Department of Environmental Conservation

Division of Environmental Remediation

Immediate Investigative Work Assignment

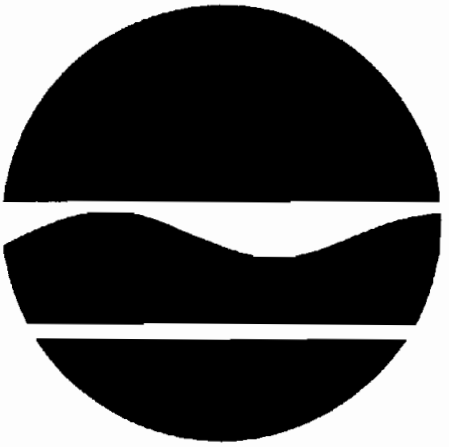
Ward Road Properties

Town of Wheatfield, Niagara County

April 1998

New York State Department of Environmental Conservation
Region 9
270 Michigan Ave.
Buffalo, New York 14203-2999

Immediate Investigative Work Assignment (IIWA)
Ward Road Properties
Unlisted Site



Prepared by:

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Environmental Engineer II

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Immediate Investigative Work Assignment (IIWA)
Ward Road Properties
Lots 147.20-1-49.1 and 147.20-1-49.2
Town of Wheatfield, Niagara County

Introduction

An IIWA for two contiguous Ward Rd. properties, Lots 147.20-1-49.1 and 147.20-1-49.2, was conducted in December, 1997 by the NY State Dept. of Environmental Conservation (DEC). The purpose of this investigation was to establish whether these properties pose a significant threat to human health or the environment, by determining:

1) the extent of contamination, if any, on these sites,
2) if the contamination poses a health risk, and
3) if hazardous waste has been disposed at the site.

The plan for this investigation called for digging a series of test pits and/or test trenches, and conducting laboratory analyses of samples from the open excavations. As shown in Figure 1, a network of twelve test trenches was laid out on the two properties, and initially nine test pits, B, E, G, E/1, F/1, K_1, K_2, L_1 and L_2, were to be dug. Depending on the conditions encountered, contingency plans called for expanding the initial test pits to an appropriate pattern of the test trenches or for digging additional test pits.

Site Description and History

The properties are located in the Town of Wheatfield, NY, in an area of mixed agricultural/residential use. They are located in an area that was once a low-lying oxbow adjacent to a swale, which now runs along the southern property line of Lot 147.20-1-49.2. The lots are approximately 350 feet deep; Lot 147.20-1-49.1 is approximately 114 feet wide, and Lot 147.20-1-49.2 is approximately 139 feet wide. Lot 147.20-1-49.1 is a vacant lot, and Lot 147.20-1-49.2 is a residential property. The present owner of Lot 147.20-1-49.1 is Mr. Edmond P DiBacco, 2198 Seneca Ave., Niagara Falls, NY 14305, and the present owner of Lot 147.20-1-49.2 is Mrs. Ralph Walck. A house and detached garage have been built on the Walck Property, and the street address is 6759 Ward Road. The Walck Property is bounded on its north side by the southern boundary of the DiBacco Property.

Both these lots were purchased from John and Beverly Wolanyk in 1987 by the respective present owners. It is alleged that while the lots were owned by the Wolanyks, they were filled with trees, brush, wood chips, concrete, stone and blacktop material from the Town of Wheatfield Highway Dept., and construction/demolition debris and ash-like material from undetermined sources. During this period, access

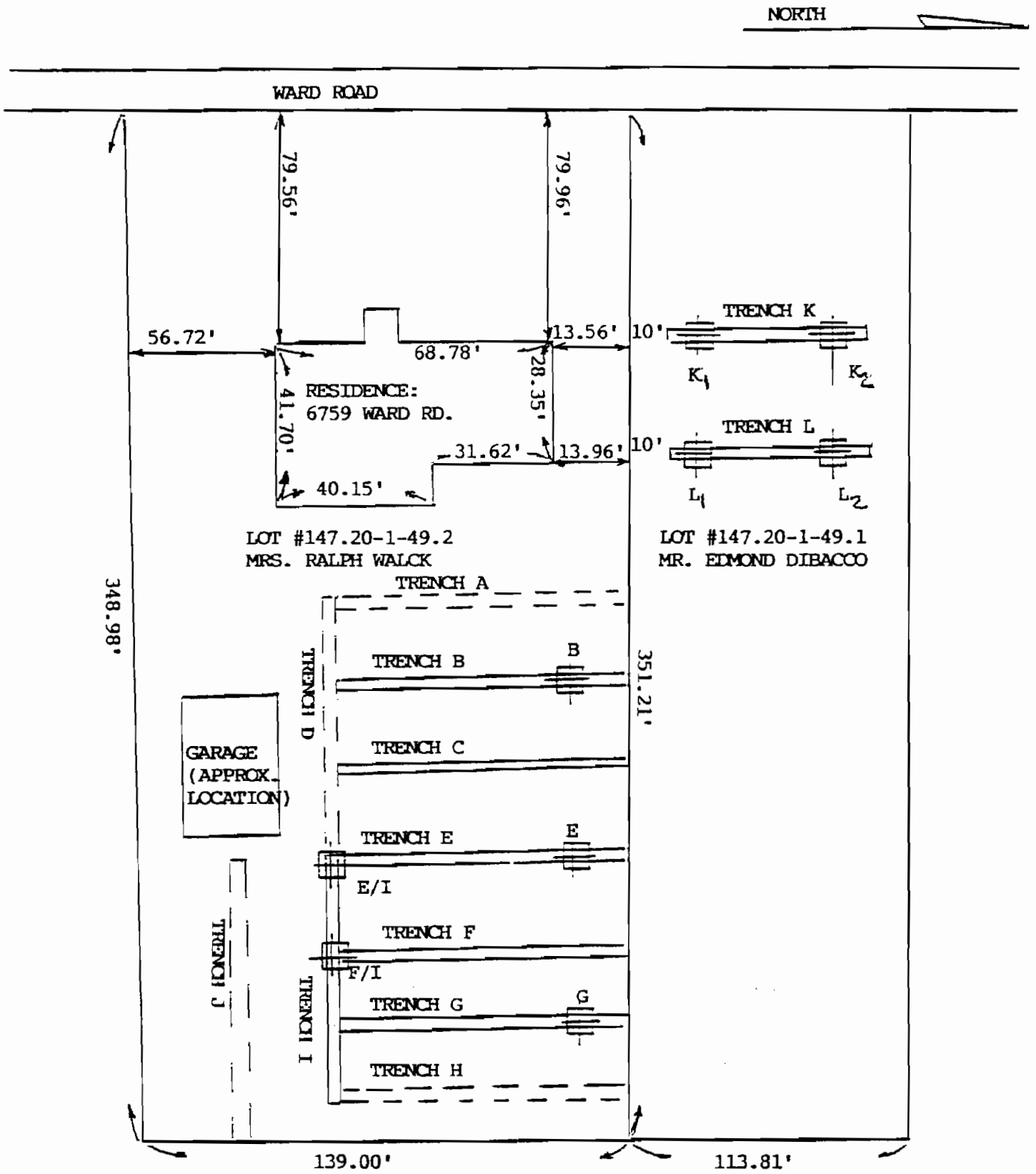

FIGURE 1: PLANNED
SUBSURFACE EXCAVATIONS

TEST PIT

INITIAL TEST TRENCH

POSSIBLE/ADDITIONAL
TEST TRENCH

NOT TO SCALE

to these sites apparently was uncontrolled. A local resident informed the Walcks of the presence and of the approximate disposal locations of possibly hazardous wastes that he had hauled to the two properties. It is alleged that over the years six to eight feet of fill have been placed on these two lots.

In 1993, the hazardous waste disposal allegations were reported to the Niagara County Health Dept. (NCHD). In July 1993, the NCHD and the NY State Dept. of Health (DOH) collected three surface soil samples from the backyard of the Walck property, and one water sample from the swale along the south boundary line of the property, in an area where the homeowner had noticed seepage. Analytical results indicated low levels of metals in the soils and chloroform in the water. In May 1994, the Walcks contracted Advanced Environmental Services (AES) to excavate test trenches and collect samples. None of the agencies, i.e. DEC, DOH or NCHD, were notified of this investigation, so no agency representatives observed this activity. Although the AES Report noted "areas of obvious contamination", these areas were never identified, and the report lacked specific information on the trenches and their sizes or on the sample locations and their depths. However, the report documented high levels of xylene. Later that year, the mortgage holder, Federal Home Loan Mortgage Corp. (FHLM) foreclosed on the property. In a December 12, 1996 letter to the local FHLM Corp. representative, AES reiterated their concerns about this property. In a February 5, 1997 field inspection of the property with the DEC, DOH, NCHD, AES and the Walcks, the locations of the test pits excavated by AES in 1994 were reconstructed.

Field Investigation

The field work for this IIWA investigation was done under contract with Ecology and Environment (E&E). A preliminary site visit was conducted on November 10, 1997 with E&E personnel to establish field procedures, and to identify and mark the proposed test pit and test trench locations. Following this meeting, E&E began the preparation of the Site Safety Plan and the Work Plan. The area utility providers were contacted to determine the locations of any buried lines in the vicinity of the proposed excavations.

During a second site visit on November 25, 1997 with representatives of E&E, E&E's excavating subcontractor, the DOH and the NCHD, the proposed sampling locations were verified and work schedules established. In addition, these modifications to the Work Plan were established:

- Due to adverse seasonal weather and the possible requirement for subsequent additional site work, final restoration of surface conditions (i.e., grading with topsoil and seeding) would be delayed until more favorable weather conditions in the Spring of 1998.

- The excavation procedure was changed to the following, in order to minimize the spread of potentially contaminated materials and to reduce decontamination requirements:

  Prior to excavating, an area of clean topsoil roughly twice as large as that of the proposed test pit or test trench and adjacent to it would be cleared, and the topsoil

staged elsewhere on the site. The underlying fill materials excavated from the test pit or test trench were then to be placed adjacent to the planned excavation, within the area cleared of the clean topsoil.

The purpose of this procedure was to prevent potential contamination of the topsoil and to allow water from the saturated fill and excavation materials to drain back into the test pit or trench, and not run across the existing land surface.

The excavation and sampling activities were conducted on December 2, 1997. Initially, the series of nine test pits were dug and inspected. After inspection of the open test pits, the excavations were expanded to the seven test pits and one test trench shown in Figure 2. Four test pits were located in the backyard area of the Walck property (Lot No.: 147.20-1-49.2) and three test pits and one trench were located on the neighboring DiBacco property (Lot No.: 147.20-1-49.1). Excavations were advanced at least three feet into native soils if no fill or debris materials were observed; i.e. in Trench L; otherwise the depth of each pit and trench was extended to the interface of the fill and native soil . Depths of excavations where fill and debris were observed ranged from 3½ to 9 feet below the existing ground surface. The fill and debris from each of the test excavations were segregated from the clean top soil, according to the procedures outlined in the second modification to the Work Plan given in the preceding paragraph, and returned to the excavation at the end of the day. The E&E report of this field work is attached. A copy of the field notes from the logbook is provided in Appendix B, and a photographic log is provided in Appendix C of the report. A summary of the excavation data are provided in Table 4-1, and subsurface profiles for each of the excavations are provided in Appendix A of the attached report.

Field Observations and Sampling

Waste materials observed in all the excavations typically consisted of wood (i.e. trees and brush), construction/demolition debris and miscellaneous metals (i.e. concrete, wood, wire, metal scrap), automobile parts, ceramics, plastics and glass. In particular, on the Walck property, a number of automobile parts and tires were especially noticeable in Test Pits E/I and F/I. In Test Pit B, evidence of burned materials was observed in a layer of ash. The origin of the ash could not be determined.

Also on the Walck property, a strong petroleum-like odor was noted at Test Pit G. However, no evidence of soil contamination from chemical or petroleum products was observed. Screening for volatile organics with a flame ionization detector (FID) indicated that volatiles other than methane were present in the test pit at an estimated 50 parts per million (ppm). These levels dissipated quickly after the initial readings.

At other test pits on the Walck property and also at Test Pit K_3, on the DiBacco property, a sulfurous odor, probably associated with methane or other gases produced by the anaerobic decomposition of the fill

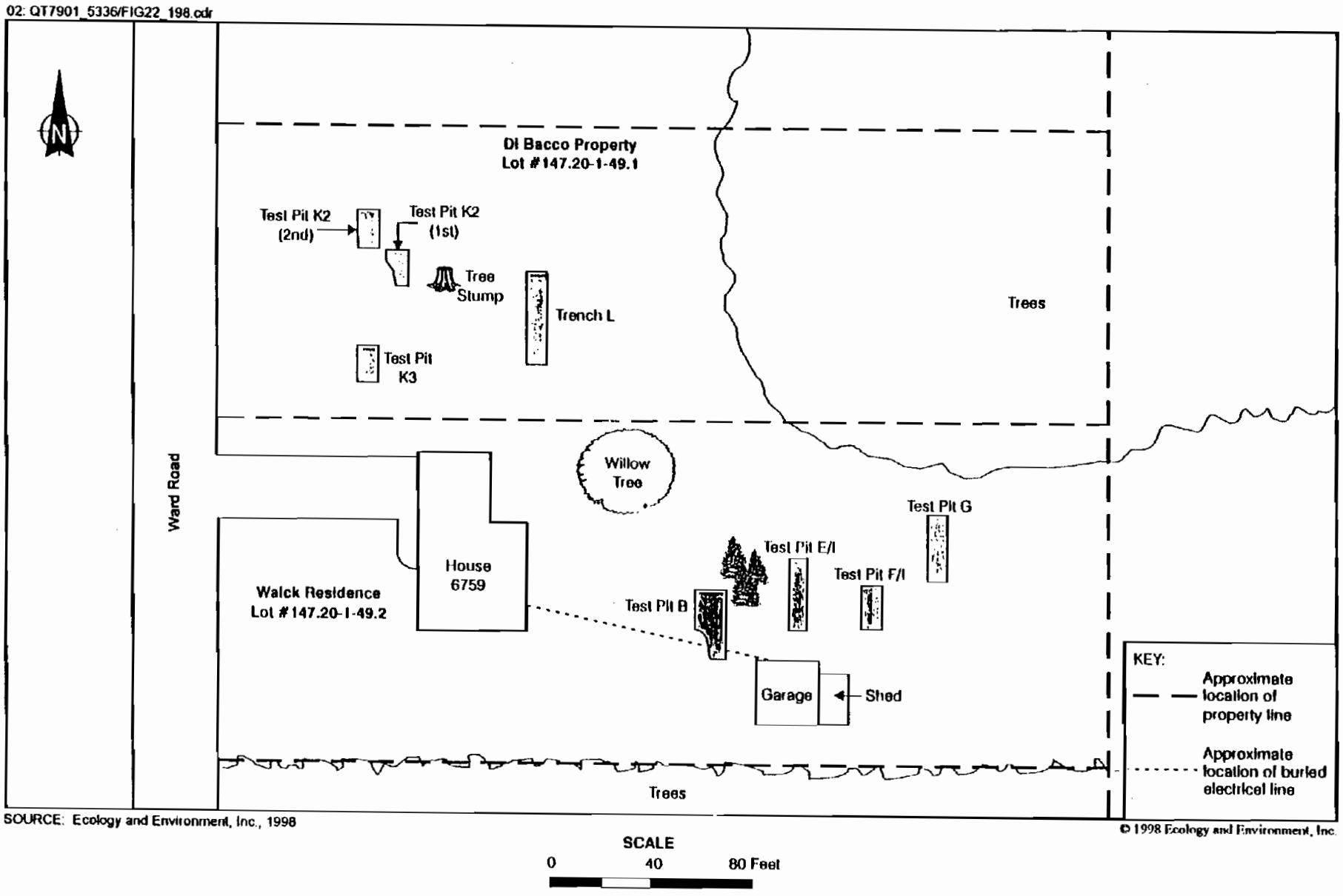

Figure 2: Final Subsurface Excavations

materials present at these locations, was noted. Sampling in the areas of these test pits with the FID indicated that methane typically accounted for all the gases, with concentrations ranging from 10 to 50 ppm; similar to Test Pit G, these gases also dissipated rapidly upon exposure to the atmosphere.

Subsurface water was observed in all seven test pits (but not in the test trench) from 2.5 to 3.5 feet below the existing ground surface. In general, water levels were nearer to ground surface on the Walck property than on the DiBacco property. The subsurface waters in the test pits on the Walck property appeared to have a black color because of ash and also the organic decomposition of the fill materials. The subsurface waters in Test Pit K_3, on the DiBacco property, also displayed a similar black color. Additional details on the field observations and sampling are given in Section 4 of the E&E report.

Analytical Results

The following samples, which are generally representative of the types of wastes observed at this site, were obtained for laboratory analysis:

Test Pit	Medium	Sample Label	Type of Analysis
B	Ash (Solids)	TP-B-ASH	Full Scan
G	Soil (Solids)	TP-G-FILL	Full Scan
G	Water	TP-G-GW	Full Scan
F/I	Soil (Solids)	TP-F/I-FILL	Toxicity Characteristic Leaching Procedure (TCLP)
K_3	Soil (Solids)	TP-K3-FILL	Full Scan

The soil samples were collected from the fill layers of the respective test pits, and TP-B-ASH was collected from the layer of ash in Test Pit B at the 1.5 foot depth. The water sample was collected from the bottom of Test Pit G. The results of the analyses of the samples are described in the individual subsections that follow.

All samples were collected, analyzed, and reported according to procedures specified in the contract with E&E, and were submitted for analyses at E&E's Analytical Services Center on December 2. Analytical results for pesticides and PCB analyses are all considered to be estimates, due to the need for re-extraction and analysis after the expiration of holding times. This delayed analysis was due to a malfunction in a GPC extraction/cleanup column used for this method. Additional details on the analytical procedures and results are given in Section 5 and in Appendix D of the E&E report.

Solids Samples

As shown previously in the general remarks of this section, three solids samples were collected for full scan laboratory analyses: TP-G-Fill, TP-K3-FILL, and TP-B-ASH. The organic and metal analytes that were detected in any of these three samples are listed in Tables 1A and 1B respectively. The DEC Cleanup Goals for the analytes, as given in the DEC Technical and Administrative Guidance Memorandum HWR-94-4046, are also listed in these tables, and those levels exceeding the goals are shaded.

As shown in Table 1A, the only organic chemical analytes for which the cleanup goals were exceeded in these solids samples were for four polycyclic aromatic hydrocarbons (PAH's) in Sample TP-G-FILL. Pesticides at detection levels were also encountered in Sample TP-G-FILL. As also noted in Table 1A, the only organic analytes encountered at any detection level in either of the other two solids samples were comparatively low levels of acetone in both samples, and methoxychlor in Sample TP-B-ASH. Because PAH's are products of incomplete combustion, and given the presence of treated wood pieces in the debris encountered in the test excavations and the alleged disposal of blacktop paving material on these two lots, PAH's in these samples is not unexpected.

As noted in Table 5-1 of the E&E report, acetone was found in the trip blank as well as in the samples . The "B" qualifier associated with the acetone results that is listed in that table indicates that acetone was detected in the associated method blank, and therefore the result is considered an artifact of laboratory contamination.

As can be seen in Table 1B, the levels of the following eleven metals exceeding the cleanup goals were encountered in these test excavations:

one sample location: barium and lead in Sample TP-B-ASH, and cadmium in TP-G-FILL;
two sample locations: mercury, nickel and selenium in TP-G-FILL and TP-K3-FILL; and
all three locations: beryllium, chromium, copper, iron and zinc.

Similar to the organic PAH's, the presence of these metals is not unexpected, given the amount of metallic items, e.g. wire products and automobile parts, encountered in the test excavations.

The E&E report presents similar results for the metals in the soil samples. In Table 5-2 of the report, the concentrations are compared to the upper 90th percentile of the elemental concentrations found in soils and other surficial materials of the eastern United States. These metals were at levels exceeding the upper 90th percentile: calcium, magnesium, and nickel (TP-G-FILL); calcium, copper, lead, and zinc (TP-B-ASH); lead (TP-K3-FILL); and selenium and zinc (TP-G-FILL and TP-K3-FILL).

Table 1A: Solids Sampling Results (μg/kg); Organic Chemicals				
Analyte	Sample Location			DEC Cleanup Goals
	TP-G-FILL	TP-K3FILL	TP-B-ASH	
Volatiles				
Acetone	83	6	4	200
Carbon Disulfide	5			2700
2-Bentanone	26			300
Total Xylene	3			1200
Semivolatiles				
Phenanthrene	490			50000
Anthracene	94			50000
Carbazole	130			
Fluoranthene	570			50000
Pyrene	750			50000
Benzo(a)anthracene	440			224
Chrysene	400			400
Bis(2ethylhexyl)phthalate	220			50000
Benzo(b)fluoranthene	620			1100
Benzo(a)pyrene	330			61
Indeno(1,2,3-cd)pyrene	340			3200
Dibenzo(a,h)anthracene	150			14
Benzo(g,h,i)perylene	300			50000
Pesticides/PCB's				
Heptachlor	7.9			100
Dieldrin	19			44
4,4-DDE	66			2100
4,4-DDD	97			2900
4,4-DDT	28			2100
Methoxychlor	24		700	
alpha-Chlordane	400			540
gamma-Chlordane	460			540

Table 1B: Solids Sampling Results (mg/kg); Metals				
Analyte	Sample Location			DEC Cleanup Goals
	TP-G-FILL	TP-K3FILL	TP-B-ASH	
Aluminum	22600	35600	4710	Background (50000)
Antimony	1.0	0.62	0.48	Background
Arsenic	6.3	5.3	1.4	7.5
Barium	152	286	483	300
Beryllium	1.3	1.6	0.19	0.16
Cadmium	1.1	0.86	0.7	1
Calcium	75800	11500	137000	Background (140000)
Chromium	24.9	52.1	25.6	10
Cobalt	20.0	12.0	2.7	30
Copper	36.9	27.5	91.9	25
Iron	40500	30800	6030	2000
Lead	25.0	96.5	220	Background (100)
Magnesium	11800	10400	5430	Background (25000)
Manganese	889	331	192	Background (1500)
Mercury	0.23	0.28	0.08	0.1
Nickel	46.0	36.3	8.4	13
Potassium	4830	3780	684	Background (20000)
Selenium	3.1	7.4	1.2	2
Silver	0.82	0.66	0.51	Background
Sodium	101	916	40.3	Background (6000)
Thallium	3.7	3.1	2.4	Background
Vanadium	50.6	41.6	9.6	150
Zinc	252	712	313	20

Water Sample

None of the organics in Sample TP-G-GW were at levels exceeding the DEC Groundwater Standards. The only organics detected in the sample were xylene at 29 μg/L and 4-methylphenol at an estimated concentration of 2 μg/L. The presence of xylene contamination is consistent with that given in the AES report of 1994. Xylenes are petroleum-related compounds and may be associated with the petroleum-like odor noticed during the excavation of Test Pit G. Acetone was also detected in this sample, but as discussed in the previous subsection Solids Samples, its presence is most likely attributed to laboratory contamination.

These metals were encountered in Sample TP-G-GW at levels exceeding the DEC Groundwater Standards: copper, iron, lead, magnesium, thallium and zinc. Because this sample was not filtered, it is not representative of a potential drinking water source. Nevertheless, the analyte concentrations were generally observed to be near or below the primary drinking water standard concentrations. The analytes detected do not appear to be excessive or to pose an immediate risk to human health or the environment.

Additional details on the analyses of the water sample are given in Section 5.2 of the E&E report. Table 5-1 lists the concentrations of the organic analytes found in the sample. Table 2, which is a copy of Table 5-3 of the E&E report, lists the metals that were detected in the analyses of this water sample.

TCLP Sample

There were no organic analytes detected for the soil extraction sample TP-F/I-FILL. Table 3, which is a copy of Table 5-4 of the E&E report, shows the results for TCLP analyses for metals conducted for the sample. As shown there, of the eight analytes, only two were detected, and none exceeded the 6 NYCRR Part 371 Limits for TCLP analyses.

Findings and Conclusions

The findings and conclusions resulting from this investigation are the following:

1. There appeared to be less fill material on the DiBacco Property than on the Walck Property;

2. A strong petroleum-like odor was noted during the excavation of Test Pit G. Furthermore, field screening using an FID organic vapor analyzer detected the possible presence of volatile organic vapors other than methane at this location;

Table 2: Results for Inorganic Analyses - Water Sample
Ward Road IIWA

Sample ID: Matrix: Analyte	TP-G-GW Water (µg/L)	6NYCRR 703.5 Stds[b] (µg/L)
Aluminum	13,400	NA
Antimony	1.8 U	3[c]
Arsenic	17.3	25
Barium	289 E	1,000
Beryllium	0.73 B	3[b]
Cadmium	2.5 U	10
Calcium	304,000	NA
Chromium	19.2	50
Cobalt	8.5 B	NA
Copper	334.0	200
Iron	18,200	300[a]
Lead	250 E	25
Magnesium	73,200	35,000[c]
Manganese	1,460	300[a]
Mercury	0.10 U	2
Nickel	20.4 B	NA
Potassium	23,500	NA
Selenium	4.5 U	10
Silver	1.9 U	50
Sodium	18,800 E	20,000
Thallium	5.9 B	4[c]
Vanadium	21.4 B	NA
Zinc	353 E	300

[a] Iron and manganese together ≤ 500 µg/L.
[b] NYSDEC standards for Class GA waters
[c] Standard from NYSDEC TOGs 1.1.1 10-22-93 guidance values.

Key:

B = Reported value is less than the contract required detection limit (CRDL), but greater than the instrument detection limit (IDL).
E = Reported value is estimated due to matrix interferences.
U = The analyte was not detected at the IDL.
[redacted] = Exceeds 6 NYCRR Standards.

Table 3: Results for TCLP Analyses, Ward Road IIWA

Sample ID: / Matrix: / Analyte	TP-F/I-FILL Soil Extraction-Water (mg/L)	Regulatory Limits (mg/L)
Inorganic Analyses		
Arsenic	0.0046 U	5.0
Barium	0.35 BE	100
Cadmium	0.0007 U	1.0
Chromium	0.0008 U	5.0
Lead	0.0070 B	5.0
Mercury	0.010 U	0.2
Selenium	0.0045 U	1.0
Silver	0.0007 U	5.0
Organic TCLP Analyses		
All Analytes	ND	--

Key:

B = Analyte was found in an associated blank and result may be biased high.
E = Result is estimated because the concentration exceeds the calibration range of the instrument.
ND = None detected.
TCLP = Toxicity Characteristic Leaching Procedure.
U = Analyte was not detected at the instrument detection limit.

3. Analytical results of the two samples from Test Pit G, solids sample TP-G-FILL and water sample TP-G-GW, indicate that organic contaminants are present in this area. In part, the presence of total xylene in these samples confirms the results reported by AES in their 1994 investigation;

4. The xylene found in the solids sample TP-G-FILL and in the water sample TP-G-GW, and the chlordane found in Sample TP-G-FILL, are at depths where the public health hazard arising from human contact is unlikely. To maintain this protection, the existing soil cover, particularly in the vicinity of Test Pit G on the Walck Property, should not be disturbed;

5. Analyses of the soil and water samples show elevated levels of metals . These elevated levels are likely due to the types and variety of waste disposed of at the site, but do not indicate the presence of hazardous wastes;

6. Water observed within the test pits on the Walck property appeared to be confined to the fill materials, and appears to be representative of a discontinuous perched water table. The water was generally black in color, probably due to the ash and decomposition of the fill materials; and

7. For the TCLP analyses of sample TP-F/I-FILL, no leachable contaminants were detected above the regulatory limits.

The fill materials encountered in all the test excavations appear to be conventional refuse such as construction and demolition debris, unserviceable parts from automobiles, household items and farm machinery, worn tires, scrap lumber and treated and untreated timber. Given these field observations, the chemical compounds found in the laboratory analyses of the samples are to be expected. In keeping with good construction practice, if future plans call for erection of buildings on these properties, the refuse cited here will probably have to be removed to allow for the installation of sound foundation structures, such as spread footings, slabs or basements. In that case, conventional solid waste removal practices, including routine precautions against the human health hazards such as those cited in Item 4 of this section, will be required.

There is no evidence that hazardous wastes, as defined by 6 NYCRR Part 371, were ever disposed on either of these two lots. Thus, no remedial action by the DEC Division of Environmental Remediation is appropriate or necessary, and no action beyond this IIWA investigation will be executed.

Site Investigation Report for the Ward Road Immediate Investigation Work Assignment (IIWA)

Contract No.: D003493
Work Assignment No.: D003493-05

January 1998

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road
Albany, New York

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1 Introduction

Under the New York State Department of Environmental Conservation (NYSDEC) Superfund Standby contract (Contract No. D003493), Ecology and Environment Engineering, P.C. (E & E) conducted an Immediate Investigation Work Assignment (IIWA) (Work Assignment No. D003493-05) for the Ward Road Dump Site (Lot numbers 147.20-1-49.1 and 147.20-1-49.2 in the Town of Wheatfield, Niagara County). This report details the IIWA activities performed and data collected under this project.

The purpose of this work assignment was to provide NYSDEC with sufficient information to evaluate the composition of the waste disposed of in the former dump area, determine the quality of groundwater in the area, and evaluate the need for site remediation. Tasks completed under this work assignment included the following:

- Prefield work meeting and site walkover;
- Development of a Health and Safety Plan for field activities;
- Excavation of test pits and trenches;
- Analyses of field samples at E & E's Analytical Services Center (ASC); and
- Preparation of this summary report for work completed under this work assignment.

The following sections summarize the work conducted under these tasks and provides the results of sample analyses. The IIWA involved a joint field effort between E & E and NYSDEC. E & E provided health and safety monitoring and oversight of the trenching subcontractor; NYSDEC provided engineering expertise and sample collection.

2 Site History

All information in this section relative to site history was provided by NYSDEC's November 1997 Scope of Work (SOW) for the Ward Road IIWA. The SOW describes the project study area as encompassing two lots along Ward Road in the Town of Wheatfield, in Niagara County, New York (see Figure 2-1). Lot No. 147.20-1-49.1 is a vacant lot currently owned by Mr. Edmond P. DiBacco. Lot No. 147.20-1-49.2 is located to the south and adjacent to the DiBacco property, and is currently occupied by Mrs. Ralph Walck. A house and detached garage have been built on the Walck property. The property address is listed as 6759 Ward Road (see Figure 2-2).

Both lots were purchased by the respective owners in 1987 from John and Beverly Wolanyk. While owned by the Wolanyk's, the lots were reportedly backfilled with trees, brush, wood chips, concrete, stone, and blacktop material from the Town of Wheatfield Highway Department and construction/demolition debris and ash-like material from undetermined sources. During this time, access to these sites was apparently uncontrolled.

In 1993, allegations of hazardous waste disposal were reported to the Niagara County Health Department (NCHD). In July 1993, NCHD and the New York State Department of Health (NYSDOH) collected three surface soil samples from the backyard of the Walck property, and one water sample from the swale along the southern property line. Analyses of these samples indicated that low levels of metals were present in the soils and chloroform in the water (NYSDEC SOW). In May 1994, the Walck's contracted with Advanced Environmental Services (AES) to conduct an independent investigation of their property, which included the installation of trenches and collection of samples. Although the AES report lacked specific information regarding trench locations and sampling information, it did note areas of "obvious contamination" and high levels of xylene (NYSDEC SOW).

In 1994, the mortgage holder of the Walck property, Federal Home Loan Mortgage Corporation (FHLM Corp.) foreclosed on the property and currently holds title to it. In a December 12, 1996

letter, AES expressed their concerns about site contamination to a representative of FHLM Corp. This led to further field inspections in 1997 of both properties by NYSDEC, NYSDOH, and NCHD. In October 1997, NYSDEC contracted with E & E to conduct additional site investigations and sampling. This investigation and the results are summarized in this report.

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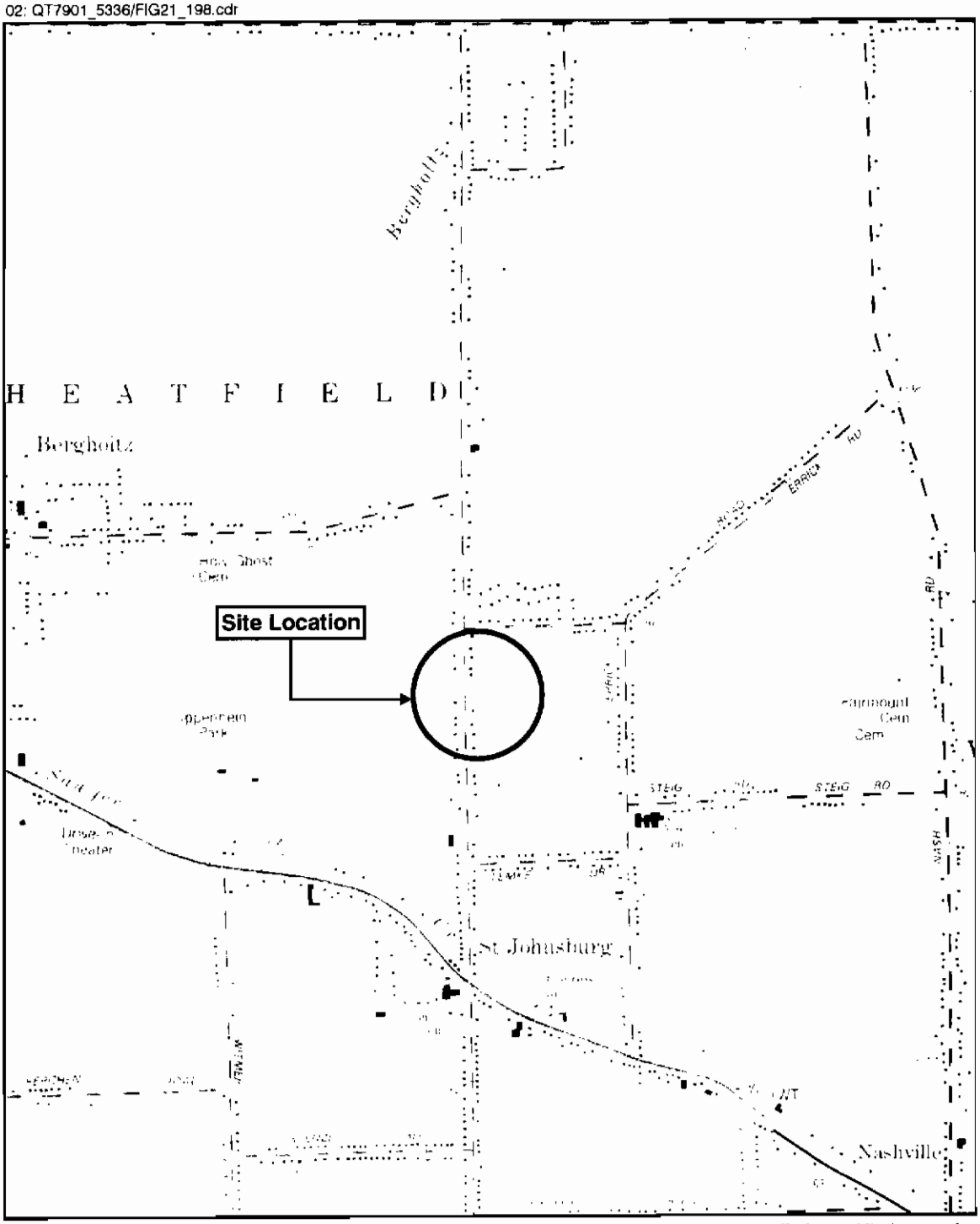


SOURCE: USGS 7.5 Minute Series (Topographic) Quadrangle:
Tonawanda East, NY, 1980; Tonawanda West, NY, 1980.

SCALE 1:24,000

0 ½ 1 Mile

0 .5 1 Kilometer

Figure 2-1 WARD ROAD IIWA SITE SITE LOCATION MAP

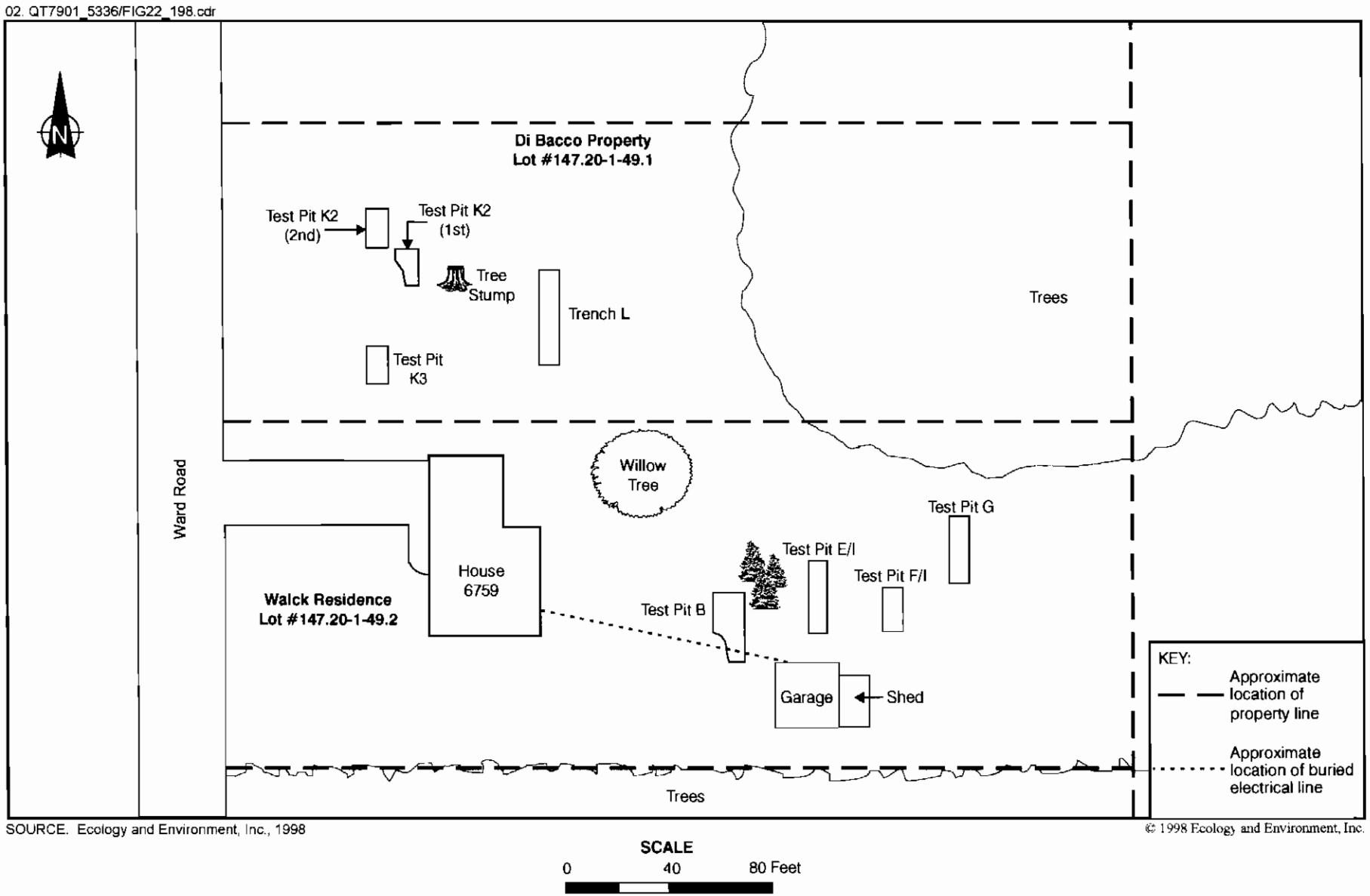


Figure 2-2 WARD ROAD IIWA SITE SKETCH, TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK

3 Objectives

The objectives of E & E's work under the IIWA project were to:

- Develop a work plan and health and safety plan for the sampling and installation of test pits and trenches;
- Solicit bids and select an excavation subcontractor for the installation of test pits and trenches;
- Perform ambient air monitoring during excavation activities to ensure the safety of the field team and the surrounding community, as well as to help characterize the site;
- Provide assistance to NYSDEC in sample collection and perform sample analyses at E & E's Analytical Services Center (ASC); and
- Prepare a brief IIWA report which includes all data obtained during the IIWA including a site sketch, and which summarizes the analytical results for the samples collected.

Completion of the field work as discussed in Section 4 and the preparation of this IIWA report have resulted in all objectives of this project, with the exception of complete site restoration, being met. All parties agreed to delay the completion of site restoration at least until spring 1998 due to weather constraints and the potential need to conduct further site investigations.

4 Site Activities

The field investigation tasks discussed below were completed between November 10 and December 2, 1997. All work was performed as a joint effort between NYSDEC, E & E, and E & E's subcontractor. During the field work, E & E provided one person who performed the duties of air monitoring/site safety, subcontractor oversight, and sample custody. NYSDEC provided one person who performed the duties of general field team leader, field engineer, and sampler. As a subcontractor to E & E, Sterling Environmental provided equipment and personnel necessary to excavate the test pits and trenches. All samples were collected by NYSDEC and E & E, and were delivered by E & E to the ASC for analyses.

Field tasks performed during the IIWA are discussed in the sections below.

4.1 Prefield Activities

A prefield investigation site visit was conducted on November 10, 1997 by John Hyden (NYSDEC), Jon Nickerson (E & E), and Jim Richert (E & E). During this initial site visit, all field procedures were discussed, and the proposed test pit and trench locations were identified and marked. Following this meeting, E & E began the preparation of the site safety plan and sampling or work plan. Clearance was obtained from utility providers regarding buried utilities at the locations of the proposed excavations.

A second site visit was conducted on November 25, 1997 by John Hyden, Jim Richert, and Scott Thorsell of E & E, Matt Forcucci of NYSDOH, Paul Dicky of NCHD, and Stephen Love and Jim Kelleran of Sterling Environmental Services. During the site walkover, the proposed sampling locations were verified and work schedules determined. In addition, modifications to the SOW were discussed and approved by the on-site representatives of NYSDEC, NYSDOH, and NCHD.

Modifications to the SOW pertaining to site restoration were considered due to seasonal weather constraints and the potential need to conduct additional site work. Per the SOW, all excavated materials were to be replaced and compacted at the end of each

work day. Final restoration of surface conditions (i.e., grading with topsoil and seeding), however, would be delayed until more favorable weather conditions in spring 1998.

During the second site visit, approval for the use of an on-site water source for decontamination of all sampling equipment was obtained from Mrs. Walck. In addition, modifications of the excavation procedures were approved by NYSDEC. These modifications were designed to minimize the spread of potentially contaminated materials and reduce decontamination requirements. The modified procedure specified clearing and separating clean topsoil from an area roughly twice as large as the test pit or trench. The underlying fill materials to be excavated were then to be placed adjacent to the excavation within the area cleared of topsoil. Keeping excavated fill materials within this shallowly excavated area would prevent potential contamination of the topsoil and allow water from saturated excavation materials to drain back into the test pit or trench and not run across the land surface.

4.2 Test Pit and Trench Excavation

Excavation and sampling activities for this work assignment were completed on December 2, 1997. A summary of the excavation data are provided in Table 4-1, and a sample collection summary is provided in Table 4-2. Subsurface profiles for each excavation are provided in Appendix A, a copy of E & E's field logbook is provided in Appendix B, and a photographic log is provided in Appendix C.

Seven test pits and one trench were excavated during this site investigation (see Figure 2-2). Four test pits were located in the backyard area of the former Walck property (Lot No.: 147.20-1-49.2) and three test pits and one trench were located on the neighboring DiBacco property (Lot No.: 147.20-1-49.1). Excavations were advanced at least 3-feet into native soils if no fill or debris materials were observed (Trench L). Depths of excavations where fill and debris were observed ranged from 3 feet to 9 feet below ground surface (BGS). Excavation materials from each test pit were segregated from the top soil as described above and returned to the test pit by the end of each day.

Waste materials observed in all excavations typically consisted of wood (trees and brush), construction/demolition debris (concrete, wood, wire, metal scrap), and miscellaneous metals, car parts, ceramics, plastics, and glass. Evidence of burning was present primarily on the former Walck property, and a layer of ash was observed in Test Pit B. The origin of the ash material observed in Test Pit B is unknown. Sample TP-B-ASH was collected from this material.

Table 4-1 Summary of Excavation Data, Ward Road IIWA

Test Pit or Trench	Dimensions (feet)			Water Level (feet BGS)	Field Screening (ppm)		Sample ID Number
	Length	Width	Depth		Method	Volatiles	
Test Pit B	25	6	3.5	2.6	40 - 50	0	TP-B-ASH
Test Pit E/I	27	4	9	3.0	30 - 40	0	No sample
Test Pit F/I	16	4	6	3.7	0	0	FP-F/I-FILL
Test Pit G	25	4	4	3.5	40	50	TP-G-GW TP-G-FILL
Test Pit K2 (1st)	14	5	5.5	3.0	0	0	No sample
Test Pit K2 (2nd)	15	4	4	3.0	0	0	No sample
Test Pit K3	14	4	6	2.5	0	0	TP-K3-FILL
Trench L	36	3	3	ND	0	0	No sample

Key:

BGS = Below ground surface.
ND = Not determined.

Table 4-2 Sample Collection Summary - December 2, 1997, Ward Road IIWA

Sample ID	Time	Matrix	Approximate Sample Depth (feet BGS)	Analyses				
				VOAs	BNAs	Pesticides/ PCBs	Metals	TCLP
QT-7-TB	08:00	Trip blank	—	X				
TP-F/I-FILL	09:10	Soil	Unknown					X
TP-G-GW	09:30	Water	Bottom of test pit	X	X	X	X	
TP-G-FILL	09:45	Soil	3	X	X	X	X	
TP-K3-FILL	12:30	Soil	6	X	X	X	X	
TP-B-ASH	13:10	Ash	1.5	X	X	X	X	

Key:

BGS = Below ground surface.
BNAs = Base, neutral, acid phenolics (EPA Method 8270).
Metals = Inorganics analyses (EPA 6000/7000 Series).
PCBs = Polychlorinated biphenyls (EPA Method 8080).
TCLP = Toxicity Characteristic Leaching Procedure (EPA Method 1311).
VOAs = Volatile organic analyses (EPA Method 8260).

Observations on the former Walck property also included a number of car parts and tires (Test Pits E/I and F/I), and a strong petroleum odor was noticed at Test Pit G. No evidence of chemical or petroleum product contamination was observed. Screening for volatile organics with a flame ionization detector (FID) indicated that volatiles other than methane were present at Test Pit G at an estimated 50 parts per million (ppm). These levels dissipated quickly after the initial readings. At other test pits on this property, and Test Pit K3 on the DiBacco property, a sulfurous odor which was believed to be associated with methane or other gases produced by anaerobic decomposition of fill materials present in these locations was noted. Sampling of these gases by FID indicated that methane typically accounted for 100% of the readings which ranged from 10 to 50 ppm, but also dissipated rapidly upon exposure to the atmosphere.

Subsurface water was observed in all seven test pits at between 2.5 and 3.5 feet BGS. In general, water levels were nearer to ground surface on the former Walck property and appeared to be black in color because of ash and the organic breakdown of fill materials. Test Pit K3 on the DiBacco property displayed similar conditions.

4.3 Sampling and Analyses

Table 4-2 provides a summary of the samples collected and of the analytical requirements for each sample. Sample collection was conducted at the direction of the on-site NYSDEC engineer. Samples were obtained in a manner to generally represent the types wastes observed. Where possible, samples were collected from areas of potential or suspected contamination. All samples were collected, analyzed, and reported according to NYSDEC-approved procedures as required under the NYSDEC Standby contract. The analytical results as presented by E & E's ASC are provided in Appendix D.

5 Analytical Results and Discussion

All samples collected were submitted for analyses at E & E's ASC on December 2, 1998. The results for these samples are presented in Tables 5-1 through 5-4 and are discussed below. Analytical results for pesticides and PCB analyses arc all considered estimated due to the need for re-extraction and analysis after the expiration of holding times. The delayed analysis was due to a malfunction in a GPC extraction/cleanup column used for this method.

5.1 Soil Sample Results

Three soil samples were collected from the test pits (TP-G-Fill, TP-K3-FILL, and TP-B-ASH). Results for organic analyses, as shown in Table 5-1, indicate that several volatile and numerous semivolatile analytes were detected in sample TP-G-FILL, and only methoxychlor was detected in sample TP-B-ASH (700 µg/kg). Acetone was also detected in all samples including the trip blank. The "B" qualifier associated with the acetone results indicates that this analyte was detected in an associated method blank and, therefore, the result is considered an artifact of laboratory contamination.

Semivolatile results for sample TP-G-FILL indicate that many of the analytes detected are members of the group of polycyclic aromatic hydrocarbons (PAHs). These compounds are generally products of incomplete burning, and their presence is not uncommon in soils from urban or industrial areas. Given the evidence of charred and burned materials, these results should be expected. Sample TP-G-FILL does, however, show PAH and pesticide contamination that was not detected in the other soil samples.

Results for inorganic analyses for soil samples, as shown in Table 5-2, indicate that a typical assortment of metals analytes were present at varying concentrations. For comparison, these concentrations are shown along with the upper 90th percentile of elemental concentrations found in soils and other surficial materials of the eastern United States. Those results exceeding the 90th percentile

Table 5-1 Positive Results for Organic Analyses, Ward Road IIWA

Matrix:	Trip Blank	Water	Soils		
Sample ID: Analyte	**QT7-TB (µg/L)**	**TP-G-GW (µg/L)**	**TP-G-FILL (µg/kg)**	**TP-K3FILL (µg/kg)**	**TP-B-ASH (µg/kg)**
Volatiles Analyses					
Acetone	8 **J**	21 **B**	83 **B**	6 **BJ**	4 **BJ**
Carbon Disulfide	ND	ND	5 **J**	ND	ND
2-Bentanone	ND	ND	26	ND	ND
Total Xylene	ND	29	3 **J**	ND	ND
Semivolatiles Analyses					
4-Methylphenol	—	2 **J**	ND	ND	ND
Phenanthrene	—	ND	490 **J**	ND	ND
Anthracene	—	ND	94 **J**	ND	ND
Carbazole	—	ND	130 **J**	ND	ND
Fluoranthene	—	ND	570 **J**	ND	ND
Pyrene	—	ND	750	ND	ND
Benzo(a)anthracene	—	ND	440 **J**	ND	ND
Chrysene	—	ND	400 **J**	ND	ND
Bis(2-ethylhexyl)-phthalate	—	ND	220 **J**	ND	ND
Benzo(b)Fluoran-thene	—	ND	620 **J**	ND	ND
Benzo(a)Pyrene	—	ND	330 **J**	ND	ND
Indeno(1,2,3-cd) Pyrene	—	ND	340 **J**	ND	ND
Dibenz(a,h)-Anthracene	—	ND	150 **J**	ND	ND
Benzo(g,h,i) Perylene	—	ND	300 **J**	ND	ND
Pesticides/PCB Analyses					
Heptachlor	—	ND[a]	7.9 **P**[a]	ND[a]	ND[a]
Dieldrin	—	ND[a]	19 **P**[a]	ND[a]	ND[a]
4,4'-DDE	—	ND[a]	66[a]	ND[a]	ND[a]
4,4'-DDD	—	ND[a]	97[a]	ND[a]	ND[a]

Table 5-1 (Cont.)

Matrix:	Trip Blank	Water	Soils		
Sample ID: Analyte	QT7-TB (µg/L)	TP-G-GW (µg/L)	TP-G-FILL (µg/kg)	TP-K3FILL (µg/kg)	TP-B-ASH (µg/kg)
4,4'-DDT	—	ND[a]	28 **P**[a]	ND[a]	ND[a]
Methoxychlor	—	ND[a]	24 **J**[a]	ND[a]	700 **D**[a]
alpha-Chlordane	—	ND[a]	400 **D**[a]	ND[a]	ND[a]
gamma-Chlordane	—	ND[a]	460 **D**[a]	ND[a]	ND[a]

[a] All pesticide/PCB results for soils qualified due to sample extraction after holding times expired.

Key:

— = Sample not analyzed for this test.
B = Analyte was found in an associated method and/or trip blank.
D = Result determined from analysis of diluted sample.
J = Result was detected below the sample quantitation limit and is estimated.
P = Result is estimated due to a greater than 25% difference for detected concentrations between the primary and confirmatory GC columns.
ND = Analyte not detected.
P = Result is estimated due to a greater than 25% difference for detected concentrations between the primary and confirmatory GC columns.

Table 5-2 Results for Inorganic Analyses - Soil Samples, Ward Road IIWA

Sample ID: Matrix: Analyte	TP-G-FILL soil (mg/kg)	TP-K3-FILL soil (mg/kg)	TP-B-ASH soil (mg/kg)	90th Percentile[a] (mg/kg)
Aluminum	22,600	35,600	4,710	128,000
Antimony	1.0 B	0.62 U	0.48 U	1.58
Arsenic	6.3	5.3	1.4 B	16.0
Barium	152	286	483	867
Beryllium	1.3 B	1.6 B	0.19 B	1.81
Cadmium	1.1 U	0.86 U	0.70 B	NR
Calcium	75,800	11,500	137,000	14,400
Chromium	24.9	52.1	25.6	112
Cobalt	20.0 B	12.0 B	2.7 B	19.8
Copper	36.9	27.5	91.9	48.7
Iron	40,500	30,800	6,030	54,100
Lead	25.0	96.5	220	33.0
Magnesium	11,800	10,400	5,430	10,700
Manganese	889	331	192	1,450
Mercury	0.23	0.28	0.08 B	0.265
Nickel	46.0	36.3	8.4 B	38.2
Potassium	4,830	3,780	684 B	23,500
Selenium	3.1	7.4	1.2 U	0.941
Silver	0.82 U	0.66 U	0.51 U	NR
Sodium	101 B	916 B	40.3 U	17,400
Thallium	3.7 B	3.1 B	2.4 B	13.8
Vanadium	50.6	41.6	9.6 B	140
Zinc	252	712	313	104

[a] Shacklette and Boerngen, 1984, USGS Paper 1270, Elemental Concentrations in Soils and Other Surficial Materials of the Eastern United States.

Key:

- B = Reported value is less than the contract required detection limit (CRDL), but greater than the instrument detection limit (IDL).
- E = Reported value is estimated due to matrix interferences.
- U = The analyte was not detected at the IDL.
- NR = Not reported
- ■ = Exceeds 90[th] Percentile concentration.

limits are shaded. They include: calcium, copper, lead, and zinc (TP-B-ASH); selenium and zinc (TP-G-FILL and TP-K3-FILL); calcium, magnesium, and nickel (TP-G-FILL); and, lead (TP-K3-FILL).

5.2 Water Sample Results

Results of organic analyses for sample TP-G-GW show that total xylene was detected at 29 µg/L and 4-methylphenol was detected at an estimated concentration of 2 µg/L (see Table 5-1). The presence of xylene contamination is consistent with that reported in the AES report in 1994. Xylenes are petroleum-related compounds and may be associated with the petroleum odor noticed during the excavation of Test Pit G. At the level detected, total xylene would exceed the concentration allowed for drinking water or all classes of surface water. The source for this water sample, however, does not fall within either classification. As discussed in Section 5.1 above, acetone was again detected, but can most likely be attributed to laboratory contamination.

Results of inorganic analyses for sample TP-G-GW indicate that many metals analytes were detected (see Table 5-3). Although this unfiltered sample is not representative of a potential drinking water source, analyte concentrations were generally observed near or below primary drinking water standard concentrations (see Table 5-3). The analytes detected do not appear to be excessive or to pose an immediate risk to human health or the environment.

5.3 TCLP Sample Results

Table 5-4 shows the results for TCLP analyses conducted for sample TP-F/I-FILL. There were no organic analytes detected for this soil extraction sample. Of the eight metals analytes, only two were detected, and none exceeded regulatory limits for TCLP analyses.

Table 5-3 Results for Inorganic Analyses - Water Samples Ward Road IIWA

Sample ID: Matrix: Analyte	TP-G-GW Water (µg/L)	6NYCRR 703.5 Stds[b] (µg/L)
Aluminum	13,400	NA
Antimony	1.8 U	3[c]
Arsenic	17.3	25
Barium	289 E	1,000
Beryllium	0.73 B	3[b]
Cadmium	2.5 U	10
Calcium	304,000	NA
Chromium	19.2	50
Cobalt	8.5 B	NA
Copper	334.0	200
Iron	18,200	300[a]
Lead	250 E	25
Magnesium	73,200	35,000[c]
Manganese	1,460	300[a]
Mercury	0.10 U	2
Nickel	20.4 B	NA
Potassium	23,500	NA
Selenium	4.5 U	10
Silver	1.9 U	50
Sodium	18,800 E	20,000
Thallium	5.9 B	4[c]
Vanadium	21.4 B	NA
Zinc	353 E	300

[a] Iron and manganese together ≤ 500 µg/L.
[b] NYSDEC standards for Class GA waters
[c] Standard from NYSDEC TOGs 1.1.1 10-22-93 guidance values.

Key:

- B = Reported value is less than the contract required detection limit (CRDL), but greater than the instrument detection limit (IDL).
- E = Reported value is estimated due to matrix interferences.
- U = The analyte was not detected at the IDL.
- [shaded box] = Exceeds 6 NYCRR Standards.

Table 5-4 Results for TCLP Analyses, Ward Road IIWA

Sample ID: Matrix: Analyte	TP-F/I-FILL Soil Extraction-Water (mg/L)	Regulatory Limits (mg/L)
Inorganic Analyses		
Arsenic	0.0046 **U**	5.0
Barium	0.35 **BE**	100
Cadmium	0.0007 **U**	1.0
Chromium	0.0008 **U**	5.0
Lead	0.0070 **B**	5.0
Mercury	0.010 **U**	0.2
Selenium	0.0045 **U**	1.0
Silver	0.0007 **U**	5.0
Organic TCLP Analyses		
All Analytes	ND	- -

Key:

B = Analyte was found in an associated blank and result may be biased high.
E = Result is estimated because the concentration exceeds the calibration range of the instrument.
ND = None detected.
TCLP = Toxicity Characteristic Leaching Procedure.
U = Analyte was not detected at the instrument detection limit.

6 Findings and Conclusions

The findings and conclusions resulting from this investigation follow:

- Analytical results for samples TP-G-FILL (soil) and TP-G-GW (water), from Test Pit G indicate that organic contaminants are present in this area. The presence of total xylene in both of these samples confirms, in part, results of this contaminant reported by AES during an earlier investigation;

- Field observations during the excavation of Test Pit G documented that a strong petroleum odor was released during the excavation. Additionally, field screening using an FID organic vapor analyzer detected the possible presence of volatile organic vapors other than methane in this excavation;

- Results of TCLP analyses for sample TP-F/I-FILL indicate that no leachable contaminants were detected for this sample above regulatory limits;

- Water observed within the test pits on the Walck property appeared to be contained within fill materials and was generally black in color, probably due to the ash and breakdown of fill materials. E & E cautions that these subsurface waters may not represent groundwater due to the presence of native clays underlying all fill materials. This water, therefore, may represent a discontinuous perched water table within the fill area;

- Results for metals analyses of soil and water samples show elevated levels for some analytes. These elevated levels are likely due to the types and variety of waste disposed of at the site, but do not indicate the presence of hazardous substances; and

- There appeared to be less fill materials on the DiBacco property, and sample TP-K3-FILL did not test positive for organic analytes other than the common laboratory contaminant, acetone.

A Subsurface Profiles

Subsurface Log - Test Pit B

Date:	December 2, 1997	***Subcontractor:***	Sterling Environmental
Time:	11:05 - 11:30	***Excavator Operator:***	Jim Kelleran
NYSDEC Rep.:	John Hyden	***Excav. Dim.(ft, LxWxD):***	25'x6'x3.5'
E & E Geologist:	Scott Thorsell	***Water Level (ft):***	2.6

Depth Range (feet)	Description of Materials
Surface 0 - 10 feet (south to north):	
0 - 0.7	Grass and Topsoil: silty sand, brown, moist:
Surface 10 - 25 feet:	
0 - 1.0	Grass and Topsoil: silty sand, brown, moist:
1.0 - 3.0	Fill: construction and demolition debris, loose, including - wood, ceramics (toilet, clay pot), bricks, and ash material. Strong sulfurous odor. OVA = 40-50ppm of methane:
· 3.0	Silty Clay: brown/gray, moist. Methane bubbling up from beneath water and clay surface.

Sample(s) Collected:

Sample ID	Time	Depth (ft, BGS)
TP-B-ASH	13:10	1.5

Subsurface Log - Test Pit E/I

Date:	December 2, 1997	***Subcontractor:***	Sterling Environmental
Time:	10:35 - 10:55	***Excavator Operator:***	Jim Kelleran
NYSDEC Rep.:	John Hyden	***Excav. Dim.(ft, LxWxD):***	27'x4'x9'
E & E Geologist:	Scott Thorsell	***Water Level (ft):***	3

Depth Range (feet)	Description of Materials
Surface 0 - 22 feet (south to north):	
0 - 1.5	Grass and Topsoil: silty sand, brown, moist:
1.5 - 8.5	Fill: black, charred, loose, consisting of wood (logs, scrap, plywood), metal (construction debris, copper pipe, etc.), brick, plastic, concrete, and tires. Sulfurous odor, OVA = 30 - 40ppm methane peak (dissipating rapidly);
· 8.5	Silty Clay: brown/gray, moist.
Surface 22 - 27 feet:	
0 - 1.5	Same as before
1.5 - 3	Same as before
> 3	Silty Clay: depth to clay decreasing from 8.5 feet BGS to 3 feet BGS as move north.

Sample(s) Collected: No Sample Collected

Subsurface Log - Test Pit F/I

Date:	December 2, 1997	***Subcontractor:***	Sterling Environmental
Time:	08:25 - 08:40	***Excavator Operator:***	Jim Kelleran
NYSDEC Rep.:	John Hyden	***Excav. Dim.(ft, LxWxD):***	16'x4'x6'
E & E Geologist:	Scott Thorsell	***Water Level (ft):***	3.7

Depth Range (feet)	**Description of Materials**
Surface 0 - 16 feet (south to north):	
0 - 1	Grass and Topsoil: silty sand, brown, moist;
1 - 1.5	Clay: brown, wet, areas with coarse gravel;
1.5 - 5.5	Fill: loose, wet to saturated, wood (scrap and logs), gravel, metal debris (corrogated sheeting, car parts, wire), plastic;
- 5.5	Silty Clay: brown/gray, moist.

Sample(s) Collected:

Sample ID	Time	Depth (ft. BGS)
TP-F/I-FILL	09:10	composite

Subsurface Log - Test Pit G

Date:	December 2, 1997	***Subcontractor:*** Sterling Environmental	
Time:	07:45 - 08:15	***Excavator Operator:*** Jim Kelleran	
NYSDEC Rep.:	John Hyden	***Excav. Dim.(ft, LxWxD):*** 25'x4'x4'	
E & E Geologist:	Scott Thorsell	***Water Level (ft):*** 3.5 - 4	

Depth Range (ft)	Description of Materials
Surface 0 - 5 feet (north to south):	
0 - 1.5	Grass and Topsoil: silty sand, brown, moist
> 1.5	Silty Clay: brown/gray, moist to wet
Surface 5 - 12 feet:	
0 - 1.5	Same as above
1.5 - 3	Fill: black charred materials, wood and plastic, some brick. OVA >10ppm of methane.
> 3	Silty Clay: as above
Surface 12 - 23 feet:	
0 - 1.5	Same as above
1.5 - 4	Fill: Same as above including railroad ties. Strong petroleum odor noticed when first excavated. OVA = approx. 40 ppm methane and 50 ppm other volatiles.
>4	Silty Clay: as above.
Surface 23 - 25 feet:	
> 3	Silty Clay: as above.

Sample(s) Collected:

Sample ID	Time	Depth (ft, BGS)
TP-G-GW	09:30	- -
TP-G-FILL	09:45	3

Subsurface Log - Test Pit K2 (1st)

Date:	December 2, 1997	***Subcontractor:*** Sterling Environmental	
Time:	11:58 - 12:02	***Excavator Operator:*** Jim Kelleran	
NYSDEC Rep.:	John Hyden	***Excav. Dim.(ft, LxWxD):*** 14'x5'x5.5'	
E & E Geologist:	Scott Thorsell	***Water Level (ft):***	

Depth Range (feet)	Description of Materials
Surface 0 - 14 feet:	
0 - 0.7	Grass and Topsoil: silty sand, brown, moist;
0.7 - 2.5	Soils: silty sand, medium brown, dry to moist. adjust excavation to the west where some debris were observed - see next description;
2.5 - 4	Fill: construction and demolition debris - wood, ceramics, bricks;
> 4	Silty Clay: brown/gray, moist to wet.

Sample(s) Collected: No Sample Collected

Subsurface Log - Test Pit K2(2nd)

Date:	December 2, 1997	***Subcontractor:***	Sterling Environmental
Time:	12:05 - 12:10	***Excavator Operator:***	Jim Kelleran
NYSDEC Rep.:	John Hyden	***Excav. Dim.(ft, LxWxD):***	15'x4'x4'
E & E Geologist:	Scott Thorsell	***Water Level (ft):***	3

Depth Range (feet)	**Description of Materials**
Surface 0 - 15 feet:	
0 - 0.7	Grass and Topsoil: silty sand, brown, moist;
0.7 - 2.5	Soils: silty sand, medium brown, dry to moist;
2.5 - 4	Fill: construction and demolition debris - large asphalt and concrete pieces, wood, ceramics, bricks;
> 4	Silty Clay: brown/gray, wet.

Sample(s) Collected: No Sample Collected

Subsurface Log - Test Pit K3

Date:	December 2, 1997	***Subcontractor:*** Sterling Environmental	
Time:	12:12 - 12:20	***Excavator Operator:*** Jim Kelleran	
NYSDEC Rep.:	John Hyden	***Excav. Dim.(ft, LxWxD):*** 14'x4'x6'	
E & E Geologist:	Scott Thorsell	***Water Level (ft):*** 2.5	

Depth Range (feet)	Description of Materials
Surface 0 - 14 feet:	
0 - 0.7	Grass and Topsoil: silty sand, brown, moist;
0.7 - 2.0	Soils: clayey sand, medium brown, dry to moist;
2.0 - 3.0	Concrete Slab: construction and demolition debris - large, approx. 3.5ft x 4ft square;
3.0 - 6.0	Fill: black, charred construction and demolition debris - wood, clay pipe, bricks, ceder shingles, etc. Sulfurous odor (methane). Wet;
> 6.0	Silty Clay: brown/gray, wet.

Sample(s) Collected:

Sample ID	Time	Depth (ft, BGS)
TP-K3-FILL	12:30	6

Subsurface Log - Trench L

Date:	December 2, 1997	***Subcontractor:***	Sterling Environmental
Time:	11:45 - 11:55	***Excavator Operator:***	Jim Kelleran
NYSDEC Rep.:	John Hyden	***Excav. Dim.(ft, LxWxD):***	36'x3'x3'
E & E Geologist:	Scott Thorsell	***Water Level (ft):***	below 3 ft

Depth Range (feet)	**Description of Materials**
Surface 0 - 36 feet:	
0 - 0.7	Grass and Topsoil: silty sand, medium brown, dry to moist;
0.7 - 2.5	Soil: silty sand, medium brown, dry to moist. OVA = 0ppm above background.

Sample(s) Collected: No Sample Collected

B Field Logbook

ecology and environment, inc.

International Specialists in the Environment

Field Log

WARD ROAD IIW4

Job Number QT 7

12/2/97 -

Jim Hyden NYSDEC
851-7220
694-6977 (home)

Matt Forcucci NYSDOH
847-4500
282-8915

Paul Dickey Nia. Co. DOH
439-7595

Edmund DiBacco

Irene Walck 731-9583

Sterling Envl. 824-2407
Steve Love -2441 (FAX
Jim Kelleran

Pat Flowers (Recherche)
377-2916 Res./Off
743-6120 (voice)

B-4

E & E Job Number QT7

Telephone Code Number

Site Name Ward Road IIWA

City/State Town Wheatfield, NY
Niagara County

TDD

PAN

SSID

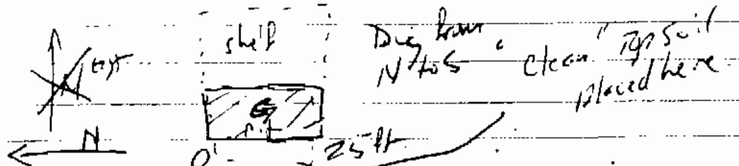
Start / Finish Date 12/2/97 /

Book 1 of 1

E & E Emergency Response Center: (716) 684-8940
E & E Corporate Center: (716) 684-8060
MEDTOX Hotline: (501) 370-8263
E & E Safety Director (Home): (716) 655-1260

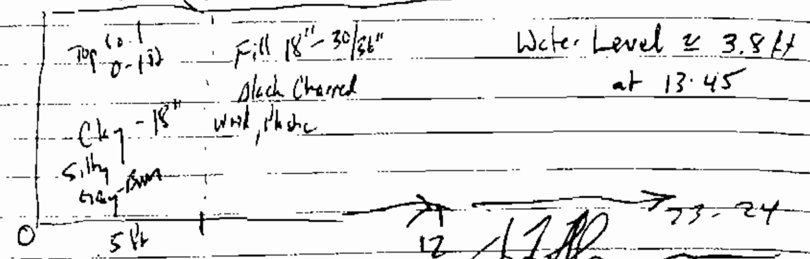
12-2-97 WARD RD QT 7

0645 S Thorsell (E&E) onsite. (Purchased Ice on route).
0648 Strong Joe? Jim Kelleran (Sterling) onsite - warming backhoe.
Weather: Dark. Cold Low 30's. Minimal wind
partly overcast. Forecast for mid 20's
+ mostly sunny.
07:00 John Hyden (NYSDEC) onsite.
07:10 E&E equipment list + check.
• Alcron, Micro Analyst, MicroR* 08-02-005
• Mini Ram PDM-SNS / # 01-09-011
• MSA Comb Gas O2 Alarm # 009887
• Foxboro OVA w/ Ext. Arm # 01-01-028
Inst all start + check out OK. Calibrations
made or verified on 12/1/97.
0730 Set backhoe at trench G
Discuss procedures for pits. Adjust location +
make 80 ft length measure.
0745 Begin excavation (G). Clear topsoil in pit area
and a shelf area to East (Shelf for fill material stagging)



Backhoe using 42 BOT inch wide bucket (42")
Model Komatsu 120 hydraulic excavator

pit outline (Trench G)



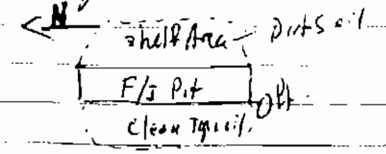
Water Level ≅ 3.8 ft
at 13:45

B-5

12-2-97 Ward Rd QT 7

Surface 0-5 ft. (North to South)
Depth: 0-18" Topsoil Silty Sandy Brown Moist
18+ Silty Clay Brn/Gray Moist-Wet
0755 Matt F (NYSDOH) onsite.
Surf 5-12 ft
Depth 0-18" Topsoil Same
18-30 - 36" Black Charred Fill Mostly Wood + Plastic - some brick.
OVA >100ppm Methane
Fill increases thickness to south
>36" Clay - Same ~~to depest pt 4.5 ft~~ = 65T
CUT
At Surface 12-23 ft.
Depth 0-18 Same
18"- 4 ft Fill. Same. Notice also RR ties +
Petroleum odor OVA peak at 90ppm w/o charcoal
+ peak ~ 30-40 w/ charcoal (~50ppm volatiles)
4+ ft Clay - Same.

Surf. 23-25 ft
Same above. w/ clay beginning to come up
to 3 ft depth
8:15 Stop excavation at this pt. J.H. wants to leave open - maybe sample Tue
Paul Dicky DOH on site
Move to E/I Test Pit
820 Begin Excavation on F/I



Dig from South to North.

~~Water Level ≅ 3.7 ft @ 13:50~~ 65T
Water Level ≅ 3.7 ft @ 13:50 OK 65T

12-2-97 Ward Rd QT 7

825 0-15' Surface 0ft - 16 ft (South to North)
Depth: 0-12" Topsoil Silty Brn. Moist
~~>12" Clay~~ ca ST
~~Surface 3ft~~ — GP
17-18" Clay Brn wet. Areas of Coarse Gravel.
>18 Fill Wet. Break through Gravel & water drains into pit from surrounding area
>2 ft Fill: — Loose Saturated.
Mostly Wood logs & scrap
Metal - Corrugated Metal sheeting
Tires, wire. Some Plastic
Depth of Fill at 5.5 ft. Clay below Brn/Grey.

0845 Break from digging to discuss sampling.
B-6
JH inst. to collect Water + soil sample from F/I pit. + Soil Sample from G pit.

09:10 Collect Sample TP-F/I-GW for water analyses of VOA, Pest./PCB, BNA, Metals. (DUMPED A.J.)
No acids were avail. for preserv. of VOA or Metals.

09:15 Collect Fill sample for TCLP Anal.
2 x 8 oz Jars! Collected from excav. pile + composited.
ID = TP-F/I-FILL

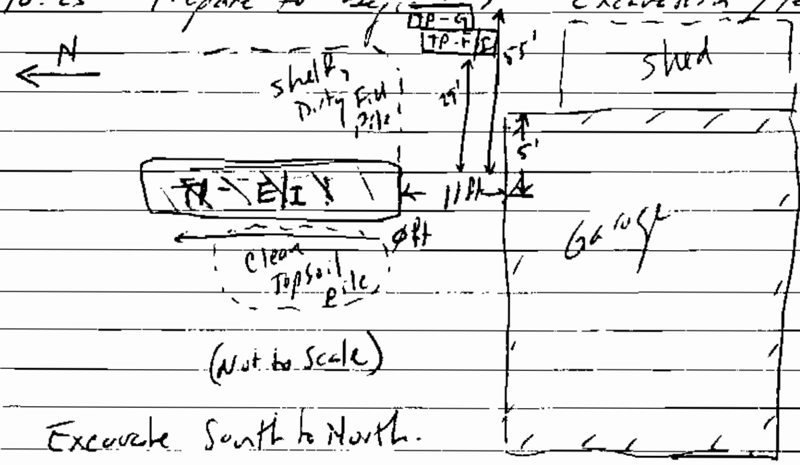
09:30 Collect Water Sample from pit G
TP-G-GW VOA 2x40z
BNA 1x80z
P/PCB 1x80z
Metals 1x1-L Poly

09:45 Collect Fill Sample from Pit G - Bottom of Fill/clay interface ~3 ft.
TP-G-FILL 2x8 oz. P/PCB/BNA/Met.
2x4 oz VOA

A. J. T[signature]

12-2-97 Ward Rd QT-7

1010 Package Samples Label etc.
Recharge OVA w/ gas
10:25 Prepare to begin 3rd Excavation / Test Pit (E/I)



Excavate South to North.

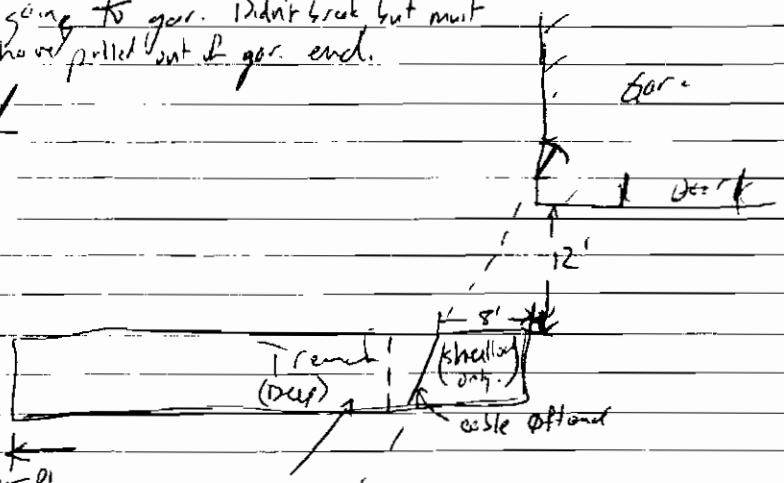
1035
Surface 0-27ft. (South to North)
Depth 0-18" Top Soil Silty-Clayey Soil Brown Moist
1.5'-8.5' Black/Charred Fill Sulfurous odor
30-40 ppm methane peak - Dissipates.
Wet, TP fills w/ water to depth of ~3 ft BGS
Fill: Wood logs, Scrap wood, Metal debris, pipe, bricks
Plastic, ply wood, Cement debris, Copper tube
Tires.
>8.5 ft (est) Native clay
((As move north (approx 22 ft Surf.) Clay depth decreases to 4-5 ft. Then 7 ft BGS at 27 ft.))
10:45 Down to ~9 ft - haven't pulled up native clay yet
Ed DiBacco is on site.
10:55 End excavation move to trench B.
Scan Old debris piles again w/ Micro-R (radiation)
w/ no readings above BG.

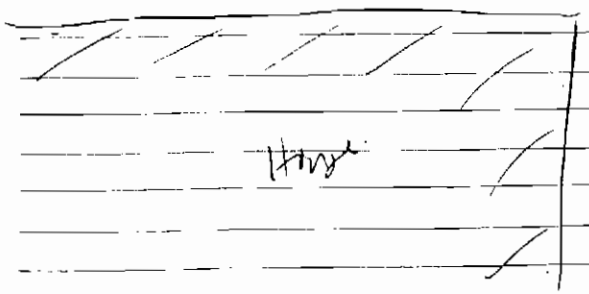
A. Scott T[signature]

12-2-97 Ward Rd QT-7

11:05 Begin trench K. Moved south end further south (as per TL), to start parallel to N-side of garage.

11:10 Uncovered buried cable (power-elec) at 4" BGS going to gar. Didn't break but must have pulled out of gar. end.





J. Scott Thomas

12-2-97 Ward Rd QT-7

Surface 0-10 Ft (South to North TP-B)
Depth 0-8" Typical. Then Elec cable.

Sect.: 0-25 Ft. (S to N)
0-1' Topsoil
1-2.5' Fill. Wood debris (C+D debris) Moist loose. Ceramics (toilet), bricks, Arch Material, Clay pots. Strong Sulfurous odor. Measured 40-50 ppm peak Methane. (Using charcoal filter to test methane)
2.5/3' and more is native grey brown clay. Moist. Some water flowing into pit at ~3 Ft. Methane bubbling up through standing water.

11:30 End excavation
Decide to collect end sample from ash interval for Met, TCL Org.
Will collect sample later after complete excav. of K & L trenches (as per SH)

11:45 Begin TP at L2

11:50 No obvious contamination found a few items here & there. SH inst. to continue & dig the trench to L1.

11:55 Complete trench L. No contaminants ~~other~~ or Fill found. Approx depth 2.5 Ft.
OVA - No readings above BG

11:58 Begin trench K
Began trench. Got to ~2.5 Ft & notice brick & water on west side & bottom of T.P. Have open excav. to the west another 7 Ft. At 2.5-4 Ft found Fill: C+D wood, ceramics, bricks. Clay at 5-5.5 Ft. (Bottom)

12:00 Agree to start new T.P. approx 15 west of initial & further north.

J. Scott Thomas

12-2-97 Ward Rd QT-7

12:05 Begin trench K(2nd)-2:
0-2.5 Topsoil + Soil.
2.5-4 Ft (+0) Fill. Asphalt, Concrete pieces (large) bricks, wood. - Wet.
~4 Ft Clay. Wet
12:10 End K-2 (2nd) Test Pit
12:12 Begin TP at K-3:
0-2 Ft Topsoil + clayey soil
2-3 Ft Huge concrete slab 3.5'x4' (approx)
2-6 Ft. (+0) Fill black, Wet.
Wood, clay pipe, bricks, etc. - Cedar Shingles
Sulferous Methane odor.
~6 Ft Clay - bottom of hole

12:20 Jt. inst to collect samples at K3: one water and one of clay-fill interface (ct. analyses + mit TCLP). Approx Depth 6 Ft BGS
- Correction - No water sample.

12:30 Collect Sample TP-K3-FILL
- Collect from bucket - sample depth approx 6 Ft BGS

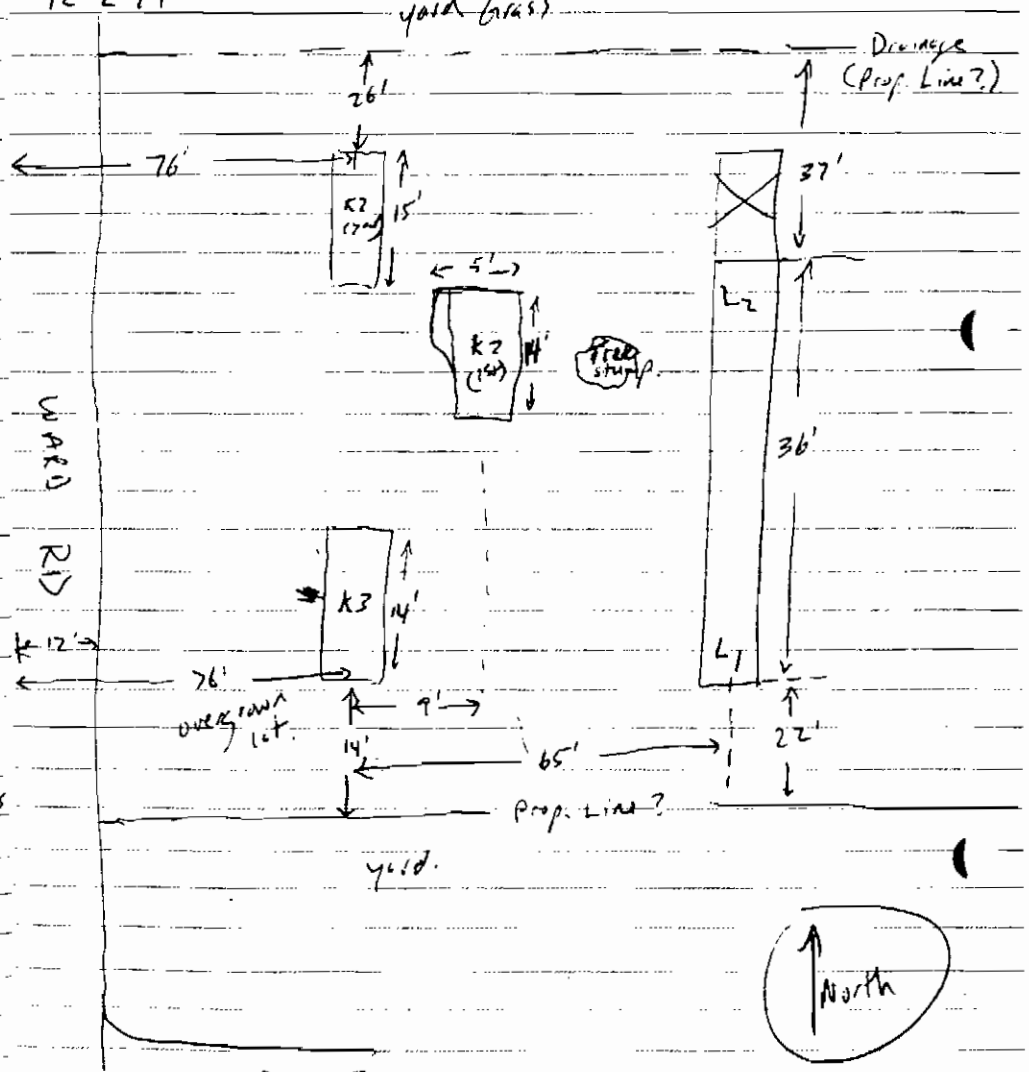
12:35 Water levels measured
K3 WL ≃ 2.5 Ft BGS.
K2(2nd) WL ≃ 3 Ft "

12:40 Make sketch + take measurements of DiBacco property area.

12:50-13:00 Take Pictures 1 ~~7~~ cat of TP's. Missed photo of K3 pit. Already being filled in.

J Scott Thomas

12-2-97 Ward Rd QT-7



J. Scott Thomas

12-2-97 Ward Rd QT-7

13:10 Collect Sample from Ash at TP B.
Sample ID = TP-B-Ash. Approx depth 15ft
8 oz - Met
8 oz. Organics
2 x 40ml VOA.

13:15 take Photographs.
Exp. 8 North. TP B
9 East. TP B in foreground.
10 East + Down - TP-B showing ash sample area.
11 North TP E/F and I
12 North + Down S- End of TP-E/I
13 NE Shows TP's F/I + G
14 N + Down TP-F/I
15 Down at TP-F/I debris + water
16 North TP-G area
17 North + Down TP-G debris + water
18 West - Area of all TPs } panoramic w/ all three four
19 NW - "
20 N-NW - "
21 SW - "

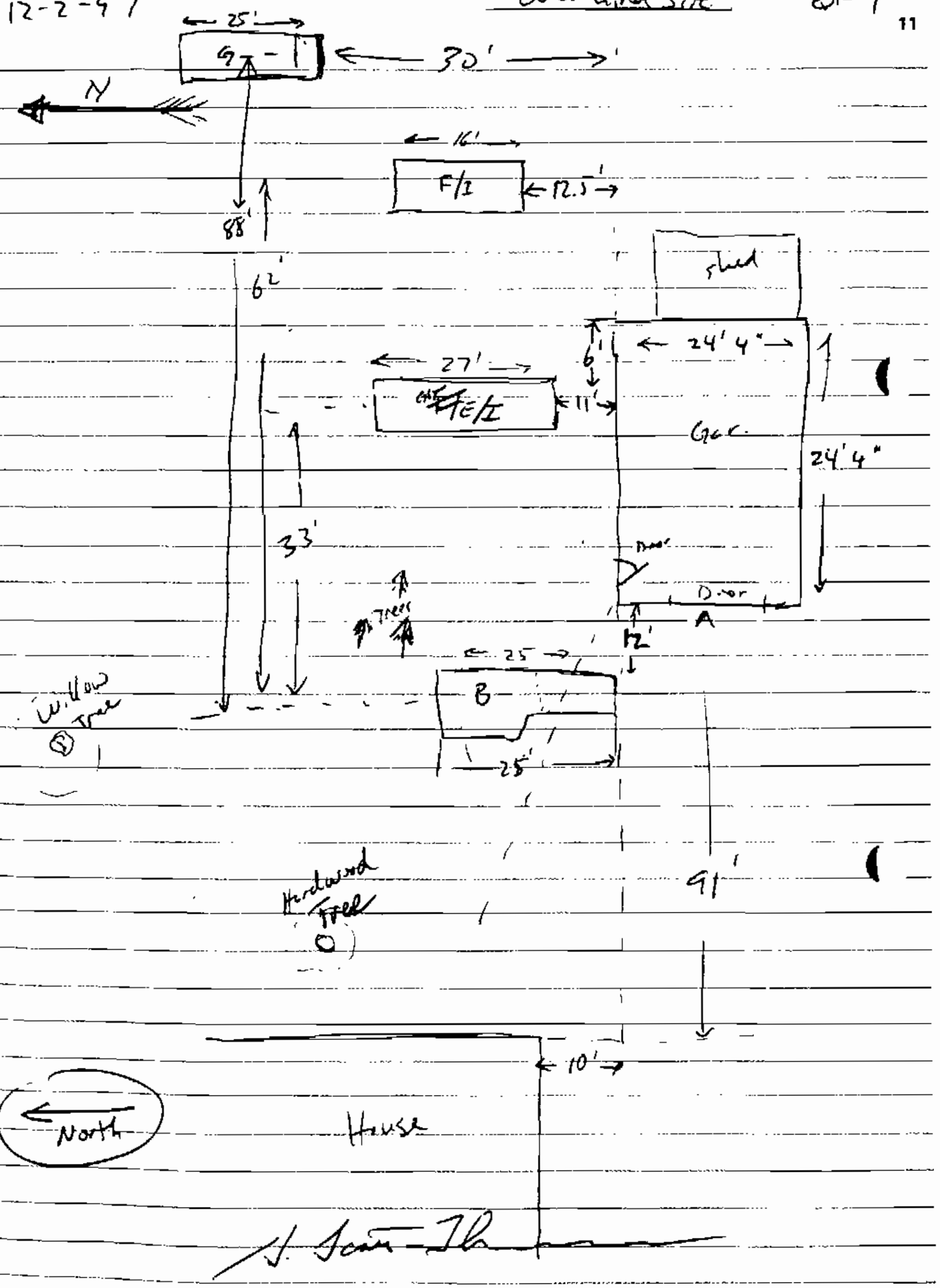
22 E-SE - Area
23 E-SE - " (Back by house)
24 NE - Area.

Excavators now back filling all trenches on DiBacco Property

13:30 JH + Thorsell take measurements of TP's
13:40 Pat Flowers on-site talk w/ site + take other pictures

[signature]

12-2-97 Ward Rd Site QT-7



[signature]

12-2-97 Ward Rd QT-7

14:20 Clr. w/ JH on samples. OK to dispose of TP-FI-GW. Only submit TCLP sample from F/I test pit.

14:30 Begin filling in last Test Pit (TP-18)

14:40 Begin packing up instruments & samples.

14:45 JH (N45DEC) & M.F. (N45DOH) depart site

15:05 E&E and Sterling Envi. depart site - JH has walked over site and approved capping of Test Pits for now. Will re-evaluate need for further restoration in the spring based on E&E report, analytical data, and surface conditions at that time.
- JH & M.F. approved of not decanning the backhoe bucket. Due to lack of obvious contamination, decon was deemed not to be necessary.

16:00 Drop off equipment at ESC

16:20 Drop samples at ASC

17:00 End of Day Depart to Log.

C

Photographic Log

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 1

Subject:
Excavator between Test Pits K2(2) and K3

Photographer:
Scott Thorsell

Date/Time:
12/02/97 12:50

Direction:
North-Northeast

Photo Number:
Frame 2

Subject:
Excavation of Test Pit K3

Photographer:
Scott Thorsell

Date/Time:
12/02/97 12:51

Direction:
Northeast

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 3

Subject:
Backfilling Test Pit K3

Photographer:
Scott Thorsell

Date/Time:
12/02/97 12:52

Direction:
North

Photo Number:
Frame 4

Subject:
Backfilling Test Pit K2 (1st)

Photographer:
Scott Thorsell

Date/Time:
12/02/97 12:54

Direction:
Southwest

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 5

Subject:
Open Test Pit K2 (2nd)

Photographer:
Scott Thorsell

Date/Time:
12/02/97 12:55

Direction:
South

Photo Number:
Frame 6

Subject:
Excavation of Trench L

Photographer:
Scott Thorsell

Date/Time:
12/02/97 12:57

Direction:
North

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

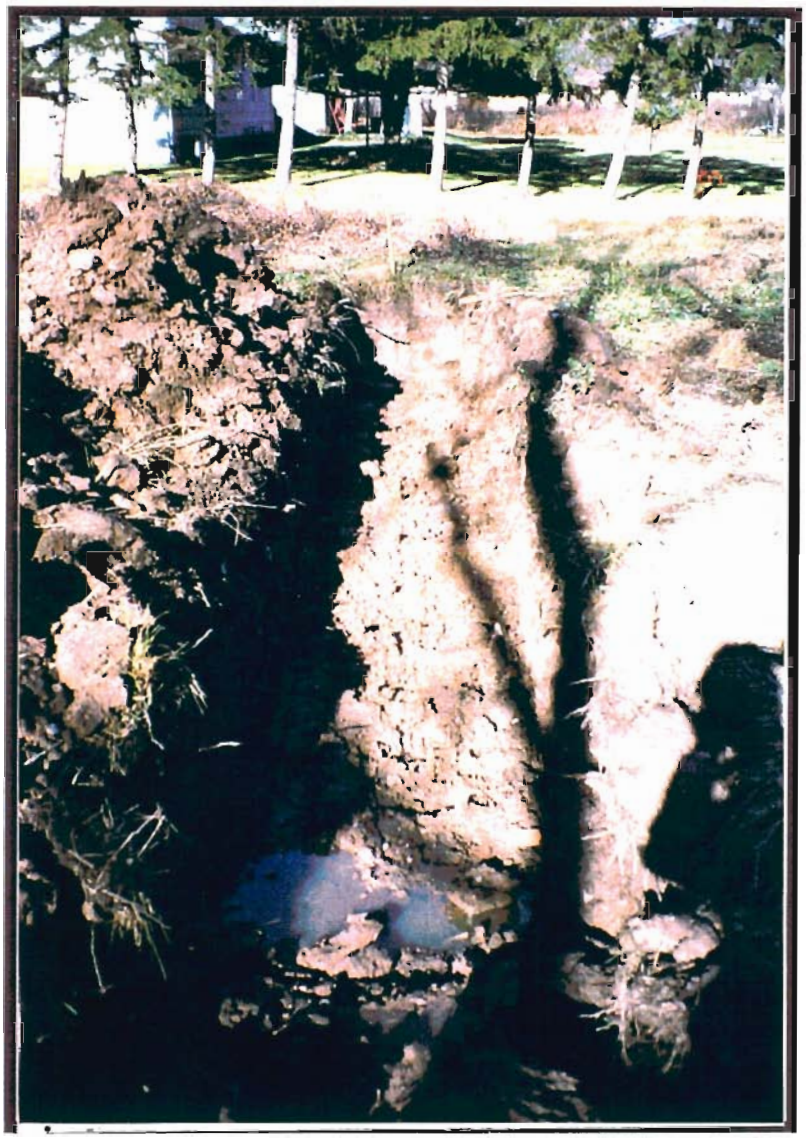
Photo Number:
Frame 7

Subject:
Close-up of Trench L

Photographer:
Scott Thorsell

Date/Time:
12/02/97 12:58

Direction:
North and Down



Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 8

Subject:
Excavation of Test Pit B shows groundwater and exposed power line to garage

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:15

Direction:
North

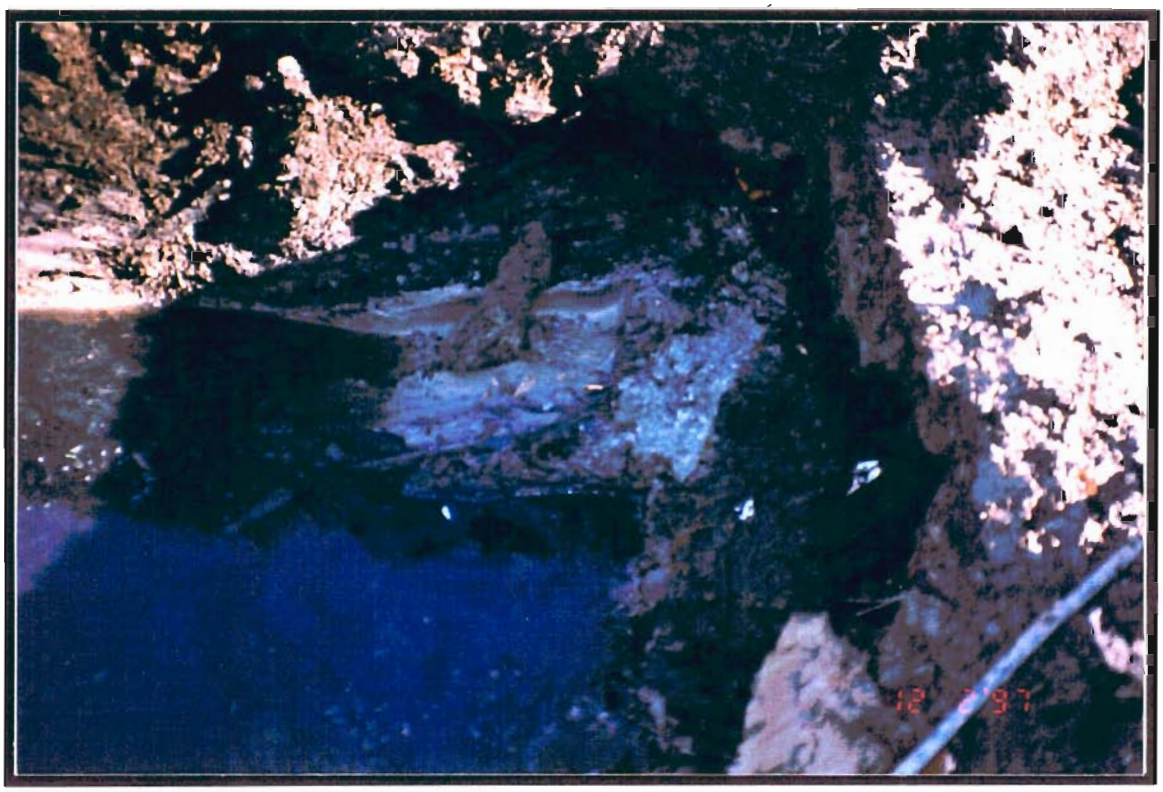


Photo Number:
Frame 10

Subject:
Ash sampling location in Test Pit B

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:16

Direction:
East and Down

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 11

Subject:
Test Pit E/I

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:18

Direction:
North

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 12

Subject:
Southend of Test Pit E/I, close-up of debris

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:19

Direction:
North and Down

Photo Number:
Frame 13

Subject:
Debris piles for Test Pits F/I (foreground) and G (background)

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:20

Direction:
Northeast

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 14

Subject:
Open Test Pit F/I shows debris and groundwater

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:21

Direction:
Down

Photo Number:
Frame 15

Subject:
Test Pit F/I showing soil column and buried debris

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:22

Direction:
West and Down

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 16

Subject:
Open Test Pit G

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:24

Direction:
North and Down

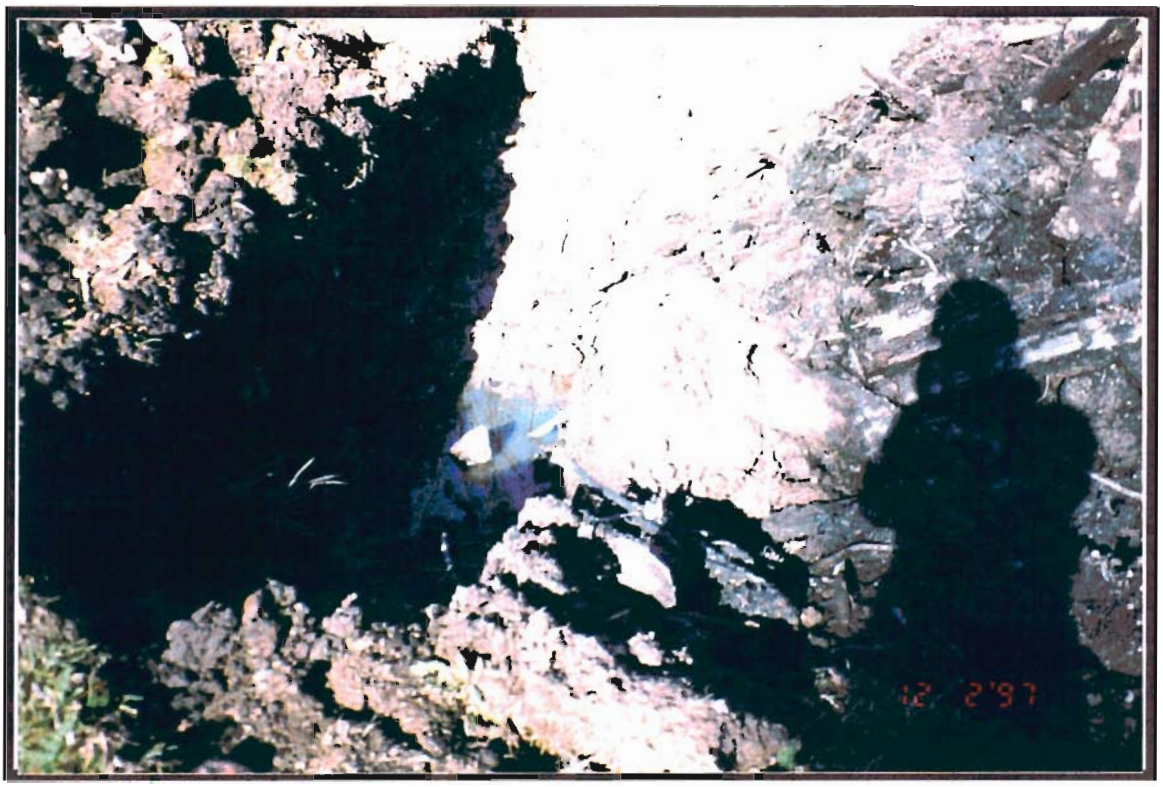


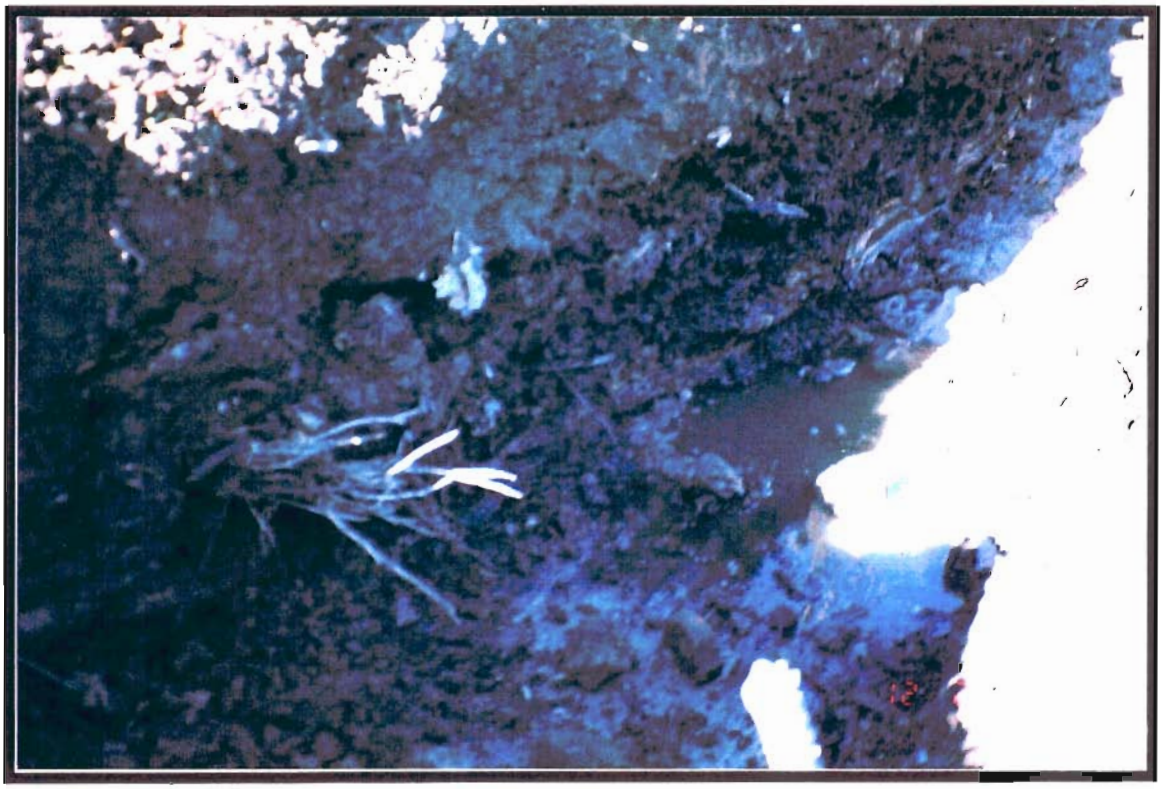
Photo Number:
Frame 17

Subject:
Open Test Pit G showing debris and water

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:24

Direction:
North and Down



Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 22

Subject:
Shows backyard area and Test Pits G and F/I (left to right)

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:26

Direction:
East-southeast

Photo Number:
Frame 23

Subject:
Backyard area, view from north and of house garage, shows rear garage and test pits

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:27

Direction:
East-southeast

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frame 24

Subject:
View of backyard area, Test Pit B in foreground

Photographer:
Scott Thorsell

Date/Time:
12/02/97 13:28

Direction:
Northeast

Ecology and Environment, Inc.
PHOTOGRAPHIC RECORD

SITE NAME: WARD ROAD - IIWA
SITE LOCATION: TOWN OF WHEATFIELD, NIAGARA COUNTY
JOB NUMBER: QT7901

Photo Number:
Frames 18-21

Subject:
Panoramic of
Backyard Area of
6759 Ward Road

Photographer:
Scott Thorsell

Date/Time:
12/2/97 13:25

Direction:
West

D

Analytical Results

ecology and environment, inc.
International Specialists in the Environment

ANALYTICAL SERVICES CENTER
4493 Walden Avenue
Lancaster, New York 14086
Tel. (716) 685-8080, Fax: (716) 685-0852

MEMORANDUM

TO: Scott Thorsell - E & E Buffalo

FROM: Gary Hahn - Laboratory Director

DATE: January 12, 1998

SUBJECT: Ward Road IIWA - Test Pit
Project # QT-7000

RE: 9702.951

CC: Lab File

Attached is the laboratory report of the analyses conducted on samples received at the Analytical Services Center on December 2, 1997. The samples were analyzed according to methods set forth in the New York State Department of Environmental Conservation, Analytical Services Protocol, 10/95 Revisions.

The chain of custody form provided herein is integral to this report and must be included with the analytical results forms upon transferral to another data user.

All samples on which this report is based will be retained by E & E for a period of 30 days from the date of this report, unless otherwise instructed by the client. If additional storage of samples is requested by the client, a storage fee of $1.00 per sample container per month will be charged for each sample, with such charges accruing until destruction of the samples is authorized by the client.

GH/fal
Enclosure

1

Metals sample TP-G-GW was received at the laboratory unpreserved. Scott Thorsell was notified on 12/3/97 and notified the laboratory to preserve the sample container with nitric acid to a pH of less than 2 s.u..

The "M" flag on a GC/MS instrument generated quantitation report indicates that a manual integration was performed. Manual integration was required due to peak shape.

CLP VOLATILES

A DB624 column from J&W which is 30 cm long, 0.53 mm wide, and has a 3-um film thickness was used for the volatile analyses. A 30-cm TEKMAR #6 Trap was used for the volatile analyses consisting of approximately 1 cm of OV-1 packing, approximately 20 cm of Tenax, and approximately 10 cm of silica gel.

Sample QT7-TB was determined to have a pH of approximately 2 s.u. and sample TP-G-GW was determined to have a pH of approximately 7 s.u..

Due to limited sample volume, the matrix spike/matrix spike duplicate analyses of sample TP-G-GW were analyzed at five-fold dilutions. Quantitation limits have been adjusted accordingly.

The aqueous and soil method spike blanks (MSB) were spiked with a solution which contains additional spike compounds besides those spike compounds required by NYSDEC. Both MSBs are associated with other jobs which required spiking with all target compounds. Form 3 shows the recoveries of the five NYSDEC spike compounds. Form 1 shows the results for all the detected compounds. The reported tentatively identified compounds (TIC) are also compounds found in the spike solution.

SEMIVOLATILES

A RESTEK (XTI-5) column which is 30 m long, 0.25 mm wide, and has a 0.25 um film thickness was used for the semivolatile analyses. The column contains 5% diphenyl and 95% dimethylpolysiloxane.

No surrogate recoveries were obtained for sample TP-G-FILL. The associated method blank and laboratory control sample met all QC criterion. The sample was re-extracted past hold time. The reanalysis met all QC criterion. Both sets of data are included in this report, but should be used with caution.

Recovery of 4-nitrophenol was high at 84% (upper limit is 80%) for the soil matrix spiked blank analysis. All other recoveries were within acceptable limits.

Several tentatively identified compound (TIC) were detected in the soil method preparation blanks SBLKS1 and SBLKS2. These TICs do not interfere with the quantitation of any target compound.

The following tentatively identified alkanes were detected:

Sample ID	Alkane Compound (series)	Estimated concentration
TP-B-ASH	straight chain	660 ug/Kg
TP-G-FILL	straight chain	11000 ug/Kg
TP-G-FILL RE	straight chain	10000 ug/Kg
TP-K3-FILL	straight chain	1500 ug/Kg

Pesticide/PCB

Columns used for analysis were a 30 m long RTX-5 with 0.53 mm diameter and 1.0 micron thickness and a 30 m long RTX-35 with 0.53 mm diameter and 0.5 micron thickness.

[illegible] GPC malfunction, the soil samples were extracted 22 days after [illegible]ne had expired. S. Thorsell was notified and instructed the [illegible]atory to proceed with analyses.

All soil samples were concentrated to a final volume of 10 mL due to matrix. Quantitation limits have been elevated accordingly.

%D criteria was not met on the RTX-5 column for heptachlor in the INDAM03 standard, for 4,4'-DDE in the INDBM03 standard, and for beta-BHC in the PEM03 standard. Criteria was met for all standards on the RTX-35 column.

METALS - TAL & TCLP

Due to software limitations, the client identification codes have been truncated throughout this fraction of the report. The full client IDs can be found in the comment section on form I.

The flag "B" associated with the TCLP sample results represents values between the IDLs and the regulatory limits.

3

METALS - TAL & TCLP

The soil laboratory control sample digested on 12/9/97 (LCS 164-1) did not meet the recovery criterion for silver, magnesium, sodium, cadmium, chromium, zinc, or selenium. The samples were redigested on 12/11/97 for selenium and on 12/12/97 for the remaining analytes. Reanalyses met all QC criterion.

The reported barium result for TCLP sample TP-F/I-FILL and TCLP BLANK have been flagged "E" based on the serial dilution. Barium, lead, manganese, sodium, and zinc sample results have been flagged "E" for aqueous sample TP-G-GW based on its serial dilution. Physical/chemical interferences are suspected.

TCLP PURGEABLES

No discrepancies were encountered during this analysis.

TCLP SEMIVOLATILES

The method blank had a slightly low surrogate recovery for 2-fluorobiphenyl at 40% (lower limit is 43%). All other surrogate recoveries were acceptable. No further action is required.

The laboratory control sample was spiked with the CLP spike compounds and not the TCLP spike compounds. All recoveries were acceptable. The matrix spike/matrix spike duplicate analyses were spiked with the TCLP spike compounds yielding acceptable recoveries for all compounds.

TCLP PESTICIDES

The RTX-35 column (channel B) is the primary analysis. The RTX-5 column (channel A) was used for confirmation.

Sample TP-F/I-FILL did not meet the surrogate recovery criteria for tetrachloro-m-xylene or decachlorobiphenyl. Both recoveries were low at 27% and 38% respectively. The TCLP blank had a low surrogate recovery for tetrachloro-m-xylene at 40% and laboratory control sample 1241-24-2 had a slightly high surrogate recovery for decachlorobiphenyl.

TCLP HERBICIDES

The RTX-35 column (channel B) is the primary analysis. The RTX-5 column (channel A) was used for confirmation.

No discrepancies were encountered during this analysis.

4

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Gary Hahn - Director
Analytical Services Center
January 12, 1998

To be included with all lab data and with each workplan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements					
		*VOA GC/MS Method #	*BNA GC/MS Method #	*VOA GC Method #	*Pest PCBs Method #	*Metals	*Other Full TCLP
TP-G-FILL	78938	95-1	95-2	9	95-3	CLP	
TP-K3-FILL	78939	1	1		1	1	
TP-B-ASH	78940	1	1		1	1	
TP-F/I-FILL	78941						✓
TP-G-GW	78942	95-1	95-2		95-3	CLP	
QT7-TB	78943	1					

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
SEMIVOLATILE (BNA)
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
78938	Soil	12/2/97	12/2/97	12/4/97	12/20/97
78939	"	"	"	"	"
78940	"	"	"	"	"
78938 RE	"	"	"	12/23/97	12/29/97
78942	Water	"	"	12/5/97	12/19/97

Re = Re-extraction

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOLATILE (VOA)
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
78938	Soil	12/2/97	12/2/97	NA	12-3-97
78939	"	"	"	"	"
78940	"	"	"	"	"
78942	Water	"	"	"	12-5-97
78943	"	"	"	"	"

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB
ANALYSES

Laboratory Sample ID	Matrix	Date Collected	Date Rec'd at Lab	Date Extracted	Date Analyzed
78938	Soil	12/2/97	12/2/97	12/9/97	1/9/98
78939	"	"	"	"	"
78940	"	"	"	"	"
78942	Water	"	"	12/5/97	"

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
SEMIVOLATILE (BNA)
ANALYSES

Laboratory Sample ID	Matrix	Analytical Protocol	Extraction Method	Auxiliary Cleanup	Dil/Conc Factor
78938	Soil	95-2	3550	GPC	1
78939	"	"	"	"	"
78940	"	"	"	"	"
78942	Water	"	3520	—	"

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

Laboratory Sample ID	Matrix	Metals Requested	Date Rec'd at Lab	Date Analyzed
78938	Soil	Al, Ba, Be, Ca, Co, Cu	12/2/97	12/11/97
78939	"	Fe, Mn, Ni, K, V, Sb	"	"
78940	"	As, Pb, Tl	"	"
78938	"	Se	"	12/12/97
78939	"	"	"	"
78940	"	"	"	"
78939	"	Cd, Cr, Mg, Ag, Na, Zn	"	12/13/97
78940	"	"	"	"
78938	"	"	"	"
78942	Water	Al, Sb, As*, Be, Ba*, Cd*	"	12/30/97
78941 *	TCLP Extract	Cr*, Cu, Co, Pb*, Mn, Ni	"	"
		Se*, Tl, V, Zn, Fe, Ag*	"	"
		Ca, Mg, K, Na	"	"
78941	TCLP Extract	Hg	"	12/19/97
78938	Soil	"	"	12/23/97
78939	"	"	"	"
78940	"	"	"	"
78942	Water	"	"	"

JOB NUMBER : 9702.951

Ecology and Environment, Inc.
SAMPLE TRACKING REPORT

- SAMPLE NUMBER	CLIENT SAMPLE ID	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED
PH -S				
78938.03	TP-G-FILL	12/02/97		12/03/97
78939.03	TP-K3-FILL	12/02/97		12/03/97
78940.03	TP-B-ASH	12/02/97		12/03/97
SOLIDS TOTAL -S				
78938.03	TP-G-FILL	12/02/97		12/08/97
78939.03	TP-K3-FILL	12/02/97		12/08/97
78940.03	TP-B-ASH	12/02/97		12/08/97
TCLP HERBICIDES -S				
78941.01	TP-F/I-FILL	12/02/97	12/15/97	12/23/97
TCLP PESTICIDES -S				
78941.01	TP-F/I-FILL	12/02/97	12/16/97	12/26/97
TCLP ACID PHENOL -S				
78941.01	TP-F/I-FILL	12/02/97	12/16/97	12/19/97
TCLP BASE NEUTRAL -S				
78941.01	TP-F/I-FILL	12/02/97	12/16/97	12/19/97
TCLP PURGEABLES -S				
78941.01	TP-F/I-FILL	12/02/97		12/16/97

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recycled paper

ecology and environment, inc.

Analytical Services Center
4493 Walden Avenue, Lancaster, New York, 14086, Tel. 716/685-8080, Fax 716/685-0852
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project No.	Project Name.	Project Manager:
QT7	WARD ROAD IIWA	SCOTT THORSELL

Samplers: (Signatures)

Field Team Leader: SCOTT THORSELL

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	TCL Volatiles	TCL Pest./PCBs	TCL BNA	TAL metals	TCLP Metals + Organics (VOAs, BNA, Metals)	REMARKS
TB	12/2/97	08:00		X		VOC, (low)	QT7-TB	2						
F/I		09:10		X		Metals Organics (med)	TP-F/I-FILL	2					2	
G		09:30		X		" " "	TP-G-GW	5	2	1	1	1		
G		09:45		X		" " "	TP-G-FILL	4	2	1	1	1		
K3		12:30		X		" " "	TP-K3-FILL	4	2	1	1	1		
B		13:10		X		" " "	TP-B-ASH	4	2	1	1	1		

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via: Hand Delivered by S. Thorsell
Relinquished By: (Signature)	Date/Time:	Received By (Signature)	Relinquished By (Signature)	Date/Time:	Received By: (Signature)	
Relinquished By: (Signature)	Date/Time: 12/7 1630	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	BL/Airbill Number: N/A

Date: 12-2-97

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form

0571194

D-15

DEFINED QUALIFIERS FOR ORGANIC ANALYSIS	
QUALIFIER	DEFINITION
U	Indicates that the compound was analyzed for but not detected. The sample quantitation limit is corrected for dilution and for percent moisture.
J	Indicates an estimated value. This flag is used when reporting a concentration for tentatively identified compounds, or when the mass spectral data indicate the presence of a compound but the result is less than the sample quantitation limit.
C	Applies to pesticide results where the identification has been confirmed by GC/MS.
B	Is used when the analyte is found in the associated blank as well as in the sample.
E	Identifies compounds whose concentrations exceed the calibration range of the instrument. The result should be considered an estimate of the concentration.
D	Identifies all compounds identified in an analysis of a diluted sample.
A	Indicates that a TIC is a suspected aldol-condensation product.
P	Is used for a pesticide/Aroclor target compound when there is greater than 25% difference for detected concentrations between the primary and confirmatory GC columns. The quantitation should be considered an estimate.
N	Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

DEFINED QUALIFIERS FOR INORGANIC ANALYSIS	
QUALIFIER	DEFINITION
	C (CONCENTRATION) COLUMN
B	The reported value was obtained from a reading that was less than the Contract Required Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL). For TCLP Metals indicates value greater than the IDL but below the Regulatory Limit.
U	The analyte was analyzed for but not detected.
	Q (QUALIFIER) COLUMN
E	The reported value is estimated because of the presence of interference.
M	Duplicate injection precision not met.
S	The reported value was determined by the Method of Standard Additions (MSA).
W	Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.
N	Spike analysis not within control limits.
*	Duplicate analysis not within control limits.
+	Correlation coefficient for the MSA is less then 0.995.
	M (METHOD) COLUMN
P	ICP
F	Furnace AA
CV	Manual Cold Vapor AA
AS	Semi-Automated Spectrophotometric
CA	Midi-Distillation Spectrophotometric

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

QT7TB

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) WATER Lab Sample ID: 78943

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C7829

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. Date Analyzed: 12/05/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

QT7TB

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) WATER Lab Sample ID: 78943

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C7829

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. Date Analyzed: 12/05/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPBASH

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78940

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2819

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. 26 Date Analyzed: 12/03/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	14	U
67-64-1	Acetone	4	BJ
75-15-0	Carbon Disulfide	14	U
75-35-4	1,1-Dichloroethene	14	U
75-34-3	1,1-Dichloroethane	14	U
540-59-0	1,2-Dichloroethene (total)	14	U
67-66-3	Chloroform	14	U
107-06-2	1,2-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
75-27-4	Bromodichloromethane	14	U
78-87-5	1,2-Dichloropropane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
79-01-6	Trichloroethene	14	U
124-48-1	Dibromochloromethane	14	U
79-00-5	1,1,2-Trichloroethane	14	U
71-43-2	Benzene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-88-3	Toluene	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U
100-42-5	Styrene	14	U
1330-20-7	Xylene (total)	14	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.: TPBASH

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78940

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2819

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. 26 Date Analyzed: 12/03/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

VOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.: TPGFILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2817

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. 54 Date Analyzed: 12/03/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	22	U
74-83-9	Bromomethane	22	U
75-01-4	Vinyl Chloride	22	U
75-00-3	Chloroethane	22	U
75-09-2	Methylene Chloride	22	U
67-64-1	Acetone	83	B
75-15-0	Carbon Disulfide	5	J
75-35-4	1,1-Dichloroethene	22	U
75-34-3	1,1-Dichloroethane	22	U
540-59-0	1,2-Dichloroethene (total)	22	U
67-66-3	Chloroform	22	U
107-06-2	1,2-Dichloroethane	22	U
78-93-3	2-Butanone	26	
71-55-6	1,1,1-Trichloroethane	22	U
56-23-5	Carbon Tetrachloride	22	U
75-27-4	Bromodichloromethane	22	U
78-87-5	1,2-Dichloropropane	22	U
10061-01-5	cis-1,3-Dichloropropene	22	U
79-01-6	Trichloroethene	22	U
124-48-1	Dibromochloromethane	22	U
79-00-5	1,1,2-Trichloroethane	22	U
71-43-2	Benzene	22	U
10061-02-6	trans-1,3-Dichloropropene	22	U
75-25-2	Bromoform	22	U
108-10-1	4-Methyl-2-Pentanone	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	22	U
79-34-5	1,1,2,2-Tetrachloroethane	22	U
108-88-3	Toluene	22	U
108-90-7	Chlorobenzene	22	U
100-41-4	Ethylbenzene	22	U
100-42-5	Styrene	22	U
1330-20-7	Xylene (total)	3	J

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

TPGFILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2817

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. 54 Date Analyzed: 12/03/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Propylbenzene isomer	23.49	42	J
2.	Trimethylbenzene isomer	24.39	19	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPGGW

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) WATER Lab Sample ID: 78942

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C7828

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. Date Analyzed: 12/05/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	21	
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	29	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.: TPGGW

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) WATER Lab Sample ID: 78942

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: C7828

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. Date Analyzed: 12/05/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Propylbenzene isomer	22.72	120	J
2.		Trimethylbenzene isomer	22.94	55	J
3.		Propylbenzene isomer	23.35	53	J
4.		Trimethylbenzene isomer	23.75	39	J
5.		Trimethylbenzene isomer	24.59	23	J
6.	496-11-7	Indane	24.91	5	JN
7.		Diethylbenzene isomer	25.13	8	J
8.		Butylbenzene isomer	25.33	6	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPK3FILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78939

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2818

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. 42 Date Analyzed: 12/03/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	17	U
67-64-1	Acetone	6	BJ
75-15-0	Carbon Disulfide	17	U
75-35-4	1,1-Dichloroethene	17	U
75-34-3	1,1-Dichloroethane	17	U
540-59-0	1,2-Dichloroethene (total)	17	U
67-66-3	Chloroform	17	U
107-06-2	1,2-Dichloroethane	17	U
78-93-3	2-Butanone	17	U
71-55-6	1,1,1-Trichloroethane	17	U
56-23-5	Carbon Tetrachloride	17	U
75-27-4	Bromodichloromethane	17	U
78-87-5	1,2-Dichloropropane	17	U
10061-01-5	cis-1,3-Dichloropropene	17	U
79-01-6	Trichloroethene	17	U
124-48-1	Dibromochloromethane	17	U
79-00-5	1,1,2-Trichloroethane	17	U
71-43-2	Benzene	17	U
10061-02-6	trans-1,3-Dichloropropene	17	U
75-25-2	Bromoform	17	U
108-10-1	4-Methyl-2-Pentanone	17	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	17	U
79-34-5	1,1,2,2-Tetrachloroethane	17	U
108-88-3	Toluene	17	U
108-90-7	Chlorobenzene	17	U
100-41-4	Ethylbenzene	17	U
100-42-5	Styrene	17	U
1330-20-7	Xylene (total)	17	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

TPK3FILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78939

Sample wt/vol: 5.0 (g/mL) G Lab File ID: F2818

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: not dec. 42 Date Analyzed: 12/03/97

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPBASH

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78940

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1459

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 26 decanted: (Y/N) N Date Extracted: 12/04/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/20/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	450	U
111-44-4	bis(2-Chloroethyl)Ether	450	U
95-57-8	2-Chlorophenol	450	U
541-73-1	1,3-Dichlorobenzene	450	U
106-46-7	1,4-Dichlorobenzene	450	U
95-50-1	1,2-Dichlorobenzene	450	U
95-48-7	2-Methylphenol	450	U
108-60-1	2,2'-oxybis(1-Chloropropane)	450	U
106-44-5	4-Methylphenol	450	U
621-64-7	N-Nitroso-Di-n-Propylamine	450	U
67-72-1	Hexachloroethane	450	U
98-95-3	Nitrobenzene	450	U
78-59-1	Isophorone	450	U
88-75-5	2-Nitrophenol	450	U
105-67-9	2,4-Dimethylphenol	450	U
111-91-1	bis(2-Chloroethoxy)Methane	450	U
120-83-2	2,4-Dichlorophenol	450	U
120-82-1	1,2,4-Trichlorobenzene	450	U
91-20-3	Naphthalene	450	U
106-47-8	4-Chloroaniline	450	U
87-68-3	Hexachlorobutadiene	450	U
59-50-7	4-Chloro-3-Methylphenol	450	U
91-57-6	2-Methylnaphthalene	450	U
77-47-4	Hexachlorocyclopentadiene	450	U
88-06-2	2,4,6-Trichlorophenol	450	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	450	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	450	U
208-96-8	Acenaphthylene	450	U
606-20-2	2,6-Dinitrotoluene	450	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	450	U
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPBASH

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78940

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1459

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 26 decanted: (Y/N) N Date Extracted: 12/04/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/20/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
132-64-9	Dibenzofuran	450	U
121-14-2	2,4-Dinitrotoluene	450	U
84-66-2	Diethylphthalate	450	U
7005-72-3	4-Chlorophenyl-phenylether	450	U
86-73-7	Fluorene	450	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	450	U
101-55-3	4-Bromophenyl-phenylether	450	U
118-74-1	Hexachlorobenzene	450	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	450	U
120-12-7	Anthracene	450	U
86-74-8	Carbazole	450	U
84-74-2	Di-n-Butylphthalate	450	U
206-44-0	Fluoranthene	450	U
129-00-0	Pyrene	450	U
85-68-7	Butylbenzylphthalate	450	U
91-94-1	3,3'-Dichlorobenzidine	450	U
56-55-3	Benzo(a)Anthracene	450	U
218-01-9	Chrysene	450	U
117-81-7	bis(2-Ethylhexyl)Phthalate	450	U
117-84-0	Di-n-Octyl Phthalate	450	U
205-99-2	Benzo(b)Fluoranthene	450	U
207-08-9	Benzo(k)Fluoranthene	450	U
50-32-8	Benzo(a)Pyrene	450	U
193-39-5	Indeno(1,2,3-cd)Pyrene	450	U
53-70-3	Dibenz(a,h)Anthracene	450	U
191-24-2	Benzo(g,h,i)Perylene	450	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

TPBASH

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78940

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1459

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 26 decanted: (Y/N) N Date Extracted: 12/04/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/20/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	8.69	140	J
2.		Unknown oxygenated hydrocarb	23.69	360	J
3.		Unknown oxygenated hydrocarb	26.54	320	BJ
4.		Unknown oxygenated hydrocarb	26.63	140	BJ
5.		Unknown oxygenated hydrocarb	27.12	1000	BJ
6.		Unknown	27.98	110	J
7.		Unknown oxygenated hydrocarb	29.32	93	J
8.		Unknown oxygenated hydrocarb	29.47	440	BJ
9.		Unknown oxygenated hydrocarb	29.60	930	BJ
10.		Unknown oxygenated hydrocarb	30.15	2000	BJ
11.		Unknown oxygenated hydrocarb	32.12	420	J
12.		Unknown oxygenated hydrocarb	32.22	600	BJ
13.		Unknown oxygenated hydrocarb	32.34	510	BJ
14.		Unknown oxygenated hydrocarb	32.73	1800	BJ
15.		Unknown hydrocarbon	33.97	330	J
16.		Unknown oxygenated hydrocarb	34.58	1600	BJ
17.		Unknown oxygenated hydrocarb	35.16	820	J
18.		Unknown oxygenated hydrocarb	36.98	1000	BJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPGFILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1457

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 54 decanted: (Y/N) N Date Extracted: 12/04/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/20/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	720	U
111-44-4	bis(2-Chloroethyl)Ether	720	U
95-57-8	2-Chlorophenol	720	U
541-73-1	1,3-Dichlorobenzene	720	U
106-46-7	1,4-Dichlorobenzene	720	U
95-50-1	1,2-Dichlorobenzene	720	U
95-48-7	2-Methylphenol	720	U
108-60-1	2,2'-oxybis(1-Chloropropane)	720	U
106-44-5	4-Methylphenol	720	U
621-64-7	N-Nitroso-Di-n-Propylamine	720	U
67-72-1	Hexachloroethane	720	U
98-95-3	Nitrobenzene	720	U
78-59-1	Isophorone	720	U
88-75-5	2-Nitrophenol	720	U
105-67-9	2,4-Dimethylphenol	720	U
111-91-1	bis(2-Chloroethoxy)Methane	720	U
120-83-2	2,4-Dichlorophenol	720	U
120-82-1	1,2,4-Trichlorobenzene	720	U
91-20-3	Naphthalene	720	U
106-47-8	4-Chloroaniline	720	U
87-68-3	Hexachlorobutadiene	720	U
59-50-7	4-Chloro-3-Methylphenol	720	U
91-57-6	2-Methylnaphthalene	720	U
77-47-4	Hexachlorocyclopentadiene	720	U
88-06-2	2,4,6-Trichlorophenol	720	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	720	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	720	U
208-96-8	Acenaphthylene	720	U
606-20-2	2,6-Dinitrotoluene	720	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	720	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPGFILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1457

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 54 decanted: (Y/N) N Date Extracted: 12/04/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/20/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
132-64-9	Dibenzofuran	720	U
121-14-2	2,4-Dinitrotoluene	720	U
84-66-2	Diethylphthalate	720	U
7005-72-3	4-Chlorophenyl-phenylether	720	U
86-73-7	Fluorene	720	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	720	U
101-55-3	4-Bromophenyl-phenylether	720	U
118-74-1	Hexachlorobenzene	720	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	720	U
120-12-7	Anthracene	720	U
86-74-8	Carbazole	720	U
84-74-2	Di-n-Butylphthalate	720	U
206-44-0	Fluoranthene	720	U
129-00-0	Pyrene	720	U
85-68-7	Butylbenzylphthalate	720	U
91-94-1	3,3'-Dichlorobenzidine	720	U
56-55-3	Benzo(a)Anthracene	720	U
218-01-9	Chrysene	720	U
117-81-7	bis(2-Ethylhexyl)Phthalate	720	U
117-84-0	Di-n-Octyl Phthalate	720	U
205-99-2	Benzo(b)Fluoranthene	720	U
207-08-9	Benzo(k)Fluoranthene	720	U
50-32-8	Benzo(a)Pyrene	720	U
193-39-5	Indeno(1,2,3-cd)Pyrene	720	U
53-70-3	Dibenz(a,h)Anthracene	720	U
191-24-2	Benzo(g,h,i)Perylene	720	U

(1) - Cannot be separated from Diphenylamine

317

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.

TPGFILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1457

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 54 decanted: (Y/N) N Date Extracted: 12/04/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/20/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown oxygenated hydrocarb	26.62	270	BJ
2.		Unknown oxygenated hydrocarb	29.59	310	BJ
3.		Unknown oxygenated hydrocarb	30.10	900	BJ
4.		Unknown oxygenated hydrocarb	33.04	420	J
5.		Unknown hydrocarbon	33.98	360	J
6.		Unknown hydrocarbon	35.14	960	J
7.		Unknown oxygenated hydrocarb	35.80	670	J
8.		Unknown oxygenated hydrocarb	36.39	1100	J
9.		Unknown oxygenated hydrocarb	37.88	540	J
10.		Unknown	38.64	740	J
11.		Unknown	38.87	1300	J
12.		Unknown oxygenated hydrocarb	39.43	2400	J
13.		Unknown oxygenated hydrocarb	39.60	1700	J
14.		Unknown oxygenated hydrocarb	40.21	1100	J
15.		Unknown oxygenated hydrocarb	40.39	800	J
16.		Unknown oxygenated hydrocarb	40.77	2000	J
17.		Unknown oxygenated hydrocarb	41.53	650	J
18.		Unknown	42.06	480	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPGFILLRE

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938RE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1485

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 54 decanted: (Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/29/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	710	U
111-44-4	bis(2-Chloroethyl)Ether	710	U
95-57-8	2-Chlorophenol	710	U
541-73-1	1,3-Dichlorobenzene	710	U
106-46-7	1,4-Dichlorobenzene	710	U
95-50-1	1,2-Dichlorobenzene	710	U
95-48-7	2-Methylphenol	710	U
108-60-1	2,2'-oxybis(1-Chloropropane)	710	U
106-44-5	4-Methylphenol	710	U
621-64-7	N-Nitroso-Di-n-Propylamine	710	U
67-72-1	Hexachloroethane	710	U
98-95-3	Nitrobenzene	710	U
78-59-1	Isophorone	710	U
88-75-5	2-Nitrophenol	710	U
105-67-9	2,4-Dimethylphenol	710	U
111-91-1	bis(2-Chloroethoxy)Methane	710	U
120-83-2	2,4-Dichlorophenol	710	U
120-82-1	1,2,4-Trichlorobenzene	710	U
91-20-3	Naphthalene	710	U
106-47-8	4-Chloroaniline	710	U
87-68-3	Hexachlorobutadiene	710	U
59-50-7	4-Chloro-3-Methylphenol	710	U
91-57-6	2-Methylnaphthalene	710	U
77-47-4	Hexachlorocyclopentadiene	710	U
88-06-2	2,4,6-Trichlorophenol	710	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	710	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	710	U
208-96-8	Acenaphthylene	710	U
606-20-2	2,6-Dinitrotoluene	710	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	710	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPGFILLRE

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938RE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1485

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 54 decanted: (Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/29/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
132-64-9	Dibenzofuran	710	U
121-14-2	2,4-Dinitrotoluene	710	U
84-66-2	Diethylphthalate	710	U
7005-72-3	4-Chlorophenyl-phenylether	710	U
86-73-7	Fluorene	710	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	710	U
101-55-3	4-Bromophenyl-phenylether	710	U
118-74-1	Hexachlorobenzene	710	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	490	J
120-12-7	Anthracene	94	J
86-74-8	Carbazole	130	J
84-74-2	Di-n-Butylphthalate	710	U
206-44-0	Fluoranthene	570	J
129-00-0	Pyrene	750	
85-68-7	Butylbenzylphthalate	710	U
91-94-1	3,3'-Dichlorobenzidine	710	U
56-55-3	Benzo(a)Anthracene	440	J
218-01-9	Chrysene	400	J
117-81-7	bis(2-Ethylhexyl)Phthalate	220	J
117-84-0	Di-n-Octyl Phthalate	710	U
205-99-2	Benzo(b)Fluoranthene	620	J
207-08-9	Benzo(k)Fluoranthene	710	U
50-32-8	Benzo(a)Pyrene	330	J
193-39-5	Indeno(1,2,3-cd)Pyrene	340	J
53-70-3	Dibenz(a,h)Anthracene	150	J
191-24-2	Benzo(g,h,i)Perylene	300	J

(1) - Cannot be separated from Diphenylamine

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1F

DEC SAMPLE NO.

TPGFILLRE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938RE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1485

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 54 decanted: (Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/29/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.7

Number TICs found: 23

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	8.70	500	J
2.		Unknown	20.46	330	J
3.		Unknown oxygenated hydrocarb	23.67	1200	JB
4.		Unknown	25.12	310	J
5.		Unknown	25.70	370	J
6.		Unknown	25.97	700	J
7.		Unknown	26.25	420	J
8.		Unknown	26.73	4700	J
9.		Unknown	26.88	360	J
10.		Unknown oxygenated hydrocarb	27.13	1400	J
11.		Unknown PAH	28.15	680	J
12.		Unknown oxygenated hydrocarb	29.54	460	J
13.		Unknown oxygenated hydrocarb	29.61	590	J
14.		Unknown oxygenated hydrocarb	30.18	2200	J
15.		Unknown	32.14	360	J
16.		Unknown	36.41	1200	J
17.		Unknown	39.52	2900	J
18.		Unknown	39.67	2000	J
19.		Unknown	40.17	640	J
20.		Unknown	40.27	1100	J
21.		Unknown	40.47	1300	J
22.		Unknown	40.87	3800	J
23.		Unknown	41.60	970	J

FORM I SV-TIC 10/95

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.: TPGGW

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) WATER Lab Sample ID: 78942

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E1454

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: decanted: (Y/N) Date Extracted: 12/05/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	2	J
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.: TPGGW

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) WATER Lab Sample ID: 78942

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E1454

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: decanted: (Y/N) Date Extracted: 12/05/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
132-64-9	Dibenzofuran	10	U
121-14-2	2,4 Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

399

1F

DEC SAMPLE NO.

TPGGW

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) WATER Lab Sample ID: 78942

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E1454

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: decanted: (Y/N) Date Extracted: 12/05/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/19/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Propylbenzene isomer	7.38	83	J
2.		Trimethylbenzene isomer	7.54	36	J
3.		Propylbenzene isomer	7.82	37	J
4.		Trimethylbenzene isomer	8.18	53	J
5.		Trimethylbenzene isomer	8.89	22	J
6.		Butylbenzene isomer	9.53	7	J
7.		Butylbenzene isomer	9.74	4	J
8.		Unknown carboxylic acid	11.14	3	J
9.		Methylacetophenone isomer	11.55	3	J
10.		Unknown terpenoid	11.71	4	J
11.		Methylacetophenone isomer	12.32	3	J
12.		Methylacetophenone isomer	12.57	3	J
13.		Ethylbenzyl alcohol	13.41	2	J
14.		Unknown	13.60	4	J
15.		Trimethylphenol isomer	13.73	2	J
16.		Methylbenzoic acid isomer	14.05	11	J
17.		Indanone isomer	14.48	7	J
18.		Dimethylbenzoic acid isomer	15.33	5	J
19.		Dimethylbenzoic acid isomer	15.45	4	J
20.		Benzofuranone isomer	15.76	8	J
21.		Dimethylbenzoic acid isomer	16.10	9	J
22.		Dimethylbenzoic acid isomer	16.19	19	J
23.		Dimethylbenzoic acid isomer	16.39	9	J
24.		Dimethylbenzoic acid isomer	16.90	6	J
25.		Unknown terpenoid	17.04	5	J
26.		Unknown	23.49	5	J
27.	81-84-5	1,8-Naphthalic anhydride	26.08	8	JN
28.		Unknown oxygenated hydrocarb	32.37	41	J
29.		Unknown	32.73	34	J
30.		Unknown oxygenated hydrocarb	33.71	49	J

400

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPK3FILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78939

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1458

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 42 decanted: (Y/N) N Date Extracted: 12/04/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/20/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	570	U
111-44-4	bis(2-Chloroethyl)Ether	570	U
95-57-8	2-Chlorophenol	570	U
541-73-1	1,3-Dichlorobenzene	570	U
106-46-7	1,4-Dichlorobenzene	570	U
95-50-1	1,2-Dichlorobenzene	570	U
95-48-7	2-Methylphenol	570	U
108-60-1	2,2'-oxybis(1-Chloropropane)	570	U
106-44-5	4-Methylphenol	570	U
621-64-7	N-Nitroso-Di-n-Propylamine	570	U
67-72-1	Hexachloroethane	570	U
98-95-3	Nitrobenzene	570	U
78-59-1	Isophorone	570	U
88-75-5	2-Nitrophenol	570	U
105-67-9	2,4-Dimethylphenol	570	U
111-91-1	bis(2-Chloroethoxy)Methane	570	U
120-83-2	2,4-Dichlorophenol	570	U
120-82-1	1,2,4-Trichlorobenzene	570	U
91-20-3	Naphthalene	570	U
106-47-8	4-Chloroaniline	570	U
87-68-3	Hexachlorobutadiene	570	U
59-50-7	4-Chloro-3-Methylphenol	570	U
91-57-6	2-Methylnaphthalene	570	U
77-47-4	Hexachlorocyclopentadiene	570	U
88-06-2	2,4,6-Trichlorophenol	570	U
95-95-4	2,4,5-Trichlorophenol	1400	U
91-58-7	2-Chloronaphthalene	570	U
88-74-4	2-Nitroaniline	1400	U
131-11-3	Dimethylphthalate	570	U
208-96-8	Acenaphthylene	570	U
606-20-2	2,6-Dinitrotoluene	570	U
99-09-2	3-Nitroaniline	1400	U
83-32-9	Acenaphthene	570	U
51-28-5	2,4-Dinitrophenol	1400	U
100-02-7	4-Nitrophenol	1400	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TPK3FILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78939

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1458

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 42 decanted: (Y/N) N Date Extracted: 12/04/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/20/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
132-64-9	Dibenzofuran	570	U
121-14-2	2,4-Dinitrotoluene	570	U
84-66-2	Diethylphthalate	570	U
7005-72-3	4-Chlorophenyl-phenylether	570	U
86-73-7	Fluorene	570	U
100-01-6	4-Nitroaniline	1400	U
534-52-1	4,6-Dinitro-2-methylphenol	1400	U
86-30-6	N-Nitrosodiphenylamine (1)	570	U
101-55-3	4-Bromophenyl-phenylether	570	U
118-74-1	Hexachlorobenzene	570	U
87-86-5	Pentachlorophenol	1400	U
85-01-8	Phenanthrene	570	U
120-12-7	Anthracene	570	U
86-74-8	Carbazole	570	U
84-74-2	Di-n-Butylphthalate	570	U
206-44-0	Fluoranthene	570	U
129-00-0	Pyrene	570	U
85-68-7	Butylbenzylphthalate	570	U
91-94-1	3,3'-Dichlorobenzidine	570	U
56-55-3	Benzo(a)Anthracene	570	U
218-01-9	Chrysene	570	U
117-81-7	bis(2-Ethylhexyl)Phthalate	570	U
117-84-0	Di-n-Octyl Phthalate	570	U
205-99-2	Benzo(b)Fluoranthene	570	U
207-08-9	Benzo(k)Fluoranthene	570	U
50-32-8	Benzo(a)Pyrene	570	U
193-39-5	Indeno(1,2,3-cd)Pyrene	570	U
53-70-3	Dibenz(a,h)Anthracene	570	U
191-24-2	Benzo(g,h,i)Perylene	570	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DEC SAMPLE NO.: TPK3FILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78939

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1458

Level: (low/med) LOW Date Received: 12/02/97

% Moisture: 42 decanted: (Y/N) N Date Extracted: 12/04/97

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 12/20/97

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4

Number TICs found: 22 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	8.23	230	J
2.		Unknown	8.71	230	J
3.		Unknown oxygenated hydrocarb	23.76	410	BJ
4.		Unknown oxygenated hydrocarb	26.63	550	BJ
5.		Unknown oxygenated hydrocarb	27.11	560	BJ
6.		Unknown oxygenated hydrocarb	29.48	250	BJ
7.		Unknown oxygenated hydrocarb	29.59	260	BJ
8.		Unknown oxygenated hydrocarb	29.71	260	J
9.		Unknown oxygenated hydrocarb	30.15	970	BJ
10.		Unknown oxygenated hydrocarb	32.13	190	J
11.		Unknown oxygenated hydrocarb	32.23	440	BJ
12.		Unknown hydrocarbon	32.74	1900	J
13.		Unknown hydrocarbon	33.70	390	J
14.		Unknown hydrocarbon	34.59	2100	J
15.		Unknown oxygenated hydrocarb	34.74	1300	BJ
16.		Unknown oxygenated hydrocarb	35.14	790	J
17.		Unknown oxygenated hydrocarb	35.60	690	J
18.		Unknown hydrocarbon	36.39	400	J
19.		Unknown oxygenated hydrocarb	36.54	510	J
20.		Unknown	36.80	380	J
21.		Unknown	38.83	550	J
22.		Unknown	40.10	420	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TP-B-ASH

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78940

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 26 decanted: (Y/N) N Date Received: 12/02/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/29/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/09/98

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.6	U
319-85-7	beta-BHC	4.6	U
319-86-8	delta-BHC	4.6	U
58-89-9	gamma-BHC (Lindane)	4.6	U
76-44-8	Heptachlor	4.6	U
309-00-2	Aldrin	4.6	U
1024-57-3	Heptachlor epoxide	4.6	U
959-98-8	Endosulfan I	4.6	U
60-57-1	Dieldrin	8.9	U
72-55-9	4,4'-DDE	8.9	U
72-20-8	Endrin	8.9	U
33213-65-9	Endosulfan II	8.9	U
72-54-8	4,4'-DDD	8.9	U
1031-07-8	Endosulfan sulfate	8.9	U
50-29-3	4,4'-DDT	8.9	U
72-43-5	Methoxychlor	550	
53494-70-5	Endrin ketone	8.9	U
7421-93-4	Endrin aldehyde	8.9	U
5103-71-9	alpha-Chlordane	4.6	U
5103-74-2	gamma-Chlordane	4.6	U
8001-35-2	Toxaphene	460	U
12674-11-2	Aroclor-1016	89	U
11104-28-2	Aroclor-1221	180	U
11141-16-5	Aroclor-1232	89	U
53469-21-9	Aroclor-1242	89	U
12672-29-6	Aroclor-1248	89	U
11097-69-1	Aroclor-1254	89	U
11096-82-5	Aroclor-1260	89	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TP-B-ASHDL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78940DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 26 decanted: (Y/N) N Date Received: 12/02/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/29/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/09/98

Injection Volume: 2.00 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	46	U
319-85-7	beta-BHC	46	U
319-86-8	delta-BHC	46	U
58-89-9	gamma-BHC (Lindane)	46	U
76-44-8	Heptachlor	46	U
309-00-2	Aldrin	46	U
1024-57-3	Heptachlor epoxide	46	U
959-98-8	Endosulfan I	46	U
60-57-1	Dieldrin	89	U
72-55-9	4,4'-DDE	89	U
72-20-8	Endrin	89	U
33213-65-9	Endosulfan II	89	U
72-54-8	4,4'-DDD	89	U
1031-07-8	Endosulfan sulfate	89	U
50-29-3	4,4'-DDT	89	U
72-43-5	Methoxychlor	700	D
53494-70-5	Endrin ketone	89	U
7421-93-4	Endrin aldehyde	89	U
5103-71-9	alpha-Chlordane	46	U
5103-74-2	gamma-Chlordane	46	U
8001-35-2	Toxaphene	4600	U
12674-11-2	Aroclor-1016	890	U
11104-28-2	Aroclor-1221	1800	U
11141-16-5	Aroclor-1232	890	U
53469-21-9	Aroclor-1242	890	U
12672-29-6	Aroclor-1248	890	U
11097-69-1	Aroclor-1254	890	U
11096-82-5	Aroclor-1260	890	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TP-G-FILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 54 decanted: (Y/N) N Date Received: 12/02/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/29/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/09/98

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	7.4	U
319-85-7	beta-BHC	7.4	U
319-86-8	delta-BHC	7.4	U
58-89-9	gamma-BHC (Lindane)	7.4	U
76-44-8	Heptachlor	7.9	P
309-00-2	Aldrin	7.4	U
1024-57-3	Heptachlor epoxide	7.4	U
959-98-8	Endosulfan I	7.4	U
60-57-1	Dieldrin	19	P
72-55-9	4,4'-DDE	66	
72-20-8	Endrin	14	U
33213-65-9	Endosulfan II	14	U
72-54-8	4,4'-DDD	97	
1031-07-8	Endosulfan sulfate	14	U
50-29-3	4,4'-DDT	28	P
72-43-5	Methoxychlor	24	J
53494-70-5	Endrin ketone	14	U
7421-93-4	Endrin aldehyde	14	U
5103-71-9	alpha-Chlordane	320	
5103-74-2	gamma-Chlordane	380	
8001-35-2	Toxaphene	740	U
12674-11-2	Aroclor-1016	140	U
11104-28-2	Aroclor-1221	290	U
11141-16-5	Aroclor-1232	140	U
53469-21-9	Aroclor-1242	140	U
12672-29-6	Aroclor-1248	140	U
11097-69-1	Aroclor-1254	140	U
11096-82-5	Aroclor-1260	140	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TP-G-FILLDL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78938DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 54 decanted: (Y/N) N Date Received: 12/02/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/29/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/09/98

Injection Volume: 2.00 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	74	U
319-85-7	beta-BHC	74	U
319-86-8	delta-BHC	74	U
58-89-9	gamma-BHC (Lindane)	74	U
76-44-8	Heptachlor	74	U
309-00-2	Aldrin	74	U
1024-57-3	Heptachlor epoxide	74	U
959-98-8	Endosulfan I	74	U
60-57-1	Dieldrin	140	U
72-55-9	4,4'-DDE	140	U
72-20-8	Endrin	140	U
33213-65-9	Endosulfan II	140	U
72-54-8	4,4'-DDD	140	U
1031-07-8	Endosulfan sulfate	140	U
50-29-3	4,4'-DDT	140	U
72-43-5	Methoxychlor	740	U
53494-70-5	Endrin ketone	140	U
7421-93-4	Endrin aldehyde	140	U
5103-71-9	alpha-Chlordane	400	D
5103-74-2	gamma-Chlordane	460	D
8001-35-2	Toxaphene	7400	U
12674-11-2	Aroclor-1016	1400	U
11104-28-2	Aroclor-1221	2900	U
11141-16-5	Aroclor-1232	1400	U
53469-21-9	Aroclor-1242	1400	U
12672-29-6	Aroclor-1248	1400	U
11097-69-1	Aroclor-1254	1400	U
11096-82-5	Aroclor-1260	1400	U

FORM I PEST 10/85

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TP-G-GW

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) WATER Lab Sample ID: 78942

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 12/02/97

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 12/05/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/09/98

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

DEC SAMPLE NO.

TP-K3-FILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Matrix: (soil/water) SOIL Lab Sample ID: 78939

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 42 decanted: (Y/N) N Date Received: 12/02/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 12/29/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 01/09/98

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	5.9	U
319-85-7	beta-BHC	5.9	U
319-86-8	delta-BHC	5.9	U
58-89-9	gamma-BHC (Lindane)	5.9	U
76-44-8	Heptachlor	5.9	U
309-00-2	Aldrin	5.9	U
1024-57-3	Heptachlor epoxide	5.9	U
959-98-8	Endosulfan I	5.9	U
60-57-1	Dieldrin	11	U
72-55-9	4,4'-DDE	11	U
72-20-8	Endrin	11	U
33213-65-9	Endosulfan II	11	U
72-54-8	4,4'-DDD	11	U
1031-07-8	Endosulfan sulfate	11	U
50-29-3	4,4'-DDT	11	U
72-43-5	Methoxychlor	59	U
53494-70-5	Endrin ketone	11	U
7421-93-4	Endrin aldehyde	11	U
5103-71-9	alpha-Chlordane	5.9	U
5103-74-2	gamma-Chlordane	5.9	U
8001-35-2	Toxaphene	590	U
12674-11-2	Aroclor-1016	110	U
11104-28-2	Aroclor-1221	230	U
11141-16-5	Aroclor-1232	110	U
53469-21-9	Aroclor-1242	110	U
12672-29-6	Aroclor-1248	110	U
11097-69-1	Aroclor-1254	110	U
11096-82-5	Aroclor-1260	110	U

10A

DEC SAMPLE NO.

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

TP-B-ASH

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Lab Sample ID : 78940 Dates(s) Analyzed: 01/09/98 01/09/98

Instrument ID (1): 58902A Instrument ID (2): 58902B

GC Column(1): RTX-5 ID: 0.53(mm) GC Column(2): RTX-35 ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Methoxychlor	1	25.65	25.57	25.71	584	
	2	24.84	24.76	24.90	550	6.2

10A

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

DEC SAMPLE NO.

TP-B-ASHDL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Lab Sample ID : 78940DL Dates(s) Analyzed: 01/09/98 01/09/98

Instrument ID (1): 58902A Instrument ID (2): 58902B

GC Column(1): RTX-5 ID: 0.53(mm) GC Column(2): RTX-35 ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Methoxychlor	1	25.65	25.57	25.71	825	
	2	24.85	24.76	24.90	702	17.5

10A

DEC SAMPLE NO.

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

TP-G-FILL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Lab Sample ID : 78938 Dates(s) Analyzed: 01/09/98 01/09/98

Instrument ID (1): 58902A Instrument ID (2): 58902B

GC Column(1): RTX-5 ID: 0.53(mm) GC Column(2): RTX-35 ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Heptachlor	1	16.06	16.06	16.16	31.2	
	2	13.63	13.61	13.71	7.91	294.4
Dieldrin	1	21.15	21.06	21.20	38.6	
	2	19.23	19.14	19.28	19.2	101.0
4,4'-DDE	1	20.88	20.80	20.94	66.5	
	2	19.00	18.91	19.05	72.4	8.9
4,4'-DDD	1	22.38	22.30	22.44	104	
	2	20.95	20.86	21.00	97.1	7.1
4,4'-DDT	1	23.72	23.64	23.78	28.1	
	2	22.04	21.95	22.09	37.3	32.7
Methoxychlor	1	25.67	25.57	25.71	23.7	
	2	24.83	24.76	24.90	24.4	3.0
alpha-Chlordane	1	20.27	20.19	20.33	382	
	2	18.13	18.04	18.18	318	20.1
gamma-Chlordane	1	19.72	19.64	19.78	438	
	2	17.57	17.49	17.63	375	16.8

10A

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

DEC SAMPLE NO.

TP-G-FILLDL

Lab Name: E & E INC. Contract:

Lab Code: EANDE Case No.: 9702.951 SAS No.: SDG No.: 78938

Lab Sample ID : 78938DL Dates(s) Analyzed: 01/09/98 01/09/98

Instrument ID (1): 58902A Instrument ID (2): 58902B

GC Column(1): RTX-5 ID: 0.53(mm) GC Column(2): RTX-35 ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
alpha-Chlordane	1	20.27	20.19	20.33	408	
	2	18.12	18.04	18.18	404	1.0
gamma-Chlordane	1	19.72	19.64	19.78	459	
	2	17.57	17.49	17.63	461	0.4

1 NYSDEC SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

TP-B-ASH

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____
Lab Code: EANDE_ Case No.: 9702.951 SAS No.: _____ SDG No.: 78938_
Matrix (soil/water): SOIL_ Lab Sample ID: 78940
Level (low/med): LOW_ Date Received: 12/02/97
% Solids: _74.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4710			P
7440-36-0	Antimony	0.48	U		P
7440-38-2	Arsenic	1.4	B		P
7440-39-3	Barium	483			P
7440-41-7	Beryllium	0.19	B		P
7440-43-9	Cadmium	0.70	B		P
7440-70-2	Calcium	137000			P
7440-47-3	Chromium	25.6			P
7440-48-4	Cobalt	2.7	B		P
7440-50-8	Copper	91.9			P
7439-89-6	Iron	6030			P
7439-92-1	Lead	220			P
7439-95-4	Magnesium	5430			P
7439-96-5	Manganese	192			P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	8.4	B		P
7440-09-7	Potassium	684	B		P
7782-49-2	Selenium	1.2	U		P
7440-22-4	Silver	0.51	U		P
7440-23-5	Sodium	40.3	U		P
7440-28-0	Thallium	2.4	B		P
7440-62-2	Vanadium	9.6	B		P
7440-66-6	Zinc	313			P

Color Before: BR_____ Clarity Before: _____ Texture: _____
Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:
CLIENT_SAMPLE_ID_:_TP-B-ASH_____

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

TP GFILL

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____
Lab Code: EANDE_ Case No.: 9702.951 SAS No.: _____ SDG No.: 78938_
Matrix (soil/water): SOIL_ Lab Sample ID: 78938
Level (low/med): LOW__ Date Received: 12/02/97
% Solids: _46.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22600			P
7440-36-0	Antimony	1.0	B		P
7440-38-2	Arsenic	6.3			P
7440-39-3	Barium	152			P
7440-41-7	Beryllium	1.3	B		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	75800			P
7440-47-3	Chromium	24.9			P
7440-48-4	Cobalt	20.0	B		P
7440-50-8	Copper	36.9			P
7439-89-6	Iron	40500			P
7439-92-1	Lead	25.0			P
7439-95-4	Magnesium	11800			P
7439-96-5	Manganese	889			P
7439-97-6	Mercury	0.23			CV
7440-02-0	Nickel	46.0			P
7440-09-7	Potassium	4830			P
7782-49-2	Selenium	3.1			P
7440-22-4	Silver	0.82	U		P
7440-23-5	Sodium	101	B		P
7440-28-0	Thallium	3.7	B		P
7440-62-2	Vanadium	50.6			P
7440-66-6	Zinc	252			P

Color Before: BR_____ Clarity Before: _____ Texture: _____
Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:
CLIENT_SAMPLE_ID_:_TP-G-FILL_____

1

NYSDEC SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

TP-G-GW

Lab Name: ECOLOGY_AND_ENVIRONMENT Contract: _____
Lab Code: EANDE Case No.: 9702.951 SAS No.: _____ SDG No.: 78938
Matrix (soil/water): WATER Lab Sample ID: 78942
Level (low/med): LOW Date Received: 12/02/97
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13400			P
7440-36-0	Antimony	1.8	U		P
7440-38-2	Arsenic	17.3			P
7440-39-3	Barium	289		E	P
7440-41-7	Beryllium	0.73	B		P
7440-43-9	Cadmium	2.5	U		P
7440-70-2	Calcium	304000			P
7440-47-3	Chromium	19.2			P
7440-48-4	Cobalt	8.5	B		P
7440-50-8	Copper	34.0			P
7439-89-6	Iron	18200			P
7439-92-1	Lead	250		E	P
7439-95-4	Magnesium	73200			P
7439-96-5	Manganese	1460		E	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	20.4	B		P
7440-09-7	Potassium	23500			P
7782-49-2	Selenium	4.5	U		P
7440-22-4	Silver	1.9	U		P
7440-23-5	Sodium	18800		E	P
7440-28-0	Thallium	5.9	B		P
7440-62-2	Vanadium	21.4	B		P
7440-66-6	Zinc	353		E	P

Color Before: BR Clarity Before: CL Texture:
Color After: CL Clarity After: C Artifacts:

Comments:
CLIENT_SAMPLE_ID_: TP-G-GW

1 NYSDEC SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

TP - K3FILL

Lab Name: ECOLOGY_AND_ENVIRONMENT Contract: _____
Lab Code: EANDE Case No.: 9702.951 SAS No.: _____ SDG No.: 78938
Matrix (soil/water): SOIL Lab Sample ID: 78939
Level (low/med): LOW Date Received: 12/02/97
% Solids: 58.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	35600			P
7440-36-0	Antimony	0.62	U		P
7440-38-2	Arsenic	5.3			P
7440-39-3	Barium	286			P
7440-41-7	Beryllium	1.6	B		P
7440-43-9	Cadmium	0.86	U		P
7440-70-2	Calcium	11500			P
7440-47-3	Chromium	52.1			P
7440-48-4	Cobalt	12.0	B		P
7440-50-8	Copper	27.5			P
7439-89-6	Iron	30800			P
7439-92-1	Lead	96.5			P
7439-95-4	Magnesium	10400			P
7439-96-5	Manganese	331			P
7439-97-6	Mercury	0.28			CV
7440-02-0	Nickel	36.3			P
7440-09-7	Potassium	3780			P
7782-49-2	Selenium	7.4			P
7440-22-4	Silver	0.66	U		P
7440-23-5	Sodium	916	B		P
7440-28-0	Thallium	3.1	B		P
7440-62-2	Vanadium	41.6			P
7440-66-6	Zinc	712			P

Color Before: BR Clarity Before: _____ Texture: _____
Color After: CL Clarity After: C Artifacts: _____

Comments:
CLIENT_SAMPLE_ID_:_TP-K3-FILL

REGULATED TCLP METALS

SAMPLE RESULTS

SAMPLE NO.

TP-F/IFILL

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____

Lab Code: EANDE_ Case No.: 9702.951 SAS No.: _____ SDG No.: 78938_

Matrix (soil/water): SOIL Lab Sample ID: 78941

Level (low/med): LOW__ Date Received: 12/02/97

Concentration Units (mg/L): MG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.0046	U		P
7440-39-3	Barium	0.35	B	E	P
7440-43-9	Cadmium	0.00070	U		P
7440-47-3	Chromium	0.00080	U		P
7439-92-1	Lead	0.0070	B		P
7439-97-6	Mercury	0.010	U		CV
7782-49-2	Selenium	0.0045	U		P
7440-22-4	Silver	0.00070	U		P

Color Before: CL_____ Clarity Before: C_____ Texture: _____

Color After: Y_____ Clarity After: C_____ Artifacts: _____

Comments:
CLIENT_SAMPLE_ID_:_TP-F/I-FILL
THIS_SAMPLE_IS_A_TCLP_EXTRACT

884

REGULATED TCLP METALS

SAMPLE RESULTS

SAMPLE NO.

TCLPBLK

Lab Name: ECOLOGY_AND_ENVIRONMENT__ Contract: _____

Lab Code: EANDE_ Case No.: 9702.951 SAS No.: _____ SDG No.: 78938_

Matrix (soil/water): WATER Lab Sample ID: TCLPBLK

Level (low/med): LOW__ Date Received: 12/02/97

Concentration Units (mg/L): MG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.0046	U		P
7440-39-3	Barium	0.18	B	E	P
7440-43-9	Cadmium	0.00070	U		P
7440-47-3	Chromium	0.0017	B		P
7439-92-1	Lead	0.0088	B		P
7439-97-6	Mercury	0.010	U		CV
7782-49-2	Selenium	0.022	B		P
7440-22-4	Silver	0.00070	U		P

Color Before: CL_____ Clarity Before: C_____ Texture: _____

Color After: CL_____ Clarity After: C_____ Artifacts: _____

Comments:
TCLP_METHOD_BLANK_:_1191-82-1
THIS_SAMPLE_IS_A_TCLP_EXTRACT

885

Results of Analysis of TCLP Extracts Job Number :9702.951
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : QT-7000 WARD ROAD IIWA - TEST PITS
SAMPLE ID LAB :EE-97-78941
SAMPLE ID CLIENT: TP-F/I-FILL
MATRIX: SOLID
UNITS : MG/L
DILUTION FACTOR = 10

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Benzene	ND		0.050	0.50
Carbon tetrachloride	ND		0.050	0.50
Chlorobenzene	ND		0.050	100
Chloroform	ND		0.050	6.0
1,2-Dichloroethane	ND		0.050	0.50
1,1-Dichloroethene	ND		0.050	0.70
2-Butanone	ND		0.10	200
Tetrachloroethene	ND		0.050	0.70
Vinyl chloride	ND		0.10	0.20
Trichloroethene	ND		0.050	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE

1130

Results of Analysis of TCLP Extracts Job Number :9702.951
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : QT-7000 WARD ROAD IIWA - TEST PITS
SAMPLE ID LAB :EE-97-78941
SAMPLE ID CLIENT: TP-F/I-FILL
MATRIX: SOLID
UNITS : MG/L
DILUTION FACTOR = 1

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Pentachlorophenol	ND		0.050	100
2,4,5-Trichlorophenol	ND		0.050	400
2,4,6-Trichlorophenol	ND		0.010	2.0
2-Methylphenol	ND		0.010	200
3-and/or 4-Methylphenol	ND		0.020	200
Hexachlorobenzene	ND		0.010	0.13
Hexachlorobutadiene	ND		0.010	0.50
Hexachloroethane	ND		0.010	3.0
Nitrobenzene	ND		0.010	2.0
2,4-Dinitrotoluene	ND		0.010	0.13
Pyridine	ND		0.10	5.0
1,4-Dichlorobenzene	ND		0.010	7.5

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE

1200

Results of Analysis of TCLP Extracts Job Number :9702.951
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : QT-7000 WARD ROAD IIWA - TEST PITS
SAMPLE ID LAB :EE-97-78941 MATRIX: SOLID
SAMPLE ID CLIENT: TP-F/I-FILL UNITS : MG/L
DILUTION FACTOR = 20

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
Chlordane	ND		0.020	0.030
Endrin	ND		0.0050	0.020
Heptachlor	ND		0.0025	0.0080
gamma-BHC (Lindane)	ND		0.0025	0.40
Methoxychlor	ND		0.20	10
Heptachlor epoxide	ND		0.0050	0.0080
Toxaphene	ND		0.10	0.50

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE

1301

Results of Analysis of TCLP Extracts Job Number :9702.951
ELAP ID : 10486

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : QT-7000 WARD ROAD IIWA - TEST PITS
SAMPLE ID LAB :EE-97-78941
SAMPLE ID CLIENT: TP-F/I-FILL
MATRIX: SOLID
UNITS : MG/L
DILUTION FACTOR = 100

PARAMETER	RESULTS	Q	QUANTITATION LIMIT	REGULATORY LEVEL
2,4-D	ND		0.25	10
2,4,5-TP (Silvex)	ND		0.025	1.0

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE

1419