	Reddish brown clay; very silty		1045 OVA=0 @ hole
	9	8						
19	9	9						
	9	34	↓	↓	↓			
20	10	50	20'/20.4'	.4'/0'				1055
						Gray bedrock, probably limestone	Bedrock	

Elev. 697.0

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BORING NUMBER: B-12

Log of Boring

Project Pfohl Bros Landfill Location ____________ Job. No 897-12-RC-SOBS

Date Drilled 11/14/89 Drilling Co. Rochester Drilling Company

Total Depth 19'8" Method Used 6 1/4" Auger

Inspector A. Downie/T. Ryan Organic Vapor Instruments Used OVA/HNU Water Table Depth N.R.

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	1	0'/2'	2'/.8'		Top .6' topsoil		1500
	1	2	↓	↓				
1	1	2				Bottom .2' coal ash - orange white		
	1	2						
2	2	1	2'/4'	2'/.1'		Orange fine material Coal ash?	Fill	Starting to rain
	2	1	↓	↓				
3	2	1						
	2	1						
4	3	1	4'/6'	2'/.6'		White coal ash		
	3	3	↓	↓				
5	3	4						
	3	5						
6	4	2	6'/8'	2'/1.5		Top .3' orange silty material		
	4	2	↓	↓		Silty clay material	Clay	
7								

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
					NAB - not above background			
	4	3	6'/8'	2'/1.5'		.5' of gray to dark gray clay		
	4	5	↓	↓		green clay silty material		
8	5	6	8'/10'	2'/1.3'		Stiff brown clay		
	5	12						
9	5	10						
	5	18	↓	↓				
10	6	9	10'/12'	2'/2'		Stiff brown clay		
	6	11						
11	6	22						
	6	20	↓	↓				
12	7	12	12'/14'	2'/1.75'	OVA and HNu	Top .2': Gray to dark gray silty clay		
	7	15			N.A.B. in hole	Middle .3': Brown clay with some silt		
13	7	32				Brown, very stiff clay		
	7	30	↓	↓				
14	8	4	14'/16'	2'/1.7'		Brown clay, stiff		
	8	8	↓	↓				
15								

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
				2'/1.7'				
	8	8	14'/16'	~~14'/16'~~		Brown elastic clay		
	8	9						
16	9	8	16'/18'	2'/1.8'		Brown, very silty elastic clay		
	9	9						
17	9	15						
	9	14						
18	10	4	18'/19.7'	1.7'/1.7'		Stiff brown clay		
	10	5						
19	10	12				Bottom .4' is till. Rock in nose piece		
	10	18/2"				BEDROCK		1630

Elev. 697.5

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BORING NUMBER: B-13

Log of Boring

Project ______ Location B-13 Job. No ______
Date Drilled ______ Drilling Co. ______
Total Depth ______ Method Used ______
Inspector ______ Organic Vapor Instruments Used ______ Water Table Depth ______

Depth (feet)	Sam. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
2	SS 1	1 1 1 1	0-2	2'/0.4		Silty top soil No fill		
4	2	4 8 10 8	2-4	2'/0		Rubber, wood, coal ash & orange material in tip of shoe	▽	
6	3	1 4 2 1	4-6'	2'/0		Glass, orange material		wet
8	4	2 4 10 8	6-8	2'/1.6		0-0.3 orange material with silty sand 0.3-1.6 Clayey silt brown		OVA - 0ppm down hole
10	5	7 14 17 12	8-10	2'/1.8		0-1.6 Clay brown, silty stiff 1.6-1.8 - Clayey silt		OVA - 0ppm down hole
12	6	10 12 8 9	10-12	2'/1.8		Clay, brown, ~~trace~~ silty trace fine sand.		
14	7	3 7 37 50	12-14	2'/.9		Clay, brown very stiff turning to reddish ~~odor~~ color		OVA - 0ppm in hole.
16	8	7 12 13 100	14-16	2'/.5		Clay, brown silty. No till.		
						Rock @ 15.8'		

Sent sample SS - 4 to lab
also sent MS/MSD from 5, 6 & 7

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Elev. 698.5

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BORING NUMBER: B-14

Log of Boring

Project ______ Location B-14 ______ Job. No ______

Date Drilled ______ Drilling Co. ______

Total Depth ______ Method Used ______

Inspector ______ Organic Vapor Instruments Used ______ Water Table Depth ______

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	SS 1	1 1 2 2	0-2	2'/0.4		Top soil - coal-like chunks		
2	2	1 2 3 4	2-4	2'/0.8		Fill - brick, topsoil, glass wood - coal-like material		
4	3	1 1 1 1	4-6	2'/1.4		Fill - glass, white tile, orange silty material		Tip & spoon is moist
6	4	2 3 3 2	6-8	2'/0.5		Fill - wood, orange silty material, glass silty clay in tip of spoon		
8	5	4 8 16 16	8-10	2'/1.6		0-0.3 ~~Sand~~, fine, brown 0.3-1.6 - Cl - silty brown		
10			10-12'	2'/2'		SHELBY TUBE		
12	6	5 14 19 24	12-14	2'/1.8		Clay, brown, silty stiff		old draw hole 0ppm o.b
14	7	5 9 19 5	14-16	2'/1.9'		Clay, brown silty - soft in middle of spoon		
16	8	5 9 17 15	16-18	2'/2'		Clay, brown silty - stiff 1.6-1.8 - silty sand, brown		
18	9	3 3 6 13	18-20	2'/2'		Clay brown, very silty soft.		
20	10	2 10 20 23	20-22	2'/1.6'		Sand, silt brown, little fine.		Sent samples SS-5 SS-13 to lab
22	11	8 9 6 6	22-24	2'/1.7		~~Clay~~ 0-0.2 - Sand silt brown 0.2-1.7 - Clay, brown, stiff		
24	12	4 4 5 6	24-26	2'/2'		Clay, brown, elastic		
26	13	3 3 5 6	26-28	2'/2'		Clay, brown, elastic		
28	14	10 34 45 [illegible]		2'/0.8'		Till, gray clay, with rock		Rock at 29.7

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BORING NUMBER: B-15

Log of Boring

Project ______ Location B-15 Job. No ______

Date Drilled ______ Drilling Co. RDC

Total Depth ______ Method Used ______

Inspector ______ Organic Vapor Instruments Used ______ Water Table Depth ______

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
2	SS 1	1 1 2 2	1-2'	2'/0.2		Piece of wood.		
4	2	2 2 3 3	2'-4'	2'/0				
6	3	6 6 5 4	4'-6'	2'/0.1		~~0-0.3~~		
8	4	3 3 3 4	6'-8'	2'/0.5		0-0.2 Black stained very fine sand 0.2-0.5 silty clay material. Rusty edge layer between them.		
10	5	1/12" 1/12"	8'-10'	2'/0.3		Black stained sand and silty clay material.		Black material was wet.
12	6	2 - 4 5	10'-12'	2'/1.5	OVA 7ppm	0-0.5 Reddish Brown clay. Top is grey green clayey silt. Same Black sand.		Hole OVA NAB
14			12'-14'			Shelby Tube		
16	7	15 15 35 25	14-16	2'/0.4	OVA NAB	Brown silty sand		Hole OVA NAB
18	8	4 14 15 14	16-18	2/1.8		Brown silty clay material with large rocks, Very silty.	TILL?	
20	9	19 21 31 30	18-20	2/1.9		Brown silty clay lot of gravel mixed in		
21	10	27 45 43 52	19-21	2/0.6		Grey to dark Brown till, silty with pebbles		
23	11	30 60 75 150	2[illegible]	2/0				
25	12	35 50 60 100	2[illegible]25	2'/1"		Silty sand with pieces of Gravel Brown.		Large chunk of weather rock in nose piece

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BORING NUMBER: B-15
Page 2 of 2

Log of Boring

Project ______ Location B-15 ______ Job. No ______

Date Drilled ______ Drilling Co. ______

Total Depth ______ Method Used ______

Inspector ______ Organic Vapor Instruments Used ______ Water Table Depth ______

Depth (feet)	Samp No.	Blows per 6" ___ lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
25								
27	13	15 35 43 57	25-27	2'/2'		Brown till, very stiff.		
29	14	29 31 55 135	27-29	2'/0		some rock in Nose piece		
						Rock at 29'-0"		
						sent SS6 and SS13 to Lab		

NY-1

G.S. ...

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BORING NUMBER: B-16

Log of Boring

Project Pfohl Bros Location ______ Job. No 897-12-RC SOBS

Date Drilled 12/7/89 Drilling Co. Rochester Drilling Co.

Total Depth 19' 8" Method Used 6¼" Auger

Inspector B. Alter Organic Vapor Instruments Used OVA/HNU Water Table Depth ______

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
					b.g. = background b.z. = breathing zone			
0	1	1	0'/2'	2'/.3'		Fill with wood, brick, and plastic		0925 Fresh snow on ground
	1	2	↓	↓				Ground is frozen
1	1	6						Site is 2'-3' lower than surrounding area
	1	2						
2	2	1	2'/4'	2'/.1'	HNU @ b.g. in hole, bz	Fill - black stained, silty soil	Fill	0930 OVA mal-functioning
	2	1	↓	↓	↓			
3	2	2						
	2	1						
4	3	3	4'/6'	2'/.3'		Fill with black stained wood + glass. Silty material		0940
	3	3	↓	↓				
5	3	7						
	3	7						
6	4	3	6'/8'	2'/.4'	HNU @ b.g. in b.z.	Fill - black stained wood and brick		0945 WET
7	4	4	↓	↓		Gray, dry clay and wood in spoon tip		

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NY-1

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" ___ lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7	4	6	6'/8'	2'/.4'	↓	Pieces of wood are yellow and orange		OVA functional? Reads @ b.g. in hole, b.z.
	4	7	↓	↓	↓			
8	5	8	8'/10'	2'/.4'	OVA= 320 in hole,	Fill- black stained wood with glass		1005 Wet
	5	4			b.g. in b.z.			
9	5	2			HNu @ b.g. in hole, b.z.			
	5	4	↓	↓	↓			
10	6	2	10'/12'	2'/.4'	OVA= 4 in hole,	Fill- black stained orange-red wood, some glass		1015 Spoon dripped black water
	6	6			b.g. in b.z.			
11	6	12						
	6	14	↓	↓	↓			Had to drive spoon 11.5'-12'
12	7	17	12'/14'	2'/.2'	OVA= 6 in hole	Fill- wet, black stained glass. Some wood and silty material.		1035
	7	6			b.g. in b.z.			
13	7	3						
	7	2	↓	↓	↓			
14	8	2	14'/16'	2'/.8'	OVA= 480 in hole,	Brown silt with some sandy particles		1045 OVA=94 on sample HNu=190 on sample!
15	8	20	↓	↓	b.g. in b.z.			

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15	8	18	14'/16'	2'/.8'	HNu @ b.g. in	Brown silt	Silt	OVA=94, HNu<190 on sample
	8	12	↓	↓	hole			
16	9	7	16'/18'	2'/.1'	OVA= 26 in	Only backfill recovered.		1055
	9	20			hole, b.g. in			
17	9	7			b.z. HNu=15 in hole,			HNu may be malfunctioning; read 7 20m from rig
	9	10	↓	↓	5? in b.z.			
18	10	10	18'/19.7'	2'/.7'	OVA= 24 in	Very silty brown clay, not too stiff. Outside is black stained.	Clay	1115 Spoon dripped black water
	10	10			hole, b.g. in b.z.,			
19	10	15			b.g. on sample			
	10	8/2"	↓	↓		BEDROCK		

NY-2

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BORING NUMBER: B-17

Log of Boring

Project: Pfohl Bros
Location:
Job. No: 897-12-RC-SOBS

Date Drilled: 12/21/89
Drilling Co.: Rochester Drilling Co.

Total Depth:
Method Used: 6 1/4" Auger

Inspector: T. Ryan
Organic Vapor Instruments Used:
Water Table Depth:

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0	1	1	0'/2'	2'/.4'		organic topsoil		1530 Frozen ground
	1	1	↓	↓				
1	1	3						
	1	4						
2	2	8	2'/4'	2'/.3'		White ash and aluminum foil, plastic	Fill	
	2	9	↓	↓				
3	2	9						
	2	8						
4	3	20	4'/6'	2'/0		Some mud in spoon tip		
	3	23	↓	↓				
5	3	2						
	3	3						
6	4	20	6'/8'	2'/0		Black stained wood and some stained silty soil		Oil sheen
	4	15	↓	↓				
7								

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BORING NUMBER: B-17

Log of Boring

Depth (feet)	Samp. No.	Blows per 6" ___ lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7	4	5	6'/8	2'/0				
	4	4	↓	↓				
8	5	8	8'/10'	2'/0		Plastic and wood in tip		1600
	5	7	↓	↓				
9	5	2					Fill	
	5	5	↓	↓				
10	6	15	10'/12'	2'/0		No recovery		
	6	10	↓	↓				
11	6	4						
	6	6	↓	↓				
12	7	15	12'/14'	2'/1.4'		Brown clayey silt		
	7	16	↓	↓				
13	7	45					Silt	
	7	38	↓	↓				
14	8		14'/16'	2'/1.7'		Brown clayey silt		
15	8		↓	↓				

NY-2

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BORING NUMBER: B-17

Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15	8		14'/16'	2'/.7'				
	8		↓	↓				
16			16'/18'	2'/0		No recovery		
			↓	↓				
17								
18						BEDROCK		

Appendix B

TOC: 696.06

TIC: 695.95

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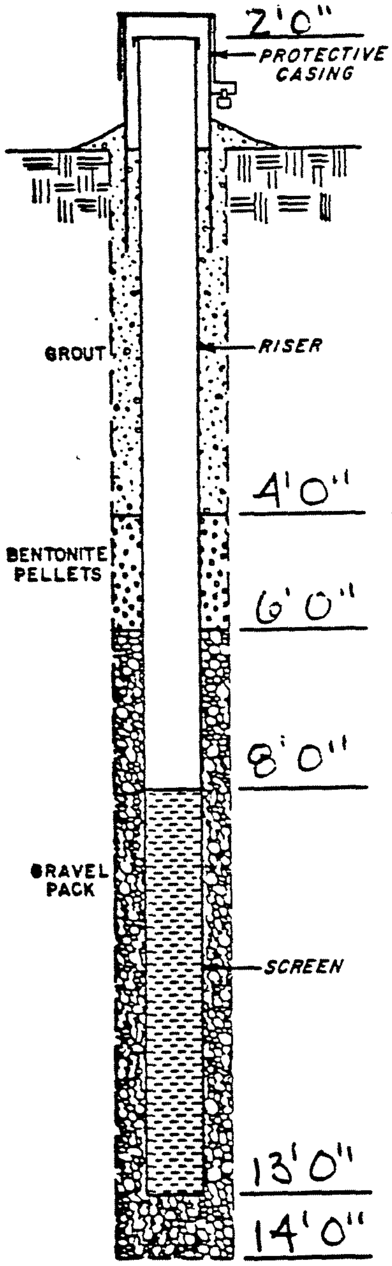
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. L.F. Client: NYSDEC Well No: 1S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Dick Miller

Drill Rig Make/Model: Moble B-61

Borehole Diameters: 8"/6" Auger Drilling Fluid: None

Bits/Depths: 6" Auger

Total Depth: 14'0" Depth to Water: 1'0" BG (3'0" TOC

Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" Length: 10'0"

Screen Material: 316 Stainless Steel Diameter: 2" Length: 5'0"

Slot Size: 0.010 inch Setting: 8'0" - 13'0"

Filter Material: None *1 equivalent Setting: 6'0" - 14'0"

Seals Material: Bentonite Pellets Setting: 4'0" - 6'0"

Grout: Cement/Bentonite Setting: Surface - 4'0"

Surface Casing Material: Black Steel Setting: 2'1" AG - 2'5" BG

TIME LOG

	Started	Completed
Drilling:	10/17/88 820 AM	0915
Installation:	10/17/88 0925 AM	1400
Development:	10/10/88 1030	11/10/88

WELL DEVELOPMENT

Method: Bailer

Static Depth to Water: 5.83 TOC

Pumping Depth to Water: 9.64 TOC

Pumping Rate: 0.54 gpm Specific Capacity:

Volume Pumped: 10 gallons during purging

9.6°C at top; 12.3°C at bottom (temperature)

G. S. 2LEO. 674.12

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Well / BORING NUMBER: 1D

Log of Boring

Project Pohl Bros. Location E/s Transit Rd/N/s Aero Drive Job. No 897-12-

Date Drilled 10/12/88 - 10/13/88 Drilling Co. Rochester Drilling Corp.

Total Depth 38' 0" Method Used Auger, Nx Core/ Tricone Roller Bit

Inspector C. Wenczel / K. Smith Organic Vapor Instruments Used OVA / HNu Water Table Depth

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0	1	1	0'0" / 2'0"	24" / 18"		3" Organic Soil, roots. 1" Clay; red. 7" Sand, medium; some fine; trace very fine; trace clay; brown. 7" Clay, grey; little medium sand.		
	1	2	"					
1	1	4	"					
	1	5	"					
2	2	9	2'0" / 4'0"	24" / 14"		2" Sand, coarse; some medium; grey. 12" Sand, medium; some fine; trace very fine; trace coarse; little silt; brown to grey.		1005
	2	6	"					
3	2	6	"					
	2	11	"					
4	3	3	4'0" / 6'0"	24" / 22"		6" Sand, fine; some silt; trace medium sand; grey. 3" Silt, brown to orange; trace very fine sand. 5" CLAY, black, orange, grey layers. 8" SAND, fine; some very fine sand; grey to brown saturated		
	3	4	"					
5	3	10	"					
	3	11	"					
6	4	10	6'0" / 8'0"	24" / 20"		12" SAND, medium; some fine; little very fine. 6" SAND; very fine; some silt; brown to black.		12" sand in bottom of spoon has a petroleum odor, no OVA reading
	4	19	"					
7								

NY-1

Well/ BORING NUMBER: 1D

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	~~Sample Interval~~ Adv./Recov.	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7	A	27		6'0"/8'0"		3" SILT, brown to orange; little clay;		well layered
	A	30		"		3" CLAY, grey to light tan, 1st Entry this sample belongs here.		well layered Petroleum odor.
8	5	4	24"/24"	8'0"/10'0"		6" SAND, medium; trace very fine sand; brown to black.		
	5	5		"		4" SAND, medium; some silt in layers of brown black and grey		
9	5	4		"		2" SAND, medium; some fine brown, trace coarse; brown.		
	5	5		"		12" CLAY red to brown; some silt no layering; trace of gravel		
10	6	1	24"/16"	10'0"/12'0"		6" SAND, medium; some silt, little fine sand; trace medium; grey to brown		
	6	3		"		4" SAND, very fine; some silt, layers of brown, tan, grey, black, trace clay		
11	6	7		"		6" SAND, very fine, some silt, trace gravel; pink to red.		
	6	5		"				
12	7	3	24"/12"	12'0"/14'0"		6" SAND, fine; some very fine trace silt, alternating layers of orange, brown and black.		
	7	5		"	10ppm	6" TILL; 1" gravel; pea gravel; very coarse sand; coarse sand, medium sand; trace fine sand; little very fine sand; little silt. Limestone chunks of gravel.		
13	7	14		"				
	7	15		"				
14	8	3	6"	14'0"/14'6"		6" SAND; medium; some fine sand; grey		
	9	R		14'6"/18'0"		ROCK, fossiliferous limestone		
15								

Well / BORING NUMBER: 1D

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15								
	9	Cuttings	14'6"/18'0"	/		ROCK, fossiliferous limestone, Onondaga?		
	9		"	/		" "		15ppm/HNU from water discharge during drilling
16	9		"	/				
	9		"	/		" "		
17	9		"	/		" "		
	9		"	/				
18	C1	CORE	18'0"/23'0"	1' / 10 min				
	C1	"	"	" / "				
19	C1	"	"	" / "				
	C1	"	"	" / "				
20	C1	"	"	" / "				
	C1	"	"	" / "				
21	C1	"	"	" / "				
	C1	"	"	" / "				
22	C1	"	"	" / "				
	C1	"	"	" / "				
23								

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BORING NUMBER: 1-D

Log of Boring

Project Pfizl Bros Location ____ Job. No ____

Date Drilled ____ Drilling Co. ____

Total Depth ____ Method Used ____

Inspector ____ Organic Vapor Instruments Used ____ Water Table Depth ____

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
23	C2		23'/28'	10'/hr		4'10" recovery		1012
	C2					Fossiliferous limestone w/ some chert nodule inclusions		
24	C2							
	C2							
25	C2							
	C2							
26	C2						Limestone	
	C2							
27	C2							
	C2							
28	C3		28'/33'	10'/hr		Fossiliferous limestone w/ some chert nodule inclusions 4'10" recovery		1045 1305
	C3							
29	C3							
	C3							
30								

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BORING NUMBER: 1-D

Log of Boring

Project PfohL Bros Location ______ Job. No ______

Date Drilled ______ Drilling Co. ______

Total Depth ______ Method Used ______

Inspector ______ Organic Vapor Instruments Used ______ Water Table Depth ______

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
~~28~~ 30	C3		28'/33'	10'/hr		Fossiliferous limestone w/some chert nodule inclusions 4'10" recovery		
	C3							
31	C3							
	C3							
32	C3							
	C3							
33	C4		33'/38'	10'/hr		Fossiliferous limestone 5'2" core recovered		1331 1345
	C4							
34	C4							
	C4							
35	C4							
	C4							
36	C4							
	C4							
37								

TOC: 696.05
TIC: 695.86

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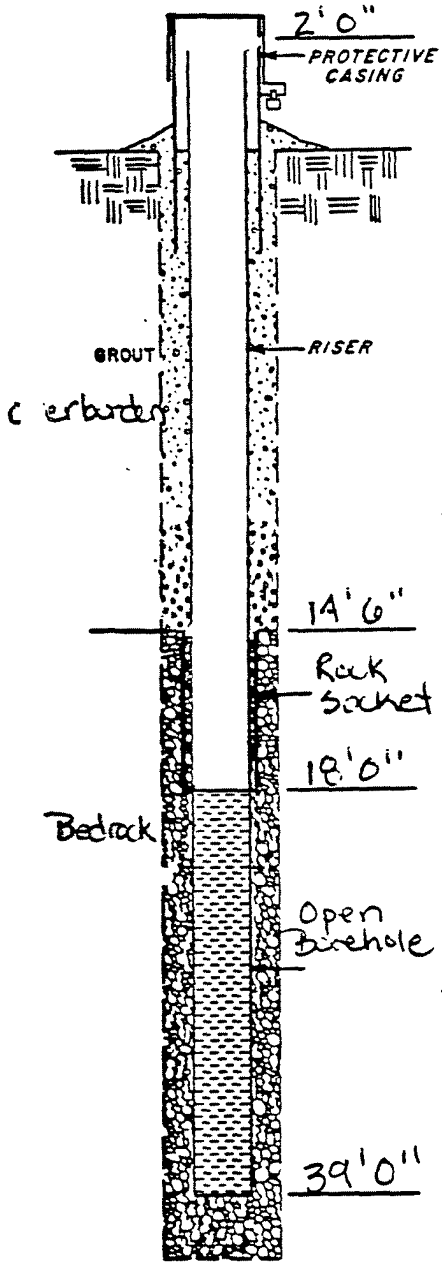
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. L.F. Client: NYSDEC Well No: 1D



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Dick Miller
Drill Rig Make/Model: Mobile B-61
Borehole Diameters: 6" Auger (8"), 4" rockbit Drilling Fluid: Water
Bits/Depths: Tricone Roller Bit - Bedrock (4") Auger - Overburden (6"
Total Depth: 39 feet 0" Depth to Water: 1' 4"
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 304 Stainless Steel Diameter: 4" ID Length: 20' 0"
Screen Material: NONE Diameter: — Length: —
Slot Size: — Setting: —
Filter Material: — Setting: —
Seals Material: — Setting: —
Grout: Cement / bentonite Setting: Surface to 18' 0"
Surface Casing Material: Black Steel Setting: 2' 1" AG - 2'-5" BG

DRAFT

TIME LOG	Started	Completed
Drilling:	10/12/88 0812	10/14/88 1132
Installation:	10/12/88 1300	10/14/88 1038
Development:	11/8/88 1400	11/8/88 1521

WELL DEVELOPMENT

Method: Airlift
Static Depth to Water:
Pumping Depth to Water:
Pumping Rate: Specific Capacity:
Volume Pumped: 385 gallons / 6 gpm

NY-5

G.S. Elev. 699.0

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BORING NUMBER: 2S

Log of Boring

Project: Pfohl Bros   Location: Job. No: 897-12-RC-WELL

Date Drilled: 12/6/89   Drilling Co.: Rochester Drilling Co.

Total Depth: 22' 7"   Method Used: 6 1/4" Auger

Inspector: B. Alter   Organic Vapor Instruments Used: OVA / HNu   Water Table Depth: 5'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
					b.z. = breathing zone b.g. = background			
0	1	2	0'/2'	2'/.3'		Black silty topsoil		0800 Well location is slight depression ~2'-3' low.
	1	4						
1	1	4						
	1	6						
2	2	3	2'/4'	2'/.0	OVA=0 in b.z.	Some fill in tip		
	2	4						
3	2	3						
	2	2						
4	3	3 total	4'/6'	2'/.3'		~~or~~ wood, orange, silty, fine sand		0815 Wood is black stained WET
	3							
5	3							
	3							
6	4	1	6'/8'	2'/.2'	OVA= 1 on sample,	Fill - wood, brick, and plastic Everything is black stained		0820 Dripping water in spoon
7	4	10			HNu= (over)			

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
					(cont)			
7	4	2	6'/8'	2'/.2'	.5 on sample	Fill - black stained		
	4	2	↓	↓	↓			
8	5	2	8'/10'	2'/.3'	OVA @ b.g. in hole, b.z.	Black stained wood and red brick	Fill	0830 Dripping water in spoon.
	5	4						
9	5	5						
	5	3	↓	↓	↓			
10	6	1	10'/12'	2'/0	OVA @ b.g. in hole	No recovery - tip of spoon has red brick piece		0840 Spoon spurted water. Water is black, oil stained
	6	2						
11	6	1						
	6	2	↓	↓	↓			
12	7	5	12'/14'	2'/1.8'	OVA @ bg. in hole	Brown clayey silt, fairly loose	Silt	0855 Hit something hard @ 12.5'
	7	20			HNu =	Sample stained w/ black tarry substance		Spoon is dripping water
13	7	45			400 on sample!			
	7	57	↓	↓	OVA on sample = 150			
14	8	6	14'/16'	2'/1.4'	HNu = 25, OVA	Black, loose, very silty clay in top .7'.	Clay	0905 Spoon is oil stained
	8	30	↓	↓	= 100 over sample	Wood in sample - could all be fill		
15								

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15	8	57	14'/16'	2'/1.4'	↓	Bottom .7' - silty, fine brown sand	Sand	
	8	30	↓	↓	↓			
16	9	16	16'/18'	2'/1.2'	OVA + HNu @	Fairly stiff brown clay		0915 Spoon is
	9	10			b.g. in hole, b.z.			oil stained
17	9	13			OVA @ b.g. on ~~sample~~,			
	9	14	↓	↓	HNu = 1.5		Clay	
18	10	16	18'/20'	2'/1.3'	OVA @ b.g. in	Brown clay, fairly to very stiff		0930 Spoon is
	10	37			hole, b.z.			oil stained
19	10	40			HNu = 3 on sample,			OVA may have failed
	10	45	↓	↓	OVA @ b.g.			
20	11	10	20'/22'	2'/2'	OVA = 230 in hole,	Stiff brown clay		0950 Spoon is dripping water
	11	18			HNu = 25			
21	11	30			Both @ b.g. in			HNu = 1.5 on sample,
	11	70	↓	↓	b.z.	Bottom .6' - very stiff gray clay (similar to that seen in 14S).	Till?	OVA @ b.g. Spoon is oil stained
22	12	25	22'/22.6'	.8'/.8'	OVA @ b.g. in hole, b.z.,	Gray clayey till with limestone fragments. Matrix similar to spoon 11.		1020, Banged .2' into gray limestone
	12	24/1"	↓	↓	sample	BEDROCK (penetrated)		
23						BEDROCK		

NY-2

TOC: 701.11
TIC: 701.00

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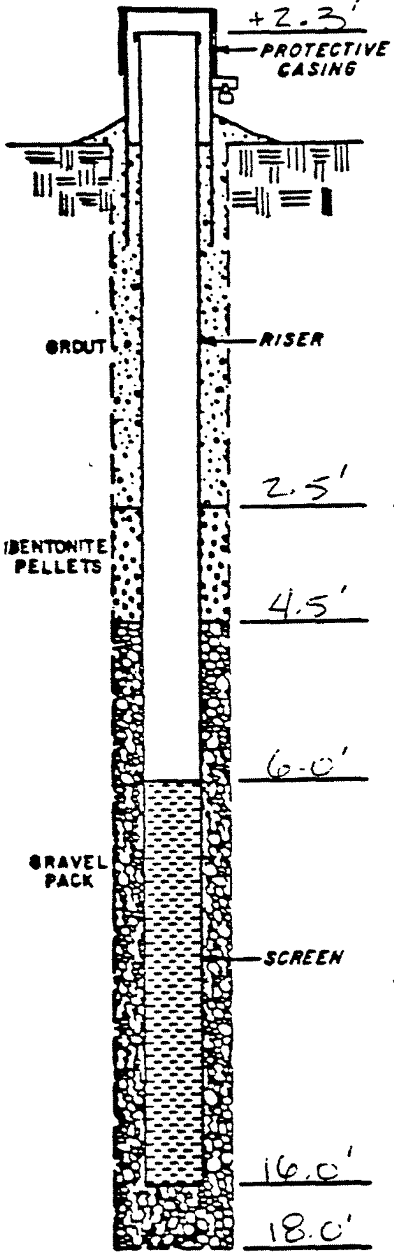
WELL CONSTRUCTION SUMMARY

Project: Peter Bros Landfill Client: NYSDEC Well No: MW-2S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter

Drill Rig Make/Model: Mobile D-53

Borehole Diameters: 10" Drilling Fluid: —

Bits/Depths: 6 1/4" Hollow Stem Augers

Total Depth: 22.6' Depth to Water:

Supervisory Geologist: Andrew Downie

WELL DESIGN

Casing Material: 316 Stainless Steel Diameter: 2" Length: 8.3'

Screen Material: Stainless Steel - Cont Diameter: 2" Length: 10'

Slot Size: 0.010" Setting: 6' - 16' bgl

Filter Material: Q-Rock #4 Morie #1 Equiv Setting: 4.5' - 18' bgl

Seals Material: Bentonite Pellets Setting: 2.5' - 4.5' bgl

Grout: Cement/Bentonite/Water Setting: Grade - 2.5' bgl

Surface Casing Material: Steel Setting: +2.5' - 2.5' bgl

DRAFT

TIME LOG	Started		Completed	
Drilling:	12/6/89	0800	12/6/89	1020
Installation:	12/6/89	1030	12/6/89	1500
Development:				

WELL DEVELOPMENT

Method: Centrifugal Pump

Static Depth to Water:

Pumping Depth to Water:

Pumping Rate: Specific Capacity:

Volume Pumped:

TOC: 693.32
TIC: 693.29

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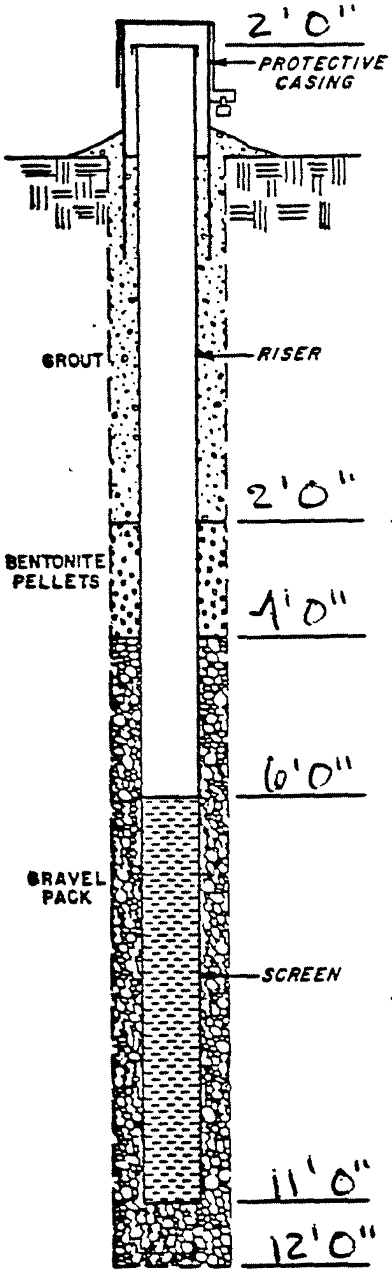
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. L.F. Client: NYSDEC Well No: 3S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Dick Miller
Drill Rig Make/Model: Mobile B-61
Borehole Diameters: 8" / 6" Augering Drilling Fluid: None
Bits/Depths: 6" Auger
Total Depth: 12' 0" Depth to Water:
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Steel Diameter: 2" Length: 8'0"
Screen Material: 316 Stainless Steel Diameter: 2" Length: 5'0"
Slot Size: 0.010 inch Setting: 6'0" - 11'0"
Filter Material: Morie #1 equivalent Setting: 4'0" - 12'0"
Seals Material: Bentonite Pellets Setting: 2'0" - 4'0"
Grout: Cement / Bentonite Setting: Surface - 2'0"
Surface Casing Material: Black Steel Setting: 2'1" AG - 2'5" BG

TIME LOG

	Started	Completed
Drilling:	11/3/88 1403	11/3/88 1500
Installation:	11/3/88 1515	11/3/88 1600
Development:	11/9/88 1038	11/9/88 1253

WELL DEVELOPMENT

Method: Bailer
Static Depth to Water:
Pumping Depth to Water:
Pumping Rate: Specific Capacity:
Volume Pumped: 20 gallons

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BORING NUMBER: 5-D

3-D

Log of Boring

Project Pfohl Bros Location Buffalo, NY Job. No 897-12-RC-5DBS

Date Drilled 10/31/88-11/3/88 Drilling Co. Rochester Drilling

Total Depth 12'2"/35' Method Used Hollow Stem Auger

Inspector C. Wenczel Organic Vapor Instruments Used OVA/HNU Water Table Depth ~~10'~~ 11.5'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0								
	1	1	0'/2'	24"/20"		8" Organic soil, medium dark brown to black sand	Soil	1400
	1	2	↓	↓				
1	1	5				12" medium light brown to orange sand. Some fine gravel. Damp.	Sand	
	1	3	↓	↓				
2	2	3	2'/4'	24"/18"		7" medium gr sand, some fine, trace silt brown		
	2	6						
3	2	8				11" Pink to brown clay. Damp.	clay	
	2	10	↓	↓				
4	3	4	4'/6'	24"/24"		6" medium gr sand, some coarse, little fine, brown to yellow Damp	Sand	Rig ~~malfunc~~ overheats 1525
	3	6						
5	3	10				18" Pink clay w/ fine, thin silty layers. Almost dry.	clay	
	3	12	↓	↓				
6	4	4	6'/8'	24"/24"	.8	4" V fine sand. Some silt. Damp	Sand	1540
	4	6	↓	↓	↓	20" Pink clay. Damp Some small gravel and 1" stone	clay	
7								

NY-1

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BORING NUMBER: 3-D
Page 2 of 4

Log of Boring
Project: Pfohl Bros — Location: Buffalo NY — Job. No 897-12-RC-SOBS
Date Drilled: 10/31/88 – 11/3/88 — Drilling Co.: Rochester Drilling
Total Depth: 12'2" / 35' — Method Used: Hollow Stem Auger
Inspector: C Wenczel — Organic Vapor Instruments Used: OVA/HNU — Water Table Depth: 11.5

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
7	4	9	6'/8'	24"/24"		Pink clay w/small gravel & 1" stone Damp.		
	4	12						
8	5	5	8'/10'	24"/9"		Pink clay. & w/ yellow to light brown & dark brown thin layers	clay	
	5	9						
9	5	10						
	5	10						
10	6	5	10'/12'	24"/18"		Pink clay, some gravel		
	6	3						
11	6	2				6" medium sand, gray wet.		
	6	1						
12		100	12'/12'2"				Bedrock	1630 2" penetration 0905 11/1/88 OVA<1ppm HNU<5ppm on water discharge
		Rock Surface to 15.0'						
13								
14								

NY-1

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BORING NUMBER: 3-D

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15								1005 11/2/88
16	C1		15'/25'			Fossiliferous limestone		OVA ≈50 ppm HNu<27 ppm Some water loss
17	C1					Fracture at 17'		
18	C1							
19	C1					Large Fracture at 19'0"		Excessive water loss
20	C1							
21	C1							
22	C1							
23	C1							
24	C1					Fracture at 24'		
25	C1							1105
26	C2		25'/35'			Many fractures Fossiliferous limestone		0755 11/3/88 100% water loss
27	C2							
28	C2							
29	C2							
30	C2							
31	C2							

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BORING NUMBER: 3-D

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
31								0903
			25'/35'					Refill water tank
32								
33								
34								1102
35								

DRAFT

NY-2

TOC: 693.31
TIC: 693.28

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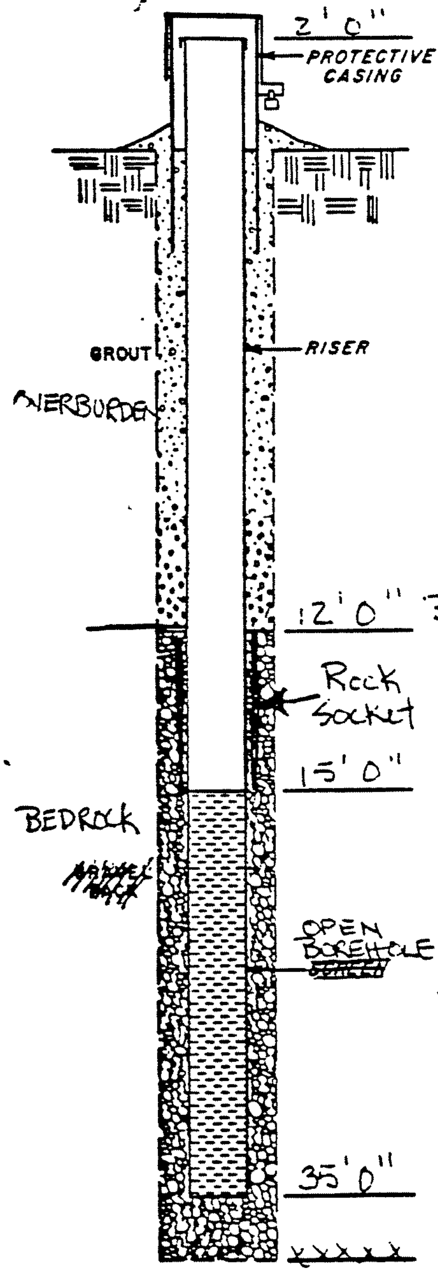
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. L.F. Client: NYSDEC Well No: 3D



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Dick Miller

Drill Rig Make/Model: Mobile B-61

Borehole Diameters: 8"/6" Auger, 4" Tricone Drilling Fluid: Water

Bits/Depths: Tricone Roller Bit (3 7/8"), 12'0" to 35'0"; Auger (6") surface to 12

Total Depth: 35'0" Depth to Water:

Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material:	304 Stainless Steel	Diameter:	4" I.D.	Length:	15'0"
Screen Material:	NONE	Diameter:	—	Length:	—
Slot Size:	—	Setting:	—	—	—
Filter Material:	—	Setting:	—	—	—
Seals Material:	—	Setting:	—	—	—
Grout:	Cement/Bentonite	Setting:	Surface to 15'0"		
Surface Casing Material:	Black Steel	Setting:	2'1" AG - 2'5" BG		

TIME LOG

	Started	Completed
Drilling:	10/31/88 1400	10/31/88 1630
Installation:	11/1/88 0905	11/3/88 1320
Development:	11/9/88 0830	11/9/88 1030

WELL DEVELOPMENT

Method: Airlift

Static Depth to Water:

Pumping Depth to Water:

Pumping Rate: Specific Capacity:

Volume Pumped: 1540 gallons

TOC: 692.76
TIC: 692.72

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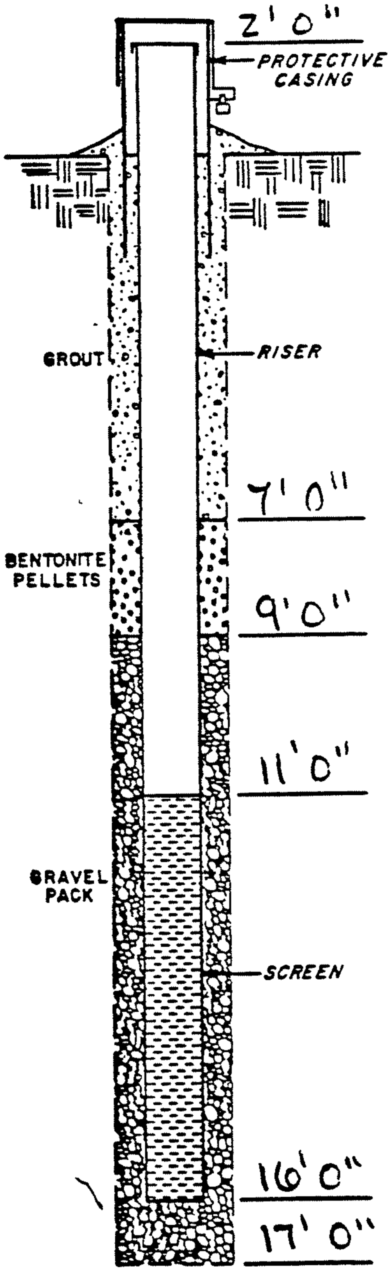
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. L.F. Client: NYSDEC Well No: 4S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Dick Miller
Drill Rig Make/Model: Mobile B-61
Borehole Diameters: 8" / 6" Auger Drilling Fluid: None
Bits/Depths: 6" Auger
Total Depth: 17'0" Depth to Water:
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" Length: 13'0"
Screen Material: 316 Stainless Diameter: 2" Length: 5'
Slot Size: 0.010 inch Setting: 11'0" - 16'0"
Filter Material: Morie #1 equivalent Setting: 9'0" - 17'0"
Seals Material: Bentonite Pellets Setting: 7'0" - 9'0"
Grout: Cement / Bentonite Setting: Surface - 7'0"
Surface Casing Material: Black Steel Setting: 2'1" AG - 2'5" BG

TIME LOG

	Started	Completed
Drilling:	10/21/88 0831 AM	10/21/88 0938 AM
Installation:	10/21/88 1026 AM	10/21/88 1249 PM
Development:	11/10/88 1030	11/10/88

WELL DEVELOPMENT

Method: Bailer
Static Depth to Water:
Pumping Depth to Water:
Pumping Rate: Specific Capacity:
Volume Pumped:

G.S Elev. 690.98

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BORING NUMBER: 4-D

Log of Boring

Project: Pfohl Bros   Location: Buffalo NY   Job. No: 897-12-RC-JOBS

Date Drilled: 10/19/88 - 10/20/88   Drilling Co.: Rochester Drilling

Total Depth: 19' 1" / 43'   Method Used: Hollow stem auger

Inspector: C. Wenczel   Organic Vapor Instruments Used: OVA / HNu   Water Table Depth: 4'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0	1	1	0'/2'	24"/18"	0	Organic black soil, roots, moist humus	Soil	0845
1	1	1						
	1	3						
	1	5						
2	2	9	2'/4'	24"/18"	0	~~Sa~~ Light tan-yellow Medium gr sd; some fine, little v fine; trace silt. Moist sample	Sand	0850
	2	6						
3	2	4						
	2	7						
4	3	2	4'/6'	24"/17"	0	Wet spoon. Pink clay, some fine layers of silt	Clay	0915
	3	4						
5	3	7						
	3	9						
6	4	5	6'/8'	24"/24"		24" Moist pink clay w/ 1" of limestone erratic; ~~glacial~~		0930 (Is limestone of glacial origin?)
7	4	9						

NY-1

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BORING NUMBER: 4-D

Log of Boring

Project: Pfohl Bros — Location: Buffalo, NY — Job. No: 897-12-RI-JOBS
Date Drilled: 10/19/88-10/20/88 — Drilling Co.: Rochester Drilling
Total Depth: 19' 1" / 43' — Method Used: Hollow stem auger
Inspector: C. Wencze) — Organic Vapor Instruments Used: OVA/HNu — Water Table Depth: 4'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
7								
	4	10	6'/8'	24"/24"		Moist pink clay		
	4	13	↓	↓				
8	5	4	8'/10'	24"/24"		Moist pink clay	clay	0935
	5	8						
9	5	17						
	5	18	↓	↓		3" Medium gr grey sand	sand	0955
10	6	5	10'/12'	24"/24"		3" brown silt w/small stones	silt	Possible lacustrine deposit which would inhibit vertical flow
	6	10				Pink clay w/ small limestone pieces	clay	
11	6	15						
	6	17	↓	↓				
12	7	5	12'/14'	24"/24"		4" wet yellow-tan silt	silt	1015
	7	8				Damp Pink clay	clay	
13	7	10						
	7	12	↓	↓				
14								

NY-1

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BORING NUMBER: 4-D
Page 3 of 5

Log of Boring
Project Pfohl Bros Location Buffalo NY Job. No 897-12-RC-5085
Date Drilled 10/19/88 - 10/20/88 Drilling Co. Rochester Drilling
Total Depth 19' 1" / 43' Method Used Hollow stem auger
Inspector C Wenczel Organic Vapor Instruments Used OVA / HNU Water Table Depth 4'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
14	8	3	14'/16'	24"/24"		Clay w/ yellow and tan layers		1030
	8	5						
15	8	6				Dark pink clay w/ small gravel and stones	clay	Gravel ~~may~~ show signs of ice erosion/deposition
	8	10						
16	9	7	16'/18'	24"/24"	30 (OVA)	Damp pink clay		1050
	9	13						
17	9	28				Brown clay with interspersed gravel		
	9	53			18	Gray till	Till	No sample left to be bagged 1115
18	10	20	18'/19'	13"/12"	60	Pink clay	clay	
	10	22				Gravel, some grains >1" diameter; wet; silt mixed in; fairly ~~loose~~	Till	Hi OVA here
19	10	100	19'/19'1"			Limestone; fossiliferous	Bedrock	
	10							1315
						Rock socket 19.5'-23.0'		Water loss experienced
23								

NY-1

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BORING NUMBER: 4-D

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
23								10/20/88 0900
	C1					Several fractures Fossiliferous limestone w/ corals; brachiopods. Some chert.		OVA <40ppm on discharge line HNu<20ppm. Smooth drilling
24	C1							
25	C1							Significant water loss during coring
26	C1							
27	C1							1000
28	C2					Same fossiliferous limestone		Significant water loss Positive OVA & HNu readings
29	C2							
30	C2							
31	C2							
32	C2							
33	C3					Some fractures Same limestone		1045 Positive OVA & HNu readings
34	C3							
35	C3							
36	C3							
37	C3							
38								

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BORING NUMBER: 4-D

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
38								1315
	C4					Same fossiliferous limestone		Drilling water has had a milky off-white with foam at the surface
39	C4					Not many fractures		
40	C4							Water has no OVA, HNu readings
41	C4							
42	C4							
43								

DRAFT

TOC: 692.89
TIC: 692.75

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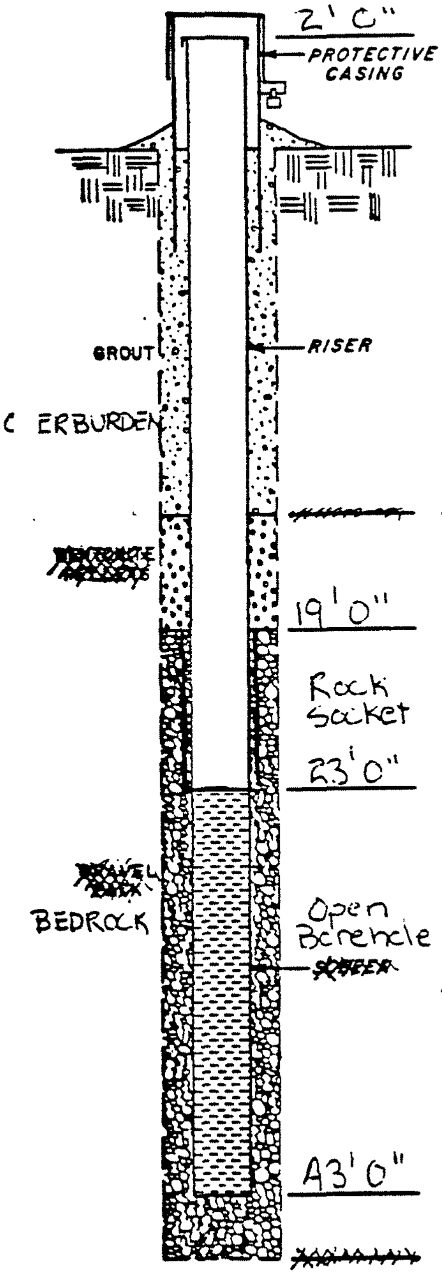
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. L.F. Client: NYSDEC Well No: 4D



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Dick Miller
Drill Rig Make/Model: Mobile B-61
Borehole Diameters: 8"/6" Auger, 4" Tricone Drilling Fluid: WATER
Bits/Depths: Tricone Roller Bit (3 7/8")
Total Depth: 43 feet 0 inches Depth to Water:
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 304 Stainless Steel Diameter: 4" ID Length: 25' 0"
Screen Material: NONE Diameter: — Length: —
Slot Size: — Setting: — — —
Filter Material: — Setting: — — —
Seals Material: — Setting: — — —
Grout: Cement/Bentonite Setting: — — —
Surface Casing Material: Black Steel Setting: 2' 1" AG - 2' 5" BG

DRAFT

TIME LOG

	Started	Completed
Drilling:	10/19/88 0845	10/19/88 1115
Installation:	10/19/88 1315	10/20/88 1530
Development:	11/7/88 1135	11/7/88 1439

WELL DEVELOPMENT

Method: Airlift
Static Depth to Water:
Pumping Depth to Water:
Pumping Rate: Specific Capacity:
Volume Pumped: 110 gallons

TOC: 696.25
TIC: 696.14

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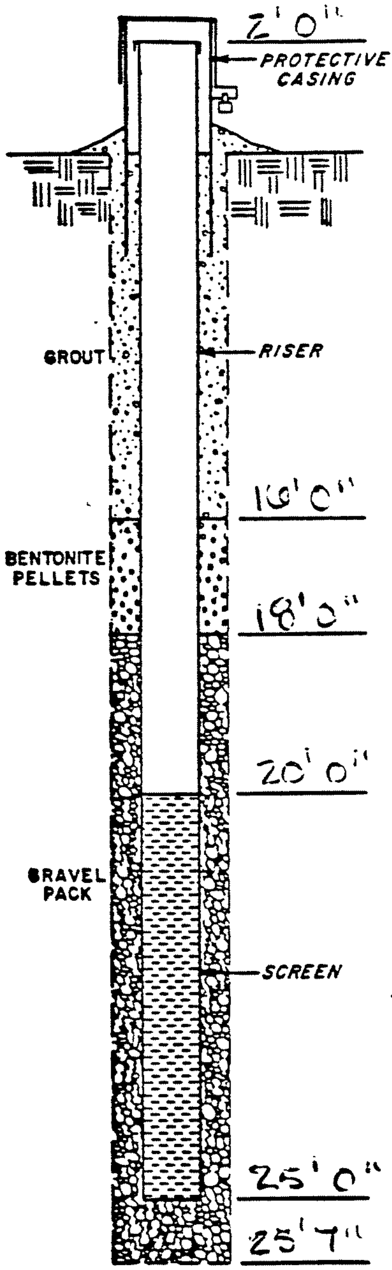
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros L.F. Client: NYSDEC Well No: 55



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Dick Miller
Drill Rig Make/Model: Mobile B-61
Borehole Diameters: 8" / 6" Auger Drilling Fluid: None
Bits/Depths: 6" Auger
Total Depth: 25' 7" Depth to Water:
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material:	316 Stainless	Diameter:	2"	Length:	21'0"
Screen Material:	316 Stainless	Diameter:	2"	Length:	5'0"
Slot Size:	0.010 inch	Setting:	20'0" - 25'0"		
Filter Material:	Morie #1 Equiv.	Setting:	18'0" - 25'7"		
Seals Material:	Bentonite Pellets	Setting:	16'0" - 18'0"		
Grout:	Cement/Bentonite	Setting:	Surface - 16'0"		
Surface Casing Material:	Black Steel	Setting:	2'1" AG - 2'5" BG		

TIME LOG

	Started	Completed
Drilling:	10/26/88 0930 AM	10/26/88 0940 AM
Installation:	10/26/88 1000 AM	10/26/88 1330 PM
Development:	11/9/88 1400	11/10/88 1030

WELL DEVELOPMENT

Method: Bailer
Static Depth to Water:
Pumping Depth to Water:
Pumping Rate: Specific Capacity:
Volume Pumped: 30 gallons

NY-5

G.S. 2leo. 694.24

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BORING NUMBER: 5-D

Log of Boring

Project (Pfohl) Bros Location Buffalo NY Job. No 897-12-RC-50BS

Date Drilled 10/24/88-10/25/88 Drilling Co. Rochester Drilling

Total Depth 25'7" /38' Method Used Hollow stem auger

Inspector C. Wenczel Organic Vapor Instruments Used OVA / HNu Water Table Depth 10.5'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0	1	1	0'/2'	24"/18"		Fill w/ ashes, glass Dry to moist		1050
	1	1						
1	1	2						
	1	4						
2	2	3	2'/4'	24"/12"		Fill w/ ashes, glass, coal. Dry to moist	Fill	
	2	3						
3	2	3						
	2	3						
4	3	3	4'/6'	24"/24"		Fill, brown organic soil		1125
	3	3						
5	3	5				Grey to green clay with some yellow	clay	
	3	7				Pink clay with some gray stripes, roots.		Damp
6	4	4	6'/8'	24"/20"		Fill with ashes, glass,	Fill	1130
	4	6						
7								

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NY-1

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BORING NUMBER: 5-D

Log of Boring

Project: Pfohl Bros Location: Buffalo, NY Job. No: 897-12-RC-SDBS

Date Drilled: 10/24/88 - 10/25/88 Drilling Co.: Rochester Drilling

Total Depth: 25' 7" / 38' Method Used: Hollow stem auger

Inspector: C. Wenczel Organic Vapor Instruments Used: OVA / HNu Water Table Depth: 10.5'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
7								
	4	11	6'/8'	24"/20"		8" Pink native clay	clay	
	4	13	↓	↓				
8	5	3	8'/10'	24"/24"	0	4" Fill	fill	1140 May be from auger
	5	6				Light pink clay; very dry	clay	Clay broke into piece when spoon was split
9	5	9						
	5	13	↓	↓	↓			
10	6	5	10'/12'	24"/20"		Fill	fill	
	6	7				Silt; light brown, wet	silt	
11	6	6				Damp pink clay		
	6	8	↓	↓				
12	7	3	12'/14'	24"/23"		Pink clay, some silt, wet to damp	clay	
	7	4						
13	7	7						
	7	9	↓	↓				
14								

NY-1

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BORING NUMBER: 5-D

Log of Boring

Project Pfohl Bros Location Buffalo NY Job. No 897-12-RC-S0BS

Date Drilled 10/24/88-10/25/88 Drilling Co. Rochester Drilling

Total Depth 38' Method Used Hollow stem auger

Inspector C. Wenczel Organic Vapor Instruments Used OVA/HNu Water Table Depth 10.5'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
14								
	8	1	14'/16'	24"/12"		Pink clay w/ some silt, damp to moist		native
	8	1					clay	
15	8	4						
	8	7						
16	9	1	16'/18'	24"/12"		Pink silt		native
	9	8					silt	
17	9	9						
	9	15						
18	10	2	18'/20'	24"/10"		Very fine grained sand, some silt. Damp.		
	10	17					sand	
19	10	12						
	10	6						1245
20	11	2	20'/22'	24"/24"		Pink to light brown silt; little clay Some v fine sd.	silt	
	11	2						
21								

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NY-1

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BORING NUMBER: 5-D

Log of Boring

Project Pfohl Bros Location Buffalo NY Job. No 897-12-RC-50BS

Date Drilled 10/24/88-10/25/88 Drilling Co. Rochester Drilling

Total Depth 25'7"/38' Method Used Hollow stem auger

Inspector C. Wenczel Organic Vapor Instruments Used OVA/HNU Water Table Depth 10.5'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
21	11	3	20'/22'	24"/24"		Pink to light brown silt, little clay some v fine sd		
	11	4	↓	↓				Break for lunch 1440
22	12	1	22'/24'	24"/24"		Pink to light brown silt; saturated	Silt	Spoon very wet
	12	2						
23	12	3						
	12	4	↓	↓				
24	13	7	24'/25'7"			Not logged		
	13	8						
25	13	100	↓			↓		1635 10/24/88
25'7"								~~[illegible]~~ No above background readings on HNu-OVA; weather stormy
26'		Drill 4' socket rock					Bedrock	
27'								
28'								
29'								
29'7"								

NY-1

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Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
28					(in breathing zone)			0930 10/25/88
	C1					Fossiliferous limestone Some chert		Full recovery
29	C1							
30	C1							
31	C1				0	Big fracture @ 31'3"		Much water loss Has 5 ppm in discharge
32	C1							
33	C2							1030 Full recovery
34	C2							No water return, still.
35	C2							
36	C2							
37	C2							1600 TD'ed due to continued water loss.
38								

TOC: 696.09
TIC: 696.06

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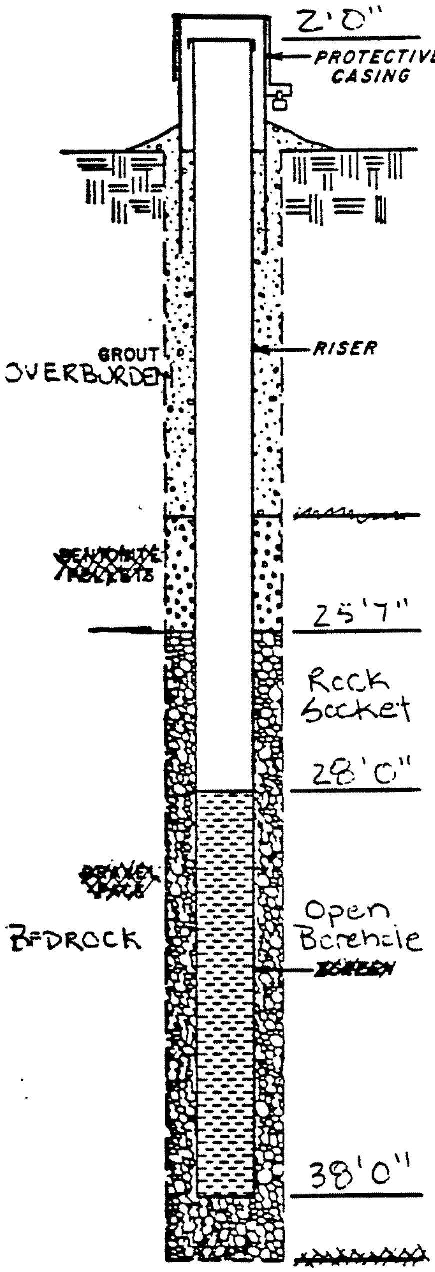
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. L.F. Client: NYSDEC Well No: 5D



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Dick Miller

Drill Rig Make/Model: Mobile B-61

Borehole Diameters: 8"/6" Auger, 4" Tricone Drilling Fluid: WATER

Bits/Depths: Tricone Roller Bit (3 7/8"), Auger-Overburden 6"

Total Depth: 38'-0" Depth to Water:

Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 304 Stainless Steel Diameter: 4" I.D. Length: 30'0"

Screen Material: NONE Diameter: — Length: —

Slot Size: — Setting: — — —

Filter Material: — Setting: — — —

Seals Material: — Setting: — — —

Grout: Cement/Bentonite Setting: Surface - 28'0'

Surface Casing Material: Black Steel Setting: 2'1" AG - 2'5" BG

DRAFT

TIME LOG

	Started	Completed
Drilling:	10/24/88 1049	10/24/88 1540
Installation:	10/24/88 1635	10/25/88 1600
Development:	11/8/88 1512	11/8/88 1145

WELL DEVELOPMENT

Method: Airlift

Static Depth to Water:

Pumping Depth to Water:

Pumping Rate: Specific Capacity:

Volume Pumped: 2310 gallons

TOC: 700.99
TIC: 700.33

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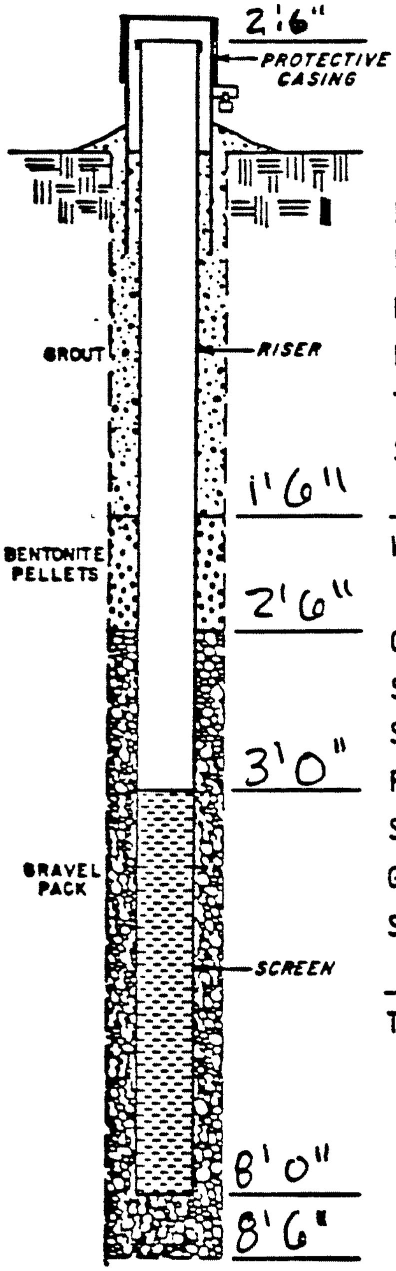
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros Client: NYSDEC Well No: 6S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter/Ed Gainer
Drill Rig Make/Model: Mobile Drill B-57
Borehole Diameters: 6 1/4" Auger Drilling Fluid: None
Bits/Depths: 6 1/4" Auger ≅ 9" borehole to
Total Depth: 10'8" ↓ Rock Depth to Water: ≅ 5'0"
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" I.D. Length: 5'0"
Screen Material: 304 Stainless Diameter: 2" I.D. Length: 5'0"
Slot Size: 0.010" Setting: 8'0" to 3'0"
Filter Material: Q Rock #4 Setting: 8'6" to 2'6"
Seals Material: Bentonite Pellets Setting: 2'6" to 1'6"
Grout: Cement / Bentonite Portland Type I Setting: 1'6" to surface
Surface Casing Material: Black Steel Setting: 2'6" to +2'6"

TIME LOG

	Started	Completed
Drilling:	7/18/89	7/18/89
Installation:	7/18/89	7/18/89
Development:	7/20/89	8/9/89

WELL DEVELOPMENT

Method: Centrifugal Pump / Bailer
Static Depth to Water: 7.00 TOC
Pumping Depth to Water: Well does not yield enough well to
Pumping Rate: Specific Capacity: facilitate
Volume Pumped: specific capacity testing

NY-5

G.S. Elev. 698.24

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BORING NUMBER: 6D

Log of Boring

Project Pfohl Bros. Location E/s Transit Rd. Job. No 897-12-RC-WELL

Date Drilled 7/18/89 Drilling Co. Rochester Drilling Company

Total Depth 10'8" / 33' Method Used 6 1/4" Auger

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅ 5'0"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	16	0'0" to 2'0"	24"/16"	Bkd	6" Fill, gravel, crusher run		1430
	1	18	"	"	"	4" Sand, very fine; some silt; brown		
1	1	18	"	"	"	6" Sand, very fine; some silt; trace very fine sand; black some roots, trace gravel		
	1	25	"	"	"			
2	2	10	2'0" to 4'0"	24"/20	"	6" Fill, brick, gravel 6" Sand, medium; some fine little very fine; trace silt; black		
	2	12	"	"	"	8" Sand, medium, some fine; trace very fine wet.		
3	2	9	"	"	"			capillary fringe moisture
	2	7	"	"	"			
4	3	3	4'0" to 6'0"	24"/14"	"	6" SAND, medium; some fine; little very fine; trace silt; pink wet.		
	3	7	"	"	"	8" SAND, very fine; some silt; pink, wet.		
5	3	9	"	"	"			▼ Approximate
	3	7	"	"	"			
6	4	6	6'0" to 8'0"	24"/16"	"	16" SAND, very fine; some fine; little silt, pink to brown, saturated		
7	4	9	"	"	"			

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BORING NUMBER: 6D

Log of Boring

Project Pfohl Bros. Location E/s Transit Rd. Job. No 897-12-RC-WELL

Date Drilled 7/18/89 Drilling Co. Rochester Drilling Company

Total Depth 10'8" / 33' Method Used 6 1/4" Auger

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅ 5'0"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
7	4	15	6'0" to 8'0"	24"/16"	Bkd			
	4	17	"	"	"			
8	5	8	8'0" to 10'0"	24"/20"	"	20" Till, 1" gravel; fine sand; silt; little clay; pink to red/brown		
	5	10	"	"	"			
9	5	13	"	"	"			
	5	16	"	"	"			
10	6	9	10'0" to 12'0"	14"/14"	"	Till, 1" gravel; fine sand; silt; little clay; pink to red/brown		
	6	R	"	"	"	Rock at 10' 8"		1645
11	6		"					
	6		"					
12		Rock socket to 13'						
								1015 7/19/89
13'	C1		13'/23'	8'/hr		Fossiliferous limestone, w/ coral + brachiopods Break 13.5' 13.7' 13.9'		
14	C1		↓	↓		Fracture 14.1' Break 14.3', 14.88'		
15								

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BORING NUMBER: 6D

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15								
16	C1		13'/23'	8'/hr		Break 15.4', 15.6'		
17	C1					FOSSILIFEROUS LIMESTONE W/ CORAL AND BRACHIOPODS		
18	C1					Fracture 17.8'		Some water loss
19	C1					Break 18.4' Fracture 18.7'		Some water loss
20	C1					Break 19.15'		
21	C1					Break 20.2'		
22	C1					Break 21.4', 21.8'		
23	C1					Break 22.8', 22.95'		1200
24	C2		23'/33'	4'/hr		Fracture 23.8'		1315 Water loss
25	C2					Fracture 24.2'		
26	C2					Break 25.4', 25.5'		
27	C2							
28	C2							
29	C2					~~Fracture~~ Break 28.65'		
30	C2					Break 29.5'		
31	C2					Break 30.1', 30.3', 30.75'		

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BORING NUMBER: 6D

Log of Boring Pfohl Bros

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
31								
32	C2		23'/33'	4'/hr		Break 31.25', ~~30~~		1545
33	C2		↓	↓		Break 32.0', 32.3'		Water gets muddy brown 1600

WELL DEPTH 33'

TOC: 701.97
TIC: 701.57

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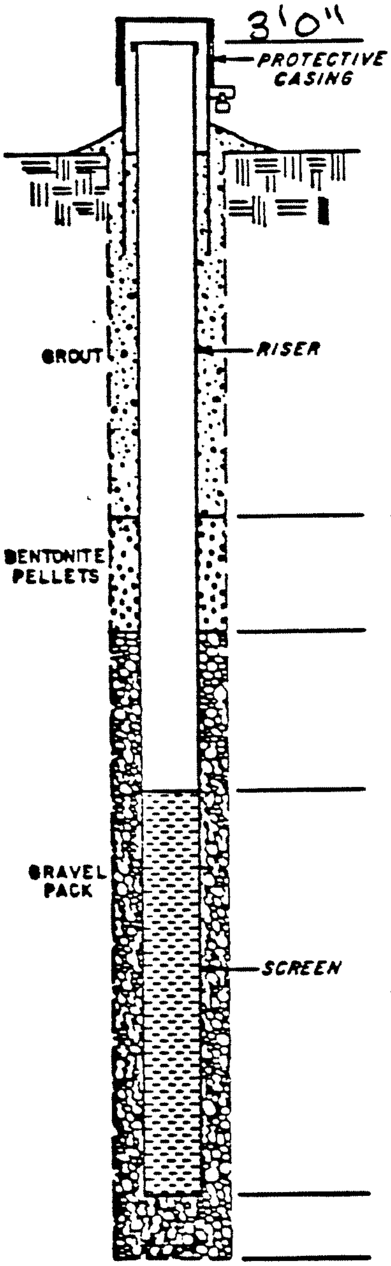
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. Client: NYSDEC Well No: 6D



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter/Ed Gainer
Drill Rig Make/Model: Mobile Drill B-57
Borehole Diameters: 6 1/4" Auger Drilling Fluid: Water
Bits/Depths: 6 1/4" Auger ≅ 9" borehole to 10'8"
Total Depth: 10' 8" Rock Depth to Water: ≅ 5'0"
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: 4" I.D. Length: 15'0"
Screen Material: — Diameter: — Length: —
Slot Size: — Setting: —
Filter Material: — Setting: —
Seals Material: — Setting: —
Grout: Cement/Bentonite Portland Type I Setting: 12' 8" to surface
Surface Casing Material: Black Steel Setting: 1'11" to +3'1"

TIME LOG

	Started	Completed
Drilling:	7/17/89	7/17/89
Installation:	7/18/89	7/20/89
Development:	7/21/89	7/21/89

WELL DEVELOPMENT

Method: Centrifugal Pump
Static Depth to Water: 17.5 TOC
Pumping Depth to Water: 18.75 TOC
Pumping Rate: 15 gpm Specific Capacity: 1.33 gpm/ft dd
Volume Pumped: 300 gallons pumped for development and specific capacity testing.

TOC: 699.19
TIC: 698.73

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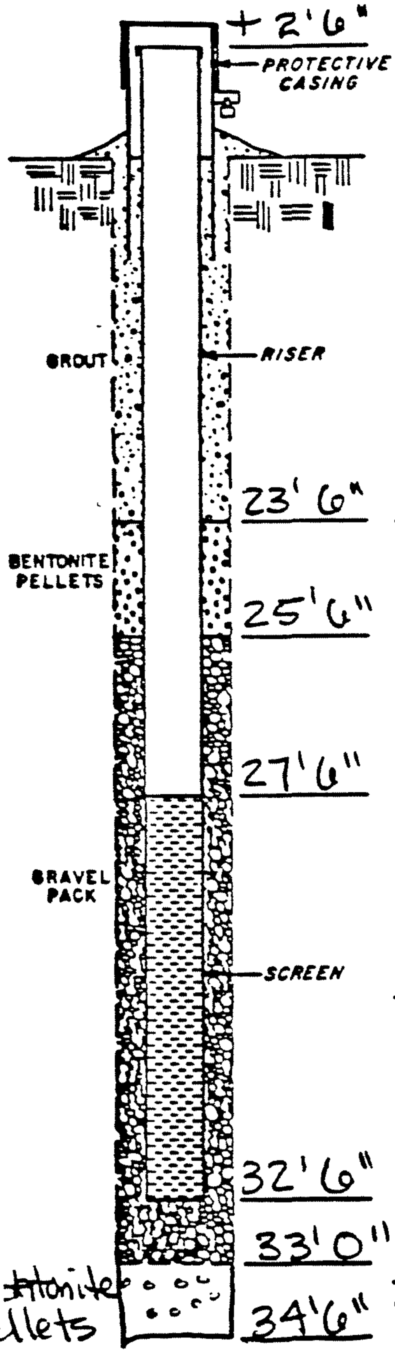
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros Client: NYSDEC Well No: 75



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co Drillers: Art Utter
Drill Rig Make/Model: Mobile Drill ATV / B-53
Borehole Diameters: 6 1/4" Auger Drilling Fluid: None
Bits/Depths: 6 1/4" Auger ≅ 9" borehole to 34' 6"
Total Depth: 34' 6" Depth to Water: ≅ 5' 6"
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" ID Length: 30' 0"
Screen Material: ~~304~~ Stainless Diameter: 2" ID Length: 5' 0"
Slot Size: 0.010" Setting: 32' 6" to 27' 6"
Filter Material: Q-Rock #4 Setting: 33' 0" to 25' 6"
Seals Material: Bentonite Pellets Setting: 25' 6" to 23' 6"
Grout: Cement / Bentonite Portland Type I Setting: 23' 6" to Surface
Surface Casing Material: Black Steel Setting: +2' 5" to +2' 7"

TIME LOG

	Started	Completed
Drilling:	6/29/89	6/29/89
Installation:	6/30/89	6/30/89
Development:	7/14/89	8/9/89

WELL DEVELOPMENT

Method: Centrifugal Pumping and bailing
Static Depth to Water: 7.65' TOC
Pumping Depth to Water: —
Pumping Rate: — Specific Capacity: —
Volume Pumped: Well yields too little water to maintain pumping at pump's lowest idle. Specific capacity testing not possible.

G.S. Elev. 696.46

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BORING NUMBER: ~~7D~~ B-11

Log of Boring

Project: Pfohl Bros. Location: S/S of Pfohl Rd Job. No: 897-12-RC-WELL

Date Drilled: 6/23/89 - 6/27/89 Drilling Co.: Rochester Drilling Company

Total Depth: 58'0" Method Used: 6 1/4" Auger/NX Core/3 7/8" Tricone Bit

Inspector: C. Wenczel Organic Vapor Instruments Used: HNu Water Table Depth: ≅ 5'6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	3	0'0" to 2'0"	24"/12"	BKd	12" Fill, silt, some small gravel, brick fragments, roots organic, black		0920 6/23
	1	4	"	"	"			
1	1	5	"	"	"			
	1	4	"	"	"			
2	2	5	2'0" to 4'0"	24"/6"	"	6" SILT; some clay; some pieces of wood; grey to red/brown damp		1015 6/23 80°F
	2	4	"	"	"			Capillary fringe
3	2	3	"	"	"			
	2	2	"	"	"			
4	3	3	4'0" to 6'0"	24"/18"	"	8" SILT; some gravel; brown and grey 4" SILT; brown 4" SAND; very fine; some silt; grey to white/yellow, wet		
	3	1	"	"	"			
5	3	3	"	"	"			▼
	3	2	"	"	"			
6	4	2	6'0" to 8'0"	24"/18"	"	6" SILT; trace gravel dark brown to black 12" SILT; some clay; trace fine sand; red to brown		
	4	6	"	"	"			
7								

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BORING NUMBER: ~~1D~~ Shut 1-1

Log of Boring

Project Pfohl Bros. Location S/s Pfohl Road Job. No 897-12-RC-WELL

Date Drilled 6/23/89-6/27/89 Drilling Co. Rochester Drilling Company

Total Depth 58' 0" Method Used 6 1/4" Auger / NX Core / 3 7/8" Tricone Bit

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≙ 5'6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
7	4	7	6'0" to 8'0"	24"/18"	Bkd			
	4	8	"	"	"			
8	5	6	8'0" to 10'0"	24"/22"	"	8" SAND, very fine; some silt; trace medium sand; grey to brown; wet		1200 86°F 6/23/89
	5	10	"	"	"	7" SILT; interlayered with clay, laminations 1/8 thick; pink		
9	5	13	"	"	"			
	5	22	"	"	"	7" CLAY, pink		
10	6	5	10'0" to 12'0"	24"/24"	"	24" CLAY; pink; 1/4" layers silt		1345
	6	7	"	"	"			
11	6	11	"	"	"			
	6	18	"	"	"			
12	7	8	12'0" to 14'0"	24"/22"	"	6" SAND, fine to very fine; some silt; grey to black; wet		6/26/89 0905
	7	9	"		"	16" CLAY, pink; some very fine sand.		
13	7	10	"		"			
	7	12	"		"			
14								

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BORING NUMBER: ~~7D~~ 5 Ref [illegible]

Log of Boring

Project Pfohl Bros. Location S/s Pfohl Road Job. No 897-12-RC-WELL

Date Drilled 6/23/89 - 6/27/89 Drilling Co. Rochester Drilling Company

Total Depth 58' 0" Method Used 6 1/4" Auger / NX Core / 3 7/8" Tricone Bit

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅ 5'6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	8	5	14'0" to 16'0"	24"/24"	Bkd	12" SAND, very fine; some silt; black to grey		
	8	6	"	"	"	12" CLAY, pink; some water in silt, laminations		
15	8	8	"	"	"			
	8	11	"	"	"			
16	9	12	16'0" to 18'0"	24"/12"	"	12" SILT, pink and grey some very fine sand, saturated		96°F inside my suite
	9	13	"	"	"			
17	9	14	"	"	"			
	9	14	"	"	"			
18	10	7	18'0" to 20'0"	24"/24"	"	6" CLAY, pink; some silt 18" SAND, very fine; some fine, little silt, some medium sand, wet		
	10	11	"	"	"			
19	10	13	"	"	"			
	10	22	"	"	"			
20	11	13	20'0" to 22'0"	24"/24"	"	3" SAND, very fine; some v.f. gravel 4" CLAY, pink; trace silt		6/26/89 1525
21	11	28	"	"	"	5" SILT, grey; some very fine sand.		

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BORING NUMBER: 7D

Log of Boring

Project Pfohl Bros. Location S/S Pfohl Road Job. No 897-12-RC-WELL
Date Drilled 6/23/89 - 6/27/89 Drilling Co. Rochester Drilling Company
Total Depth 58' 0" Method Used 6 1/4" Auger/Nx Core/3 7/8" Tricone Bit
Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅ 5'6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	11	40	20'0" to 22'0"	24"/24"	Bkd	12" SAND, very fine; some fine; trace silt; grey to brown, saturated		
	11	57	"	"	"			
22	12	9	22'0" to 24'0"	24"/16"	"	22 6" SILT, pink to grey to brown		
	12	10	"	"	"	10" SAND, very fine; some fine, trace medium, trace silt, saturated		
23	12	14	"	"	"	23		
	12	20	"	"	"			
24	13	10	24'0" to 26'0"	24"/24"	"	24 24" SAND, very fine; some silt; trace clay, some layers of silt, all dull brown to grey.		
	13	9	"	"	"			
25	13	16	"	"	"	25		
	13	16	"	"	"			
26	14	7	26'0" to 28'0"	24"/24"	"	26 12" SAND, very fine; some silt; trace fine sand		1430
	14	11	"	"	"	12" SILT, some fine sand; little gravel; grey brown		
27	14	14	"	"	"	27		
	14	13	"	"	"			
28						28		

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Log of Boring

Project Pfohl Bros. Location S/S Pfohl Road Job. No 897-12-RC-WELL
Date Drilled 6/23/89 - 6/27/89 Drilling Co. Rochester Drilling Company
Total Depth 58' 0" Method Used 6 1/4" Auger / NxCore & 3 7/8" Tricone Bit
Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅ 5' 6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	15	7	28'0" to 30'0"	24"/24"	Bkd	24" SILT; some very fine sand, trace 1/2" gravel very tight, red to grey		
	15	10	"	"	"			
29	15	43	"	"	"	29		
	15	32	"	"	"			
30	16	20	30'0" to 32'0"	24"/16"	"	30 16" SAND, very fine; some silt; trace gravel brown to grey.		
	16	34	"	"	"			
31	16	49	"	"	"	31		6/27/89
	16	62	"	"	"			
32	17	15	32'0" to 34'0"	24"/24"	"	32 6" SAND, very fine; some silt; pink to brown saturated		
	17	40	"	"	"	3" SAND, fine; some silt trace medium, brown, wet.		
33	17	36	"	"	"	33 15" CLAY; grey; damp, very tight.		
	17	42	"	"	"			
34	18	17	34'0" to 36'0"	24"/24"	"	34 8" SILT; red to pink, saturated 4" CLAY; grey to black damp		
35	18	25	"	"	"	12" silt, some very fine sand little gravel 35		

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BORING NUMBER: 7D

Log of Boring

Project Pfohl Bros. Location S/S Pfohl Road Job. No 897-12-RC-WELL
Date Drilled 6/23/89 - 6/27/89 Drilling Co. Rochester Drilling Company
Total Depth 58' 0" Method Used 6 1/4" Auger/ Nx Core/ 3 7/8" Tricone Bit
Inspector C. Wenzel Organic Vapor Instruments Used HNu Water Table Depth ≅5'6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	18	28	34'0" to 36'0"	24"/24"				
	18	R	"	"		Rock at 35'9"		
36	19		36'0" to 38'0"			36 Rock Socket for casing 35'9" to 38'0"		
	19		"					
37	19		"			37		
	19		"					
38	CORE # 1		38'0" to 48'0"			38 Limestone, fossiferous some corals, some brachiopods. Core is in 7 pieces. Some secondary mineralization (calcite) some chert nodules		
	C1	"	"	"	"			
39	C1	"	"	"	"			
	C1	"	"	"	"			
40	C1	"	"	"	"	40.4 fracture		
	C1	"	"	"	"			
41	C1	"	"	"	"	41.45 fracture		
42	C1	"	"	"	"			

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BORING NUMBER: 7D

Log of Boring

Project Pfohl Bros. Location S/S Pfohl Road Job. No 897-12-RC-WELL
Date Drilled 6/23/89 - 6/27/89 Drilling Co. Rochester Drilling Company
Total Depth 58' 0" Method Used 6 1/4" Auger/NX Core/3 7/8" Tricone Bit
Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅ 5'6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	C1	"	"	"	"			
	C1	"	"	"	"			
43	C1	"	"	"	"			
	C1	"	"	"	"	43.65 fracture 43.80 fracture		
44	C1	"	"	"	"			
	C1	"	"	"	"			
45	C1	"	"	"	"			
	C1	"	"	"	"			
46	C1	"	"	"	"	46.25 fracture		
	C1	"	"	"	"			
47	C1	"	"	"	"			
	C1	"	"	"	"			
48	C2	CORE #2 48'0" to 58'0"						
49	C2	"	"	"	"			

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BORING NUMBER: 7D

Log of Boring

Project Pfohl Bros. Location S/s Pfohl Road Job. No 897-12-RC-WELL
Date Drilled 6/23/89 – 6/27/89 Drilling Co. Rochester Drilling Company
Total Depth 58' 0" Method Used 6¼" Auger/Nx Core/3 7/8" Tricone Bit
Inspector C. Wenczel Organic Vapor Instruments Used HNU Water Table Depth ≅5'6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	C2	"	"	"	"			
	C2	"	"	"	"			
50	C2	"	"	"	"	50.4 break		
	C2	"	"	"	"			
51	C2	"	"	"	"	51.3 break 51.5 break		
	C2	"	"	"	"	51.7 break		
52	C2	"	"	"	"	52.1 break		
	C2	"	"	"	"	52.8 break		
53	C2	"	"	"	"	53.3 fracture 53.6 break		
	C2	"	"	"	"			
54	C2	"	"	"	"			
	C2	"	"	"	"			
55	C2	"	"	"	"	55.1 break		
	C2	"	"	"	"			
56								

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Log of Boring

Project Pfohl Bros. Location S/S Pfohl Road Job. No 847-12-RC-WELL

Date Drilled 6/23/89 - 6/27/89 Drilling Co. Rochester Drilling Company

Total Depth 58' 0" Method Used 6 1/4" Auger/Nx Core/3 7/8" Tricone Bit

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅5'6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
						56.1 break 56.3 break 56.6 break		
57								
58						End of Core 58' 0"		

TOC: 699.44
TIC: 699.19

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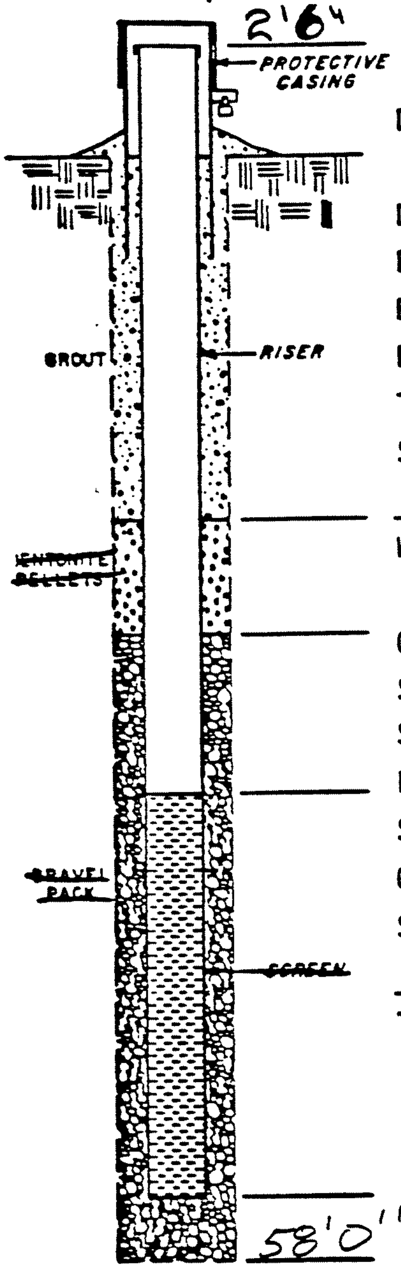
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. Client: NYSDEC Well No: 7D



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter
Drill Rig Make/Model: Mobile Drill ATV / B-53
Borehole Diameters: 6¼" ID Auger / 3⅞" Borehole Drilling Fluid: water
Bits/Depths: 6¼" ID Auger to 35'9" / 6' Socket TRB 3⅞" TRB 38'0" to 58' 0"
Total Depth: 58' 0" Depth to Water: ≅ 5'.6"
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: ID Length: 40' 0"
Screen Material: None Diameter: none Length: none
Slot Size: none Setting: none
Filter Material: none Setting: none
Seals Material: None Setting: None
Grout: Cement Bentonite Portland Type I Setting: surface to 38' 0"
Surface Casing Material: Black steel Setting: + 2'2" to − 2'10"

DRAFT

TIME LOG	Started	Completed
Drilling:	6/23/89	6/27/89
Installation:	6/27/89 - Coring -	6/29/89
Development:	7/21/89	7/21/89

WELL DEVELOPMENT

Method: Bailer
Static Depth to Water: 14.78 TOC
Pumping Depth to Water: Well yields too little water to maintain pumpage
Pumping Rate: Specific Capacity:
Volume Pumped: Well yields too little water to perform specific capacity testing.

TRB = Tricone roller bit

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G.S. Elev. 692.77

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BORING NUMBER: 85

Log of Boring

Project Pfohl Bros. Location S/S Thruway Int. Job. No 897-12-RC-WELL

Date Drilled 7/10/89 Drilling Co. Rochester Drilling Company

Total Depth 12' 3" Method Used 6 1/4" Auger

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅6'0"

Depth (feet)	Samp No.	Blows per 6" (140 lbs.)	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	3	0'0" to 2'0"	24"/18"	Bkd	4" Organic Soil, roots grey to black		1100 85°F
	1	2	"	"	"	6" SILT; trace very fine sand; orange grey to yellow		
1	1	1	"	"	"	6" SAND, medium; some fine; trace silt; little very fine sand; brown		
	1	2	"	"	"	2" CLAY; pink to yellow		
2	2	1	2'0" to 4'0"	24"/20"	"	20" CLAY; pink; some silt; orange to brown to red.		
	2	5	"	"	"			
3	2	8	"	"	"			
	2	14	"	"	"			
4	3	8	4'0" to 6'0"	24"/24"	"	24" CLAY, pink to yellowish orange; some silt.		1135
	3	13	"	"	"			
5	3	20	"	"	"			
	3	19	"	"	"			
6	4	5	6'0" to 8'0"	24"/22"	"	22" SILT, brown to red to orange; little clay; some very fine sand wet		1256
	4	10	"	"	"			
7								

NY-1

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BORING NUMBER: 8S

Log of Boring

Project Pfohl Bros. Location S/S Thruway Inter. Job. No 897-12-RC-WELL
Date Drilled 7/10/89 Drilling Co. Rochester Drilling Company
Total Depth 12' 3" Method Used 6 1/4" Auger
Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≙ 6'0"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	4	13	6'0" to 8'0"	24"/22"	Bkd			
	4	14	"	"	"			
8	5	10	8'0" to 10'0"	24"/24"	"	24" SILT; some very fine sand; pink to brown wet.	8	
	5	16	"	"	"			
9	5	20	"	"	"		9	
	5	22	"	"	"			
10	6	7	10'0" to 12'0"	24"/24"	"	12" Laminated layers of SILT and FINE SAND pink to orange	10	1350
	6	9	"	"	"	12" CLAY, brownish red; ~~trace 1/4" to 1/2" gravel~~ (Till?)		
11	6	12	"	"	"		11	
	6	16	"	"	"			
12	7	3-R	12'0" to 14'0"		"	Rock at 12.2 feet	12	
	7		"		"			
13	7		"		"		13	
14	7		"		"		14	

TOC: 696.90
TIC: 696.57

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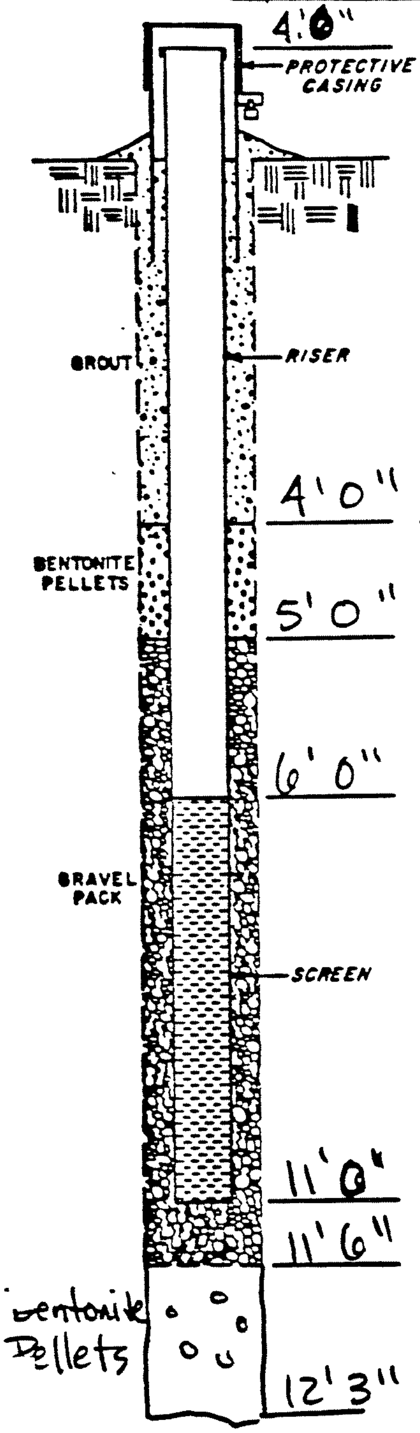
WELL CONSTRUCTION SUMMARY

Project: Pohl Bros. Client: NYSDEC Well No: 85



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter

Drill Rig Make/Model: Mobile Drill ATV /B-53

Borehole Diameters: 6 1/4' ID Auger Drilling Fluid: None

Bits/Depths: 6 1/4" Auger ≅ 9" borehole to 12'3"

Total Depth: 12' 3" (Rock) Depth to Water: ≦ 6'0"

Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" ID Length: 10'0"

Screen Material: 304 Stainless Diameter: 2" ID Length: 5'0"

Slot Size: 0.010" Setting: 11'0" to 6'0"

Filter Material: Q Rock #4 Setting: 11'6" to 5'0"

Seals Material: Bentonite Pellets Setting: 5'0" to 4'0"

Grout: Cement/Bentonite Portland Type Setting: 4'0" to Surface

Surface Casing Material: Black Steel Setting: 3'6" to +4'6"

TIME LOG

	Started	Completed
Drilling:	7/10/89	7/10/89
Installation:	7/10/89	7/10/89
Development:	7/11/89	8/11/89

WELL DEVELOPMENT

Method: Centrifugal Pump / Bailer

Static Depth to Water: 7.30 TOC

Pumping Depth to Water: 13.55 TOC

Pumping Rate: 0.19 gpm Specific Capacity: 0.0304 gpm/ft/dd

Volume Pumped:

NY-5

G.S Elev. 697.8

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BORING NUMBER: 95

Log of Boring

Project Pfohl Bros. Location S/S Area C Job. No 897-12-RC-WELL
Date Drilled 7/13/89 Drilling Co. Rochester Drilling Company
Total Depth 13' 6" Method Used 6 1/4" Auger
Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅ 4'0"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	7	0'0" to 2'0"	24"/8"	Bkd	8" Fill, coal ash sample dry		1330
	1	5	"	"	"			
1	1	9	"	"	"			
	1	8	"	"	"			
2	2	8	2'0" to 4'0"	24"/10"	"	10" Fill, coal ash sample damp		
	2	5	"	"	"			
3	2	3	"	"	"			
	2	2	"	"	"			
4	3	2	4'0" to 6'0"	24"/2"	"	2" SAND, medium; glass; black, lots of water		▼
	3	1	"	"	"			
5	3	20	"	"	"			
	3	87	"	"	"			
6	4	1	6'0" to 8'0"	24"/24"	"	24" SAND, medium; some fine; little very fine; trace silt; black to grey.		
	4	9	"	"	"			
7								

NY-1

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BORING NUMBER: 9S

Log of Boring

Project Pfohl Bros. Location S/S Area C Job. No 897-12-RC-WELL

Date Drilled 7/13/89 Drilling Co. Rochester Drilling Company

Total Depth 13'6" Method Used 6 1/4" Auger

Inspector C. Wenczel Organic Vapor Instruments Used Hnu Water Table Depth ≅ 46"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	4	6	6'0" to 8'0"	24"/24"	Bkd			
	4	3	"	"	"			
8	5	1	8'0" to 10'0"	24"/20"	"	10" SAND, medium; some fine; little coarse; trace very fine.		
	5	5	"	"	"	10" Till, 1" gravel, red to pink clay;		
9	5	12	"	"	"			
	5	26	"	"	"			
10	6	9	10'0" to 12'0"	24"/24"	"	24" SAND, medium; some fine; trace silt; grey; saturated		
	6	19	"	"	"			
11	6	23	"	"	"			
	6	44	"	"	"			
12	7	18	12'0" to 14'0"	18"/18"	"	18" Till, 1" gravel red to pink clay some medium sand on top		1445
	7	57	"	"	"			
13	7	R	"	"	"	Rock at 13'6"		
	7							

DRAFT

NY-1

TOC: 701.56
TIC: 701.46

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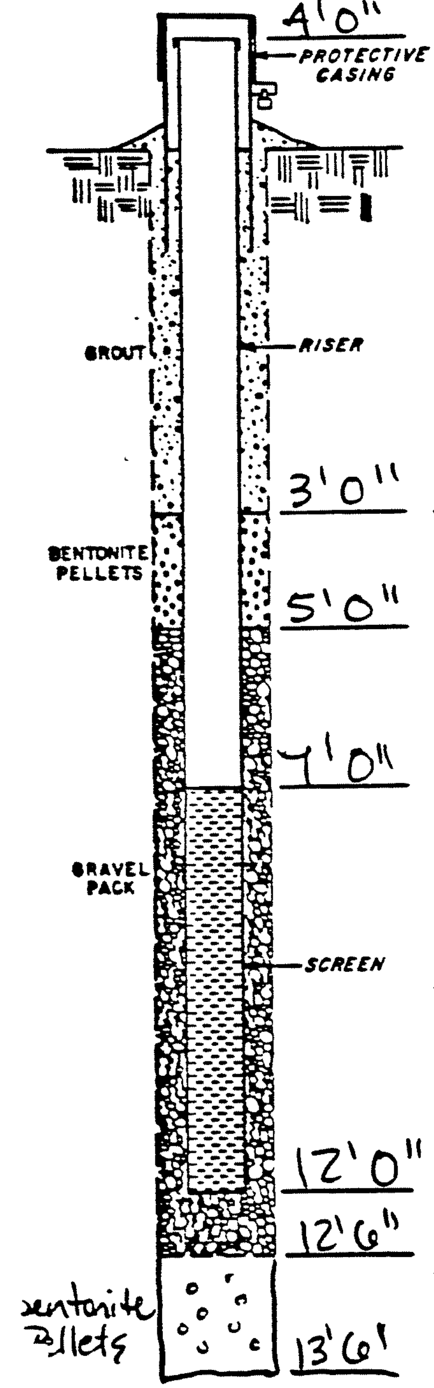
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros Client: NYSDEC Well No: 95



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co Drillers: Art Utter/Ed Gaines

Drill Rig Make/Model: Mobile Drill ATV /B-53

Borehole Diameters: 6¼" Auger Drilling Fluid: None

Bits/Depths: 6¼" Auger ≙ 9" borehole to 13'6"

Total Depth: 13' 6" (Rock) Depth to Water: ≙ 4' 0"

Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" ID Length: 11'0"

Screen Material: 306 Stainless Diameter: 2" ID Length: 5'0"

Slot Size: 0.010" Setting: 12'0" to 7'0"

Filter Material: QRock #4 Setting: 12'6" to 5'0"

Seals Material: Bentonite Pellets Setting: 5'0" to 3'0"

Grout: Cement / Bentonite ~~Portland Type I~~ Setting: 3'0" to Surface

Surface Casing Material: Black Steel Setting: 1'11" to 4'1"

TIME LOG	Started	Completed
Drilling:	7/13/89	7/13/89
Installation:	7/13/89	7/14/89
Development:	7/19/89	7/20/89

WELL DEVELOPMENT

Method: Centrifugal Pump / Bailer

Static Depth to Water: 8.25' TOC

Pumping Depth to Water: 13.85' TOC

Pumping Rate: 0.66 gpm Specific Capacity: 0.117 gpm/Ft dd

Volume Pumped: purged 21 gallons during specific capacity testing

NY-5

6.S. Elev. 698.04

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Log of Boring

Project Pfohl Bros. Location W/s of Area C Job. No 897-12-RC-WELL

Date Drilled 7/12/89 Drilling Co. Rochester Drilling Company

Total Depth 15'0" Method Used 6¼" Auger

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅ 6'0"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	11	0'0" to 2'0"	24"/10"	Bkd	Fill: SAND, medium; some 1" gravel; little silt; trace very fine sand; damp		1245
	1	8	"	"	"			
1	1	9	"	"	"			
	1	6	"	"	"			
2	2	4	2'0" to 4'0"	24"/4"	"	Fill: SAND, medium; some 1" gravel; little silt; trace very fine sand; damp		
	2	5	"	"	"			
3	2	7	"	"	"			
	2	9	"	"	"			
4	3	6	4'0" to 6'0"	24"/6"	"	Fill: Cement, rusted metal, some black organic mater. Bottom of sample is saturated at 6'0".		
	3	4	"	"	"			
5	3	5	"	"	"			
	3	9	"	"	"			
6	4	1	6'0" to 8'0"	24"/10"	"	4" Concrete: decayed 6" SILT, organic; some roots; black; saturated		Native Soil Horizon
	4	2	"	"	"			
7								

NY-1

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BORING NUMBER: 105

Log of Boring

Project: Pfohl Bros. Location: W/s of Area C Job. No: 897-12-RC-WELL
Date Drilled: 7/12/89 Drilling Co.: Rochester Drilling Company
Total Depth: 15'0" Method Used: 6 1/4" Auger
Inspector: C. Wenzel Organic Vapor Instruments Used: HNu Water Table Depth: ≅5'6"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	4	1	6'0" to 8'0"	24"/10"	"			
	4	1	"	"	"			
8	5	2	8'0" to 10'0"	24"/12"	"	8 4" SILT, organic; ~~little~~ little very fine sand; black wet		
	5	5	"	"	"	4" SAND, medium; some coarse; little fine to trace very fine; trace silt; grey to brown		
9	5	7	"	"	"			
	5	11	"	"	"	4" CLAY; pink to reddish orange.		
10	6	4	10'0" to 12'0"	24"/14"	"	10 14" SILT & CLAY layers. Laminations 1/8" to 1/4" thick; pink to reddish brown; damp to wet		
	6	6	"	"	"			
11	6	15	"	"	"	11		
	6	12	"	"	"			
12	7	6	12'0" to 14'0"	24"/20"	"	12 15" SILT, pink to red brown 5" Till, silt and clay; some 1/2" to 1" gravel		
	7	12	"	"	"	SS#8 24"/14" 8-30-R Till as above		
13	7	31	"	"	"	13		
	7	37	"	"	"	Rock at 15'0"		1535
14								

NY-1

TOC: 700.44
TIC: 699.50

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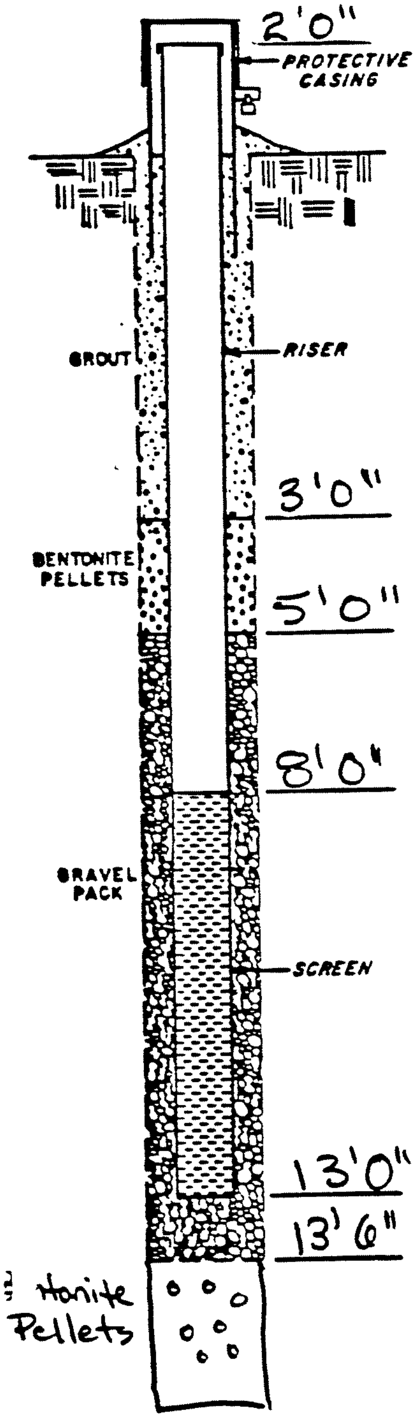
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. Client: NYSDEC Well No: 105



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter
Drill Rig Make/Model: Mobile Drill ATV / B-53
Borehole Diameters: 6 1/4" Auger Drilling Fluid: none
Bits/Depths: 6 1/4" Auger ≅ 9" borehole to 15'0"
Total Depth: 15' 0" to (Rock) Depth to Water: ≅ 6'0"
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" ID Length: 10'0"
Screen Material: 304 Stainless Diameter: 2" ID Length: 5' 0"
Slot Size: 0.010" Setting: 13'0" to 8'0"
Filter Material: Q Rock #4 Setting: 13'6" to 5'0"
Seals Material: Bentonite Pellets Setting: 5'0" to 3'0"
Grout: Cement / Bentonite Portland Type I Setting: 3'0" to Surface
Surface Casing Material: Black Steel Setting: 2'0" to + 3'0"

TIME LOG

	Started	Completed
Drilling:	7/12/89	7/12/89
Installation:	7/12/89	7/13/89
Development:	7/19/89	8/9/89

WELL DEVELOPMENT

Method: Centrifugal Pump / Bailer
Static Depth to Water: 9.55 TOC
Pumping Depth to Water: Well does not yield enough water to facilitate specific capacity testing.
Pumping Rate: —— Specific Capacity:
Volume Pumped: ——

NY-5

G.S. Elev. 690.67

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BORING NUMBER: 115

Log of Boring

Project Pfohl Bros. Location W/s of Area B Job. No 841-12-RC-WELL
Date Drilled 7/11/89 Drilling Co. Rochester Drilling Company
Total Depth 15' 10" Method Used 6 1/4" Auger
Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅6'0"

Depth (feet)	Samp No.	Blows per 6" 140 lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	1	0'0" to 2'0"	24"/16"	Bkd	10" SILT, organic; black; some roots		1145
	1	2	"	"	"	6" SAND, very fine; some fine sand; trace silt; damp		
1	1	3	"	"	"			
	1	2	"	"	"			
2	2	3	2'0" to 4'0"	24"/18"	"	SILT; trace fine sand; grey to brown.		
	2	2	"	"	"	8" SAND, medium; some fine; little very fine; trace silt; wet		
3	2	4	"	"	"			
	2	14	"	"	"			
4	3	9	4'0" to 6'0"	24"/24"	"	24" SILT, pink to red/brown damp; very tight		
	3	13	"	"	"			
5	3	22	"	"	"			
	3	35	"	"	"			
6	4	13	6'0" to 8'0"	24"/24"	"	24" CLAY, pink to brown; some silt; tight damp to wet.		
	4	18	"	"	"			
7								

NY-1

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BORING NUMBER: 11 S

Log of Boring

Project Pfohl Bros. Location W/S Area B Job. No 897-12-RC-WELL
Date Drilled 7/11/89 Drilling Co. Rochester Drilling Company
Total Depth 15' 10" Method Used 6¼" Auger
Inspector C. Wenzel Organic Vapor Instruments Used HNu Water Table Depth ≅ 6'0"

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	4	23	6'0" to 8'0"	24"/24"	Bkd			
	4	31	"	"	"			
8	5	9	8'0" to 10'0"	24"/24"	"	24" CLAY, pink to red/brown; some silt plastic; damp to wet.		
	5	10	"	"	"			
9	5	22	"	"	"			
	5	28	"	"	"			
10	6	12	10'0" to 12'0"	24"/24"	"	24" CLAY; pink to red brown; some silt; plastic; damp to wet.		1330
	6	16	"	"	"			
11	6	16	"	"	"			
	6	15	"	"	"			
12	7	4	12'0" to 14'0"			24" CLAY; pink to red brown; some silt; plastic; damp to wet		
	7	4	"					
13	7	9	"					
	7	14	"					
14								

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Log of Boring

Project Pfohl Bros. Location W/s Area B Job. No 897-12-RC-WELL
Date Drilled 7/11/89 Drilling Co. Rochester Drilling Company
Total Depth 15' 10" Method Used 6 1/4" Auger
Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ±6'0"

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
14	8	3	14'0" to 16'0"	28"/18"	Bkd	18" Till, clay; silt; 1" gravel.		
	8	25	"	"	"			
15	8	32	"	"	"			
	8	R	"	"	"	Rock at 15'10"		1425
16								

DRAFT

NY-1

TOC: 693.61
TIC: 693.30

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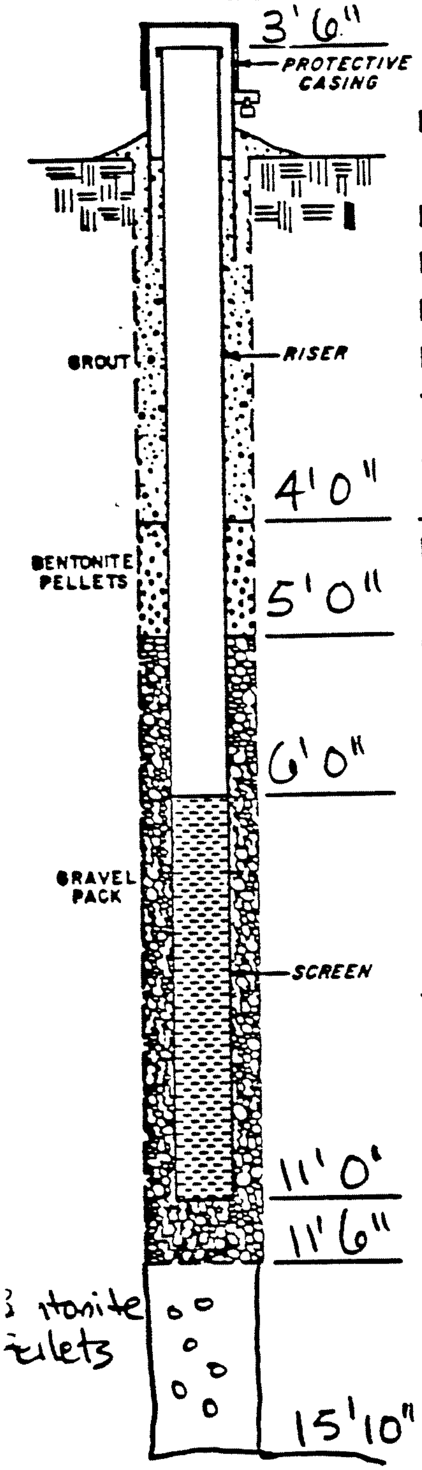
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. Client: NYSDEC Well No: 11S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter
Drill Rig Make/Model: Mobile Drill ATV / B-53
Borehole Diameters: 6 1/4" Auger Drilling Fluid: None
Bits/Depths: 6 1/4" Auger ≙ 9" borehole to 15'10"
Total Depth: 15'10" (Rock) Depth to Water: ≙ 6'0"
Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: Stainless 316 Diameter: 2" ID Length: 9'6"
Screen Material: Stainless 304 Diameter: 2" ID Length: 5'0"
Slot Size: 0.010" Setting: 11'0" to 6'0"
Filter Material: Q Rock #4 Setting: 11'6" to 5'0"
Seals Material: Bentonite Pellets Setting: 5'0" to 4'0"
Grout: Cement / Bentonite Portland Type I Setting: 4'0" to Surface
Surface Casing Material: Black Steel Setting: 1'5" to +3'7"

TIME LOG

	Started	Completed
Drilling:	7/11/89	7/11/89
Installation:	7/11/89	7/11/89
Development:	7/24/89	?

WELL DEVELOPMENT

Method: Bailer
Static Depth to Water: 10.68 TOC
Pumping Depth to Water: Does not recharge fast enough to pump
Pumping Rate: — Specific Capacity: —
Volume Pumped: —

G.S. Elev. 700.31

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BORING NUMBER: 12S

Log of Boring

Project Pfohl Bros. Location Area A Job. No 847-12-RC-WELL

Date Drilled 7/6/89 Drilling Co. Rochester Drilling Company

Total Depth 15' 3" Method Used 6 1/4" Auger

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅8'0"

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	1	23	0'0" to 2'0"	24"/18"	Bkd	18" Gravel; typical crusher run for driveway.		
	1	29	"	"	"			
1	1	31	"	"	"			
	1	30	"	"	"			
2	2	18	2'0" to 4'0"	24"/20"	"	20" Gravel; typical crusher run for driveway. 1" gravel, some medium sand; some silt.		
	2	21	"	"	"			
3	2	38	"	"	"			
	2	51	"	"	"			
4	3	11	4'0" to 6'0"	24"/18"	"	10" Gravel; typical crusher run for driveway. 8" SAND; very fine; some silt; little medium sand; trace 1/4" rounded gravel		
	3	7	"	"	"			
5	3	4	"	"	"			— native soil.
	3	4	"	"	"			
6	4	30	6'0" to 8'0"	24"/5"	"	5" Stone and sand stuck in the drive shoe.		1000 83°F
	4	43	"	"	"			
7								

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BORING NUMBER: 12S

Log of Boring

Project Pfohl Bros. Location Area A Job. No 847-12-RC-WELL

Date Drilled 7/6/89 Drilling Co. Rochester Drilling Company

Total Depth 15'3" Method Used 6 1/4" Auger

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≅ 8'0"

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	4	4	6'0" to 8'0"	24"/5"	Bkd			
	4	6	"	"	"			
8	5	1	8'0" to 10'0"	24"/16"	"	3" SAND, fine; some silt; trace 1/8" gravel; brown to black. 3" organic swamp deposit some silt; black 5" SILT, trace very fine sand; grey to black 5" CLAY, pink to brown; little very fine sand;		
	5	1	"	"	"			
9	5	4	"	"	"			
	5	10	"	"	"			
10	6	8	10'0" to 12'0"	24"/24"	"	6" SAND, very fine; some silt; black, organic. 18" SILT, red to orange some streaks of grey damp		
	6	9	"	"	"			
11	6	10	"	"	"			
	6	14	"	"	"			
12	7	6	12'0" to 14'0"	24"/24	"	6" SAND, very fine; some silt. 18" SILT, orange to pink to red; some grey laminations. Trace		
	7	12	"	"	"			
13	7	19	"	"	"			
	7	25	"	"	"			
14								

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BORING NUMBER: 125

Log of Boring

Project Pfohl Bros. Location Area A Job. No 897-12-RL-WELL

Date Drilled 7/6/89 Drilling Co. Rochester Drilling Company

Total Depth 15'3" Method Used 6 1/4" Auger

Inspector C. Wenczel Organic Vapor Instruments Used HNu Water Table Depth ≙ 8'0"

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
	8	6	14'0" to 16'0"	24"/24"	Bkd	6" SAND, very fine; some silt. wet		
	8	10	"	"	"	18" SILT, orange to pink to red, some grey laminations trace 1/4" rounded gravel (TILL)		
15	8	14	"	"	"	Rock 15'3"	15	
	8	R	"	"	"			
16							16	

DRAFT

NY-1

TOC: 702.91
TIC: 702.49

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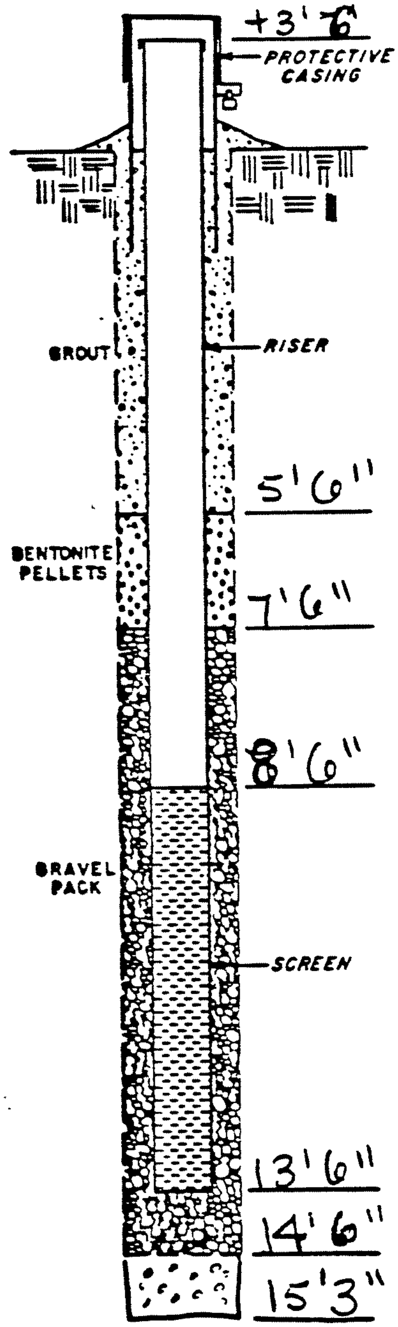
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros. Client: NYSDEC Well No: 12S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter

Drill Rig Make/Model: Mobile Drill ATV / B-53

Borehole Diameters: 6 1/4" Auger Drilling Fluid: None

Bits/Depths: 6 1/4" Auger ≅ 9" borehole to 15'3"

Total Depth: 15' 3" Depth to Water: ≅ 8' 0"

Supervisory Geologist: Chris Wenczel

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" ID Length: 12'0"

Screen Material: ~~304~~ Stainless Diameter: 2" ID Length: 5' 0"

Slot Size: 0.010" Setting: 13'6" to 8'6"

Filter Material: Q Rock #4 Setting: 14'0" to 7'6"

Seals Material: Bentonite Pellets Setting: 7'6" to 5'6"

Grout: Cement / Bentonite Portland Type I Setting: 5'6" to surface

Surface Casing Material: Black Steel Setting: 2'5" to +3'7"

Note: Protective casing was 6'0" long

TIME LOG

	Started	Completed
Drilling:	7/6/89	7/6/89
Installation:	7/6/89	7/6/89
Development:	7/14/89	8/9/89

WELL DEVELOPMENT

Method: Centrifugal Pumping / Bailer

Static Depth to Water: 9.25' TOC

Pumping Depth to Water: 15.25' TOC

Pumping Rate: 0.16 gpm Specific Capacity: 0.027 gpm/ft of dd

Volume Pumped: 14 gallons during specific capacity testing

NY-5

G.S. Elev. 703.14

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BORING NUMBER: 13-S

Log of Boring

Project Pfohl Bros Location 26+50 15'E 825N Job. No 897-12-RC-WELL

Date Drilled 11/30/89 Drilling Co. Rochester Drilling Co.

Total Depth 26' Method Used 6 1/4" Auger

Inspector T. Ryan Organic Vapor Instruments Used OVA / HNu Water Table Depth 9'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. PPM	Sample Description	Strata Change	Remarks (Time of Day)
0	NS		NS		OVA @ background	Auger to 5'		0800
	↓		↓		↓			
5	NS		NS		OVA in hole = 65 ppm, HNu @ background	Auger to 10'	Fill	
	↓		↓					Water @ 9'±
10	NS		NS			Auger to 12'		
	↓		↓					
12'	1	3	12'/14'	2'/.1'		Fill material Black fine sand w/ some silt 2½" yellow colored chunks	Silty sand	0830
	1	1						
13'	1	1						
	1	6	↓	↓				
14'	2	5	14'/16'	2'/1.4'	OVA on cuttings -10 @ background in breathing zone, 200-250 in hole. HNu @ background	Stiff brown clay	Clay	
	2	10						
15	2	15						
	2	22	↓	↓				
16								

NY-1

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
16	3	31	16'/18'	2'/.7'	OVA = 400 in	Stiff brown clay		0900
	3	32			hole, HNu @			
17	3	50			background			
	3	45						
18	4	15	18'/20'	2'/1.7'	OVA = 200 in	Stiff brown clay		
	4	22			hole, HNu @		Clay	
19	4	23			background			
	4	31						
20	5	15	20'/22'	2'/1.3'		Very moist brown clay. Elastic + silty		
	5	20						
21	5	22						
	5	26						
22	6	6	22'/24'	2'/1.7'		Brown clay, varying stiff and elastic.		
	6	7						
23	6	11						
	6	14						
24								

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BORING NUMBER: 13-S

Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
24	7		24'/26'	2'/.3'	OVA = 50-60 in hole	Brown clay, mostly elastic, some stiff	Clay	
	7							
25	7							
	7							
26						BEDROCK		

DRAFT

NY-2

TOC: 705.18
T/C: 705.01

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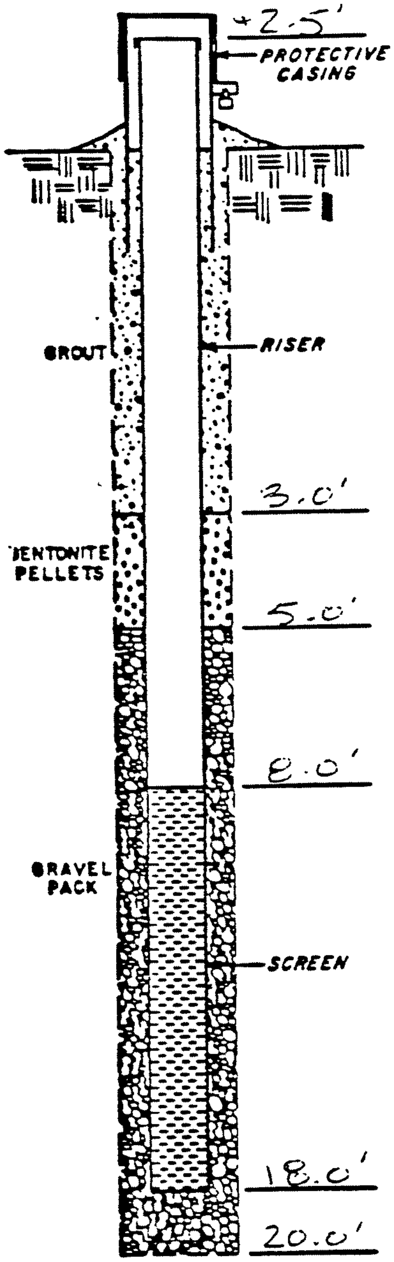
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros Landfill Client: NYSDEC Well No: MW-13S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Uttez

Drill Rig Make/Model: Mobile D-53

Borehole Diameters: 10" Drilling Fluid: —

Bits/Depths: 6 1/4" Hollow Stem Augers

Total Depth: 26.0' Depth to Water:

Supervisory Geologist: Andrew Devine

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" Length: 10.5'

Screen Material: Stainless Continuous Diameter: 2" Length: 10.0'

Slot Size: 0.010" Setting: 8' - 18' bgl

Filter Material: Q-Rock #4 Morie #1 Echow Setting: 5' - 20' bgl

Seals Material: Bentonite Pellets Setting: 3' - 5' bgl

Grout: Cement/Bentonite/Water Setting: Grade - 3' bgl

Surface Casing Material: Steel Setting: +2.7' - 2.3' bgl

TIME LOG

	Started		Completed	
Drilling:	11/30/89	08:00	11/30/89	10:30
Installation:	11/30/89	1030	11/30/89	1245
Development:				

WELL DEVELOPMENT

Method: Bail / Centrifugal Pump

Static Depth to Water:

Pumping Depth to Water:

Pumping Rate: Specific Capacity:

Volume Pumped:

G.S. Elev. 700.51

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BORING NUMBER: 14-S

Log of Boring

Project: Pfohl Bros   Location: ____   Job. No: 897-12-RC-WELL

Date Drilled: 12/4/89 - 12/5/89   Drilling Co.: Rochester Drilling Co.

Total Depth: 23' 9"   Method Used: 6 1/4" Augers

Inspector: S. Alter   Organic Vapor Instruments Used: OVA / HNu   Water Table Depth: 6.5'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
					b.z. = breathing zone b.g. = background			
0	1	1	0'/2'	2'/.9'	OVA=0 on sample, in b.z.	Brown silty topsoil		1510
	1	2	↓	↓	↓			Ground is very hard
1	1	3						
	1	3				Last .1' is fill		
2	2	1	2'/4'	2'/.1'		Fill-dry. Glass, wood, soil.	Fill	
	2	1	↓	↓				
3	2	2						
	2	1						
4	3	1	4'/6'	2'/.3'	OVA=0 in hole,	Fill- dark brown, silty material		1520
	3	3	↓	↓	0 in b.z.	Hit something hard or stretchy at 5.5'		
5	3	3			↓			
	3	14						
6	4	4	6'/8'	2'/.4'	OVA=0 in hole, 0 in b.z.	Fill: stained wood in spoon		1530
	4	4	↓	↓				
7								

NY-1

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BORING NUMBER: 14-S

Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7	4	3	6'/8'	2'/.4'				
	4	3						
8	5	5	8'/10'	0	OVA = 550 in hole, b.g. in b.z. HNu @ b.g. in hole, b.z.	Large piece of wood in spoon.	Fill	1540
	5	1						
9	5	2						
	5	3						
10	6	5	10'/12'	2'/0	OVA = 20 in hole, b.g. in b.z.	No recovery		1550
	6	3						
11	6	8						
	6	20						
12	7	6	12'/14'	2'/.3'	OVA = 10 in hole, b.g. in b.z.	Top .2' wood + fill		1605
	7	16						
13	7	19						
	7	20				Bottom .1' brown clayey silt		
14	8	16	14'/16'	2'/1.4'	OVA=68 in hole, b.g. in b.z.	Top .9' brown clayey silt	Clayey Silt	OVA @ b.g. over sample
15	8	30						

DRAFT

NY-2

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" 140 lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15	8	24	14'/16'	2'/1.4'	HNu @ b.g. in	Bottom .5' Very stiff brown clay		OVA @ b.g. oversample
	8	24	↓	↓	hole ↓			
16	9	12	16'/18'	2'/1.6'	OVA @ b.g. in	Reddish-brown clay, very stiff, silty	Brown	1630
	9	12			hole, b.z.,			
17	9	36			sample			Spoon stuck in hole
	9	29	↓	↓	↓		Clay	
18	10	6	18'/20'	2'/1.7'	OVA = 1 in	Very silty brown clay, elastic		1650 Sun set
	10	8			hole, b.g. in			
19	10	8			b.z.			
	10	11	↓	↓	↓			
20	11	9	20'/22'	2'/1.2'	OVA = 1 in	Very stiff, dark gray clay		1700 Water running out of spoon
	11	20			hole, b.g. in			May be till,
21	11	20			b.z., sample			but no large particles detected
	11	22	↓	↓	↓			
22	12		22'/23.8'	2'/1.8'	OVA = 34 in	Dark gray clay without elastic component. Fairly stiff	Gray clay	12/5/89 0815
23	12	2	↓	↓	hole HNu @			

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BORING NUMBER: 14-S

Page 4 of 4

Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
23	12		22'/23.8'	2'/1.8'	b.g. in hole	Dark gray clay without clastic component. Fairly stiff	Gray Clay	
	12		↓	↓	↓			
24						BEDROCK		

TOC: 702.83
TIC: 702.51

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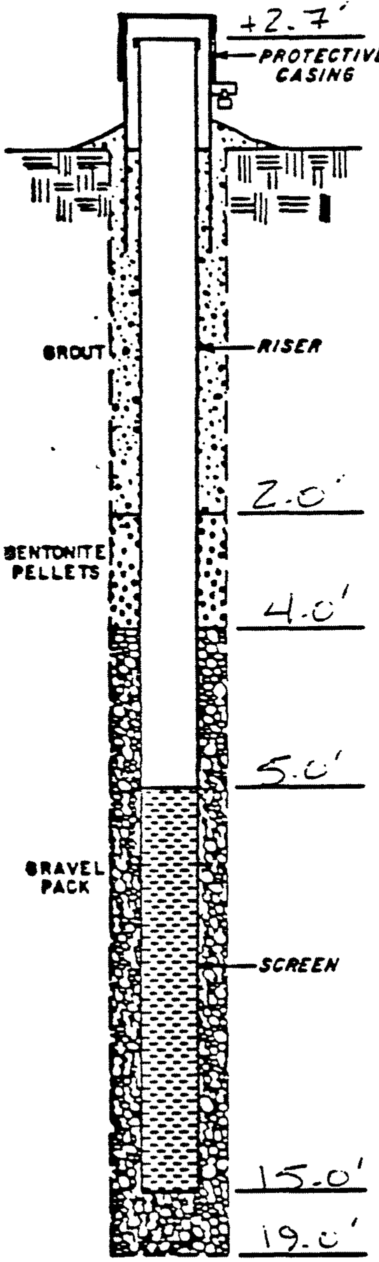
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros Landfill Client: NYSDEC Well No: MW-14S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter
Drill Rig Make/Model: Mobile D-53
Borehole Diameters: 10" Drilling Fluid: —
Bits/Depths: 6 1/4" Hollow Stem Augers
Total Depth: 23.7' Depth to Water:
Supervisory Geologist: Andrew Downie

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" Length: 7.7'
Screen Material: Stainless Steel [illegible] Diameter: 2" Length: 10.0'
Slot Size: 0.010" Setting: 5' - 15' bgl
Filter Material: Morie #1 Equiv. (or Rock #4) Setting: 4' - 19' bgl
Seals Material: Bentonite Pellets Setting: 2' - 4' bgl
Grout: Cement/Bentonite/Water Setting: Grade - 2' bgl
Surface Casing Material: Steel Setting: +2.9' - 2.1' bgl

DRAFT

TIME LOG

	Started	Completed
Drilling:	12/4/89 15:00	12/5/89 0830
Installation:	12/5/89 0830	12/5/89 1030
Development:		

WELL DEVELOPMENT

Method:
Static Depth to Water:
Pumping Depth to Water:
Pumping Rate: Specific Capacity:
Volume Pumped:

GS Elev. 697.07

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BORING NUMBER: 15-S

Log of Boring

Project Pfohl Bros Location Job. No 897-12-RC-WELL

Date Drilled 12/1/89 Drilling Co. Rochester Drilling Co.

Total Depth 13.5' Method Used 6 1/4" Auger

Inspector T. Ryan Organic Vapor Instruments Used OVA / HNU Water Table Depth 6'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0	1	2	0'/2'	2'/.1'		Silty organic material		0915
	1	1						
1	1	2						
	1	2						
2	2	2	2'/4'	2'/.4'		Topsoil with glass, trash		
	2	2					Fill	
3	2	3						
	2	3						
4	3	3	4'/6'	2'/.6'		4.0'-4.2' Fill material		
	3	2						
5	3	3				Brown clayey silt		
	3	4						
6	4	3	6'/8'	2'/.2'		Silty fill with wood and hard plastic		Wet spoon
	4	3						
7								

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BORING NUMBER: 15-S

Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7	4	4	6'/8'	2'/.2'			Fill	
	4	4	↓	↓				
8	5	3	8'/10'	2'/.7'	OVA= 1000 ppm @ hole, HNu @ back-ground	Top 0.2' brown clay	Clay	
	5	4						
9	5	6						
	5	6	↓	↓	↓			
10	6	2	10'/12'	2'/.4'	OVA = 1000 @ hole, HNu @ back-grand	Wet brown clay; very silty	Clay	
	6	3						
11	6	2						
	6	4	↓	↓	↓			
12	7	11	12'/13.5'	1.5'/0'				
	7	21						
13	7	30	↓	↓		Piece of rock in spoon tip		
						BEDROCK		

NY-2

TOC: 699.47
TIC: 699.26

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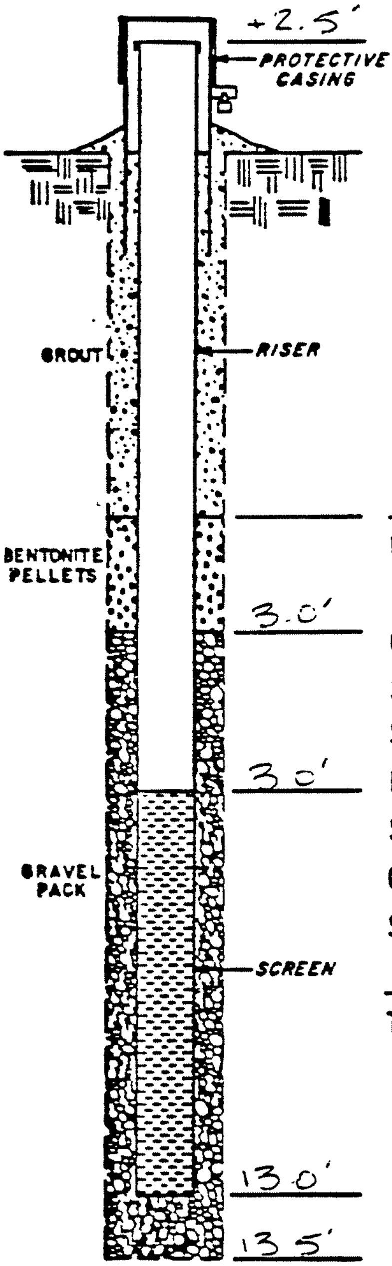
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros Landfill Client: NYSDEC Well No: MW-15S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter
Drill Rig Make/Model: Mobile D-53
Borehole Diameters: 10" Drilling Fluid: —
Bits/Depths: 6 1/4" Hollow Stem Augers
Total Depth: 13.5' Depth to Water:
Supervisory Geologist: Andrew Downie

WELL DESIGN

Casing Material: S.S. Stainless Diameter: 2" Length: 5.5'
Screen Material: Stainless Continuous Diameter: 2" Length: 10.0'
Slot Size: 0.010" Setting: 3' - 13' bgl
Filter Material: Morie #1 Equiv (Check #4) Setting: 3' - 13.5' bgl
Seals Material: Bentonite Pellets Setting: 1' - 3' bgl
Grout: Cement/Bentonite/Water Setting: Grade - 1' bgl
Surface Casing Material: Steel Setting: +2.7' - 2.3 bgl

DRAFT

TIME LOG

	Started	Completed
Drilling:	12/1/89 0815	12/1/89 1015
Installation:	12/1/89 1015	12/1/89 1200
Development:		

WELL DEVELOPMENT

Method:
Static Depth to Water:
Pumping Depth to Water:
Pumping Rate: Specific Capacity:
Volume Pumped:

GS Elev. 699.99

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BORING NUMBER: 16-S

Log of Boring

Project Pfohl Bros Location ______ Job. No 897-12-RC-WELL

Date Drilled 11/29/89 Drilling Co. Rochester Drilling Co.

Total Depth 16' 10" Method Used 6 1/4" Auger

Inspector T. Ryan Organic Vapor Instruments Used OVA / HNU Water Table Depth 12'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. PPM	Sample Description	Strata Change	Remarks (Time of Day)
0								
	NS		NS		OVA @ background @ 5'	Augered to 5'. Fill material with silty top soil		0830 Auger is dry
5	NS		NS		OVA = 60-70 ppm in hole, HNu @ background	Augered to 10'		0850 Auger is dry
10	NS		NS			Augered to 12'		Auger is dry
12	1	14	12'/14'	1.1'/2'		Brown silty sand	Silty sand	Wet spoon
	1	27						
13	1	18						
	1	20						
14	2	14	14'/16'	1.5'/2'	OVA = 100-150 ppm in hole, HNu @ background	Hard, dark brown stiff clay	Clay	0920
	2	20						
15	2	30						
	2	30						
16								

NY-1

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BORING NUMBER: 16-S

Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./ Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
16								
	3	10	16'/17.3'	1.3'/2'		16.0'-16.3' Brown clay	Clay	1000
	3	13				Grey brown clay		
17	3	20/4"				Bottom is till	Till	
						BEDROCK		

TOC: 701.80
TIC: 701.46

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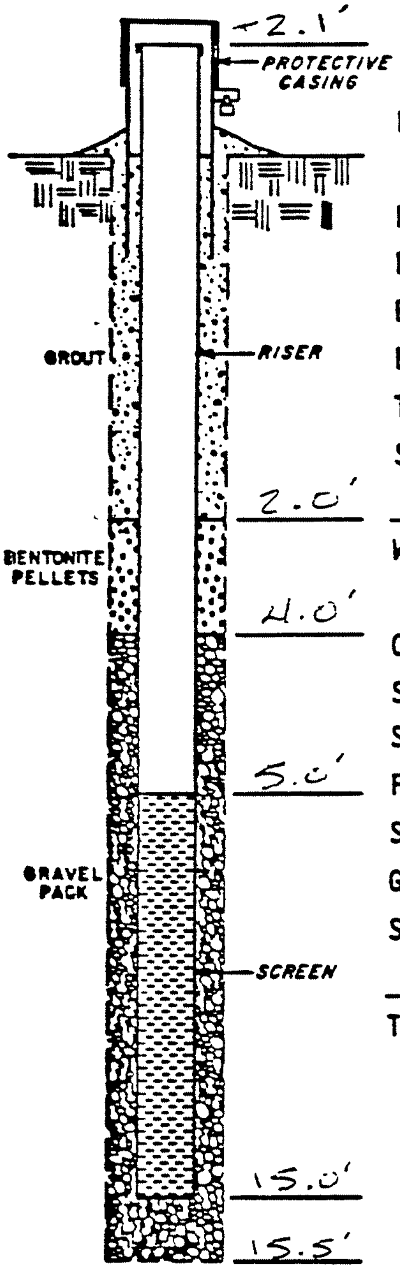
WELL CONSTRUCTION SUMMARY

Project: Peck Bros Landfill Client: NYSDEC Well No: MW-16S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter
Drill Rig Make/Model: Mobile D-53
Borehole Diameters: 10" Drilling Fluid: —
Bits/Depths: 6 1/4" Hollow Stem Augers
Total Depth: 17.3' Depth to Water:
Supervisory Geologist: Andrew Downie

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" Length: 7.1'
Screen Material: Stainless Continuous Diameter: 2" Length: 10.0'
Slot Size: 0.010" Setting: 5 - 15' bgl
Filter Material: Q-Rock # 4 Morie # 1 Equiv. Setting: 4 - 15.5' bgl
Seals Material: Bentonite Pellets Setting: 2' - 4' bgl
Grout: Cement/Bentonite/Water Setting: Grade - 2' bgl
Surface Casing Material: Steel Setting: +2.5' - 2.5' bgl

TIME LOG

	Started		Completed	
Drilling:	11/29/89	0830	11/29/89	10:15
Installation:	11/29/89	1015	11/29/89	12:30
Development:				

WELL DEVELOPMENT

Method:
Static Depth to Water:
Pumping Depth to Water:
Pumping Rate: Specific Capacity:
Volume Pumped:

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BORING NUMBER: 17-S

Log of Boring

Project Pfohl Bros. Location ______ Job. No 897-12-RC-WELL

Date Drilled 11/27/89 Drilling Co. Rochester Drilling Co.

Total Depth 22.6' Method Used 6 1/4" hollow stem auger

Inspector T. Ryan Organic Vapor Instruments Used OVA/HNu Water Table Depth 2'

Depth (feet)	Samp No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. - PPM	Sample Description	Strata Change	Remarks (Time of Day)
0	1	2	0'/2'	.7'/2'		Dark brown to black top soil. Silty. Cover for fill		1200
	1	2						
1	1	2						
	1	2						
2	2	2	2'/4'	0		Black organic material with glass in tip. Very silty.		Wet spoon
	2	5						
3	2	2						
	2	3						
4	3	1	4'/6'	0	OVA = 300 in hole, HNu @ background	Black clayey silt in tip. Bits of newspaper with oily sheen.		
	3	1						
5	3	1						
	3	1						
6	4	1	6'/8'	.3'/2'	OVA = 1000 in hole, HNu @ background	Very fine sand with glass and newspaper. Bottommost part is silty		1300
	4	1						
7								

NY-1

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
7								
	4	1	6'/8'	.3'/2'	↓			
	4	14	↓	↓	↓	Bottommost part is silty.	Silty sand	✓
8	5	10	8'/10'	1.2'/2'	OVA= 7ppm on black stain	Light brown silty sand. Black stained. 0.5'-0.8'		~~Possible~~ Analytical sample? ✓
	5	20	↓	↓				
9	5	22	↓	↓	↓			
	5	32	↓	↓	↓	Clayey at bottom		
10	6	22	10'/12'	1.5'/2'		Very fine silty sand Black laminations @ 10.2', 10.9', 11.4', about .5" thick		1324
	6	32	↓	↓				
11	6	35	↓	↓				
	6	14	↓	↓				
12	7	7	12'/14'	1.9'/2'		12.0'-12.3' Clayey silt		1345
	7	9	↓	↓		12.3'-14.0' Silty clay with black laminations		
13	7	7	↓	↓				
	7	8	↓	↓		13.8'-14.0' w/small cobbles	Clay	
14	8	8	14'/16'	2'/2'	OVA = 400-500 in hole	Brown clay w/small cobbles		
	8	8	↓	↓	HNu @ background			
15								

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Log of Boring

Depth (feet)	Samp. No.	Blows per 6" lbs.	Sample Interval	Adv./Recov.	Org. Vap. (PPM)	Sample Description	Strata Change	Remarks (Time of Day)
15	8	9	14'/16'	2'/2'	↓	Brown clay very stiff on bottom.	Clay	
	8	18	↓	↓	↓			
16	9	11	16'/18'	0	OVA = 200 ppm in hole	Rock in spoon tip. Oily sheen in spots		
	9	21	↓	↓	↓			
17	9	32						
	9	40	↓	↓	↓			
18	10		18'/20'	1.9'/2'		Stiff brown clay Black laminates		1440
	10		↓	↓				
19	10							
	10		↓	↓				
20	11		20'/22'	1.6'/2'		Silty clay with rock fragments.		1505
	11		↓	↓				
21	11							
	11		↓	↓		Piece of bedrock in tip of spoon.	Till	
22	12	30	22'/22.7'	.6'/.6'		Dark gray till		
	12	30/1"	↓	↓		BEDROCK		
23								

TOC : 698.99
T/C : 698.79

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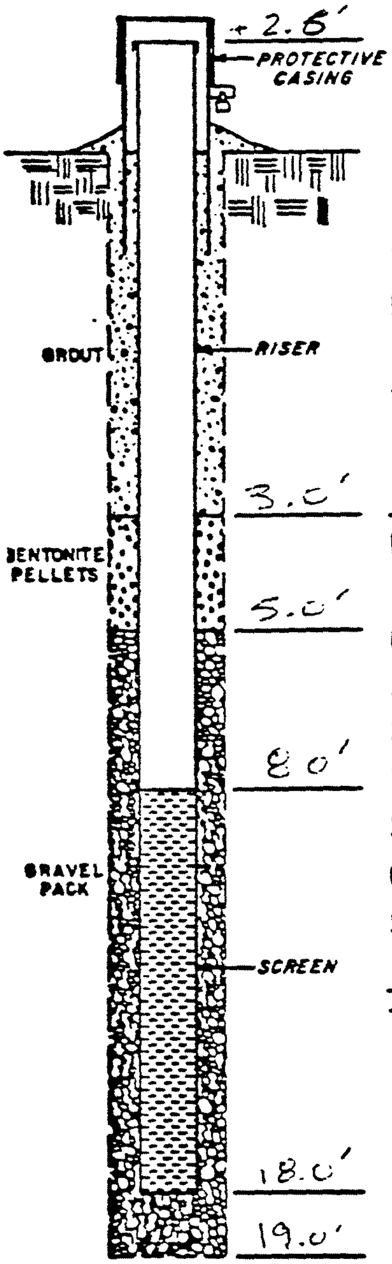
WELL CONSTRUCTION SUMMARY

Project: Pfohl Bros Landfill Client: NYSDEC Well No: MW-17 S



DRILLING SUMMARY

Drilling Co: Rochester Drilling Co. Drillers: Art Utter

Drill Rig Make/Model: Mobile D-53

Borehole Diameters: 10" Drilling Fluid: —

Bits/Depths: 6 1/4" Hollow Stem Auger

Total Depth: 22.6' Depth to Water:

Supervisory Geologist: Andrew Downie

WELL DESIGN

Casing Material: 316 Stainless Diameter: 2" Length: 10.6'

Screen Material: Stainless Continuous Diameter: 2" Length: 10.0'

Slot Size: 0.010" Setting: 8' - 18' bgl

Filter Material: Q-Rock #4 Morie #1 Equiv. Setting: 5' - 19' bgl

Seals Material: Bentonite Pellets Setting: 3' - 5' bgl

Grout: Cement/Bentonite/Water Setting: Grade - 3' bgl

Surface Casing Material: Steel Setting: +2.8' - 2.2' bgl

TIME LOG

	Started		Completed	
Drilling:	11/27/89	12:00	11/27/89	15:30
Installation:	11/28/89	08:00	11/28/89	10:30
Development:				

WELL DEVELOPMENT

Method: Bail

Static Depth to Water:

Pumping Depth to Water:

Pumping Rate: Specific Capacity:

Volume Pumped:

NY-5

Appendix C

Appendix C

PFOHL BROTHERS LANDFILL WATER LEVEL MEASUREMENTS

		DEPTH-TO-WATER				
WELL	ELEVATION (TOC)	JAN. '89	AUG. '89	DEC. '89	JAN. '90	MAY '90
MW-1S	695.95	2.30	5.83		2.10	2.48
MW-1D	695.86	2.47	4.00		1.65	3.09
MW-2S	701.00			7.70	7.70	6.35
MW-2D	701.57			10.80	10.35	10.48
MW-3S	693.29	1.93	16.69	4.33	2.55	4.63
MW-3D	693.28	1.92	10.15	2.35	2.00	2.19
MW-4S	692.72	2.96	5.25		2.70	3.10
MW-4D	692.75	11.40	12.25		12.00	11.23
MW-5S	696.14	3.30	4.88	3.95	3.65	2.80
MW-5D	696.06	5.40	5.94	5.00	4.55	4.90
MW-6S	700.33		7.00		4.75	6.73
MW-6D	701.57		7.10		3.70	5.87
MW-7S	698.73		7.65	5.68	7.05	6.39
MW-7D	699.19		21.20	15.95	20.10	14.43
MW-8S	696.57		7.30		4.20	6.19
MW-9S	701.46		8.20		8.10	6.87
MW-10S	699.50		9.55		6.50	6.75
MW-11S	693.30				2.85	2.91
MW-12S	702.49		9.10		8.90	9.34
MW-13S	705.01			10.64	10.50	9.58
MW-14S	702.51			8.15	8.55	7.20
MW-15S	699.26			7.30	6.75	6.11
MW-16S	701.46			7.02	6.95	4.60
MW-17S	698.79					3.80

File: PBMWDTW

Appendix D

TABLE 2.—*Mean concentrations, deviations, and ranges of elements in samples of soils and other surficial materials in the conterminous United States*

[Means and ranges are reported in parts per million (μg/g), and means and deviations are geometric except as indicated. Ratio, number of samples in which the element was found in measurable concentrations to number of samples analyzed. <, less than; >, greater than]

Element	Conterminous United States			Western United States (west of 96th meridian)					Eastern United States (east of 96th meridian)				
	Mean	Deviation	Estimated arithmetic mean	Ratio	Mean	Deviation	Observed range	Estimated arithmetic mean	Ratio	Mean	Deviation	Observed range	Estimated arithmetic mean
Al, percent	4.7	2.48	7.2	661:770	5.8	2.00	0.5 - >10	7.4	450:477	3.3	2.87	0.7 - >10	5.7
As	5.2	2.23	7.2	728:730	5.5	1.98	<0.10 - 97	7.0	521:527	4.8	2.56	<0.1 - 73	7.4
B	26	1.97	33	506:778	23	1.99	<20 - 300	29	425:541	31	1.88	<20 - 150	38
Ba	440	2.14	580	778:778	580	1.72	70 - 5,000	670	541:541	290	2.35	10 - 1,500	420
Be	.63	2.38	.92	310:778	.68	2.30	<1 - 15	.97	169:525	.55	2.53	<1 - 7	.85
Br	.56	2.50	.85	113:220	.52	2.74	<0.5 - 11	.86	78:128	.62	2.18	<0.5 - 5.3	.85
C, percent	1.6	2.57	2.5	250:250	1.7	2.37	0.16 - 10	2.5	162:162	1.5	2.88	0.06 - 37	2.6
Ca, percent	.92	4.00	2.4	777:777	1.8	3.05	0.06 - 32	3.3	514:514	.34	3.08	0.01 - 28	.63
Ce	63	1.78	75	81:683	65	1.71	<150 - 300	75	70:489	63	1.85	<150 - 300	76
Co	6.7	2.19	9.1	698:778	7.1	1.97	<3 - 50	9.0	403:533	5.9	2.57	<0.3 - 70	9.2
Cr	37	2.37	54	778:778	41	2.19	3 - 2,000	56	541:541	33	2.60	1 - 1,000	52
Cu	17	2.44	25	778:778	21	2.07	2 - 300	27	523:533	13	2.80	<1 - 700	22
F	210	3.34	430	598:610	280	2.52	<10 - 1,900	440	390:435	130	4.19	<10 - 3,700	360
Fe, percent	1.8	2.38	2.6	776:777	2.1	1.95	0.1 - >10	2.6	539:540	1.4	2.87	0.01 - >10	2.5
Ga	13	2.03	17	767:776	16	1.68	<5 - 70	19	431:540	9.3	2.38	<5 - 70	14
Ge	1.2	1.37	1.2	224:224	1.2	1.32	0.58 - 2.5	1.2	130:131	1.1	1.45	<0.1 - 2.0	1.2
Hg	.058	2.52	.089	729:733	.046	2.33	<0.01 - 4.6	.065	534:534	.081	2.52	0.01 - 3.4	.12
I	.75	2.63	1.2	169:246	.79	2.55	<0.5 - 9.6	1.2	90:153	.68	2.81	<0.5 - 7.0	1.2
K, percent[1]	1.5	.79	None	777:777	1.8	.71	0.19 - 6.3	None	537:537	1.2	.75	0.005 - 3.7	—
La	30	1.92	37	462:777	30	1.89	<30 - 200	37	294:516	29	1.98	<30 - 200	37
Li	20	1.85	24	731:731	22	1.58	5 - 130	25	479:527	17	2.16	<5 - 140	22
Mg, percent	.44	3.28	.90	777:778	.74	2.21	0.03 - >10	1.0	528:528	.21	3.55	0.005 - 5	.46
Mn	330	2.77	550	777:777	380	1.98	30 - 5,000	480	537:540	260	3.82	<2 - 7,000	640
Mo	.59	2.72	.97	57:774	.85	2.17	<3 - 7	1.1	32:524	.32	3.93	<3 - 15	.79
Na, percent	.59	3.27	1.2	744:744	.97	1.95	0.05 - 10	1.2	363:449	.25	4.55	<0.05 - 5	.78
Nb	9.3	1.75	11	418:771	8.7	1.82	<10 - 100	10	322:498	10	1.65	<10 - 50	12
Nd	40	1.68	46	120:538	36	1.76	<70 - 300	43	109:332	46	1.58	<70 - 300	51
Ni	13	2.31	19	747:778	15	2.10	<5 - 700	19	443:540	11	2.64	<5 - 700	18
P	260	2.67	430	524:524	320	2.33	40 - 4,500	460	380:382	200	2.95	<20 - 6,800	360
Pb	16	1.86	19	712:778	17	1.80	<10 - 700	20	422:541	14	1.95	<10 - 300	17
Rb	58	1.72	67	221:224	69	1.50	<20 - 210	74	107:131	43	1.94	<20 - 160	53
S, percent	.12	2.04	.16	34:224	.13	2.37	<0.08 - 4.8	.19	20:131	.10	1.34	<0.08 - 0.31	.11
Sb	.48	2.27	.67	35:223	.47	2.15	<1 - 2.6	.62	31:131	.52	2.38	<1 - 8.8	.76
Sc	7.5	1.82	8.9	685:778	8.2	1.74	<5 - 50	9.6	389:526	6.5	1.90	<5 - 30	8.0
Se	.26	2.46	.39	590:733	.23	2.43	<0.1 - 4.3	.34	449:534	.30	2.44	<0.1 - 3.9	.45
Si, percent[1]	31	6.48	None	250:250	30	5.70	15 - 44	None	156:156	34	6.64	1.7 - 45	--
Sn	.89	2.36	1.3	218:224	.90	2.11	<0.1 - 7.4	1.2	123:131	.86	2.81	<0.1 - 10	1.5
Sr	120	3.30	240	778:778	200	2.16	10 - 3,000	270	501:540	53	3.61	<5 - 700	120
Ti, percent	.24	1.89	.29	777:777	.22	1.78	0.05 - 2.0	.26	540:540	.28	2.00	0.007 - 1.5	.35
Th	8.6	1.53	9.4	195:195	9.1	1.49	2.4 - 31	9.8	102:102	7.7	1.58	2.2 - 23	8.6
U	2.3	1.73	2.7	224:224	2.5	1.45	0.68 - 7.9	2.7	130:130	2.1	2.12	0.29 - 11	2.7
V	58	2.25	80	778:778	70	1.95	7 - 500	88	516:541	43	2.51	<7 - 300	66
Y	21	1.78	25	759:778	22	1.66	<10 - 150	25	477:541	20	1.97	<10 - 200	25
Yb	2.6	1.79	3.1	754:764	2.6	1.63	<1 - 20	3.0	452:486	2.6	2.06	<1 - 50	3.3
Zn	48	1.95	60	766:766	55	1.79	10 - 2,100	65	473:482	40	2.11	<5 - 2,900	52
Zr	180	1.91	230	777:778	160	1.77	<20 - 1,500	190	539:541	220	2.01	<20 - 2,000	290

[1] Means are arithmetic, deviations are standard.

Appendix E

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
VOLATILES
SOIL BORING ANALYTICAL RESULTS
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	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B1-SS-05	B1-SS-06	B2-SS-03	B2-SS-05	B3-SS-06	B4-SS-03	B4-SS-03D	B4-SS-10	B4-SS-10D
VOLATILES									
Chloromethane	12.0 U	12.0 U	11.0 U	12.0 U	130.0 U	200.0 U	5000.0 U	12.0 U	59.0 U
Bromomethane	12.0 U	12.0 U	11.0 U	12.0 U	130.0 U	200.0 U	5000.0 U	12.0 U	59.0 U
Vinyl Chloride	12.0 U	12.0 U	11.0 U	12.0 U	130.0 U	200.0 U	5000.0 U	12.0 U	59.0 U
Chloroethane	12.0 U	12.0 U	11.0 U	12.0 U	130.0 U	200.0 U	5000.0 U	12.0 U	59.0 U
Methylene Chloride	R	R	R	R	80.0 B	390.0 B	5000.0 BD	34.0 B	33.0 BD
Acetone	R	R	R	R	130.0 U	6800.0 BD	7300.0 BD	770.0 D	950.0 D
Carbon Disulfide	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
1,1-Dichloroethene	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
1,1-Dichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
1,2-Dichloroethene (total)	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
Chloroform	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
1,2-Dichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
2-Butanone	12.0 U	12.0 U	11.0 U	12.0 U	130.0 U	200.0 U	5000.0 U	12.0 U	59.0 U
1,1,1-Trichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
Carbon Tetrachloride	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
Vinyl Acetate	12.0 U	12.0 U	11.0 U	12.0 U	130.0 U	200.0 U	5000.0 U	12.0 U	59.0 U
Bromodichloromethane	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
1,2-Dichloropropane	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
cis-1,3-Dichloropropene	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
Trichloroethene	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
Dibromochloromethane	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
1,1,2-Trichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
Benzene	6.0 U	6.0 U	6.0 U	6.0 U	54.0 J	4200.0 D	3700.0 D	6.0 U	29.0 U
trans-1,3-Dichloropropene	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
Bromoform	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
4-Methyl-2-Pentanone	12.0 U	12.0 U	11.0 U	12.0 U	130.0 U	200.0 U	5000.0 U	12.0 U	59.0 U
2-Hexanone	12.0 U	12.0 U	11.0 U	12.0 U	130.0 U	200.0 U	5000.0 U	12.0 U	59.0 U
Tetrachloroethene	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
1,1,2,2-Tetrachloroethane	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
Toluene	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	19000.0 D	17000.0 D	11.0 JD	15.0 JD
Chlorobenzene	6.0 U	6.0 U	6.0 U	6.0 U	2200.0	150.0	2500.0 U	6.0 U	18.0 JD
Ethylbenzene	6.0 U	6.0 U	6.0 U	6.0 U	1300.0	590.0	2400.0 JD	6.0 U	29.0 U
Styrene	6.0 U	6.0 U	6.0 U	6.0 U	64.0 U	100.0 U	2500.0 U	6.0 U	29.0 U
Xylenes(total)	6.0 U	6.0 U	6.0 U	6.0 U	3100.0 E	3300.0	11000.0 D	11.0	29.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
SOIL BORING ANALYTICAL RESULTS
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	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B5-SS-08	B6-SS-07	B6-SS-7DUP	B7-SS-06	B8-SS-08	B9-SS-07	B9-SS-10	B10-SS-02	B10-SS-05
VOLATILES									
Chloromethane	59.0 U	67.0 U	64.0 U	1700.0 U	62.0 U	59.0 U	60.0 U	11000.0 U	16000.0 U
Bromomethane	59.0 U	67.0 U	64.0 U	1700.0 U	62.0 U	59.0 U	60.0 U	11000.0 U	16000.0 U
Vinyl Chloride	59.0 U	67.0 U	64.0 U	1700.0 U	62.0 U	59.0 U	60.0 U	11000.0 U	16000.0 U
Chloroethane	59.0 U	67.0 U	64.0 U	1700.0 U	62.0 U	59.0 U	60.0 U	11000.0 U	16000.0 U
Methylene Chloride	29.0 U	20.0 J	19.0 J	690.0 J	83.0	30.0	19.0 J	5700.0 U	8000.0 U
Acetone	110.0	240.0	490.0	1700.0 U	330.0	310.0	230.0	14000.0 B	5600.0 BJ
Carbon Disulfide	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
1,1-Dichloroethene	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
1,1-Dichloroethane	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
1,2-Dichloroethene (total)	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	4600.0 J
Chloroform	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
1,2-Dichloroethane	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
2-Butanone	59.0 U	67.0 U	64.0 U	1700.0 U	62.0 U	59.0 U	60.0 U	11000.0 U	16000.0 U
1,1,1-Trichloroethane	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Carbon Tetrachloride	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Vinyl Acetate	59.0 U	67.0 U	64.0 U	1700.0 U	62.0 U	59.0 U	60.0 U	11000.0 U	16000.0 U
Bromodichloromethane	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
1,2-Dichloropropane	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
cis-1,3-Dichloropropene	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Trichloroethene	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Dibromochloromethane	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
1,1,2-Trichloroethane	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Benzene	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
trans-1,3-Dichloropropene	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Bromoform	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
4-Methyl-2-Pentanone	59.0 U	67.0 U	64.0 U	1700.0 U	62.0 U	59.0 U	60.0 U	11000.0 U	16000.0 U
2-Hexanone	59.0 U	67.0 U	64.0 U	1700.0 U	62.0 U	59.0 U	60.0 U	11000.0 U	16000.0 U
Tetrachloroethene	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
1,1,2,2-Tetrachloroethane	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Toluene	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Chlorobenzene	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Ethylbenzene	29.0 U	33.0 U	32.0 U	1000.0	31.0 U	29.0 U	30.0 U	6900.0	89000.0
Styrene	29.0 U	33.0 U	32.0 U	870.0 U	31.0 U	29.0 U	30.0 U	5700.0 U	8000.0 U
Xylenes(total)	29.0 U	33.0 U	32.0 U	1700.0	31.0 U	29.0 U	30.0 U	90000.0	110000.0

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
SOIL BORING ANALYTICAL RESULTS
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SAMPLE NUMBER -	B11-SS-07	B12-SS-01	B12-SS-04	B13-SS-04	B13-SS-567	B14-SS-05	B14-SS-13	B15-SS-06	B15-SS-13
	CONCENTRATIONS in ug/kg or mg/kg								
VOLATILES									
Chloromethane	69.0 U	88.0 U	62.0 U	63.0 U	14000.0 U	62.0 U	58.0 U	60.0 U	56.0 U
Bromomethane	69.0 U	88.0 U	62.0 U	63.0 U	14000.0 U	62.0 U	58.0 U	60.0 U	56.0 U
Vinyl Chloride	69.0 U	88.0 U	62.0 U	63.0 U	14000.0 U	62.0 U	58.0 U	60.0 U	56.0 U
Chloroethane	69.0 U	88.0 U	62.0 U	63.0 U	14000.0 U	62.0 U	58.0 U	60.0 U	56.0 U
Methylene Chloride	40.0	200.0	34.0	100.0	7200.0 U	90.0	23.0 J	62.0	58.0
Acetone	430.0	330.0	280.0	440.0	14000.0 BJ	930.0	210.0	700.0	330.0
Carbon Disulfide	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	420.0	29.0 U	30.0 U	28.0 U
1,1-Dichloroethene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
1,1-Dichloroethane	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
1,2-Dichloroethene (total)	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Chloroform	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
1,2-Dichloroethane	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
2-Butanone	69.0 U	88.0 U	62.0 U	63.0 U	14000.0 U	62.0 U	58.0 U	60.0 U	56.0 U
1,1,1-Trichloroethane	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Carbon Tetrachloride	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Vinyl Acetate	69.0 U	88.0 U	62.0 U	63.0 U	14000.0 U	62.0 U	58.0 U	60.0 U	56.0 U
Bromodichloromethane	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
1,2-Dichloropropane	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
cis-1,3-Dichloropropene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Trichloroethene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Dibromochloromethane	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
1,1,2-Trichloroethane	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Benzene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
trans-1,3-Dichloropropene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Bromoform	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
4-Methyl-2-Pentanone	69.0 U	88.0 U	62.0 U	63.0 U	14000.0 U	62.0 U	58.0 U	60.0 U	56.0 U
2-Hexanone	69.0 U	88.0 U	62.0 U	63.0 U	14000.0 U	62.0 U	58.0 U	60.0 U	56.0 U
Tetrachloroethene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
1,1,2,2-Tetrachloroethane	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Toluene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Chlorobenzene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Ethylbenzene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Styrene	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U
Xylenes(total)	35.0 U	44.0 U	31.0 U	32.0 U	7200.0 U	31.0 U	29.0 U	30.0 U	28.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
SOIL BORING ANALYTICAL RESULTS

05/29/90

SAMPLE NUMBER -	B16-SS-08	B16-SS-10	MW-1D-07	MW-2S-07	MW-2S-07DL	MW-2S-11	MW-2S-11DL	MW-3S-04	MW-3S-06
	CONCENTRATIONS in ug/kg or mg/kg								
VOLATILES									
Chloromethane	3000.0 U	12.0 U	12.0 U	32.0* U	6400.0* U	12.0 U	59.0 U	11.0 U	12.0 U
Bromomethane	3000.0 U	12.0 U	12.0 U	32.0* U	6400.0* U	12.0 U	59.0 U	11.0 U	12.0 U
Vinyl Chloride	3000.0 U	12.0 U	12.0 U	32.0* U	6400.0* U	12.0 U	59.0 U	11.0 U	12.0 U
Chloroethane	3000.0 U	12.0 U	12.0 U	45.0*	6400.0* U	12.0 U	59.0 U	11.0 U	12.0 U
Methylene Chloride	2300.0 B	12.0	6.0	14.0* BJ	2700.0* BJD	14.0	130.0 BD	6.0 U	19.0
Acetone	3000.0 U	37.0	220.0 D	32.0* U	6400.0* U	270.0 D	570.0 D	59.0	79.0
Carbon Disulfide	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
1,1-Dichloroethene	1500.0 U	6.0 U	6.0 U	910.0* JD	710.0* JD	6.0 U	29.0 U	6.0 U	6.0 U
1,1-Dichloroethane	1500.0 U	6.0 U	6.0 U	2100.0* JD	2000.0* JD	100.0	51.0 D	6.0 U	6.0 U
1,2-Dichloroethene (total)	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Chloroform	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
1,2-Dichloroethane	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
2-Butanone	3000.0 U	12.0 U	25.0	32.0* U	6400.0* U	12.0 U	59.0 U	11.0 U	12.0 U
1,1,1-Trichloroethane	2900.0	6.0 U	6.0 U	11000.0* D	83000.0* D	780.0 D	620.0 D	6.0 U	6.0 U
Carbon Tetrachloride	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Vinyl Acetate	3000.0 U	12.0 U	12.0 U	32.0* U	6400.0* U	12.0 U	59.0 U	11.0 U	12.0 U
Bromodichloromethane	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
1,2-Dichloropropane	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
cis-1,3-Dichloropropene	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Trichloroethene	1500.0 U	6.0 U	6.0 U	30.0*	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Dibromochloromethane	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
1,1,2-Trichloroethane	1500.0 U	6.0 U	6.0 U	28.0*	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Benzene	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
trans-1,3-Dichloropropene	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Bromoform	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
4-Methyl-2-Pentanone	3000.0 U	12.0 U	4.0 J	32.0* U	6400.0* U	12.0 U	59.0 U	11.0 U	12.0 U
2-Hexanone	3000.0 U	12.0 U	12.0 U	32.0* U	6400.0* U	12.0 U	59.0 U	11.0 U	12.0 U
Tetrachloroethene	1500.0 U	6.0 U	6.0 U	31.0*	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
1,1,2,2-Tetrachloroethane	1500.0 U	6.0 U	12.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	11.0 U	12.0 U
Toluene	1500.0 U	6.0 U	3.0 J	12.0* J	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Chlorobenzene	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Ethylbenzene	1500.0 U	6.0 U	6.0 U	62.0*	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Styrene	1500.0 U	6.0 U	6.0 U	16.0* U	3200.0* U	6.0 U	29.0 U	6.0 U	6.0 U
Xylenes(total)	1500.0 U	6.0 U	6.0 U	350.0*	3200.0* U	7.0	29.0 U	6.0 U	6.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
SOIL BORING ANALYTICAL RESULTS
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SAMPLE NUMBER -	CONCENTRATIONS in ug/kg or mg/kg								
	MW-3S-07	MW-4D-10	MW-5S-1	MW-6S-02	MW-6S-03	MW-6S-03BD	MW-7S-15	MW-8S-05	MW-9S-06
VOLATILES									
Chloromethane	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U	12.0 U	13.0 U	11.0 U	11.0 U
Bromomethane	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U	12.0 U	13.0 U	11.0 U	11.0 U
Vinyl Chloride	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U	12.0 U	13.0 U	11.0 U	11.0 U
Chloroethane	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U	12.0 U	13.0 U	11.0 U	11.0 U
Methylene Chloride	12.0	6.0	6.0	R	R	R	7.0	5.0 J	17.0
Acetone	83.0	11.0 U	11.0 U	120.0 B	R	R	R	25.0	43.0
Carbon Disulfide	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
1,1-Dichloroethene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
1,1-Dichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
1,2-Dichloroethene (total)	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Chloroform	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
1,2-Dichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
2-Butanone	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U	12.0 U	13.0 U	11.0 U	11.0 U
1,1,1-Trichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Carbon Tetrachloride	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Vinyl Acetate	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U	12.0 U	13.0 U	11.0 U	11.0 U
Bromodichloromethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
1,2-Dichloropropane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
cis-1,3-Dichloropropene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Trichloroethene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Dibromochloromethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
1,1,2-Trichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Benzene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
trans-1,3-Dichloropropene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Bromoform	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
4-Methyl-2-Pentanone	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U	12.0 U	13.0 U	11.0 U	11.0 U
2-Hexanone	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U	12.0 U	13.0 U	11.0 U	11.0 U
Tetrachloroethene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
1,1,2,2-Tetrachloroethane	11.0 U	11.0 U	11.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Toluene	6.0 U	1.0 J	1.0 J	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Chlorobenzene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Ethylbenzene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Styrene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
Xylenes(total)	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
SOIL BORING ANALYTICAL RESULTS
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	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	MW-10S-07	MW-11S-07	MW-12S-07	MW-13S-02	MW-13S-06	MW-14S-08	MW-14S-12	MW-15S-05	MW-16S-01
VOLATILES									
Chloromethane	11.0 U	12.0 U	11.0 U	12.0 U	12.0 U	11.0 U	13.0 U	12.0 U	1500.0 U
Bromomethane	11.0 U	12.0 U	11.0 U	12.0 U	12.0 U	11.0 U	13.0 U	12.0 U	1500.0 U
Vinyl Chloride	11.0 U	12.0 U	11.0 U	12.0 U	12.0 U	11.0 U	13.0 U	12.0 U	1500.0 U
Chloroethane	11.0 U	12.0 U	11.0 U	12.0 U	12.0 U	11.0 U	13.0 U	12.0 U	1500.0 U
Methylene Chloride	R	R	18.0	18.0 B	17.0 B	7.0	12.0	12.0 B	1000.0 B
Acetone	11.0 U	55.0	35.0	21.0	89.0	81.0	120.0	100.0	1500.0 U
Carbon Disulfide	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
1,1-Dichloroethene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
1,1-Dichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
1,2-Dichloroethene (total)	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
Chloroform	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
1,2-Dichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
2-Butanone	11.0 U	12.0 U	11.0 U	12.0 U	12.0 U	11.0 U	13.0 U	12.0 U	1500.0 U
1,1,1-Trichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0	3.0 J	6.0 U	740.0 U
Carbon Tetrachloride	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
Vinyl Acetate	11.0 U	12.0 U	11.0 U	12.0 U	12.0 U	11.0 U	13.0 U	12.0 U	1500.0 U
Bromodichloromethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
1,2-Dichloropropane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
cis-1,3-Dichloropropene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
Trichloroethene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	31.0	740.0 U
Dibromochloromethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
1,1,2-Trichloroethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
Benzene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
trans-1,3-Dichloropropene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
Bromoform	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
4-Methyl-2-Pentanone	11.0 U	12.0 U	11.0 U	12.0 U	12.0 U	11.0 U	13.0 U	12.0 U	1500.0 U
2-Hexanone	11.0 U	12.0 U	11.0 U	12.0 U	12.0 U	11.0 U	13.0 U	12.0 U	1500.0 U
Tetrachloroethene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
1,1,2,2-Tetrachloroethane	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
Toluene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
Chlorobenzene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	780.0
Ethylbenzene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
Styrene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U
Xylenes(total)	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	740.0 U

FOOTNOTES :
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TABLE (contd)
VOLATILES
SOIL BORING ANALYTICAL RESULTS

05/29/90

SAMPLE NUMBER -	CONCENTRATIONS in ug/kg or mg/kg			
	MW-16S-03	MW-16S-3DUP	MW-17S-05	MW-17S-11
VOLATILES				
Chloromethane	1600.0 U	1600.0 U	3000.0 U	1500.0 U
Bromomethane	1600.0 U	1600.0 U	3000.0 U	1500.0 U
Vinyl Chloride	1600.0 U	1600.0 U	3000.0 U	1500.0 U
Chloroethane	1600.0 U	1600.0 U	3000.0 U	1500.0 U
Methylene Chloride	890.0 B	540.0 BJ	1900.0 B	1100.0 B
Acetone	1600.0 U	1600.0 U	3000.0 U	1500.0 U
Carbon Disulfide	790.0 U	790.0 U	1500.0 U	750.0 U
1,1-Dichloroethene	790.0 U	790.0 U	1500.0 U	750.0 U
1,1-Dichloroethane	790.0 U	790.0 U	1500.0 U	750.0 U
1,2-Dichloroethene (total)	790.0 U	790.0 U	1500.0 U	750.0 U
Chloroform	790.0 U	790.0 U	1500.0 U	750.0 U
1,2-Dichloroethane	790.0 U	790.0 U	1500.0 U	750.0 U
2-Butanone	1600.0 U	1600.0 U	3000.0 U	1500.0 U
1,1,1-Trichloroethane	790.0 U	790.0 U	1500.0 U	750.0 U
Carbon Tetrachloride	790.0 U	790.0 U	1500.0 U	750.0 U
Vinyl Acetate	1600.0 U	1600.0 U	3000.0 U	1500.0 U
Bromodichloromethane	790.0 U	790.0 U	1500.0 U	750.0 U
1,2-Dichloropropane	790.0 U	790.0 U	1500.0 U	750.0 U
cis-1,3-Dichloropropene	790.0 U	790.0 U	1500.0 U	750.0 U
Trichloroethene	790.0 U	790.0 U	1500.0 U	750.0 U
Dibromochloromethane	790.0 U	790.0 U	1500.0 U	750.0 U
1,1,2-Trichloroethane	790.0 U	790.0 U	1500.0 U	750.0 U
Benzene	790.0 U	790.0 U	1500.0 U	750.0 U
trans-1,3-Dichloropropene	790.0 U	790.0 U	1500.0 U	750.0 U
Bromoform	790.0 U	790.0 U	1500.0 U	750.0 U
4-Methyl-2-Pentanone	1600.0 U	1600.0 U	3000.0 U	1500.0 U
2-Hexanone	1600.0 U	1600.0 U	3000.0 U	1500.0 U
Tetrachloroethene	790.0 U	790.0 U	1500.0 U	750.0 U
1,1,2,2-Tetrachloroethane	790.0 U	790.0 U	1500.0 U	750.0 U
Toluene	790.0 U	790.0 U	1500.0 U	750.0 U
Chlorobenzene	790.0 U	790.0 U	1500.0 U	750.0 U
Ethylbenzene	790.0 U	790.0 U	1500.0 U	750.0 U
Styrene	790.0 U	790.0 U	1500.0 U	750.0 U
Xylenes(total)	790.0 U	790.0 U	1500.0 U	750.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
SEMI-VOLATILES 1
SOIL BORING ANALYTICAL RESULTS

05/29/90

	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B1-SS-05	B1-SS-06	B2-SS-03	B2-SS-05	B3-SS-06	B3-SS-6DL	B4-SS-03	B4-SS-10	B5-SS-08
SEMI-VOLATILES 1									
Phenol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	150000.0	1800.0	390.0 U
bis(2-Chloroethyl)Ether	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2-Chlorophenol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
1,3-Dichlorobenzene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
1,4-Dichlorobenzene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Benzyl Alcohol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
1,2-Dichlorobenzene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2-Methylphenol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	4400.0 J	390.0 U	390.0 U
bis(2-Chloroisopropyl)Ether	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
4-Methylphenol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
N-Nitroso-Di-n-Propylamine	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Hexachloroethane	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Nitrobenzene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Isophorone	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2-Nitrophenol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2,4-Dimethylphenol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Benzoic Acid	1900.0 U	1900.0 U	1800.0 U	1900.0 UJ	420000.0 U	850000.0 U	69000.0 U	1900.0 U	1900.0 U
bis(2-Chloroethoxy)Methane	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2,4-Dichlorophenol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
1,2,4-Trichlorobenzene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Naphthalene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
4-Chloroaniline	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Hexachlorobutadiene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
4-Chloro-3-Methylphenol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2-Methylnaphthalene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Hexachlorocyclopentadiene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2,4,6-Trichlorophenol	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2,4,5-Trichlorophenol	1900.0 U	1900.0 U	1800.0 U	1900.0 UJ	420000.0 U	850000.0 U	69000.0 U	1900.0 U	1900.0 U
2-Chloronaphthalene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2-Nitroaniline	1900.0 U	1900.0 U	1800.0 U	1900.0 UJ	420000.0 U	850000.0 U	69000.0 U	1900.0 U	1900.0 U
Dimethyl Phthalate	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Acenaphthylene	390.0 U	400.0 U	75.0 J	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2,6-Dinitrotoluene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 1
SOIL BORING ANALYTICAL RESULTS
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	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B6-SS-07	B6-SS-7DUP	B7-SS-06	B8-SS-08	B9-SS-07	B9-SS-10	B10-SS-02	B10-SS-05	B11-SS-07
SEMI-VOLATILES 1									
Phenol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
bis(2-Chloroethyl)Ether	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2-Chlorophenol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
1,3-Dichlorobenzene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
1,4-Dichlorobenzene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Benzyl Alcohol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
1,2-Dichlorobenzene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2-Methylphenol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
bis(2-Chloroisopropyl)Ether	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
4-Methylphenol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	36000.0 J	42000.0 U	2300.0 U
N-Nitroso-Di-n-Propylamine	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Hexachloroethane	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Nitrobenzene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Isophorone	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2-Nitrophenol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2,4-Dimethylphenol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	110000.0	65000.0	2300.0 U
Benzoic Acid	4400.0 U	4200.0 U	46000.0 U	4100.0 U	3900.0 U	1900.0 U	380000.0 U	210000.0 U	1800.0 J
bis(2-Chloroethoxy)Methane	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2,4-Dichlorophenol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
1,2,4-Trichlorobenzene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Naphthalene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	7500.0 J	3900.0 J	340.0 J
4-Chloroaniline	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Hexachlorobutadiene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
4-Chloro-3-Methylphenol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2-Methylnaphthalene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	9900.0 J	2300.0 U
Hexachlorocyclopentadiene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2,4,6-Trichlorophenol	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2,4,5-Trichlorophenol	4400.0 U	4200.0 U	46000.0 U	4100.0 U	3900.0 U	1900.0 U	380000.0 U	210000.0 U	11000.0 U
2-Chloronaphthalene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2-Nitroaniline	4400.0 U	4200.0 U	46000.0 U	4100.0 U	3900.0 U	1900.0 U	380000.0 U	210000.0 U	11000.0 U
Dimethyl Phthalate	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Acenaphthylene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2,6-Dinitrotoluene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 1
SOIL BORING ANALYTICAL RESULTS
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SAMPLE NUMBER -	B12-SS-01	B12-SS-04	B13-SS-04	B13-SS-567	B14-SS-05	B14-SS-13	B15-SS-06	B15-SS-13	B16-SS-08
	CONCENTRATIONS in ug/kg or mg/kg								
SEMI-VOLATILES 1									
Phenol	1200.0 U	400.0 U	550.0	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
bis(2-Chloroethyl)Ether	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2-Chlorophenol	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
1,3-Dichlorobenzene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
1,4-Dichlorobenzene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Benzyl Alcohol	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
1,2-Dichlorobenzene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2-Methylphenol	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
bis(2-Chloroisopropyl)Ether	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
4-Methylphenol	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
N-Nitroso-Di-n-Propylamine	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Hexachloroethane	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Nitrobenzene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Isophorone	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2-Nitrophenol	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2,4-Dimethylphenol	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Benzoic Acid	5800.0 U	2000.0 U	2100.0 U	1900.0 U	2100.0 U	1900.0 U	2000.0 U	3700.0 U	4000.0 U
bis(2-Chloroethoxy)Methane	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2,4-Dichlorophenol	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
1,2,4-Trichlorobenzene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Naphthalene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
4-Chloroaniline	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Hexachlorobutadiene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
4-Chloro-3-Methylphenol	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2-Methylnaphthalene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Hexachlorocyclopentadiene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2,4,6-Trichlorophenol	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2,4,5-Trichlorophenol	5800.0 U	2000.0 U	2100.0 U	1900.0 U	2100.0 U	1900.0 U	2000.0 U	3700.0 U	4000.0 U
2-Chloronaphthalene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2-Nitroaniline	5800.0 U	2000.0 U	2100.0 U	1900.0 U	2100.0 U	1900.0 U	2000.0 U	3700.0 U	4000.0 U
Dimethyl Phthalate	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Acenaphthylene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2,6-Dinitrotoluene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U

FOOTNOTES :
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Units for inorganic results are mg/kg (milligrams per kilogram).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 1
SOIL BORING ANALYTICAL RESULTS
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SAMPLE NUMBER -	B16-SS-10	MW-1D-07	MW-2S-07	MW-2S-11	MW-3S-04	MW-3S-06	MW-3S-07	MW-4D-10	MW-5S-1
	CONCENTRATIONS in ug/kg or mg/kg								
SEMI-VOLATILES 1									
Phenol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
bis(2-Chloroethyl)Ether	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2-Chlorophenol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
1,3-Dichlorobenzene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
1,4-Dichlorobenzene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Benzyl Alcohol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
1,2-Dichlorobenzene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2-Methylphenol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
bis(2-Chloroisopropyl)Ether	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
4-Methylphenol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
N-Nitroso-Di-n-Propylamine	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Hexachloroethane	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Nitrobenzene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Isophorone	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2-Nitrophenol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2,4-Dimethylphenol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Benzoic Acid	2000.0 U	4000.0 U	62.0* U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	3600.0 U	3600.0 U
bis(2-Chloroethoxy)Methane	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2,4-Dichlorophenol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
1,2,4-Trichlorobenzene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Naphthalene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
4-Chloroaniline	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Hexachlorobutadiene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
4-Chloro-3-Methylphenol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2-Methylnaphthalene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Hexachlorocyclopentadiene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2,4,6-Trichlorophenol	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2,4,5-Trichlorophenol	2000.0 U	4000.0 U	62.0* U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	3600.0 U	3600.0 U
2-Chloronaphthalene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2-Nitroaniline	2000.0 U	4000.0 U	62.0* U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	3600.0 U	3600.0 U
Dimethyl Phthalate	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Acenaphthylene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2,6-Dinitrotoluene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 1
SOIL BORING ANALYTICAL RESULTS
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	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	MW-6S-02	MW-6S-03	MW-6S-03BD	MW-7S-15	MW-8S-05	MW-9S-06	MW-10S-07	MW-11S-07	MW-12S-07
SEMI-VOLATILES 1									
Phenol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
bis(2-Chloroethyl)Ether	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2-Chlorophenol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
1,3-Dichlorobenzene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
1,4-Dichlorobenzene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Benzyl Alcohol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
1,2-Dichlorobenzene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2-Methylphenol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
bis(2-Chloroisopropyl)Ether	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
4-Methylphenol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
N-Nitroso-Di-n-Propylamine	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Hexachloroethane	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Nitrobenzene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Isophorone	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2-Nitrophenol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2,4-Dimethylphenol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Benzoic Acid	1800.0 U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	1800.0 U	1900.0 U	1900.0 U	1800.0 U
bis(2-Chloroethoxy)Methane	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2,4-Dichlorophenol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
1,2,4-Trichlorobenzene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Naphthalene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	120.0 J
4-Chloroaniline	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Hexachlorobutadiene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
4-Chloro-3-Methylphenol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2-Methylnaphthalene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Hexachlorocyclopentadiene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2,4,6-Trichlorophenol	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2,4,5-Trichlorophenol	1800.0 U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	1800.0 U	1900.0 U	1900.0 U	1800.0 U
2-Chloronaphthalene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2-Nitroaniline	1800.0 U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	1800.0 U	1900.0 U	1900.0 U	1800.0 U
Dimethyl Phthalate	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Acenaphthylene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2,6-Dinitrotoluene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 1
SOIL BORING ANALYTICAL RESULTS

05/29/90

	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	MW-13S-02	MW-13S-06	MW-14S-08	MW-14S-12	MW-15S-05	MW-16S-01	MW-16S-03	MW-16S-3DUP	MW-17S-05
SEMI-VOLATILES 1									
Phenol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	3300.0 D
bis(2-Chloroethyl)Ether	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2-Chlorophenol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
1,3-Dichlorobenzene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
1,4-Dichlorobenzene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Benzyl Alcohol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
1,2-Dichlorobenzene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2-Methylphenol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
bis(2-Chloroisopropyl)Ether	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
4-Methylphenol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
N-Nitroso-Di-n-Propylamine	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Hexachloroethane	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Nitrobenzene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Isophorone	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2-Nitrophenol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2,4-Dimethylphenol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Benzoic Acid	2000.0 U	2000.0 U	1900.0 U	2100.0 U	4100.0 U	2000.0 U	2100.0 U	2100.0 U	2000.0 U
bis(2-Chloroethoxy)Methane	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2,4-Dichlorophenol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
1,2,4-Trichlorobenzene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Naphthalene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
4-Chloroaniline	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Hexachlorobutadiene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
4-Chloro-3-Methylphenol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2-Methylnaphthalene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Hexachlorocyclopentadiene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2,4,6-Trichlorophenol	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2,4,5-Trichlorophenol	2000.0 U	2000.0 U	1900.0 U	2100.0 U	4100.0 U	2000.0 U	2100.0 U	2100.0 U	2000.0 U
2-Chloronaphthalene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2-Nitroaniline	2000.0 U	2000.0 U	1900.0 U	2100.0 U	4100.0 U	2000.0 U	2100.0 U	2100.0 U	2000.0 U
Dimethyl Phthalate	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Acenaphthylene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2,6-Dinitrotoluene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor.

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 1
SOIL BORING ANALYTICAL RESULTS
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SAMPLE NUMBER -	MW-17S-11
	CONCENTRATIONS in ug/kg or mg/kg
SEMI-VOLATILES 1	
Phenol	310.0 J
bis(2-Chloroethyl)Ether	390.0 U
2-Chlorophenol	390.0 U
1,3-Dichlorobenzene	390.0 U
1,4-Dichlorobenzene	390.0 U
Benzyl Alcohol	390.0 U
1,2-Dichlorobenzene	390.0 U
2-Methylphenol	390.0 U
bis(2-Chloroisopropyl)Ether	390.0 U
4-Methylphenol	390.0 U
N-Nitroso-Di-n-Propylamine	390.0 U
Hexachloroethane	390.0 U
Nitrobenzene	390.0 U
Isophorone	390.0 U
2-Nitrophenol	390.0 U
2,4-Dimethylphenol	390.0 U
Benzoic Acid	2000.0 U
bis(2-Chloroethoxy)Methane	390.0 U
2,4-Dichlorophenol	390.0 U
1,2,4-Trichlorobenzene	390.0 U
Naphthalene	390.0 U
4-Chloroaniline	390.0 U
Hexachlorobutadiene	390.0 U
4-Chloro-3-Methylphenol	390.0 U
2-Methylnaphthalene	390.0 U
Hexachlorocyclopentadiene	390.0 U
2,4,6-Trichlorophenol	390.0 U
2,4,5-Trichlorophenol	2000.0 U
2-Chloronaphthalene	390.0 U
2-Nitroaniline	2000.0 U
Dimethyl Phthalate	390.0 U
Acenaphthylene	390.0 U
2,6-Dinitrotoluene	390.0 U

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FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
SEMI-VOLATILES 2
SOIL BORING ANALYTICAL RESULTS
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	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B1-SS-05	B1-SS-06	B2-SS-03	B2-SS-05	B3-SS-06	B3-SS-6DL	B4-SS-03	B4-SS-10	B5-SS-08
SEMI-VOLATILES 2									
3-Nitroaniline	1900.0 U	1900.0 U	1800.0 U	1900.0 UJ	420000.0 U	850000.0 U	69000.0 U	1900.0 U	1900.0 U
Acenaphthene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
2,4-Dinitrophenol	1900.0 U	1900.0 U	1800.0 U	1900.0 UJ	420000.0 U	850000.0 U	69000.0 U	1900.0 U	1900.0 U
4-Nitrophenol	1900.0 U	1900.0 U	1800.0 U	1900.0 UJ	420000.0 U	850000.0 U	69000.0 U	1900.0 U	1900.0 U
Dibenzofuran	390.0 U	400.0 U	380.0 U	390.0 UJ	1900000.0 D	1900000.0	2100.0 J	120.0 J	390.0 U
2,4-Dinitrotoluene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Diethylphthalate	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
4-Chlorophenyl-phenylether	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Fluorene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
4-Nitroaniline	1900.0 U	1900.0 U	1800.0 U	1900.0 UJ	420000.0 U	850000.0 U	69000.0 U	1900.0 U	1900.0 U
4,6-Dinitro-2-Methylphenol	1900.0 U	1900.0 U	1800.0 U	1900.0 UJ	420000.0 U	850000.0 U	69000.0 U	1900.0 U	1900.0 U
N-Nitrosodiphenylamine (1)	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
4-Bromophenyl-phenylether	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Hexachlorobenzene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Pentachlorophenol	1900.0 U	1900.0 U	1800.0 U	1900.0 UJ	420000.0 U	850000.0 U	69000.0 U	1900.0 U	1900.0 U
Phenanthrene	390.0 U	400.0 U	350.0 J	390.0 UJ	32000.0 J	170000.0 U	8300.0 J	390.0 U	390.0 U
Anthracene	390.0 U	400.0 U	72.0 J	390.0 UJ	85000.0 U	170000.0 U	1900.0 J	390.0 U	390.0 U
Di-n-Butylphthalate	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Fluoranthene	390.0 U	400.0 U	910.0	390.0 UJ	67000.0 J	170000.0 U	17000.0	140.0 J	390.0 U
Pyrene	390.0 U	400.0 U	940.0	390.0 UJ	49000.0 J	170000.0 U	5200.0 J	390.0 U	390.0 U
Butylbenzylphthalate	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	140.0 J	390.0 U
3,3'-Dichlorobenzidine	790.0 U	800.0 U	760.0 U	790.0 UJ	170000.0 U	340000.0 U	28000.0 U	780.0 U	780.0 U
Benzo(a)Anthracene	390.0 U	400.0 U	940.0	390.0 UJ	24000.0 J	170000.0 U	2900.0 J	390.0 U	390.0 U
Chrysene	390.0 U	400.0 U	600.0	390.0 UJ	25000.0 J	170000.0 U	14000.0 U	390.0 U	390.0 U
bis(2-Ethylhexyl)Phthalate	390.0 U	400.0 U	3000.0 B	R	34000.0 J	170000.0 U	14000.0 U	370.0 J	310.0 BJ
Di-n-Octyl Phthalate	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Benzo(b)Fluoranthene	390.0 U	400.0 U	610.0	390.0 UJ	32000.0 J	170000.0 U	4100.0 J	390.0 U	390.0 U
Benzo(k)Fluoranthene	390.0 U	400.0 U	400.0	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Benzo(a)Pyrene	390.0 U	400.0 U	390.0	390.0 UJ	21000.0 J	170000.0 U	14000.0 U	390.0 U	390.0 U
Indeno(1,2,3-cd)Pyrene	390.0 U	400.0 U	270.0 J	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Dibenz(a,h)Anthracene	390.0 U	400.0 U	380.0 U	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U
Benzo(g,h,i)Perylene	390.0 U	400.0 U	230.0 J	390.0 UJ	85000.0 U	170000.0 U	14000.0 U	390.0 U	390.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 2
SOIL BORING ANALYTICAL RESULTS
Page 02 of 07

05/29/90

	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B6-SS-07	B6-SS-7DUP	B7-SS-06	B8-SS-08	B9-SS-07	B9-SS-10	B10-SS-02	B10-SS-05	B11-SS-07
SEMI-VOLATILES 2									
3-Nitroaniline	4400.0 U	4200.0 U	46000.0 U	4100.0 U	3900.0 U	1900.0 U	380000.0 U	210000.0 U	11000.0 U
Acenaphthene	880.0 U	850.0 U	9200.0 U	210.0 J	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2,4-Dinitrophenol	4400.0 U	4200.0 U	46000.0 U	4100.0 U	3900.0 U	1900.0 U	380000.0 U	210000.0 U	11000.0 U
4-Nitrophenol	4400.0 U	4200.0 U	46000.0 U	4100.0 U	3900.0 U	1900.0 U	380000.0 U	210000.0 U	11000.0 U
Dibenzofuran	580.0 J	440.0 J	9200.0 U	150.0 J	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
2,4-Dinitrotoluene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Diethylphthalate	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	150.0 J	75000.0 U	42000.0 U	2300.0 U
4-Chlorophenyl-phenylether	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Fluorene	880.0 U	850.0 U	9200.0 U	160.0 J	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
4-Nitroaniline	4400.0 U	4200.0 U	46000.0 U	4100.0 U	3900.0 U	1900.0 U	380000.0 U	210000.0 U	11000.0 U
4,6-Dinitro-2-Methylphenol	4400.0 U	4200.0 U	46000.0 U	4100.0 U	3900.0 U	1900.0 U	380000.0 U	210000.0 U	11000.0 U
N-Nitrosodiphenylamine (1)	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
4-Bromophenyl-phenylether	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Hexachlorobenzene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Pentachlorophenol	4400.0 U	4200.0 U	46000.0 U	4100.0 U	3900.0 U	1900.0 U	380000.0 U	210000.0 U	11000.0 U
Phenanthrene	690.0 J	76.0 J	9200.0 U	1100.0	780.0 U	390.0 U	75000.0 U	8600.0 J	300.0 J
Anthracene	150.0 J	39.0 J	9200.0 U	290.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Di-n-Butylphthalate	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Fluoranthene	1000.0	120.0 J	9200.0 U	1600.0	780.0 U	390.0 U	75000.0 U	42000.0 U	160.0 J
Pyrene	670.0 J	100.0 J	9200.0 U	1100.0	780.0 U	390.0 U	75000.0 U	42000.0 U	190.0 J
Butylbenzylphthalate	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	7900.0 E	75000.0 U	42000.0 U	3400.0
3,3'-Dichlorobenzidine	1800.0 U	1700.0 U	18000.0 U	1600.0 U	1600.0 U	780.0 U	150000.0 U	85000.0 U	4600.0 U
Benzo(a)Anthracene	550.0 J	55.0 J	9200.0 U	790.0 J	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Chrysene	460.0 J	53.0 J	9200.0 U	840.0	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
bis(2-Ethylhexyl)Phthalate	880.0 U	1000.0	9200.0 U	810.0 U	780.0 U	380.0 J	75000.0 U	42000.0 U	1200.0 J
Di-n-Octyl Phthalate	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Benzo(b)Fluoranthene	480.0 J	70.0 J	9200.0 U	960.0	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Benzo(k)Fluoranthene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Benzo(a)Pyrene	880.0 U	850.0 U	9200.0 U	510.0 J	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Indeno(1,2,3-cd)Pyrene	880.0 U	850.0 U	9200.0 U	390.0 J	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Dibenz(a,h)Anthracene	880.0 U	850.0 U	9200.0 U	810.0 U	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U
Benzo(g,h,i)Perylene	880.0 U	850.0 U	9200.0 U	300.0 J	780.0 U	390.0 U	75000.0 U	42000.0 U	2300.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

TABLE (contd)
SEMI-VOLATILES 2
SOIL BORING ANALYTICAL RESULTS

05/29/90

	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B12-SS-01	B12-SS-04	B13-SS-04	B13-SS-567	B14-SS-05	B14-SS-13	B15-SS-06	B15-SS-13	B16-SS-08
SEMI-VOLATILES 2									
3-Nitroaniline	5800.0 U	2000.0 U	2100.0 U	1900.0 U	2100.0 U	1900.0 U	2000.0 U	3700.0 U	4000.0 U
Acenaphthene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2,4-Dinitrophenol	5800.0 U	2000.0 U	2100.0 U	1900.0 U	2100.0 U	1900.0 U	2000.0 U	3700.0 U	4000.0 U
4-Nitrophenol	5800.0 U	2000.0 U	2100.0 U	1900.0 U	2100.0 U	1900.0 U	2000.0 U	3700.0 U	4000.0 U
Dibenzofuran	1200.0 U	400.0 U	170.0 J	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
2,4-Dinitrotoluene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Diethylphthalate	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
4-Chlorophenyl-phenylether	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Fluorene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
4-Nitroaniline	5800.0 U	2000.0 U	2100.0 U	1900.0 U	2100.0 U	1900.0 U	2000.0 U	3700.0 U	4000.0 U
4,6-Dinitro-2-Methylphenol	5800.0 U	2000.0 U	2100.0 U	1900.0 U	2100.0 U	1900.0 U	2000.0 U	3700.0 U	4000.0 U
N-Nitrosodiphenylamine (1)	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
4-Bromophenyl-phenylether	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Hexachlorobenzene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Pentachlorophenol	5800.0 U	2000.0 U	2100.0 U	1900.0 U	2100.0 U	1900.0 U	2000.0 U	3700.0 U	4000.0 U
Phenanthrene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Anthracene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Di-n-Butylphthalate	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Fluoranthene	340.0 J	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	290.0 J	740.0 U	800.0 U
Pyrene	340.0 J	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	310.0 J	740.0 U	800.0 U
Butylbenzylphthalate	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
3,3'-Dichlorobenzidine	2300.0 U	810.0 U	840.0 U	760.0 U	820.0 U	770.0 U	790.0 U	1500.0 U	1600.0 U
Benzo(a)Anthracene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	280.0 J	740.0 U	800.0 U
Chrysene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	210.0 J	740.0 U	800.0 U
bis(2-Ethylhexyl)Phthalate	1200.0 U	400.0 U	61.0 J	380.0 U	420.0 B	4700.0 B	190.0 J	510.0 J	800.0 U
Di-n-Octyl Phthalate	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Benzo(b)Fluoranthene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	240.0 J	740.0 U	800.0 U
Benzo(k)Fluoranthene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Benzo(a)Pyrene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	170.0 J	740.0 U	800.0 U
Indeno(1,2,3-cd)Pyrene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	95.0 J	740.0 U	800.0 U
Dibenz(a,h)Anthracene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U
Benzo(g,h,i)Perylene	1200.0 U	400.0 U	420.0 U	380.0 U	410.0 U	380.0 U	390.0 U	740.0 U	800.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 2
SOIL BORING ANALYTICAL RESULTS

05/29/90

SAMPLE NUMBER -	CONCENTRATIONS in ug/kg or mg/kg								
	B16-SS-10	MW-1D-07	MW-2S-07	MW-2S-11	MW-3S-04	MW-3S-06	MW-3S-07	MW-4D-10	MW-5S-1
SEMI-VOLATILES 2									
3-Nitroaniline	2000.0 U	4000.0 U	62.0* U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	3600.0 U	3600.0 U
Acenaphthene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2,4-Dinitrophenol	2000.0 U	4000.0 U	62.0* U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	3600.0 U	3600.0 U
4-Nitrophenol	2000.0 U	4000.0 U	62.0* U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	3600.0 U	3600.0 U
Dibenzofuran	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
2,4-Dinitrotoluene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Diethylphthalate	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
4-Chlorophenyl-phenylether	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Fluorene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
4-Nitroaniline	2000.0 U	4000.0 U	62.0* U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	3600.0 U	3600.0 U
4,6-Dinitro-2-Methylphenol	2000.0 U	4000.0 U	62.0* U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	3600.0 U	3600.0 U
N-Nitrosodiphenylamine (1)	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
4-Bromophenyl-phenylether	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Hexachlorobenzene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Pentachlorophenol	2000.0 U	4000.0 U	62.0* U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	3600.0 U	3600.0 U
Phenanthrene	390.0 U	790.0 U	5.0* J	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Anthracene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Di-n-Butylphthalate	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Fluoranthene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Pyrene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Butylbenzylphthalate	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
3,3'-Dichlorobenzidine	790.0 U	1600.0 U	25.0* U	780.0 U	740.0 U	790.0 U	750.0 U	1500.0 U	1500.0 U
Benzo(a)Anthracene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Chrysene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
bis(2-Ethylhexyl)Phthalate	110.0 BJ	140.0 J	13.0* U	390.0 U	1500.0	250.0 J	130.0 J	140.0 J	140.0 J
Di-n-Octyl Phthalate	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Benzo(b)Fluoranthene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Benzo(k)Fluoranthene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Benzo(a)Pyrene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Indeno(1,2,3-cd)Pyrene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Dibenz(a,h)Anthracene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U
Benzo(g,h,i)Perylene	390.0 U	790.0 U	13.0* U	390.0 U	370.0 U	390.0 U	370.0 U	730.0 U	730.0 U

FOOTNOTES :

ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 2
SOIL BORING ANALYTICAL RESULTS

05/29/90

SAMPLE NUMBER -	CONCENTRATIONS in ug/kg or mg/kg								
	MW-6S-02	MW-6S-03	MW-6S-03BD	MW-7S-15	MW-8S-05	MW-9S-06	MW-10S-07	MW-11S-07	MW-12S-07
SEMI-VOLATILES 2									
3-Nitroaniline	1800.0 U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	1800.0 U	1900.0 U	1900.0 U	1800.0 U
Acenaphthene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2,4-Dinitrophenol	1800.0 U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	1800.0 U	1900.0 U	1900.0 U	1800.0 U
4-Nitrophenol	1800.0 U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	1800.0 U	1900.0 U	1900.0 U	1800.0 U
Dibenzofuran	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
2,4-Dinitrotoluene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Diethylphthalate	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
4-Chlorophenyl-phenylether	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Fluorene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
4-Nitroaniline	1800.0 U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	1800.0 U	1900.0 U	1900.0 U	1800.0 U
4,6-Dinitro-2-Methylphenol	1800.0 U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	1800.0 U	1900.0 U	1900.0 U	1800.0 U
N-Nitrosodiphenylamine (1)	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
4-Bromophenyl-phenylether	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Hexachlorobenzene	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Pentachlorophenol	1800.0 U	1900.0 U	1900.0 U	2000.0 U	1900.0 U	1800.0 U	1900.0 U	1900.0 U	1800.0 U
Phenanthrene	130.0 J	200.0 J	400.0 U	420.0 U	250.0 J	370.0 U	400.0 U	400.0 U	230.0 J
Anthracene	380.0 U	390.0 U	400.0 U	420.0 U	320.0 J	370.0 U	400.0 U	400.0 U	380.0 U
Di-n-Butylphthalate	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Fluoranthene	220.0 J	270.0 J	400.0 U	190.0 J	340.0 J	370.0 U	400.0 U	400.0 U	160.0 J
Pyrene	170.0 J	240.0 J	400.0 U	420.0 U	260.0 J	370.0 U	400.0 U	400.0 U	110.0 J
Butylbenzylphthalate	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
3,3'-Dichlorobenzidine	760.0 U	790.0 U	800.0 U	840.0 U	800.0 U	740.0 U	800.0 U	790.0 U	760.0 U
Benzo(a)Anthracene	97.0 J	120.0 J	400.0 U	420.0 U	99.0 J	370.0 U	400.0 U	400.0 U	380.0 U
Chrysene	85.0 J	110.0 J	400.0 U	420.0 U	150.0 J	370.0 U	400.0 U	400.0 U	380.0 U
bis(2-Ethylhexyl)Phthalate	380.0 U	470.0	400.0 U	150.0 J	400.0 U	100.0 J	2600.0	400.0 U	380.0 U
Di-n-Octyl Phthalate	380.0 U	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Benzo(b)Fluoranthene	91.0 J	190.0 J	400.0 U	420.0 U	170.0 J	370.0 U	400.0 U	400.0 U	380.0 U
Benzo(k)Fluoranthene	70.0 J	390.0 U	400.0 U	420.0 U	400.0 U	370.0 U	400.0 U	400.0 U	380.0 U
Benzo(a)Pyrene	380.0 U	98.0 J	400.0 U	420.0 U	92.0 J	370.0 U	400.0 U	400.0 U	380.0 U
Indeno(1,2,3-cd)Pyrene	380.0 U	390.0 U	400.0 U	420.0 U	65.0 J	370.0 U	400.0 U	400.0 U	380.0 U
Dibenz(a,h)Anthracene	380.0 U	390.0 U	400.0 U	420.0 U	31.0 J	370.0 U	400.0 U	400.0 U	380.0 U
Benzo(g,h,i)Perylene	380.0 U	390.0 U	400.0 U	420.0 U	68.0 J	370.0 U	400.0 U	400.0 U	380.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 2
SOIL BORING ANALYTICAL RESULTS

05/29/90

SAMPLE NUMBER -	MW-13S-02	MW-13S-06	MW-14S-08	MW-14S-12	MW-15S-05	MW-16S-01	MW-16S-03	MW-16S-3DUP	MW-17S-05
	CONCENTRATIONS in ug/kg or mg/kg								
SEMI-VOLATILES 2									
3-Nitroaniline	2000.0 U	2000.0 U	1900.0 U	2100.0 U	4100.0 U	2000.0 U	2100.0 U	2100.0 U	2000.0 U
Acenaphthene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
2,4-Dinitrophenol	2000.0 U	2000.0 U	1900.0 U	2100.0 U	4100.0 U	2000.0 U	2100.0 U	2100.0 U	2000.0 U
4-Nitrophenol	2000.0 U	2000.0 U	1900.0 U	2100.0 U	4100.0 U	2000.0 U	2100.0 U	2100.0 U	2000.0 U
Dibenzofuran	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	140.0 J
2,4-Dinitrotoluene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Diethylphthalate	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
4-Chlorophenyl-phenylether	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Fluorene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
4-Nitroaniline	2000.0 U	2000.0 U	1900.0 U	2100.0 U	4100.0 U	2000.0 U	2100.0 U	2100.0 U	2000.0 U
4,6-Dinitro-2-Methylphenol	2000.0 U	2000.0 U	1900.0 U	2100.0 U	4100.0 U	2000.0 U	2100.0 U	2100.0 U	2000.0 U
N-Nitrosodiphenylamine (1)	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
4-Bromophenyl-phenylether	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Hexachlorobenzene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Pentachlorophenol	2000.0 U	2000.0 U	1900.0 U	2100.0 U	4100.0 U	2000.0 U	2100.0 U	2100.0 U	2000.0 U
Phenanthrene	150.0 J	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Anthracene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Di-n-Butylphthalate	400.0 U	400.0 U	370.0 U	420.0 U	1400.0	390.0 U	420.0 U	420.0 U	390.0 U
Fluoranthene	180.0 J	400.0 U	370.0 U	420.0 U	180.0 J	390.0 U	420.0 U	420.0 U	390.0 U
Pyrene	150.0 J	400.0 U	370.0 U	420.0 U	190.0 J	390.0 U	420.0 U	420.0 U	390.0 U
Butylbenzylphthalate	400.0 U	400.0 U	120.0 J	420.0 U	31000.0 D	390.0 U	420.0 U	420.0 U	390.0 U
3,3'-Dichlorobenzidine	800.0 U	800.0 U	750.0 U	840.0 U	1600.0 U	790.0 U	840.0 U	840.0 U	790.0 U
Benzo(a)Anthracene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Chrysene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
bis(2-Ethylhexyl)Phthalate	120.0 J	400.0 U	200.0 J	420.0 U	100000.0 D	210.0 J	130.0 J	130.0 J	390.0 U
Di-n-Octyl Phthalate	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Benzo(b)Fluoranthene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Benzo(k)Fluoranthene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Benzo(a)Pyrene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Indeno(1,2,3-cd)Pyrene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Dibenz(a,h)Anthracene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U
Benzo(g,h,i)Perylene	400.0 U	400.0 U	370.0 U	420.0 U	820.0 U	390.0 U	420.0 U	420.0 U	390.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 2
SOIL BORING ANALYTICAL RESULTS

05/29/90

	CONCENTRATIONS in ug/kg or mg/kg
SAMPLE NUMBER -	MW-17S-11
SEMI-VOLATILES 2	
3-Nitroaniline	2000.0 U
Acenaphthene	390.0 U
2,4-Dinitrophenol	2000.0 U
4-Nitrophenol	2000.0 U
Dibenzofuran	390.0 U
2,4-Dinitrotoluene	390.0 U
Diethylphthalate	390.0 U
4-Chlorophenyl-phenylether	390.0 U
Fluorene	390.0 U
4-Nitroaniline	2000.0 U
4,6-Dinitro-2-Methylphenol	2000.0 U
N-Nitrosodiphenylamine (1)	390.0 U
4-Bromophenyl-phenylether	390.0 U
Hexachlorobenzene	390.0 U
Pentachlorophenol	2000.0 U
Phenanthrene	390.0 U
Anthracene	390.0 U
Di-n-Butylphthalate	390.0 U
Fluoranthene	390.0 U
Pyrene	390.0 U
Butylbenzylphthalate	390.0 U
3,3'-Dichlorobenzidine	790.0 U
Benzo(a)Anthracene	390.0 U
Chrysene	390.0 U
bis(2-Ethylhexyl)Phthalate	230.0 J
Di-n-Octyl Phthalate	390.0 U
Benzo(b)Fluoranthene	390.0 U
Benzo(k)Fluoranthene	390.0 U
Benzo(a)Pyrene	390.0 U
Indeno(1,2,3-cd)Pyrene	390.0 U
Dibenz(a,h)Anthracene	390.0 U
Benzo(g,h,i)Perylene	390.0 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
PESTICIDES/PCBs
SOIL BORING ANALYTICAL RESULTS

05/29/90

	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B1-SS-05	B1-SS-06	B2-SS-03	B2-SS-05	B3-SS-06	B4-SS-03	B4-SS-03D	B4-SS-10	B5-SS-08
PESTICIDES/PCBs									
alpha-BHC	9.5 U	9.6 U	92.0 UJ	9.5 UJ	210.0 U	320.0 U	3200.0 U	47.0 U	9.4 U
beta-BHC	9.5 U	9.6 U	92.0 UJ	9.5 UJ	210.0 U	320.0 U	3200.0 U	47.0 U	9.4 U
delta-BHC	9.5 U	9.6 U	92.0 UJ	9.5 UJ	210.0 U	320.0 U	3200.0 U	47.0 U	9.4 U
gamma-BHC (Lindane)	9.5 U	9.6 U	92.0 UJ	9.5 UJ	210.0 U	320.0 U	3200.0 U	47.0 U	9.4 U
Heptachlor	9.5 U	9.6 U	92.0 UJ	9.5 UJ	210.0 U	320.0 U	3200.0 U	47.0 U	9.4 U
Aldrin	9.5 U	9.6 U	92.0 UJ	9.5 UJ	210.0 U	320.0 U	3200.0 U	47.0 U	9.4 U
Heptachlor epoxide	9.5 U	9.6 U	92.0 UJ	9.5 UJ	210.0 U	320.0 U	3200.0 U	47.0 U	9.4 U
Endosulfan I	9.5 U	9.6 U	92.0 UJ	9.5 UJ	210.0 U	320.0 U	3200.0 U	47.0 U	9.4 U
Dieldrin	19.0 U	19.0 U	180.0 UJ	19.0 UJ	410.0 U	640.0 U	6400.0 U	94.0 U	19.0 U
4,4'-DDE	19.0 U	19.0 U	180.0 UJ	19.0 UJ	560.0	640.0 U	6400.0 U	94.0 U	19.0 U
Endrin	19.0 U	19.0 U	180.0 UJ	19.0 UJ	410.0 U	640.0 U	6400.0 U	94.0 U	19.0 U
Endosulfan II	19.0 U	19.0 U	180.0 UJ	19.0 UJ	410.0 U	640.0 U	6400.0 U	94.0 U	19.0 U
4,4'-DDD	19.0 U	19.0 U	180.0 UJ	19.0 UJ	410.0 U	640.0 U	6400.0 U	94.0 U	19.0 U
Endosulfan sulfate	19.0 U	19.0 U	180.0 UJ	19.0 UJ	410.0 U	640.0 U	6400.0 U	94.0 U	19.0 U
4,4'-DDT	19.0 U	19.0 U	180.0 UJ	19.0 UJ	410.0 U	640.0 U	6400.0 U	94.0 U	19.0 U
Methoxychlor	95.0 U	96.0 U	920.0 UJ	95.0 UJ	2100.0 U	3200.0 U	32000.0 U	470.0 U	94.0 U
Endrin ketone	19.0 U	19.0 U	180.0 UJ	19.0 UJ	410.0 U	640.0 U	6400.0 U	94.0 U	19.0 U
alpha-Chlordane	95.0 U	96.0 U	920.0 UJ	95.0 UJ	2100.0 U	3200.0 U	32000.0 U	470.0 U	94.0 U
gamma-Chlordane	95.0 U	96.0 U	920.0 UJ	95.0 UJ	2100.0 U	3200.0 U	32000.0 U	470.0 U	94.0 U
Toxaphene	190.0 U	190.0 U	1800.0 UJ	190.0 UJ	4100.0 U	6400.0 U	64000.0 U	940.0 U	190.0 U
Aroclor-1016	95.0 U	96.0 U	920.0 UJ	95.0 UJ	2100.0 U	3200.0 U	32000.0 U	470.0 U	94.0 U
Aroclor-1221	95.0 U	96.0 U	920.0 UJ	95.0 UJ	2100.0 U	3200.0 U	32000.0 U	470.0 U	94.0 U
Aroclor-1232	95.0 U	96.0 U	920.0 UJ	95.0 UJ	2100.0 U	3200.0 U	32000.0 U	470.0 U	94.0 U
Aroclor-1242	95.0 U	96.0 U	920.0 UJ	95.0 UJ	2100.0 U	3200.0 U	32000.0 U	470.0 U	94.0 U
Aroclor-1248	95.0 U	96.0 U	920.0 UJ	95.0 UJ	2100.0 U	3200.0 U	32000.0 U	470.0 U	94.0 U
Aroclor-1254	190.0 U	190.0 U	1800.0 UJ	190.0 UJ	4100.0 U	6400.0 U	64000.0 U	940.0 U	190.0 U
Aroclor-1260	190.0 U	190.0 U	1800.0 UJ	190.0 UJ	4100.0 U	6400.0 U	64000.0 U	940.0 U	190.0 U

FOOTNOTES :
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Units for inorganic results are mg/kg (milligrams per kilogram).
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R = Analyte was rejected due to QA/QC.
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
PESTICIDES/PCBs
SOIL BORING ANALYTICAL RESULTS
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05/29/90

SAMPLE NUMBER -	B6-SS-07	B6-SS-7DUP	B7-SS-06	B8-SS-08	B9-SS-07	B9-SS-10	B10-SS-02	B10-SS-05	B10-SS-05DL
	CONCENTRATIONS in ug/kg or mg/kg								
PESTICIDES/PCBs									
alpha-BHC	11.0 U	10.0 U	11.0 U	9.9 U	9.4 U	9.6 U	37.0 U	100.0 U	510.0 U
beta-BHC	11.0 U	10.0 U	11.0 U	9.9 U	9.4 U	9.6 U	37.0 U	100.0 U	510.0 U
delta-BHC	11.0 U	10.0 U	11.0 U	9.9 U	9.4 U	9.6 U	37.0 U	100.0 U	510.0 U
gamma-BHC (Lindane)	11.0 U	10.0 U	11.0 U	9.9 U	9.4 U	9.6 U	37.0 U	100.0 U	510.0 U
Heptachlor	11.0 U	10.0 U	11.0 U	9.9 U	9.4 U	9.6 U	37.0 U	100.0 U	510.0 U
Aldrin	11.0 U	10.0 U	11.0 U	9.9 U	9.4 U	9.6 U	6.9 J	100.0 U	510.0 U
Heptachlor epoxide	11.0 U	10.0 U	11.0 U	9.9 U	9.4 U	9.6 U	37.0 U	100.0 U	510.0 U
Endosulfan I	11.0 U	10.0 U	11.0 U	9.9 U	9.4 U	9.6 U	37.0 U	100.0 U	510.0 U
Dieldrin	21.0 U	21.0 U	210.0 B	20.0 U	19.0 U	19.0 U	74.0 U	210.0 U	1000.0 U
4,4'-DDE	21.0 U	21.0 U	22.0 U	20.0 U	19.0 U	19.0 U	74.0 U	210.0 U	1000.0 U
Endrin	21.0 U	21.0 U	220.0 B	20.0 U	19.0 U	19.0 U	74.0 U	210.0 U	1000.0 U
Endosulfan II	21.0 U	21.0 U	22.0 U	20.0 U	19.0 U	19.0 U	74.0 U	210.0 U	1000.0 U
4,4'-DDD	21.0 U	21.0 U	22.0 U	20.0 U	19.0 U	19.0 U	74.0 U	210.0 U	1000.0 U
Endosulfan sulfate	21.0 U	21.0 U	22.0 U	20.0 U	19.0 U	19.0 U	74.0 U	210.0 U	1000.0 U
4,4'-DDT	21.0 U	21.0 U	230.0 B	20.0 U	19.0 U	19.0 U	30.0 BJ	210.0 U	1000.0 U
Methoxychlor	110.0 U	100.0 U	110.0 U	99.0 U	94.0 U	96.0 U	370.0 U	1000.0 U	5100.0 U
Endrin ketone	21.0 U	21.0 U	22.0 U	20.0 U	19.0 U	19.0 U	74.0 U	210.0 U	1000.0 U
alpha-Chlordane	110.0 U	100.0 U	110.0 U	99.0 U	94.0 U	96.0 U	370.0 U	1000.0 U	5100.0 U
gamma-Chlordane	110.0 U	100.0 U	110.0 U	99.0 U	94.0 U	96.0 U	4.8 J	1000.0 U	5100.0 U
Toxaphene	210.0 U	210.0 U	220.0 U	200.0 U	190.0 U	190.0 U	740.0 U	2100.0 U	10000.0 U
Aroclor-1016	110.0 U	100.0 U	110.0 U	99.0 U	94.0 U	96.0 U	370.0 U	1000.0 U	5100.0 U
Aroclor-1221	110.0 U	100.0 U	110.0 U	99.0 U	94.0 U	96.0 U	370.0 U	1000.0 U	5100.0 U
Aroclor-1232	110.0 U	100.0 U	110.0 U	99.0 U	94.0 U	96.0 U	370.0 U	1000.0 U	5100.0 U
Aroclor-1242	110.0 U	100.0 U	110.0 U	99.0 U	94.0 U	96.0 U	370.0 U	1000.0 U	5100.0 U
Aroclor-1248	110.0 U	100.0 U	110.0 U	99.0 U	94.0 U	96.0 U	370.0 U	1000.0 U	5100.0 U
Aroclor-1254	210.0 U	210.0 U	220.0 U	200.0 U	190.0 U	190.0 U	740.0 U	2100.0 U	10000.0 U
Aroclor-1260	210.0 U	210.0 U	220.0 U	200.0 U	190.0 U	190.0 U	740.0 U	2100.0 U	10000.0 U

FOOTNOTES :
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Units for inorganic results are mg/kg (milligrams per kilogram).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
PESTICIDES/PCBs
SOIL BORING ANALYTICAL RESULTS
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05/29/90

	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B11-SS-07	B12-SS-01	B12-SS-04	B13-SS-04	B13-SS-567	B14-SS-05	B14-SS-13	B15-SS-06	B15-SS-13
PESTICIDES/PCBs									
alpha-BHC	11.0 U	140.0 U	9.8 U	10.0 U	9.2 U	10.0 U	9.3 U	9.5 U	9.0 U
beta-BHC	11.0 U	140.0 U	9.8 U	10.0 U	9.2 U	10.0 U	9.3 U	9.5 U	9.0 U
delta-BHC	11.0 U	140.0 U	9.8 U	10.0 U	9.2 U	10.0 U	9.3 U	9.5 U	9.0 U
gamma-BHC (Lindane)	11.0 U	140.0 U	9.8 U	10.0 U	9.2 U	10.0 U	9.3 U	9.5 U	9.0 U
Heptachlor	11.0 U	140.0 U	9.8 U	10.0 U	9.2 U	10.0 U	9.3 U	9.5 U	9.0 U
Aldrin	11.0 U	140.0 U	9.8 U	10.0 U	9.2 U	10.0 U	9.3 U	9.5 U	9.0 U
Heptachlor epoxide	11.0 U	140.0 U	9.8 U	10.0 U	9.2 U	10.0 U	9.3 U	9.5 U	9.0 U
Endosulfan I	11.0 U	140.0 U	9.8 U	10.0 U	9.2 U	10.0 U	9.3 U	9.5 U	9.0 U
Dieldrin	22.0 U	280.0 U	20.0 U	20.0 U	18.0 U	20.0 U	19.0 U	19.0 U	18.0 U
4,4'-DDE	22.0 U	280.0 U	20.0 U	20.0 U	18.0 U	20.0 U	19.0 U	19.0 U	18.0 U
Endrin	22.0 U	280.0 U	20.0 U	20.0 U	18.0 U	20.0 U	19.0 U	19.0 U	18.0 U
Endosulfan II	22.0 U	280.0 U	20.0 U	20.0 U	18.0 U	20.0 U	19.0 U	19.0 U	18.0 U
4,4'-DDD	22.0 U	280.0 U	20.0 U	20.0 U	18.0 U	20.0 U	19.0 U	19.0 U	18.0 U
Endosulfan sulfate	22.0 U	280.0 U	20.0 U	20.0 U	18.0 U	20.0 U	19.0 U	19.0 U	18.0 U
4,4'-DDT	22.0 U	280.0 U	20.0 U	20.0 U	18.0 U	20.0 U	19.0 U	19.0 U	18.0 U
Methoxychlor	110.0 U	1400.0 U	98.0 U	100.0 U	92.0 U	100.0 U	93.0 U	95.0 U	90.0 U
Endrin ketone	22.0 U	280.0 U	20.0 U	20.0 U	18.0 U	20.0 U	19.0 U	19.0 U	18.0 U
alpha-Chlordane	110.0 U	1400.0 U	98.0 U	100.0 U	92.0 U	100.0 U	93.0 U	95.0 U	90.0 U
gamma-Chlordane	110.0 U	1400.0 U	98.0 U	100.0 U	92.0 U	100.0 U	93.0 U	95.0 U	90.0 U
Toxaphene	220.0 U	2800.0 U	200.0 U	200.0 U	180.0 U	200.0 U	190.0 U	190.0 U	180.0 U
Aroclor-1016	110.0 U	1400.0 U	98.0 U	100.0 U	92.0 U	100.0 U	93.0 U	95.0 U	90.0 U
Aroclor-1221	110.0 U	1400.0 U	98.0 U	100.0 U	92.0 U	100.0 U	93.0 U	95.0 U	90.0 U
Aroclor-1232	110.0 U	1400.0 U	98.0 U	100.0 U	92.0 U	100.0 U	93.0 U	95.0 U	90.0 U
Aroclor-1242	3700.0	1400.0 U	98.0 U	100.0 U	92.0 U	100.0 U	93.0 U	95.0 U	90.0 U
Aroclor-1248	110.0 U	1400.0 U	98.0 U	100.0 U	92.0 U	100.0 U	93.0 U	95.0 U	90.0 U
Aroclor-1254	220.0 U	2800.0 U	200.0 U	200.0 U	180.0 U	200.0 U	190.0 U	190.0 U	180.0 U
Aroclor-1260	220.0 U	2800.0 U	200.0 U	200.0 U	180.0 U	200.0 U	190.0 U	190.0 U	180.0 U

FOOTNOTES :
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Units for inorganic results are mg/kg (milligrams per kilogram).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
PESTICIDES/PCBs
SOIL BORING ANALYTICAL RESULTS

05/29/90

	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B16-SS-08	B16-SS-10	MW-1D-07	MW-2S-07	MW-2S-11	MW-3S-04	MW-3S-06	MW-3S-07	MW-4D-10
PESTICIDES/PCBs									
alpha-BHC	9.6 U	9.5 U	9.0 U	310.0 U	9.4 U	9.0 U	9.5 U	9.1 U	9.0 U
beta-BHC	9.6 U	9.5 U	9.0 U	310.0 U	9.4 U	9.0 U	9.5 U	9.1 U	9.0 U
delta-BHC	9.6 U	9.5 U	9.0 U	310.0 U	9.4 U	9.0 U	9.5 U	9.1 U	9.0 U
gamma-BHC (Lindane)	9.6 U	9.5 U	9.0 U	310.0 U	9.4 U	9.0 U	9.5 U	9.1 U	9.0 U
Heptachlor	9.6 U	9.5 U	9.0 U	310.0 U	9.4 U	9.0 U	9.5 U	9.1 U	9.0 U
Aldrin	9.6 U	9.5 U	9.0 U	310.0 U	9.4 U	9.0 U	9.5 U	9.1 U	9.0 U
Heptachlor epoxide	9.6 U	9.5 U	9.0 U	310.0 U	9.4 U	9.0 U	9.5 U	9.1 U	9.0 U
Endosulfan I	9.6 U	9.5 U	9.0 U	310.0 U	9.4 U	9.0 U	9.5 U	9.1 U	9.0 U
Dieldrin	19.0 U	19.0 U	18.0 U	620.0 U	19.0 U	18.0 U	19.0 U	18.0 U	18.0 U
4,4'-DDE	19.0 U	19.0 U	18.0 U	620.0 U	19.0 U	18.0 U	19.0 U	18.0 U	18.0 U
Endrin	19.0 U	19.0 U	18.0 U	620.0 U	19.0 U	18.0 U	19.0 U	18.0 U	18.0 U
Endosulfan II	19.0 U	19.0 U	18.0 U	620.0 U	19.0 U	18.0 U	19.0 U	18.0 U	18.0 U
4,4'-DDD	19.0 U	19.0 U	18.0 U	620.0 U	19.0 U	18.0 U	19.0 U	18.0 U	18.0 U
Endosulfan sulfate	19.0 U	19.0 U	18.0 U	620.0 U	19.0 U	18.0 U	19.0 U	18.0 U	18.0 U
4,4'-DDT	19.0 U	19.0 U	18.0 U	620.0 U	19.0 U	18.0 U	19.0 U	18.0 U	18.0 U
Methoxychlor	96.0 U	95.0 U	90.0 U	3100.0 U	94.0 U	90.0 U	95.0 U	91.0 U	90.0 U
Endrin ketone	19.0 U	19.0 U	18.0 U	620.0 U	19.0 U	18.0 U	19.0 U	18.0 U	18.0 U
alpha-Chlordane	96.0 U	95.0 U	90.0 U	3100.0 U	94.0 U	90.0 U	95.0 U	91.0 U	90.0 U
gamma-Chlordane	96.0 U	95.0 U	90.0 U	3100.0 U	94.0 U	90.0 U	95.0 U	91.0 U	90.0 U
Toxaphene	190.0 U	190.0 U	180.0 U	6200.0 U	190.0 U	180.0 U	190.0 U	180.0 U	180.0 U
Aroclor-1016	96.0 U	95.0 U	90.0 U	3100.0 U	94.0 U	90.0 U	95.0 U	91.0 U	90.0 U
Aroclor-1221	96.0 U	95.0 U	90.0 U	3100.0 U	94.0 U	90.0 U	95.0 U	91.0 U	90.0 U
Aroclor-1232	96.0 U	95.0 U	90.0 U	3100.0 U	94.0 U	90.0 U	95.0 U	91.0 U	90.0 U
Aroclor-1242	96.0 U	95.0 U	90.0 U	3100.0 U	94.0 U	90.0 U	95.0 U	91.0 U	90.0 U
Aroclor-1248	96.0 U	95.0 U	90.0 U	3100.0 U	94.0 U	90.0 U	95.0 U	91.0 U	90.0 U
Aroclor-1254	190.0 U	190.0 U	180.0 U	6200.0 U	190.0 U	180.0 U	190.0 U	180.0 U	180.0 U
Aroclor-1260	190.0 U	190.0 U	180.0 U	6200.0 U	190.0 U	180.0 U	190.0 U	180.0 U	180.0 U

FOOTNOTES :
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
PESTICIDES/PCBs
SOIL BORING ANALYTICAL RESULTS

05/29/90

SAMPLE NUMBER -	CONCENTRATIONS in ug/kg or mg/kg								
	MW-5S-1	MW-6S-02	MW-6S-03	MW-6S-03BD	MW-7S-15	MW-8S-05	MW-9S-06	MW-10S-07	MW-11S-07
PESTICIDES/PCBs									
alpha-BHC	9.0 U	9.2 U	9.2 U	9.5 U	10.0 U	9.2 U	9.0 U	9.2 U	9.4 U
beta-BHC	9.0 U	9.2 U	9.2 U	9.5 U	10.0 U	9.2 U	9.0 U	9.2 U	9.4 U
delta-BHC	9.0 U	9.2 U	9.2 U	9.5 U	10.0 U	9.2 U	9.0 U	9.2 U	9.4 U
gamma-BHC (Lindane)	9.0 U	9.2 U	9.2 U	9.5 U	10.0 U	9.2 U	9.0 U	9.2 U	9.4 U
Heptachlor	9.0 U	9.2 U	9.2 U	9.5 U	10.0 U	9.2 U	9.0 U	9.2 U	9.4 U
Aldrin	9.0 U	9.2 U	9.2 U	9.5 U	10.0 U	9.2 U	9.0 U	9.2 U	9.4 U
Heptachlor epoxide	9.0 U	9.2 U	9.2 U	9.5 U	10.0 U	9.2 U	9.0 U	9.2 U	9.4 U
Endosulfan I	9.0 U	9.2 U	9.2 U	9.5 U	10.0 U	9.2 U	9.0 U	9.2 U	9.4 U
Dieldrin	18.0 U	18.0 U	18.0 U	19.0 U	20.0 U	18.0 U	18.0 U	18.0 U	19.0 U
4,4'-DDE	18.0 U	18.0 U	18.0 U	19.0 U	20.0 U	18.0 U	18.0 U	18.0 U	19.0 U
Endrin	18.0 U	18.0 U	18.0 U	19.0 U	20.0 U	18.0 U	18.0 U	18.0 U	19.0 U
Endosulfan II	18.0 U	18.0 U	18.0 U	19.0 U	20.0 U	18.0 U	18.0 U	18.0 U	19.0 U
4,4'-DDD	18.0 U	18.0 U	18.0 U	19.0 U	20.0 U	18.0 U	18.0 U	18.0 U	19.0 U
Endosulfan sulfate	18.0 U	18.0 U	18.0 U	19.0 U	20.0 U	18.0 U	18.0 U	18.0 U	19.0 U
4,4'-DDT	18.0 U	18.0 U	18.0 U	19.0 U	35.0	18.0 U	18.0 U	18.0 U	19.0 U
Methoxychlor	90.0 U	92.0 U	92.0 U	95.0 U	100.0 U	92.0 U	90.0 U	92.0 U	94.0 U
Endrin ketone	18.0 U	18.0 U	18.0 U	19.0 U	20.0 U	18.0 U	18.0 U	18.0 U	19.0 U
alpha-Chlordane	90.0 U	92.0 U	92.0 U	95.0 U	100.0 U	92.0 U	90.0 U	92.0 U	94.0 U
gamma-Chlordane	90.0 U	92.0 U	92.0 U	95.0 U	100.0 U	92.0 U	90.0 U	92.0 U	94.0 U
Toxaphene	180.0 U	180.0 U	180.0 U	190.0 U	200.0 U	180.0 U	180.0 U	180.0 U	190.0 U
Aroclor-1016	90.0 U	92.0 U	92.0 U	95.0 U	100.0 U	92.0 U	90.0 U	92.0 U	94.0 U
Aroclor-1221	90.0 U	92.0 U	92.0 U	95.0 U	100.0 U	92.0 U	90.0 U	92.0 U	94.0 U
Aroclor-1232	90.0 U	92.0 U	92.0 U	95.0 U	100.0 U	92.0 U	90.0 U	92.0 U	94.0 U
Aroclor-1242	90.0 U	92.0 U	92.0 U	95.0 U	100.0 U	92.0 U	90.0 U	92.0 U	94.0 U
Aroclor-1248	90.0 U	92.0 U	92.0 U	95.0 U	100.0 U	92.0 U	90.0 U	92.0 U	94.0 U
Aroclor-1254	180.0 U	180.0 U	180.0 U	190.0 U	200.0 U	180.0 U	180.0 U	180.0 U	190.0 U
Aroclor-1260	180.0 U	180.0 U	180.0 U	190.0 U	200.0 U	180.0 U	180.0 U	180.0 U	190.0 U

FOOTNOTES :
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Units for inorganic results are mg/kg (milligrams per kilogram).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
PESTICIDES/PCBs
SOIL BORING ANALYTICAL RESULTS

05/29/90

	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	MW-12S-07	MW-13S-02	MW-13S-06	MW-14S-08	MW-14S-12	MW-15S-05	MW-16S-01	MW-16S-03	MW-16S-3DUP
PESTICIDES/PCBs									
alpha-BHC	9.2 U	9.6 U	9.6 U	9.1 U	10.0 U	10.0 U	9.5 U	10.0 U	10.0 U
beta-BHC	9.2 U	9.6 U	9.6 U	9.1 U	10.0 U	10.0 U	9.5 U	10.0 U	10.0 U
delta-BHC	9.2 U	9.6 U	9.6 U	9.1 U	10.0 U	10.0 U	9.5 U	10.0 U	10.0 U
gamma-BHC (Lindane)	9.2 U	9.6 U	9.6 U	9.1 U	10.0 U	10.0 U	9.5 U	10.0 U	10.0 U
Heptachlor	9.2 U	9.6 U	9.6 U	9.1 U	10.0 U	10.0 U	9.5 U	10.0 U	10.0 U
Aldrin	9.2 U	9.6 U	9.6 U	9.1 U	10.0 U	10.0 U	9.5 U	10.0 U	10.0 U
Heptachlor epoxide	9.2 U	9.6 U	9.6 U	9.1 U	10.0 U	10.0 U	9.5 U	10.0 U	10.0 U
Endosulfan I	9.2 U	9.6 U	9.6 U	9.1 U	10.0 U	10.0 U	9.5 U	10.0 U	10.0 U
Dieldrin	18.0 U	19.0 U	19.0 U	18.0 U	20.0 U	20.0 U	19.0 U	20.0 U	20.0 U
4,4'-DDE	18.0 U	19.0 U	19.0 U	18.0 U	20.0 U	20.0 U	19.0 U	20.0 U	20.0 U
Endrin	18.0 U	19.0 U	19.0 U	18.0 U	20.0 U	20.0 U	19.0 U	20.0 U	20.0 U
Endosulfan II	18.0 U	19.0 U	19.0 U	18.0 U	20.0 U	20.0 U	19.0 U	20.0 U	20.0 U
4,4'-DDD	18.0 U	19.0 U	19.0 U	18.0 U	20.0 U	20.0 U	19.0 U	20.0 U	20.0 U
Endosulfan sulfate	18.0 U	19.0 U	19.0 U	18.0 U	20.0 U	20.0 U	19.0 U	20.0 U	20.0 U
4,4'-DDT	18.0 U	19.0 U	19.0 U	18.0 U	20.0 U	20.0 U	19.0 U	320.0	20.0 U
Methoxychlor	92.0 U	96.0 U	96.0 U	91.0 U	100.0 U	100.0 U	95.0 U	100.0 U	100.0 U
Endrin ketone	18.0 U	19.0 U	19.0 U	18.0 U	20.0 U	20.0 U	19.0 U	20.0 U	20.0 U
alpha-Chlordane	92.0 U	96.0 U	96.0 U	91.0 U	100.0 U	100.0 U	95.0 U	100.0 U	100.0 U
gamma-Chlordane	92.0 U	96.0 U	96.0 U	91.0 U	100.0 U	100.0 U	95.0 U	100.0 U	100.0 U
Toxaphene	180.0 U	190.0 U	190.0 U	180.0 U	200.0 U	200.0 U	190.0 U	200.0 U	200.0 U
Aroclor-1016	92.0 U	96.0 U	96.0 U	91.0 U	100.0 U	100.0 U	95.0 U	100.0 U	100.0 U
Aroclor-1221	92.0 U	96.0 U	96.0 U	91.0 U	100.0 U	100.0 U	95.0 U	100.0 U	100.0 U
Aroclor-1232	92.0 U	96.0 U	96.0 U	91.0 U	100.0 U	100.0 U	95.0 U	100.0 U	100.0 U
Aroclor-1242	92.0 U	96.0 U	96.0 U	91.0 U	100.0 U	100.0 U	95.0 U	100.0 U	100.0 U
Aroclor-1248	92.0 U	96.0 U	96.0 U	91.0 U	100.0 U	100.0 U	95.0 U	100.0 U	100.0 U
Aroclor-1254	180.0 U	190.0 U	190.0 U	180.0 U	200.0 U	200.0 U	190.0 U	200.0 U	200.0 U
Aroclor-1260	180.0 U	190.0 U	190.0 U	180.0 U	200.0 U	200.0 U	190.0 U	200.0 U	200.0 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
PESTICIDES/PCBs
SOIL BORING ANALYTICAL RESULTS

05/29/90

	CONCENTRATIONS in ug/kg or mg/kg	
SAMPLE NUMBER -	MW-17S-05	MW-17S-11
PESTICIDES/PCBs		
alpha-BHC	9.5 U	9.6 U
beta-BHC	9.5 U	9.6 U
delta-BHC	9.5 U	9.6 U
gamma-BHC (Lindane)	9.5 U	9.6 U
Heptachlor	9.5 U	9.6 U
Aldrin	9.5 U	9.6 U
Heptachlor epoxide	9.5 U	9.6 U
Endosulfan I	9.5 U	9.6 U
Dieldrin	19.0 U	19.0 U
4,4'-DDE	19.0 U	19.0 U
Endrin	19.0 U	19.0 U
Endosulfan II	19.0 U	19.0 U
4,4'-DDD	19.0 U	19.0 U
Endosulfan sulfate	19.0 U	19.0 U
4,4'-DDT	19.0 U	19.0 U
Methoxychlor	95.0 U	96.0 U
Endrin ketone	19.0 U	19.0 U
alpha-Chlordane	95.0 U	96.0 U
gamma-Chlordane	95.0 U	96.0 U
Toxaphene	190.0 U	190.0 U
Aroclor-1016	95.0 U	96.0 U
Aroclor-1221	95.0 U	96.0 U
Aroclor-1232	95.0 U	96.0 U
Aroclor-1242	95.0 U	96.0 U
Aroclor-1248	95.0 U	96.0 U
Aroclor-1254	190.0 U	190.0 U
Aroclor-1260	190.0 U	190.0 U

FOOTNOTES :
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Units for inorganic results are mg/kg (milligrams per kilogram).
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B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
INORGANICS
SOIL BORING ANALYTICAL RESULTS
Page 01 of 06

05/29/90

SAMPLE NUMBER -	B1-SS-05	B1-SS-06	B2-SS-03	B2-SS-05	B3-SS-06	B4-SS-03	B4-SS-10	B5-SS-08	B6-SS-07
	CONCENTRATIONS in ug/kg or mg/kg								
INORGANICS									
ALUMINUM	11600.00	9540.00	5940.00	4620.00	9930.00	1700.00	11200.00	2290.00	10500.00
ANTIMONY	20.30	12.90 UJ	12.20 UJ	13.40 BJ	13.80 U	15.70 U	11.70 U	11.90 U	13.20 U
ARSENIC	3.10	2.90	3.80	2.20 B	3.90 J	26.20 J	4.70 J	0.77 BJ	8.10
BARIUM	93.00	75.00	35.40 B	37.00 B	168.00	304.00	85.70	15.70 B	126.00
BERYLLIUM	0.02 U	0.02 U	0.02 U	0.02 U	0.60 B	0.31 U	0.50 B	0.23 U	0.43 B
CADMIUM	0.85 U	0.87 U	0.83 U	0.86 U	1.10 U	4.30	0.92 U	0.94 U	1.30
CALCIUM	62900.00	69100.00	55200.00	121000.00	36000.00	8040.00	61700.00	54700.00	6460.00 J
CHROMIUM	16.00 J	15.10 J	9.60 J	6.50	24.00	82.80 J	15.40	4.70 J	33.20
COBALT	8.00 B	6.70 B	4.30 B	3.10 B	10.90 B	27.10	7.60 B	2.60 B	12.40 B
COPPER	16.50 J	15.80 J	13.90 J	17.80 J	43.40	573.00	17.10	8.30	72.30
IRON	18700.00	16000.00	11600.00	7920.00	21400.00	104000.00	18200.00	5400.00	55800.00
LEAD	12.80	23.20	49.10	12.30	70.50 J	375.00 J	13.40 J	12.60 J	107.00
MAGNESIUM	17400.00	20100.00	13400.00	60000.00	12800.00	1070.00 B	23400.00	24100.00	3780.00
MANGANESE	667.00	445.00	339.00	565.00	244.00 J	728.00 J	453.00 J	294.00 J	770.00
MERCURY	0.12 U	0.12 U	0.11 U	0.12 U	0.31	1.30	0.81	0.12 U	0.70
NICKEL	15.60	14.60	10.40	4.50 B	35.30	173.00	18.60	5.60 B	43.90
POTASSIUM	2190.00	2030.00	769.00 B	1200.00	1600.00	189.00 B	2820.00	659.00 B	1280.00
SELENIUM	0.54 U	0.56 U	0.53 U	0.55 U	0.54 UJ	0.62 BJ	0.46 UJ	0.47 UJ	0.78 B
SILVER	0.66 U	0.68 U	0.64 U	0.67 U	0.81 U	4.70	0.69 U	0.70 U	1.70 B
SODIUM	202.00 B	202.00 B	161.00 B	164.00 B	381.00 B	174.00 B	246.00 B	195.00 B	215.00 B
THALLIUM	0.61 U	0.63 U	0.60 U	0.62 U	0.81 U	0.93 U	0.69 U	0.70 U	0.78 U
VANADIUM	21.60 J	20.00 J	14.30 J	10.60 BJ	22.50	1.20 U	21.40	7.80 B	16.40
ZINC	79.30	70.40	50.10	70.70	158.00	1000.00	63.20	70.20	669.00
CYANIDE	0.59 U	0.61 U	0.57 U	0.60 U	0.74* J	1.60 J	0.57 UJ	1.20 UJ	0.65 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
D = Denotes analyte quantified at a secondary dilution factor

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
INORGANICS
SOIL BORING ANALYTICAL RESULTS
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SAMPLE NUMBER -	B6-SS-7DUP	B7-SS-06	B8-SS-08	B9-SS-07	B9-SS-10	B10-SS-02	B10-SS-05	B11-SS-07	B12-SS-01
	CONCENTRATIONS in ug/kg or mg/kg								
INORGANICS									
ALUMINUM	9910.00	9560.00	7970.00	9310.00	8860.00	2900.00	1940.00	2630.00	10300.00
ANTIMONY	13.70 U	13.00 U	12.60 U	12.10 U	11.40 U	15.50 U	17.80 U	15.20 U	15.20 U
ARSENIC	4.50	3.50	3.00	3.10	1.90 B	2.70 B	29.70	1.10 B	21.80 J
BARIUM	82.30	77.50	72.10	76.70	85.30	185.00	5080.00	39.70 B	2240.00
BERYLLIUM	0.50 B	0.56 B	0.34 B	0.44 B	0.29 B	0.06 B	0.48	0.30 U	1.00 B
CADMIUM	1.10 U	0.88 U	0.99 U	0.95 U	0.90 U	5.50	1.50	1.20 U	5.90
CALCIUM	3190.00 J	52400.00	57600.00 J	71100.00 J	70500.00 J	5630.00	7160.00	54900.00 J	8450.00
CHROMIUM	32.20	R	17.50	13.50	13.60	28.20	484.00	15.60	37.50
COBALT	8.50 B	9.30 J	6.40 B	7.60 B	6.10 B	16.90 J	44.60 J	8.30 B	13.50 B
COPPER	29.30	37.90 J	18.20	17.60	15.10	512.00 J	268.00 J	27.80	337.00
IRON	23600.00	17500.00	13700.00	18400.00	14400.00	12800.00	489000.00	20000.00	33100.00
LEAD	91.00	52.60	49.60	13.00	12.30	431.00	633.00 J	50.00	882.00 J
MAGNESIUM	3380.00	18300.00	21800.00	25600.00	20200.00	1370.00 B	1850.00	23700.00	1300.00 B
MANGANESE	587.00	461.00 J	415.00	471.00	454.00	146.00 J	4430.00 J	351.00	275.00 J
MERCURY	0.28	0.12 U	0.12 U	0.15	0.11 U	0.27	0.17 U	0.15 U	1.10
NICKEL	27.30	19.80	16.20	16.10	13.00	22.60	193.00	20.30	34.80
POTASSIUM	1460.00	R	1820.00	2550.00	2370.00	357.00 B	232.00 B	640.00 B	1170.00 B
SELENIUM	0.54 U	0.51 U	0.50 U	1.20	0.45 U	2.00	0.71 U	0.59 U	2.00 J
SILVER	0.81 U	0.69 U	0.74 U	0.71 U	0.67 U	2.10 B	11.20	4.30	2.40 B
SODIUM	178.00 B	R	237.00 B	280.00 B	300.00 B	262.00 B	837.00 B	269.00 B	244.00 B
THALLIUM	0.81 U	0.69 U	0.74 U	0.71 U	0.67 U	0.82 U	0.94 U	0.89 U	0.89 U
VANADIUM	21.90	20.60	16.40	18.50	21.30	6.50 B	1.10 U	8.20 B	36.60
ZINC	R	82.60	114.00	87.00	55.70	200.00	643.00	472.00	1150.00
CYANIDE	0.74	0.61 UJ	0.62 UJ	1.20 U	1.10 U	1.00 J	1.30 J	0.74 U	6.10 J

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
INORGANICS
SOIL BORING ANALYTICAL RESULTS
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	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	B12-SS-04	B13-SS-04	B13-SS-567	B14-SS-05	B14-SS-13	B15-SS-06	B15-SS-13	B16-SS-08	B16-SS-10
INORGANICS									
ALUMINUM	12700.00	5160.00	6670.00	6630.00	9240.00	14900.00	8650.00	3130.00	9070.00
ANTIMONY	13.60 U	12.60 U	11.70 U	12.20 U	11.80 U	12.80 U	11.20 U	5.70 U	5.70 U
ARSENIC	6.50 J	15.80 J	2.80 J	5.10 J	2.30 BJ	3.00 J	8.40 J	1.80 B	2.20 B
BARIUM	106.00	35.00 B	68.50	52.50	73.90	106.00	79.90	29.00 B	92.40
BERYLLIUM	0.59 B	0.37 B	0.27 B	0.42 B	0.45 B	0.61 B	0.37 B	0.24 U	0.24 U
CADMIUM	1.10 U	0.99 U	0.91 U	0.95 U	0.92 U	1.00 U	0.88 U	0.24 U	0.24 U
CALCIUM	7150.00	51300.00	70900.00	42400.00	69600.00	3330.00	71400.00	59100.00	74700.00
CHROMIUM	18.00	8.40	9.80	11.00	12.40	21.60	12.00	4.70 J	11.50 J
COBALT	8.10 B	3.90 B	6.50 B	7.00 B	5.70 B	8.70 B	6.00 B	2.50 B	6.40 B
COPPER	23.90	10.40	13.60	23.20	12.90	20.90	15.00	14.20 J	16.90 J
IRON	26100.00	12300.00	11700.00	14400.00	13700.00	21000.00	13700.00	7260.00	14900.00
LEAD	38.20 J	148.00 J	15.40 J	13.00 J	16.30 J	27.80 J	11.70 B	17.70	18.30
MAGNESIUM	4470.00	22600.00	26000.00	12400.00	26800.00	4300.00	28500.00	25000.00	26500.00
MANGANESE	386.00 J	412.00 J	451.00 J	311.00 J	458.00	202.00 J	428.00 B	341.00 J	483.00 J
MERCURY	1.20	0.14	0.11 U	0.12 U	0.12 U	0.13 U	0.17	0.12 U	0.12 U
NICKEL	19.10	8.70 B	10.60	18.60	14.10	23.10	13.40	4.70 U	12.00
POTASSIUM	1470.00	1370.00	1600.00	1570.00	2820.00	2040.00	2420.00	920.00 B	2440.00
SELENIUM	0.59 BJ	0.49 UJ	0.46 UJ	0.48 UJ	0.46 UJ	0.50 UJ	0.44 UJ	0.47 U	0.47 U
SILVER	0.80 U	0.74 U	0.69 U	0.72 U	0.69 U	0.75 U	0.66 U	0.47 U	0.47 U
SODIUM	192.00 B	180.00 B	345.00 B	179.00 B	249.00 B	209.00 B	228.00 B	193.00 BJ	228.00 BJ
THALLIUM	0.80 U	0.74 U	0.69 U	0.72 U	0.69 U	0.75 U	0.66 U	0.24 U	0.24 U
VANADIUM	25.80	14.50	13.60	14.50	19.60	25.90	17.30	8.50 BJ	17.10 J
ZINC	113.00	79.80	86.80	74.30	66.90	109.00	61.10	191.00 J	83.10 J
CYANIDE	0.67 UJ	1.20 UJ	1.10 UJ	0.60 UJ	1.20 UJ	0.63 UJ	1.10 U	0.59 U	0.59 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
INORGANICS
SOIL BORING ANALYTICAL RESULTS
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	CONCENTRATIONS in ug/kg or mg/kg								
SAMPLE NUMBER -	MW-1D-07	MW-2S-07	MW-2S-11	MW-3S-04	MW-3S-06	MW-3S-07	MW-4D-10	MW-5S-01	MW-6S-02
INORGANICS									
ALUMINUM	4240.00 J	3490.00	10900.00	9770.00	6570.00	8870.00	13100.00 J	4450.00	6000.00
ANTIMONY	4.60 B	6.10 U	5.30 U	5.60 BJ	7.40 BJ	8.60 BJ	3.60 U	4.20 U	12.40 U
ARSENIC	1.60 B	1.70 B	3.60	3.90 J	3.10 J	2.90 J	4.90	2.10	3.50
BARIUM	38.80 B	31.10 B	93.80	78.40	63.70	81.10	92.00	51.70	34.90 B
BERYLLIUM	0.17 B	0.25 U	0.22 U	0.59 B	0.47 B	0.59 B	0.57 B	0.32 B	0.02 U
CADMIUM	0.75 U	0.25 U	0.22 U	0.68 U	0.64 U	0.68 U	0.77 U	0.58 U	0.84 U
CALCIUM	65400.00	58300.00	54300.00	72500.00	76400.00	78300.00	70900.00	56800.00 J	28000.00
CHROMIUM	4.50	5.80 J	13.80 J	10.60	6.50	8.80	14.00	5.00	6.80
COBALT	4.30 B	0.99 B	8.80 B	9.10 B	6.30 B	8.30 B	11.10 B	4.20	2.40 B
COPPER	13.40	27.00 J	29.70 J	17.60	13.90	16.80	21.40	22.20 J	15.50 J
IRON	7570.00	8280.00	19600.00	15800.00	11300.00	14500.00	21400.00	8710.00 J	7820.00
LEAD	11.90	23.30	12.90	13.50	13.10	20.80	16.20	43.70	30.70
MAGNESIUM	27300.00 J	24100.00	19900.00	25200.00	30100.00	31900.00	24900.00 J	23600.00	3660.00
MANGANESE	323.00	360.00 J	414.00 J	506.00	412.00	459.00	476.00	358.00 J	103.00
MERCURY	0.22	0.13 U	0.14	0.12 U	0.11 U	0.12 U	0.17	0.31	0.12 U
NICKEL	10.30	8.40 B	18.40	18.50	12.90	17.20	22.30	8.10	6.80 B
POTASSIUM	801.00 B	846.00 B	2510.00	1940.00	1450.00	2070.00	2640.00	975.00 B	624.00 B
SELENIUM	0.89 U	0.51 U	0.44 U	0.61 U	0.58 U	0.61 U	0.92 U	0.26 U	0.54 U
SILVER	0.65 U	0.51 U	0.44 U	1.10 U	1.00 U	1.10 U	0.67 U	0.94 U	0.65 U
SODIUM	155.00 B	205.00 BJ	200.00 BJ	184.00 B	177.00 B	193.00 B	233.00 B	143.00 B	205.00 B
THALLIUM	0.43 U	0.25 U	0.22 U	0.42 U	0.40 U	0.42 U	0.45 U	0.36 U	0.61 U
VANADIUM	11.20 B	8.10 BJ	18.40 J	19.30	13.60	17.70	25.20	10.40 J	16.10
ZINC	66.50	73.90 J	63.30 J	92.60	76.40	71.30	64.00	82.00 J	61.70 J
CYANIDE	0.60 U	0.63 U	0.55 U	0.59 U	0.55 U	0.59 U	0.62 U	0.50 U	0.58 U

FOOTNOTES :
ug/kg (micrograms per kilogram) = ppb (parts per billion).
Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = For organics, analyte was detected in the method blank
B = For inorganics, analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
INORGANICS
SOIL BORING ANALYTICAL RESULTS

05/29/90

SAMPLE NUMBER -	MW-6S-03	MW-6S-03D	MW-7S-15	MW-8S-05	MW-9S-06	MW-10S-07	MW-11S-07	MW-12S-07	MW-13S-02
	CONCENTRATIONS in ug/kg or mg/kg								
INORGANICS									
ALUMINUM	4480.00	4920.00	4200.00	10800.00	4500.00	10300.00	11800.00	8900.00	16500.00
ANTIMONY	12.50 U	13.00 U	12.50 U	12.30 UJ	11.90 U	12.20 U	12.50 U	11.80 UJ	12.70 U
ARSENIC	2.30	3.00	3.70	3.80	1.90 B	2.90	3.30	2.40	4.40 J
BARIUM	30.60	33.60	29.30 B	67.60	33.40 B	79.80	94.70	93.50	104.00
BERYLLIUM	0.02 U	0.02 U	0.24 B	0.44 B	0.02 U	0.32 B	0.39 B	0.39 B	1.40
CADMIUM	0.85 U	0.88 U	0.85 U	0.84 U	0.81 U	0.83 U	0.85 U	0.80 U	1.00 U
CALCIUM	49800.00	57900.00	55400.00	43200.00	52100.00	66000.00	73600.00	65800.00	72900.00
CHROMIUM	7.60	7.80	7.30 J	15.80 J	7.80 J	15.00 J	16.30 J	13.20 J	21.40
COBALT	3.50 B	3.50	3.90 B	7.40 B	4.10 B	8.40 B	7.90 B	5.00 B	7.40 B
COPPER	11.60	18.90	7.80 J	16.50	14.40	15.00	16.20	21.30 J	21.20
IRON	9880.00	10500.00	7770.00	17800.00	8660.00	16300.00	17700.00	13800.00	24500.00
LEAD	10.00	11.80	18.50	16.90 J	12.00 J	14.10 J	15.10 J	10.00	19.00
MAGNESIUM	20000.00	25100.00	21800.00	15500.00	20900.00	21400.00	23400.00	24400.00	24500.00
MANGANESE	414.00	406.00	321.00	449.00	329.00	508.00	520.00	382.00	449.00
MERCURY	0.12 U	0.12 U	0.37	0.31 J	0.11 U	0.31 J	0.12 UJ	0.71	0.16
NICKEL	5.90	8.00	6.10 B	17.40	8.90 B	15.30	16.70	13.00	21.20
POTASSIUM	905.00	981.00	1270.00	2060.00 J	1120.00	2630.00 J	3010.00 J	2080.00	3330.00 J
SELENIUM	0.54 U	0.56 U	0.49 U	0.49 U	0.52 U	0.48 U	0.49 U	0.47 U	0.50 U
SILVER	0.66 U	0.68 U	0.66 U	0.65 U	0.63 U	0.64 U	0.66 U	0.62 U	0.75 U
SODIUM	114.00	135.00	169.00 B	196.00	158.00 B	228.00 B	239.00 B	263.00 B	296.00 B
THALLIUM	0.61 U	0.63 U	0.66 U	0.65 U	0.58 U	0.64 U	0.66 U	0.62 U	0.25 U
VANADIUM	13.00	13.80	11.60 BJ	21.00	10.80 B	20.60	21.90	19.10 J	31.00
ZINC	67.20	73.60	78.10	68.00	70.80	78.90	70.60	97.20	76.90
CYANIDE	0.59 U	0.61 U	1.20 U	1.20 U	1.10 U	0.57 U	0.59 U	1.10 U	1.20 U

FOOTNOTES :
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Units for inorganic results are mg/kg (milligrams per kilogram).
J is a data qualifier indicating estimated values (appendix A).
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
INORGANICS
SOIL BORING ANALYTICAL RESULTS

05/29/90

SAMPLE NUMBER -	MW-13S-06	MW-14S-08	MW-14S-12	MW-15S-05	MW-16S-01	MW-16S-03	MW-16S-3DUP	MW-17S-05	MW-17S-11
	CONCENTRATIONS in ug/kg or mg/kg								
INORGANICS									
ALUMINUM	12500.00	4850.00	14300.00	7530.00	5920.00	10500.00	6990.00	2570.00	6690.00
ANTIMONY	12.20 U	11.90 U	12.10 U	12.60 UJ	12.00 U	12.30 U	11.80 U	12.40 U	11.90 U
ARSENIC	2.60 J	1.70 BJ	7.20 J	3.30 J	1.70 BJ	5.10	2.80 J	2.40 BJ	2.60 J
BARIUM	98.80	35.50 B	115.00	340.00	43.90 B	74.90	65.00	12.60 B	61.00
BERYLLIUM	1.30	0.23 U	1.40	0.25 U	0.24 U	1.20	1.20	0.24 U	1.20
CADMIUM	0.96 U	0.93 U	0.95 U	2.00	0.94 U	0.97 U	0.93 U	0.97 U	0.93 U
CALCIUM	71200.00	57000.00	50700.00	30900.00	58500.00	63100.00	64900.00	53900.00	64500.00
CHROMIUM	16.80	7.10	19.90	50.30	8.30	15.40 J	10.10 J	4.20	10.30
COBALT	8.50 B	3.30 B	11.50 B	12.80	3.40 B	7.60 B	5.80 B	2.30 B	4.60 B
COPPER	17.40	10.00	25.20	123.00	11.50	20.70	24.30	9.80	15.30
IRON	19300.00	9250.00	25100.00	52800.00	10000.00	17400.00	12300.00	6250.00	11900.00
LEAD	17.20	20.20	13.90	110.00	11.30	18.30	10.00	12.30	15.20
MAGNESIUM	25000.00	23300.00	19100.00	9630.00	24100.00	23800.00	25100.00	23400.00	25200.00
MANGANESE	516.00	357.00	479.00	555.00	355.00	448.00	401.00	343.00	409.00
MERCURY	0.12 U	0.12 U	0.12 U	0.49	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
NICKEL	19.50	7.40 B	28.90	46.80	8.00 B	15.80	11.40	10.60	10.00
POTASSIUM	3560.00 J	1160.00 B	3130.00 J	1170.00 BJ	1790.00 J	2710.00 J	1790.00 J	563.00 B	1960.00 J
SELENIUM	0.48 U	0.47 U	0.48 U	0.49 U	0.47 U	0.48 U	0.46 U	0.49 U	0.47 U
SILVER	0.72 U	0.70 U	0.71 U	2.90	0.71 U	0.72 U	0.69 U	0.73 U	0.70 U
SODIUM	242.00 B	187.00 B	228.00 B	184.00 BJ	192.00 B	233.00 B	213.00 BJ	155.00 B	202.00 BJ
THALLIUM	0.24 B	0.23 U	0.45 B	0.32 B	0.24 B	0.34 B	0.28 B	0.24 U	0.23 U
VANADIUM	23.80	11.60	25.30	16.80	14.00	21.40	14.40	8.00 B	15.90
ZINC	75.20	66.10	72.80	511.00	76.00	70.20	64.60	153.00	91.10
CYANIDE	U	1.20 U	0.60 U	1.20 U	1.20 U	1.20 U	1.20 U	0.61 U	1.20 U

FOOTNOTES :
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Units for inorganic results are mg/kg (milligrams per kilogram).
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R = Analyte was rejected due to QA/QC.
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 1
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	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-1S-01	GW-1D-01	GW-3S-01	GW-3D-01	GW-3D-01BDUP	GW-4S-01	GW-4D-01	GW-5S-01	GW-5D-01
VOLATILES (8010)									
Bromodichloromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Bromoform	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Bromomethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Carbon Tetrachloride	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Chlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Chloroethane	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Dibromochloromethane	2.6 U	2.6 U	1.2 U	1.2 U	1.2 U	2.6 U	1.2 U	2.6 U	2.6 U
1,1-Dichloroethane	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dichloroethane	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,1-Dichloroethene	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
trans 1,2-Dichloroethylene	1.6 U	1.6 U	1.6 U	R	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,2-Dichloropropane	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
cis-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
trans-1,3-Dichloropropene	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Methylene Chloride	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
1,1,2-Trichloroethane	2.6 U	2.6 U	1.3 U	1.3 U	1.3 U	2.6 U	1.3 U	2.6 U	2.6 U
Trichloroethene	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2-Chloroethylvinylether	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Vinyl Chloride	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Trichlorofluoromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U

FOOTNOTES :
* All values in ug/l unless noted otherwise
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Indicates the analyte was found in the blank. Indicates possible blank contamination.
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
NR Indicates analysis was not requested.
E = Estimated value due to exceedance of linear calibration range.

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 1

05/29/90

	CONCENTRATIONS in ug/l							
SAMPLE NUMBER -	GW-6S-01	GW-6D-01	GW-7S-01	GW-7D-01	GW-8S-01	GW-9S-01	GW-10S-01	GW-12S-01
VOLATILES (8010)								
Bromodichloromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Bromoform	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Bromomethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Carbon Tetrachloride	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Chlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Chloroethane	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	1.2 U	2.6 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethane	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dichloroethane	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,1-Dichloroethene	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
trans 1,2-Dichloroethylene	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,2-Dichloropropane	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
cis-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
trans-1,3-Dichloropropene	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Methylene Chloride	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	1.3 U	2.6 U	2.6 U	2.6 U	2.6 U
Trichloroethene	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2-Chloroethylvinylether	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Vinyl Chloride	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Trichlorofluoromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U

FOOTNOTES :
* All values in ug/l unless noted otherwise
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Indicates the analyte was found in the blank. Indicates possible blank contamination.
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 1
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05/29/90

	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-1S-01	GW-1D-01	GW-3S-01	GW-3D-01	GW-3D-01BDUP	GW-4S-01	GW-4D-01	GW-5S-01	GW-5D-01
VOLATILES (8020)									
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Toluene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Chlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Ethylbenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
m-Xylene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
o-Xylene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
p-Xylene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U

FOOTNOTES :

* All values in ug/l unless noted otherwise
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Indicates the analyte was found in the blank. Indicates possible blank contamination.
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 1
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	CONCENTRATIONS in ug/l							
SAMPLE NUMBER -	GW-6S-01	GW-6D-01	GW-7S-01	GW-7D-01	GW-8S-01	GW-9S-01	GW-10S-01	GW-12S-01
VOLATILES (8020)								
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Toluene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Chlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Ethylbenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
m-Xylene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
o-Xylene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
p-Xylene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U

FOOTNOTES :
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ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
SEMI-VOLATILES 1
GROUND WATER SAMPLE RESULTS - ROUND 1
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	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-1S-01	GW-1D-01	GW-3S-01	GW-3D-01	GW-3D-01BDUP	GW-4S-01	GW-4D-01	GW-5S-01	GW-5D-01
SEMI-VOLATILES 1									
Phenol	R	10.0 U	R	10.0 U	10.0 U	10.0 U	10.0 U	R	10.0 U
bis(2-Chloroethyl)Ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Chlorophenol	R	10.0 U	R	10.0 U	10.0 U	10.0 U	10.0 U	R	10.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzyl Alcohol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Methylphenol	R	10.0 U	R	10.0 U	10.0 U	10.0 U	10.0 U	R	10.0 U
bis(2-Chloroisopropyl)Ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Methylphenol	R	10.0 U	R	10.0 U	10.0 U	10.0 U	10.0 U	R	10.0 U
N-Nitroso-Di-n-Propylamine	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Nitrobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isophorone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Nitrophenol	R	10.0 U	R	10.0 U	10.0 U	10.0 U	10.0 U	R	10.0 U
2,4-Dimethylphenol	R	10.0 U	R	10.0 U	10.0 U	10.0 U	10.0 U	R	10.0 U
Benzoic Acid	R	50.0 U	R	50.0 U	50.0 U	50.0 U	50.0 U	3.0 J	50.0 U
bis(2-Chloroethoxy)Methane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dichlorophenol	R	10.0 U	R	10.0 U	10.0 U	10.0 U	10.0 U	R	10.0 U
1,2,4-Trichlorobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Naphthalene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Chloroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorobutadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Chloro-3-Methylphenol	R	10.0 U	R	10.0 U	10.0 U	10.0 U	10.0 U	R	10.0 U
2-Methylnaphthalene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorocyclopentadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4,6-Trichlorophenol	R	10.0 U	R	10.0 U	10.0 U	10.0 U	10.0 U	R	10.0 U
2,4,5-Trichlorophenol	R	50.0 U	R	50.0 U	50.0 U	50.0 U	50.0 U	R	50.0 U
2-Chloronaphthalene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Nitroaniline	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Dimethyl Phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Acenaphthylene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,6-Dinitrotoluene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
SEMI-VOLATILES 2
GROUND WATER SAMPLE RESULTS - ROUND 1
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SAMPLE NUMBER -	GW-1S-01	GW-1D-01	GW-3S-01	GW-3D-01	GW-3D-01BDUP	GW-4S-01	GW-4D-01	GW-5S-01	GW-5D-01
	CONCENTRATIONS in ug/l								
SEMI-VOLATILES 2									
3-Nitroaniline	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Acenaphthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrophenol	R	50.0 U	R	50.0 U	50.0 U	50.0 U	50.0 U	R	50.0 U
4-Nitrophenol	R	50.0 U	R	50.0 U	50.0 U	50.0 U	50.0 U	R	50.0 U
Dibenzofuran	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrotoluene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Diethylphthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Chlorophenyl-phenylether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Fluorene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Nitroaniline	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
4,6-Dinitro-2-Methylphenol	R	50.0 U	R	50.0 U	50.0 U	50.0 U	50.0 U	R	50.0 U
N-Nitrosodiphenylamine (1)	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Bromophenyl-phenylether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Pentachlorophenol	R	50.0 U	R	50.0 U	50.0 U	50.0 U	50.0 U	R	50.0 U
Phenanthrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Anthracene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Di-n-Butylphthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Fluoranthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Pyrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Butylbenzylphthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
3,3'-Dichlorobenzidine	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Benzo(a)Anthracene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Chrysene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
bis(2-Ethylhexyl)Phthalate	R	R	R	R	R	R	12.0	R	R
Di-n-Octyl Phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzo(b)Fluoranthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzo(k)Fluoranthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzo(a)Pyrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Indeno(1,2,3-cd)Pyrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Dibenz(a,h)Anthracene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzo(g,h,i)Perylene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

FOOTNOTES :
* All values in ug/l unless noted otherwise
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Indicates the analyte was found in the blank. Indicates possible blank contamination.
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E = Estimated value due to exceedance of linear calibration range.

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 1
GROUND WATER SAMPLE RESULTS - ROUND 1
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SAMPLE NUMBER -	GW-6S-01	GW-6D-01	GW-7S-01	GW-7D-01	GW-8S-01	GW-9S-01	GW-10S-01	GW-12S-01
	CONCENTRATIONS in ug/l							
SEMI-VOLATILES 1								
Phenol	R	R	R	16.0	R	50.0 U	R	10.0 U
bis(2-Chloroethyl)Ether	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
2-Chlorophenol	R	R	R	10.0 U	R	50.0 U	R	10.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzyl Alcohol	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Methylphenol	R	R	R	10.0 U	R	50.0 U	R	10.0 U
bis(2-Chloroisopropyl)Ether	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
4-Methylphenol	R	R	R	10.0 U	R	50.0 U	R	10.0 U
N-Nitroso-Di-n-Propylamine	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Hexachloroethane	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Nitrobenzene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Isophorone	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
2-Nitrophenol	R	R	R	10.0 U	R	50.0 U	R	10.0 U
2,4-Dimethylphenol	R	R	R	10.0 U	R	50.0 U	R	10.0 U
Benzoic Acid	R	R	R	8.0 J	R	250.0 U	R	50.0 U
bis(2-Chloroethoxy)Methane	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
2,4-Dichlorophenol	R	R	R	10.0 U	R	50.0 U	R	10.0 U
1,2,4-Trichlorobenzene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Naphthalene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
4-Chloroaniline	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Hexachlorobutadiene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
4-Chloro-3-Methylphenol	R	R	R	10.0 U	R	50.0 U	R	10.0 U
2-Methylnaphthalene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Hexachlorocyclopentadiene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
2,4,6-Trichlorophenol	R	R	R	10.0 U	R	50.0 U	R	10.0 U
2,4,5-Trichlorophenol	R	R	R	50.0 U	R	250.0 U	R	50.0 U
2-Chloronaphthalene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
2-Nitroaniline	R	50.0 UJ	50.0 U	50.0 U	50.0 U	250.0 U	50.0 U	50.0 U
Dimethyl Phthalate	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Acenaphthylene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
2,6-Dinitrotoluene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U

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J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 2
GROUND WATER SAMPLE RESULTS - ROUND 1
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SAMPLE NUMBER -	CONCENTRATIONS in ug/l							
	GW-6S-01	GW-6D-01	GW-7S-01	GW-7D-01	GW-8S-01	GW-9S-01	GW-10S-01	GW-12S-01
SEMI-VOLATILES 2								
3-Nitroaniline	R	50.0 UJ	50.0 U	50.0 U	50.0 U	250.0 U	50.0 U	50.0 U
Acenaphthene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
2,4-Dinitrophenol	R	R	R	50.0 U	R	250.0 U	R	50.0 U
4-Nitrophenol	R	R	R	50.0 U	R	250.0 U	R	50.0 U
Dibenzofuran	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
2,4-Dinitrotoluene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Diethylphthalate	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
4-Chlorophenyl-phenylether	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Fluorene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
4-Nitroaniline	R	50.0 UJ	50.0 U	50.0 U	50.0 U	250.0 U	50.0 U	50.0 U
4,6-Dinitro-2-Methylphenol	R	R	R	50.0 U	R	250.0 U	R	50.0 U
N-Nitrosodiphenylamine (1)	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
4-Bromophenyl-phenylether	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Hexachlorobenzene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Pentachlorophenol	R	R	R	50.0 U	R	250.0 U	R	50.0 U
Phenanthrene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Anthracene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Di-n-Butylphthalate	R	10.0 UJ	10.0 U	10.0 U	10.0 U	2.0 J	10.0 U	10.0 U
Fluoranthene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Pyrene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Butylbenzylphthalate	R	10.0 UJ	10.0 U	10.0 U	150.0 J	50.0 U	10.0 U	10.0 U
3,3'-Dichlorobenzidine	R	20.0 UJ	20.0 U	20.0 U	20.0 U	100.0 U	20.0 U	20.0 U
Benzo(a)Anthracene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Chrysene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
bis(2-Ethylhexyl)Phthalate	25.0	R	R	11.0	R	R	R	R
Di-n-Octyl Phthalate	R	10.0 UJ	73.0 J	10.0 U	43.0 J	30.0 J	10.0 U	10.0 U
Benzo(b)Fluoranthene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Benzo(k)Fluoranthene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Benzo(a)Pyrene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Indeno(1,2,3-cd)Pyrene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Dibenz(a,h)Anthracene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U
Benzo(g,h,i)Perylene	R	10.0 UJ	10.0 U	10.0 U	10.0 U	50.0 U	10.0 U	10.0 U

FOOTNOTES :
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
PESTICIDES/PCBs
GROUND WATER SAMPLE RESULTS - ROUND 1

05/29/90

SAMPLE NUMBER -	GW-1S-01	GW-1D-01	GW-3S-01	GW-3D-01	GW-3D-01BDUP	GW-4S-01	GW-4D-01	GW-5S-01	GW-5D-01
	CONCENTRATIONS in ug/l								
PESTICIDES/PCBs									
alpha-BHC	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.25 UJ	0.05 U	0.05 U
beta-BHC	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.25 UJ	0.05 U	0.05 U
delta-BHC	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.25 UJ	0.05 U	0.05 U
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.25 UJ	0.05 U	0.05 U
Heptachlor	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.25 UJ	0.05 U	0.05 U
Aldrin	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.25 UJ	0.05 U	0.05 U
Heptachlor epoxide	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.25 UJ	0.05 U	0.05 U
Endosulfan I	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.25 UJ	0.05 U	0.05 U
Dieldrin	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.50 UJ	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.50 UJ	0.10 U	0.10 U
Endrin	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.50 UJ	0.10 U	0.10 U
Endosulfan II	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.50 UJ	0.10 U	0.10 U
4,4'-DDD	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.50 UJ	0.10 U	0.10 U
Endosulfan sulfate	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.50 UJ	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.50 UJ	0.10 U	0.10 U
Methoxychlor	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	2.50 UJ	0.50 U	0.50 U
Endrin ketone	0.10 U	0.10 U	0.10 UJ	0.10 UJ	0.10 UJ	0.10 U	0.50 UJ	0.10 U	0.10 U
alpha-Chlordane	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	2.50 UJ	0.50 U	0.50 U
gamma-Chlordane	0.50 U	0.50 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	2.50 UJ	0.50 U	0.50 U
Toxaphene	1.00 U	1.00 U	1.00 UJ	1.00 UJ	1.00 UJ	1.00 U	5.00 UJ	1.00 U	1.00 U
Aroclor-1016	0.50 U	0.05 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	2.50 UJ	0.50 U	0.50 U
Aroclor-1221	0.50 U	0.05 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	2.50 UJ	0.50 U	0.50 U
Aroclor-1232	0.50 U	0.05 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	2.50 UJ	0.50 U	0.50 U
Aroclor-1242	0.50 U	0.05 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	2.50 UJ	0.50 U	0.50 U
Aroclor-1248	0.50 U	0.05 U	0.50 UJ	0.50 UJ	0.50 UJ	0.50 U	2.50 UJ	0.50 U	0.50 U
Aroclor-1254	1.00 U	1.00 U	1.00 UJ	1.00 UJ	1.00 UJ	1.00 U	5.00 UJ	1.00 U	1.00 U
Aroclor-1260	1.00 U	1.00 U	1.00 UJ	1.00 UJ	1.00 UJ	1.00 U	5.00 UJ	1.00 U	1.00 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
PESTICIDES/PCBs
GROUND WATER SAMPLE RESULTS - ROUND 1
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SAMPLE NUMBER -	GW-6S-01	GW-6D-01	GW-7S-01	GW-7D-01	GW-8S-01	GW-9S-01	GW-10S-01	GW-12S-01
	CONCENTRATIONS in ug/l							
PESTICIDES/PCBs								
alpha-BHC	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	0.05 U	0.05 U	0.05 U	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U
Endrin	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan II	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.10 U	0.10 U
Methoxychlor	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.10 U	0.50 U
Endrin ketone	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 U	0.50 U	0.10 U
alpha-Chlordane	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.10 U	0.50 U
gamma-Chlordane	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Toxaphene	1.00 U	1.00 U	1.00 U	1.00 UJ	1.00 U	1.00 U	0.50 U	1.00 U
Aroclor-1016	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	1.00 U	0.50 U
Aroclor-1221	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1232	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1242	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1248	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1254	1.00 U	1.00 U	1.00 U	1.00 UJ	1.00 U	1.00 U	0.50 U	1.00 U
Aroclor-1260	1.00 U	1.00 U	1.00 U	1.00 UJ	1.00 U	1.00 U	1.00 U	1.00 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
INORGANICS
GROUND WATER SAMPLE RESULTS - ROUND 1
Page 01 of 02

05/29/90

SAMPLE NUMBER -	CONCENTRATIONS in ug/l								
	GW-1S-01	GW-1D-01	GW-3S-01	GW-3D-01	GW-4S-01	GW-4D-01	GW-5S-01	GW-5D-01	GW-6S-01
INORGANICS									
ALUMINUM	97.60 B	56.10 B	4460.00	78.10 B	1050.00	146.00 B	59.50 B	108.00 B	90.90 B
ANTIMONY	53.10 U	53.10 U	53.10 U	53.10 U	53.10 U	53.10 U	53.10 U	53.10 U	53.10 U
ARSENIC	6.20 B	1.90 U	3.90 B	4.60 B	2.50 B	1.90 U	9.80 B	4.70 B	1.90 U
BARIUM	77.90 B	24.90 B	79.50 B	64.60 B	62.00 B	34.40 B	73.20 B	174.00 B	35.50 B
BERYLLIUM	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
CADMIUM	3.60 U	3.90 B	3.60 U	3.60 U	3.60 U	3.60 U	3.60 U	3.60 U	3.60 U
CALCIUM	213000.00	30300.00	80700.00	90700.00	39100.00	55600.00	28200.00	115000.00	111000.00
CHROMIUM	3.10 B	5.60 B	21.20 J	131.00 J	6.80 B	728.00 J	3.00 U	41.60	3.00 U
COBALT	4.20 U	4.20 U	4.20 U	4.20 U	4.20 U	7.10 B	4.20 U	4.20 U	4.20 U
COPPER	10.00 B	2.60 U	45.80	3.70 B	5.30 B	3.90 B	10.20 B	12.40 B	14.80 B
IRON	5070.00	272.00	7360.00	4510.00	1720.00	2260.00	2370.00	5270.00	201.00
LEAD	2.80 B	2.00 U	11.30	3.10 B	2.90 B	2.30 B	2.00 U	2.00 U	5.90
MAGNESIUM	41700.00	7180.00	44600.00	17400.00	21500.00	29500.00	20400.00	36800.00	32400.00
MANGANESE	1580.00	5.90 B	1620.00	234.00	591.00	47.60	576.00	82.70	1080.00
MERCURY	0.20 U	0.20 U	R	R	0.38	R	0.20 U	0.20 U	0.20 U
NICKEL	13.70 B	17.40 B	26.60 B	52.00	28.00 B	198.00	10.70 U	21.10 B	13.10 B
POTASSIUM	1800.00 B	5330.00	3860.00 B	2670.00 B	1330.00 B	15600.00	761.00 B	6700.00	1960.00 B
SELENIUM	2.10 U	2.10 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U
SILVER	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U
SODIUM	70100.00	38800.00	22400.00	67900.00	19400.00	41100.00	27700.00	131000.00	84000.00 B
THALLIUM	2.80 U	2.80 U	2.60 U	2.60 U	2.80 U	2.60 U	2.80 U	2.80 U	2.80 U
VANADIUM	3.20 U	3.20 U	8.40 B	3.20 U	3.20 U	6.80 B	3.20 U	3.20 U	3.20 U
ZINC	12.30 B	4.90 B	51.70	10.70 B	R	13.90 B	12.80 B	11.90 B	9.90 B
CYANIDE	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U

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FOOTNOTES :
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
INORGANICS
GROUND WATER SAMPLE RESULTS - ROUND 1
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SAMPLE NUMBER -	GW-6D-01	GW-7S-01	GW-7D-01	GW-8S-01	GW-9S-01	GW-10S-01	GW-12S-01
	CONCENTRATIONS in ug/l						
INORGANICS							
ALUMINUM	162.00 B	257.00	559.00	3960.00	2120.00	1850.00	311.00
ANTIMONY	53.10 U	53.10 U	53.10 U	53.10 U	53.10 U	53.10 U	53.10 U
ARSENIC	1.90 U	1.90 U	1.90 U	2.70 B	2.60 B	1.90 U	1.90 U
BARIUM	48.30 B	332.00	97.30 B	141.00 B	271.00	107.00 B	76.40 B
BERYLLIUM	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
CADMIUM	3.60 U	3.60 U	3.60 U	3.60 U	3.60 U	3.60 U	3.60 U
CALCIUM	68600.00	46800.00	244000.00	124000.00	156000.00	178000.00	345000.00
CHROMIUM	23.00	3.00 U	5.60 BJ	21.10	8.70 B	11.20	3.00 U
COBALT	4.20 U	4.20 U	4.20 U	4.50 B	4.20 U	4.20 U	4.20 U
COPPER	10.40 B	10.00 B	11.20 B	14.40 B	11.80 B	7.00 B	6.80 B
IRON	424.00	429.00	161.00	5650.00	13200.00	2740.00	547.00
LEAD	2.00 U	4.40 B	2.90 B	9.60	10.40	5.80	6.60
MAGNESIUM	20900.00	31500.00	156.00 B	61200.00	41400.00	150000.00	188000.00
MANGANESE	17.30	62.10	0.50 U	520.00	2280.00	391.00	451.00
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	2.00	3.20
NICKEL	33.00 B	11.80 B	10.70 U	113.00	20.50 B	14.30 B	10.70 U
POTASSIUM	5110.00	1900.00 B	23300.00	3100.00 B	42700.00	1970.00 B	839.00 B
SELENIUM	2.30 U	2.10 U	2.30 U	2.10 U	2.30 U	2.30 U	2.30 U
SILVER	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U	2.80 U
SODIUM	127000.00	24000.00	58000.00	21500.00	30400.00	126000.00	206000.00
THALLIUM	2.80 U	2.80 U	2.60 U	2.80 U	2.80 U	2.80 U	2.80 U
VANADIUM	3.20 U	3.20 U	3.20 U	7.40 B	3.50 B	6.30 B	3.20 U
ZINC	R	10.80 B	21.40	R	R	R	7.80 B
CYANIDE	10.00 U	10.00 U	10.00 U	0.50 U	10.00 U	10.00 U	10.00 U

FOOTNOTES :
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 2
Page 01 of 03

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	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-1S-02	GW-1D-02	GW-2S-02	GW-2D-02	GW-3S-02	GW-3D-02	GW-4S-02	GW-4D-02	GW-5D-02
VOLATILES (8010)									
Bromodichloromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Bromoform	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Bromomethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Carbon Tetrachloride	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Chlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Chloroethane	5.9 U	5.9 U	900.0	3.7	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethane	1.1 U	1.1 U	4900.0	4.1	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dichloroethane	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,1-Dichloroethene	1.8 U	1.8 U	240.0	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
trans 1,2-Dichloroethylene	1.6 U	1.6 U	1.6 U	9.2	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,2-Dichloropropane	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
cis-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
trans-1,3-Dichloropropene	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Methylene Chloride	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	1.3 U	1.3 U	15000.0 J	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Trichloroethene	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2-Chloroethylvinylether	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Vinyl Chloride	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Trichlorofluoromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 2

05/29/90

	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-6S-02	GW-6D-02	GW-7S-02	GW-7D-02	GW-8S-02	GW-9S-02	GW-10S-02	GW-11S-02	GW-12S-02
VOLATILES (8010)									
Bromodichloromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Bromoform	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Bromomethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Carbon Tetrachloride	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Chlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Chloroethane	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethane	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.6
1,2-Dichloroethane	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,1-Dichloroethene	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
trans 1,2-Dichloroethylene	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,2-Dichloropropane	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
cis-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
trans-1,3-Dichloropropene	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Methylene Chloride	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	26.0
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Trichloroethene	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2-Chloroethylvinylether	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Vinyl Chloride	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Trichlorofluoromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 2
Page 03 of 03

05/29/90

	CONCENTRATIONS in ug/l					
SAMPLE NUMBER -	GW-13S-02	GW-14S-02	GW-14S-02DUP	GW-15S-02	GW-16S-02	GW-17S-02
VOLATILES (8010)						
Bromodichloromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Bromoform	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Bromomethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Carbon Tetrachloride	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Chlorobenzene	3.0 U	3.0 U	3.7 U	3.0 U	1200.0 J	3.0 U
Chloroethane	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethane	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1,2-Dichloroethane	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,1-Dichloroethene	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
trans 1,2-Dichloroethylene	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
1,2-Dichloropropane	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
cis-1,3-Dichloropropene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
trans-1,3-Dichloropropene	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Methylene Chloride	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Trichloroethene	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
2-Chloroethylvinylether	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Vinyl Chloride	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Trichlorofluoromethane	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 2
Page 01 of 03

05/29/90

	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-1S-02	GW-1D-02	GW-2S-02	GW-2D-02	GW-3S-02	GW-3D-02	GW-4S-02	GW-4D-02	GW-5D-02
VOLATILES (8020)									
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	26.0	23.0	2.0 U	2.0 U	2.0 U
Toluene	3.0 U	3.0 U	3.0 U	3.0 U	41.0	3.0	3.0 U	3.0 U	3.0 U
Chlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Ethylbenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
m-Xylene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
o-Xylene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
p-Xylene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 2

05/29/90

	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-6S-02	GW-6D-02	GW-7S-02	GW-7D-02	GW-8S-02	GW-9S-02	GW-10S-02	GW-11S-02	GW-12S-02
VOLATILES (8020)									
Benzene	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.8	2.0 U	2.0 U	2.0 U
Toluene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	4.1	3.0 U	3.0 U	3.0 U
Chlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Ethylbenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
m-Xylene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
o-Xylene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
p-Xylene	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U	6.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
VOLATILES
GROUND WATER SAMPLE RESULTS - ROUND 2
Page 03 of 03

05/29/90

SAMPLE NUMBER -	CONCENTRATIONS in ug/l					
	GW-13S-02	GW-14S-02	GW-14S-02DUP	GW-15S-02	GW-16S-02	GW-17S-02
VOLATILES (8020)						
Benzene	2.0 U	2.0 U	2.7	2.0 U	290.0	2.0 U
Toluene	3.0 U	3.0 U	43.0	3.0 U	3.0 U	3.0 U
Chlorobenzene	3.0 U	3.0 U	3.0 U	3.0 U	1200.0 J	3.0 U
Ethylbenzene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
m-Xylene	6.0 U	6.0 U	6.0 U	6.0 U	200.0 J	6.0 U
o-Xylene	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
p-Xylene	6.0 U	6.0 U	6.0 U	6.0 U	200.0 J	6.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	4.0 J	5.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	82.0	5.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	240.0 J	5.0 U

FOOTNOTES :
* All values in ug/l unless noted otherwise
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Indicates the analyte was found in the blank. Indicates possible blank contamination.
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
SEMI-VOLATILES 1
GROUND WATER SAMPLE RESULTS - ROUND 2
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	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-1S-02	GW-1D-02	GW-2S-02	GW-2D-02	GW-3S-02	GW-3D-02	GW-4S-02	GW-4D-02	GW-5S-02
SEMI-VOLATILES 1									
Phenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
bis(2-Chloroethyl)Ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Chlorophenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10.0 U
Benzyl Alcohol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10.0 U
2-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
bis(2-Chloroisopropyl)Ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
N-Nitroso-Di-n-Propylamine	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Nitrobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isophorone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Nitrophenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dimethylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzoic Acid	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
bis(2-Chloroethoxy)Methane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dichlorophenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
1,2,4-Trichlorobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Naphthalene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Chloroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorobutadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Chloro-3-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Methylnaphthalene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorocyclopentadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4,6-Trichlorophenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4,5-Trichlorophenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
2-Chloronaphthalene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Nitroaniline	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Dimethyl Phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Acenaphthylene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,6-Dinitrotoluene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

FOOTNOTES :
* All values in ug/l unless noted otherwise
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Indicates the analyte was found in the blank. Indicates possible blank contamination.
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
NR Indicates analysis was not requested.
E = Estimated value due to exceedance of linear calibration range.

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
SEMI-VOLATILES 2
GROUND WATER SAMPLE RESULTS - ROUND 2
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	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-1S-02	GW-1D-02	GW-2S-02	GW-2D-02	GW-3S-02	GW-3D-02	GW-4S-02	GW-4D-02	GW-5S-02
SEMI-VOLATILES 2									
3-Nitroaniline	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Acenaphthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrophenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
4-Nitrophenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Dibenzofuran	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrotoluene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Diethylphthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Chlorophenyl-phenylether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Fluorene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Nitroaniline	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
4,6-Dinitro-2-Methylphenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
N-Nitrosodiphenylamine (1)	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Bromophenyl-phenylether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Pentachlorophenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Phenanthrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Anthracene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Di-n-Butylphthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Fluoranthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Pyrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Butylbenzylphthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
3,3'-Dichlorobenzidine	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Benzo(a)Anthracene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Chrysene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
bis(2-Ethylhexyl)Phthalate	4.0 J	3.0 J	10.0 U	12.0	66.0	24.0	3.0 J	8.0 J	21.0
Di-n-Octyl Phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzo(b)Fluoranthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzo(k)Fluoranthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzo(a)Pyrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Indeno(1,2,3-cd)Pyrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Dibenz(a,h)Anthracene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzo(g,h,i)Perylene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

FOOTNOTES :
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 1
GROUND WATER SAMPLE RESULTS - ROUND 2
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SAMPLE NUMBER -	GW-5D-02	GW-6S-02	GW-6D-02	GW-7S-02	GW-7D-02	GW-8S-02	GW-9S-02	GW-10S-02	GW-11S-02
	CONCENTRATIONS in ug/l								
SEMI-VOLATILES 1									
Phenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
bis(2-Chloroethyl)Ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2-Chlorophenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzyl Alcohol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
bis(2-Chloroisopropyl)Ether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
4-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
N-Nitroso-Di-n-Propylamine	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Nitrobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Isophorone	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2-Nitrophenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2,4-Dimethylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Benzoic Acid	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	100.0 U	100.0 U
bis(2-Chloroethoxy)Methane	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2,4-Dichlorophenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
1,2,4-Trichlorobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Naphthalene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
4-Chloroaniline	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Hexachlorobutadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
4-Chloro-3-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2-Methylnaphthalene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Hexachlorocyclopentadiene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2,4,6-Trichlorophenol	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2,4,5-Trichlorophenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	100.0 U	100.0 U
2-Chloronaphthalene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2-Nitroaniline	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	100.0 U	100.0 U
Dimethyl Phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Acenaphthylene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2,6-Dinitrotoluene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U

FOOTNOTES :
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 2
GROUND WATER SAMPLE RESULTS - ROUND 2
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	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-5D-02	GW-6S-02	GW-6D-02	GW-7S-02	GW-7D-02	GW-8S-02	GW-9S-02	GW-10S-02	GW-11S-02
SEMI-VOLATILES 2									
3-Nitroaniline	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	100.0 U	100.0 U
Acenaphthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2,4-Dinitrophenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	100.0 U	100.0 U
4-Nitrophenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	100.0 U	100.0 U
Dibenzofuran	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
2,4-Dinitrotoluene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Diethylphthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
4-Chlorophenyl-phenylether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Fluorene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
4-Nitroaniline	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	100.0 U	100.0 U
4,6-Dinitro-2-Methylphenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	100.0 U	100.0 U
N-Nitrosodiphenylamine (1)	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
4-Bromophenyl-phenylether	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Hexachlorobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Pentachlorophenol	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	100.0 U	100.0 U
Phenanthrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Anthracene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Di-n-Butylphthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Fluoranthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Pyrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Butylbenzylphthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
3,3'-Dichlorobenzidine	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	40.0 U	40.0 U
Benzo(a)Anthracene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Chrysene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
bis(2-Ethylhexyl)Phthalate	7.0 J	10.0 U	3.0 J	10.0 U	42.0	9.0 J	10.0 U	20.0 U	4.0 J
Di-n-Octyl Phthalate	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Benzo(b)Fluoranthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Benzo(k)Fluoranthene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Benzo(a)Pyrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Indeno(1,2,3-cd)Pyrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Dibenz(a,h)Anthracene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U
Benzo(g,h,i)Perylene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.0 U	20.0 U

FOOTNOTES :
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 1
GROUND WATER SAMPLE RESULTS - ROUND 2
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	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-12S-02	GW-13S-02	GW-14S-02	GW-14S-02DUP	GW-15S-02	GW-16S-02	GW-16S-02DL	GW-17S-02	GW-17S-02DL
SEMI-VOLATILES 1									
Phenol	10.0 U	10.0 U	20.0 U	6.0 J	20.0 U	20.0 U	100.0 U	3600.0 E	4000.0 D
bis(2-Chloroethyl)Ether	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2-Chlorophenol	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	13.0 J	100.0 U	100.0 U	1000.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	20.0 U	10.0 U	5.0 U	82.0	100.0 U	5.0 U	1000.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	20.0 U	2.0 J	5.0 U	240.0 J	100.0 U	5.0 U	1000.0 U
Benzyl Alcohol	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
1,2-Dichlorobenzene	5.0 U	5.0 U	20.0 U	10.0 U	5.0 U	4.0 J	100.0 U	5.0 U	1000.0 U
2-Methylphenol	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	72.0 J	1000.0 U
bis(2-Chloroisopropyl)Ether	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
4-Methylphenol	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	75.0 J	1000.0 U
N-Nitroso-Di-n-Propylamine	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Hexachloroethane	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Nitrobenzene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Isophorone	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2-Nitrophenol	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2,4-Dimethylphenol	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	860.0 E	940.0 D	630.0	1000.0 U
Benzoic Acid	50.0 U	50.0 U	100.0 U	50.0 U	100.0 U	100.0 U	500.0 U	500.0 U	5000.0 U
bis(2-Chloroethoxy)Methane	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2,4-Dichlorophenol	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
1,2,4-Trichlorobenzene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Naphthalene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
4-Chloroaniline	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Hexachlorobutadiene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
4-Chloro-3-Methylphenol	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2-Methylnaphthalene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Hexachlorocyclopentadiene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2,4,6-Trichlorophenol	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2,4,5-Trichlorophenol	50.0 U	50.0 U	100.0 U	50.0 U	100.0 U	100.0 U	500.0 U	500.0 U	5000.0 U
2-Chloronaphthalene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2-Nitroaniline	50.0 U	50.0 U	100.0 U	50.0 U	100.0 U	100.0 U	500.0 U	500.0 U	5000.0 U
Dimethyl Phthalate	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Acenaphthylene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2,6-Dinitrotoluene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U

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J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
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U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
SEMI-VOLATILES 2
GROUND WATER SAMPLE RESULTS - ROUND 2
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	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-12S-02	GW-13S-02	GW-14S-02	GW-14S-02DUP	GW-15S-02	GW-16S-02	GW-16S-02DL	GW-17S-02	GW-17S-02DL
SEMI-VOLATILES 2									
3-Nitroaniline	50.0 U	50.0 U	100.0 U	50.0 U	100.0 U	100.0 U	500.0 U	500.0 U	5000.0 U
Acenaphthene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2,4-Dinitrophenol	50.0 U	50.0 U	100.0 U	50.0 U	100.0 U	100.0 U	500.0 U	500.0 U	5000.0 U
4-Nitrophenol	50.0 U	50.0 U	100.0 U	50.0 U	100.0 U	100.0 U	500.0 U	500.0 U	5000.0 U
Dibenzofuran	10.0 U	10.0 U	20.0	15.0	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
2,4-Dinitrotoluene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Diethylphthalate	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
4-Chlorophenyl-phenylether	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Fluorene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
4-Nitroaniline	50.0 U	50.0 U	100.0 U	50.0 U	100.0 U	100.0 U	500.0 U	500.0 U	5000.0 U
4,6-Dinitro-2-Methylphenol	50.0 U	50.0 U	100.0 U	50.0 U	100.0 U	100.0 U	500.0 U	500.0 U	5000.0 U
N-Nitrosodiphenylamine (1)	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
4-Bromophenyl-phenylether	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Hexachlorobenzene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Pentachlorophenol	50.0 U	50.0 U	100.0 U	50.0 U	100.0 U	100.0 U	500.0 U	500.0 U	5000.0 U
Phenanthrene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Anthracene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Di-n-Butylphthalate	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Fluoranthene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Pyrene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Butylbenzylphthalate	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
3,3'-Dichlorobenzidine	20.0 U	20.0 U	40.0 U	20.0 U	40.0 U	40.0 U	200.0 U	200.0 U	2000.0 U
Benzo(a)Anthracene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Chrysene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
bis(2-Ethylhexyl)Phthalate	5.0 J	3.0 J	20.0 U	10.0 U	26.0	20.0 U	100.0 U	100.0 U	1000.0 U
Di-n-Octyl Phthalate	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Benzo(b)Fluoranthene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Benzo(k)Fluoranthene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Benzo(a)Pyrene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Indeno(1,2,3-cd)Pyrene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Dibenz(a,h)Anthracene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U
Benzo(g,h,i)Perylene	10.0 U	10.0 U	20.0 U	10.0 U	20.0 U	20.0 U	100.0 U	100.0 U	1000.0 U

FOOTNOTES :
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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
PESTICIDES/PCBs
GROUND WATER SAMPLE RESULTS - ROUND 2
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SAMPLE NUMBER -	GW-1S-02	GW-1D-02	GW-2S-02	GW-2D-02	GW-3S-02	GW-3D-02	GW-4S-02	GW-4D-02	GW-5S-02
	CONCENTRATIONS in ug/l								
PESTICIDES/PCBs									
alpha-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.05 U	0.05 U	0.05 U	0.05 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Methoxychlor	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Endrin ketone	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
alpha-Chlordane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
gamma-Chlordane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toxaphene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Aroclor-1016	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1221	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1232	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1242	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1248	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1254	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Aroclor-1260	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
PESTICIDES/PCBs
GROUND WATER SAMPLE RESULTS - ROUND 2

05/29/90

	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-5D-02	GW-6S-02	GW-6D-02	GW-7S-02	GW-7D-02	GW-8S-02	GW-9S-02	GW-10S-02	GW-11S-02
PESTICIDES/PCBs									
alpha-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endrin	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Endosulfan sulfate	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Methoxychlor	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Endrin ketone	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
alpha-Chlordane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
gamma-Chlordane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toxaphene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Aroclor-1016	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1221	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1232	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1242	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1248	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Aroclor-1254	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Aroclor-1260	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
PESTICIDES/PCBs
GROUND WATER SAMPLE RESULTS - ROUND 2
Page 03 of 03

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SAMPLE NUMBER -	CONCENTRATIONS in ug/l						
	GW-12S-02	GW-13S-02	GW-14S-02	GW-14S-02DUP	GW-15S-02	GW-16S-02	GW-17S-02
PESTICIDES/PCBs							
alpha-BHC	0.05 U	0.50 U	0.05 U	0.05 U	0.50 U	0.05 U	0.50 U
beta-BHC	0.05 U	0.50 U	0.05 U	0.05 U	0.50 U	0.05 U	0.50 U
delta-BHC	0.05 U	0.50 U	0.05 U	0.05 U	0.50 U	0.05 U	0.50 U
gamma-BHC (Lindane)	0.05 U	0.50 U	0.05 U	0.05 U	0.50 U	0.05 U	0.50 U
Heptachlor	0.05 U	0.50 U	0.05 U	0.05 U	0.50 U	0.05 U	0.50 U
Aldrin	0.05 U	0.50 U	0.05 U	0.05 U	0.50 U	0.05 U	0.50 U
Heptachlor epoxide	0.05 U	0.50 U	0.05 U	0.05 U	0.50 U	0.05 U	0.50 U
Endosulfan I	0.05 U	0.50 U	0.05 U	0.05 U	0.50 U	0.05 U	0.50 U
Dieldrin	0.10 U	1.00 U	0.10 U	0.10 U	1.00 U	0.10 U	1.00 U
4,4'-DDE	0.10 U	1.00 U	0.10 U	0.10 U	1.00 U	0.10 U	1.00 U
Endrin	0.10 U	1.00 U	0.10 U	0.10 U	1.00 U	0.10 U	1.00 U
Endosulfan II	0.10 U	1.00 U	0.69	0.10 U	1.00 U	0.10 U	1.00 U
4,4'-DDD	0.10 U	1.00 U	0.10 U	0.10 U	1.00 U	0.10 U	1.00 U
Endosulfan sulfate	0.10 U	1.00 U	0.10 U	0.10 U	1.00 U	0.10 U	1.00 U
4,4'-DDT	0.10 U	1.00 U	0.10 U	0.10 U	1.00 U	0.10 U	1.00 U
Methoxychlor	0.50 U	5.00 U	0.50 U	0.50 U	5.00 U	0.50 U	5.00 U
Endrin ketone	0.10 U	1.00 U	0.10 U	0.10 U	1.00 U	0.10 U	1.00 U
alpha-Chlordane	0.50 U	5.00 U	0.50 U	0.50 U	5.00 U	0.50 U	5.00 U
gamma-Chlordane	0.50 U	5.00 U	0.50 U	0.50 U	5.00 U	0.50 U	5.00 U
Toxaphene	1.00 U	10.00 U	1.00 U	1.00 U	10.00 U	1.00 U	10.00 U
Aroclor-1016	0.50 U	5.00 U	0.50 U	0.50 U	5.00 U	0.50 U	5.00 U
Aroclor-1221	0.50 U	5.00 U	0.50 U	0.50 U	5.00 U	0.50 U	5.00 U
Aroclor-1232	0.50 U	5.00 U	0.50 U	0.50 U	110.00	0.50 U	110.00
Aroclor-1242	0.50 U	5.00 U	0.50 U	0.50 U	5.00 U	0.50 U	5.00 U
Aroclor-1248	0.50 U	5.00 U	0.50 U	0.50 U	5.00 U	0.50 U	5.00 U
Aroclor-1254	1.00 U	10.00 U	1.00 U	1.00 U	10.00 U	1.00 U	10.00 U
Aroclor-1260	1.00 U	10.00 U	1.00 U	1.00 U	10.00 U	1.00 U	10.00 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
INORGANICS
GROUND WATER SAMPLE RESULTS - ROUND 2
Page 01 of 04

05/29/90

SAMPLE NUMBER -	GW-1S-02	GW-1D-02	GW-2S-02	GW-2D-02	GW-3S-02	GW-3D-02	GW-4S-02	GW-4D-02	GW-5S-02
	CONCENTRATIONS in ug/l								
INORGANICS									
ALUMINUM	1210.00	89.00 B	728.00	1630.00	653.00	82.40 B	106.00 B	316.00	521.00
ANTIMONY	51.00 U	35.10 B	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U
ARSENIC	5.10 B	2.00 U	3.70 B	2.40 B	2.30 B	3.60 B	3.50 B	2.00 U	10.10
BARIUM	107.00 B	34.20 BJ	111.00 B	49.70 B	82.80 B	81.50 B	73.50 B	28.90 B	52.20 B
BERYLLIUM	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
CADMIUM	4.00 U	4.20 B	1.00 U	2.30 B	1.30 B	4.00 B	4.60 B	4.20 B	3.20 B
CALCIUM	257000.00	70700.00	344000.00	125000.00	64600.00	121000.00	34100.00	81000.00	28700.00
CHROMIUM	15.00	2.40 BJ	9.50 B	32.70	4.90 B	36.00	1.00 U	11.50	10.80
COBALT	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	4.10 B	2.00 U	2.00 U
COPPER	12.10 B	5.70 BJ	40.10	17.60 B	4.10 B	28.40	5.60 B	1.00 U	16.30 B
IRON	9120.00	185.00	39100.00	2410.00	1160.00	2510.00	269.00	594.00	2530.00
LEAD	4.70	2.00 U	74.90	6.20	3.40	3.00	3.50	2.60 B	4.70
MAGNESIUM	56500.00	26300.00	60900.00	16300.00	48100.00	23100.00	20400.00	34700.00	20300.00
MANGANESE	1390.00	33.30 J	2100.00	59.50	580.00	428.00	263.00	45.40	845.00
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.87
NICKEL	23.00 U	20.00 U	20.00 U	26.40 B	20.00 U	39.40 B	20.00 U	30.00 B	20.00 U
POTASSIUM	2050.00 B	3000.00 B	21000.00	8200.00	2280.00 B	3110.00 B	933.00 B	3350.00 B	926.00 B
SELENIUM	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
SILVER	3.00 U	2.00 U	4.60 B	2.00 B	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
SODIUM	86000.00	41400.00	63700.00	68200.00	12700.00	85800.00	18900.00	34300.00	27300.00
THALLIUM	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
VANADIUM	4.00 U	1.00 U	5.40 B	35.30 B	1.00 U	1.00 U	4.10 B	1.40 B	2.80 B
ZINC	37.70	1.10 BJ	182.00	44.00	13.40 B	15.50 B	11.80 B	12.40 B	33.60
CYANIDE	10.00 U	10.00 U	30.00	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
INORGANICS
GROUND WATER SAMPLE RESULTS - ROUND 2

05/29/90

	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-5D-02	GW-6S-02	GW-6D-02	GW-7S-02	GW-7D-02	GW-8S-02	GW-9S-02	GW-9S-02F	GW-10S-02
INORGANICS									
ALUMINUM	234.00	227.00	326.00	610.00	1590.00	224.00	1850.00	20.00 U	603.00
ANTIMONY	24.00 U	24.00 U	30.40 B	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U
ARSENIC	3.00 B	2.10 B	2.00 U	2.60 B	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
BARIUM	240.00	30.70 B	60.00 B	277.00	59.60 B	102.00 B	269.00	248.00	122.00 B
BERYLLIUM	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
CADMIUM	1.10 B	4.00 B	2.30 B	1.00 U	1.00 U	3.30 B	4.00 B	5.50	2.10 B
CALCIUM	138000.00	116000.00	118000.00	44200.00	156000.00	117000.00	141000.00	133000.00	221000.00
CHROMIUM	1.00 U	1.00 U	191.00	26.80	18.40	10.00 B	4.60 B	1.00 U	2.00 B
COBALT	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 B	2.00 U	2.00 U	2.00 U
COPPER	1.00 U	10.60 B	13.00 B	8.10 B	6.50 B	4.80 B	10.00 B	3.30 B	13.60 B
IRON	1250.00	2140.00	1200.00	1060.00	933.00	327.00	7240.00	2360.00	1170.00
LEAD	2.00 U	3.30	2.20 B	3.70	6.80	2.70 B	6.00	2.40 B	4.70
MAGNESIUM	44400.00	35600.00	26700.00	31500.00	1210.00 B	62900.00	45600.00	43000.00	97000.00
MANGANESE	124.00	1670.00	39.50	248.00	45.50	341.00	1920.00	1910.00	375.00
MERCURY	0.48	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
NICKEL	20.00 U	20.00 U	20.00 U	20.00 U	20.00 U	32.60 B	24.90 B	20.00 U	32.60 B
POTASSIUM	12400.00	3350.00 B	1850.00 B	3090.00 B	20800.00	1770.00 B	41700.00	41200.00	30700.00
SELENIUM	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
SILVER	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.80 B	2.50 B	2.00 U	2.10 B
SODIUM	354000.00	130000.00	76900.00	28500.00	55000.00	35500.00	31400.00	31400.00	183000.00
THALLIUM	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
VANADIUM	1.00 U	1.40 B	1.00 U	1.00 U	1.40 B	8.10 B	8.10 B	4.00 B	1.40 B
ZINC	2.10 B	8.80 B	12.30 B	14.60 B	11.20 B	11.80 B	31.70	5.20 B	17.10 B
CYANIDE	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U	10.00 U	NR	10.00 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA,

TABLE (contd)
INORGANICS
GROUND WATER SAMPLE RESULTS - ROUND 2
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	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-10S-02F	GW-11S-02	GW-12S-02	GW-13S-02	GW-14S-02	GW-14S-02DUP	GW-14S-02F	GW-14S-02FDUP	GW-15S-02
INORGANICS									
ALUMINUM	20.00 U	76.90 B	606.00	1750.00	74000.00	74000.00	20.00 U	20.00 U	323.00
ANTIMONY	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U	24.00 U
ARSENIC	2.00 U	2.60 B	2.00 U	3.30 B	8.90 B	9.50 B	2.10 B	2.00 U	2.40 B
BARIUM	118.00 B	176.00 B	80.80 B	778.00	1170.00	1220.00	476.00	481.00	1840.00
BERYLLIUM	1.00 U	1.00 U	1.00 U	1.00 U	1.50 B	1.60 B	1.00 U	1.00 U	1.00 U
CADMIUM	1.30 B	1.00 U	3.50 B	1.00 U	1.80 B	1.00 U	2.60 B	2.10 B	1.00 U
CALCIUM	223000.00	93900.00	343000.00	206000.00	554000.00	593000.00	241000.00	236000.00	164000.00
CHROMIUM	1.00 U	3.80 B	196.00	5.10 B	115.00	107.00	1.00 U	1.00 U	11.10
COBALT	2.00 U	2.00 U	2.00 U	2.00 U	44.00 B	44.10 B	2.00 U	2.00 U	2.00 U
COPPER	11.10 B	4.80 B	8.80 B	6.00 B	239.00	258.00	2.00 B	2.60 B	2.70 B
IRON	1.00 U	160.00	1270.00	38000.00	131000.00	130000.00	16200.00	13500.00	26300.00
LEAD	2.00 B	2.30 B	5.20	39.10	369.00	328.00	2.00 B	2.00 U	17.10
MAGNESIUM	99400.00	46600.00	203000.00	52500.00	159000.00	173000.00	48400.00	48500.00	79000.00
MANGANESE	356.00	66.40	1130.00	316.00	3220.00	3450.00	762.00	763.00	183.00
MERCURY	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.23	0.20 U	0.20 U	0.20 U
NICKEL	20.00 U	34.20 B	180.00	20.00 U	118.00	118.00	20.00 U	20.00 U	20.00 U
POTASSIUM	30300.00	3890.00 B	1710.00 B	38300.00	30800.00	30700.00	16100.00	16100.00	83500.00
SELENIUM	2.00 U	2.00 U	2.00 U	2.00 U	10.00 U	2.00 U	2.00 U	2.00 U	2.00 U
SILVER	2.00 U	2.00 U	2.00 U	2.00 U	9.60 B	6.60 B	2.60 B	2.00 U	2.00 U
SODIUM	182000.00	53200.00	287000.00	60700.00	46700.00	47500.00	40000.00	39600.00	97500.00
THALLIUM	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
VANADIUM	2.70 B	4.10 B	6.10 B	2.80 B	124.00	121.00	5.40 B	2.70 B	2.80 B
ZINC	12.90 B	7.50 B	17.20 B	80.00	769.00	780.00	6.00 B	7.30 B	78.80
CYANIDE	NR	10.00 U	10.00 U	20.00 U	20.00 U	20.00 U	NR	NR	20.00 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
INORGANICS
GROUND WATER SAMPLE RESULTS - ROUND 2
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05/29/90

SAMPLE NUMBER -	GW-16S-02	GW-16S-02F	GW-17S-02
	CONCENTRATIONS in ug/l		
INORGANICS			
ALUMINUM	51600.00	20.00 U	13300.00
ANTIMONY	33.00 B	24.00 U	24.40 B
ARSENIC	22.30	2.70 B	4.30 B
BARIUM	1220.00	322.00	1530.00
BERYLLIUM	1.70 B	1.00 U	1.00 U
CADMIUM	5.10	4.50 B	12.00
CALCIUM	463000.00	146000.00	302000.00
CHROMIUM	99.70	1.00 U	25.40
COBALT	46.90 B	2.00 U	10.30 B
COPPER	3060.00	3.00 B	89.50
IRON	176000.00	51700.00	32500.00
LEAD	331.00	13.20	50.60
MAGNESIUM	140000.00	30700.00	175000.00
MANGANESE	2710.00	242.00	1320.00
MERCURY	3.30	0.20 U	0.20 U
NICKEL	141.00	28.00 B	136.00
POTASSIUM	28400.00	18500.00	35000.00
SELENIUM	10.00 U	2.00 U	2.00 U
SILVER	23.70	3.50 B	2.00 U
SODIUM	31100.00	25600.00	201000.00
THALLIUM	1.00 U	1.00 U	1.00 U
VANADIUM	96.50	1.00 U	26.40 B
ZINC	1490.00	7.00 B	594.00
CYANIDE	20.00 U	NR	20.00 U

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Appendix F

Appendix F

PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE
INORGANICS
FILTERED GROUND WATER SAMPLE ANALYTICAL RESULTS

05/25/90

	CONCENTRATIONS in ug/l								
SAMPLE NUMBER -	GW-9S-02	GW-9S-02F	GW-10S-02	GW-10S-02F	GW-14S-02	GW-14S-02F	GW-14S-02DUP	GW-14S-02FDUP	GW-16S-02
INORGANICS									
ALUMINUM	1850.0	20.0 U	603.0	20.0 U	73900	20.0 U	74000.0	20.0 U	51600.0
ANTIMONY	24.0 U	24.0 U	24.0 U	24.0 U	24.0 U	24.0 U	24.0 U	24.0 U	33.0 B
ARSENIC	2.0 U	2.0 U	2.0 U	2.0 U	8.9 B	2.1 B	9.5 B	2.0 U	22.3
BARIUM	269.0	248.0	122.0 B	118.0 B	1170.0	476.0	1220.0	481.0	1220.0
BERYLLIUM	1.0 U	1.0 U	1.0 U	1.0 U	1.5 B	1.0 U	1.6 B	1.0 U	1.7 B
CADMIUM	4.0 B	5.5	2.1 B	1.3 B	1.8 B	2.6 B	1.0 U	2.1 B	5.1
CALCIUM	141000.0	133000.0	221000.0	223000.0	554000.0	241000.0	593000.0	236000.0	463000.0
CHROMIUM	4.6 B	1.0 U	2.0 B	1.0 U	115.0	1.0 U	107.0	1.0 U	99.7
COBALT	2.0 U	2.0 U	2.0 U	2.0 U	44.0 B	2.0 U	44.1 B	2.0 U	46.9 B
COPPER	10.0 B	3.3 B	13.6 B	11.1 B	239.0	2.0 B	258.0	2.6 B	3060.0
IRON	7240.0	2360.0	1170.0	1.0 U	131000.0	16200.0	130000.0	13500.0	176000.0
LEAD	6.0	2.4 B	4.7	2.0 B	369.0	2.0 B	328.0	2.0 U	331.0
MAGNESIUM	45600.0	43000.0	97000.0	99400.0	159000.0	48400.0	173000.0	48500.0	140000.0
MANGANESE	1920.0	1910.0	375.0	356.0	3220.0	762.0	3450.0	763.0	2710.0
MERCURY	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.2 U	3.3
NICKEL	24.9 B	20.0 U	32.6 B	20.0 U	118.0	20.0 U	118.0	20.0 U	141.0
POTASSIUM	41700.0	41200.0	30700.0	30300.0	30800.0	16100.0	30700.0	16100.0	28400.0
SELENIUM	2.0 U	2.0 U	2.0 U	2.0 U	10.0 U	2.0 U	2.0 U	2.0 U	10.0 U
SILVER	2.5 B	2.0 U	2.1 B	2.0 U	9.6 B	2.6 B	6.6 B	2.0 U	23.7
SODIUM	31400.0	31400.0	183000.0	182000.0	46700.0	40000.0	47500.0	39600.0	31100.0
THALLIUM	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
VANADIUM	8.1 B	4.0 B	1.4 B	2.7 B	124.0	5.4 B	121.0	2.7 B	96.5
ZINC	31.7	5.2 B	17.1 B	12.9 B	769.0	6.0 B	780.0	7.3 B	1490.0
CYANIDE	10.0 U	NR	10.0 U	NR	20.0 U	NR	20.0 U	NR	20.0 U

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PFOHL BROTHERS LANDFILL ANALYTICAL DATA

TABLE (contd)
INORGANICS
FILTERED GROUND WATER SAMPLE ANALYTICAL RESULTS

05/25/90

	CONCENTRATIONS in ug/l
SAMPLE NUMBER -	GW-16S-02F
INORGANICS	
ALUMINUM	20.0 U
ANTIMONY	24.0 U
ARSENIC	2.7 B
BARIUM	322.0
BERYLLIUM	1.0 U
CADMIUM	4.5 B
CALCIUM	146000.0
CHROMIUM	1.0 U
COBALT	2.0 U
COPPER	3.0 B
IRON	51700.0
LEAD	13.2
MAGNESIUM	30700.0
MANGANESE	242.0
MERCURY	0.2 U
NICKEL	28.0 B
POTASSIUM	18500.0
SELENIUM	2.0 U
SILVER	3.5 B
SODIUM	25600.0
THALLIUM	1.0 U
VANADIUM	1.0 U
ZINC	7.0 B
CYANIDE	NR

FOOTNOTES :
ug/l (micrograms per liter) = ppb (parts per billion).
J is a data qualifier indicating estimated values (appendix A).
R = Analyte was rejected due to QA/QC.
B = Analyte value is between the contract required detection limit (CRDL) and the instrument detection limit (IDL).
U = Indicates element was analyzed for but not detected. The number shown is the detection limit.
NR Indicates analysis was not requested.