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ORGANICS O.K.

DRAFT APPROVAL LETTER WRITTEN 9/11/92

ECKENFELDER
ENGINEERING P.C.

RFA SAMPLING VISIT
PRETREATMENT PLANT
CIBA-GEIGY SITE
GLENS FALLS, NEW YORK

Prepared for:

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July 1992

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1.0 INTRODUCTION

This report presents the results of the RFA Sampling Visit at the Pretreatment Plant in response to the Hazardous Waste Management (HWM) Permit and Hazardous and Solid Waste Amendments (HSWA) Permit issued for the CIBA-GEIGY Site in Glens Falls, New York. The RFA Sampling Visit is a component of the RCRA Facility Investigation (RFI) being conducted at the site by Hercules Incorporated and CIBA-GEIGY Corporation.[1] The Pretreatment Plant, located north of the Glens Falls Feeder Canal and Lower Warren Street, is identified as a Solid Waste Management Unit (SWMU) in the permits (Figure 1-1).

A work plan entitled "Work Plan For RFA Sampling Visit At The Pretreatment Plant" (ECKENFELDER INC., 1991) was submitted to the New York State Department of Environmental Conservation (NYSDEC) and the U.S. Environmental Protection Agency (USEPA) after the issuance of the permits. The work plan was approved by the NYSDEC and USEPA on October 21, 1991. The RFA Sampling Visit was initiated on November 5, 1991.

The goal of the RFA Sampling Visit at the Pretreatment Plant is to characterize soil and groundwater conditions to determine potential environmental impacts, if any, from site operations. A RFA Sampling Visit Work Plan Outline was provided in Appendix III-E of the HWM Permit and Appendix E of the HSWA Permit. The following objectives were identified in the outline:

- Determine the potential distribution of contaminants in the soil
- Determine the direction of groundwater flow in the overburden
- Determine the quality of the groundwater beneath the site

A soil sampling investigation was conducted within the area of land occupied by the existing and former treatment facility. The depth of the soil sampling was specified in the Permit as being limited to the first two feet of natural clay deposits, or refusal on bedrock.

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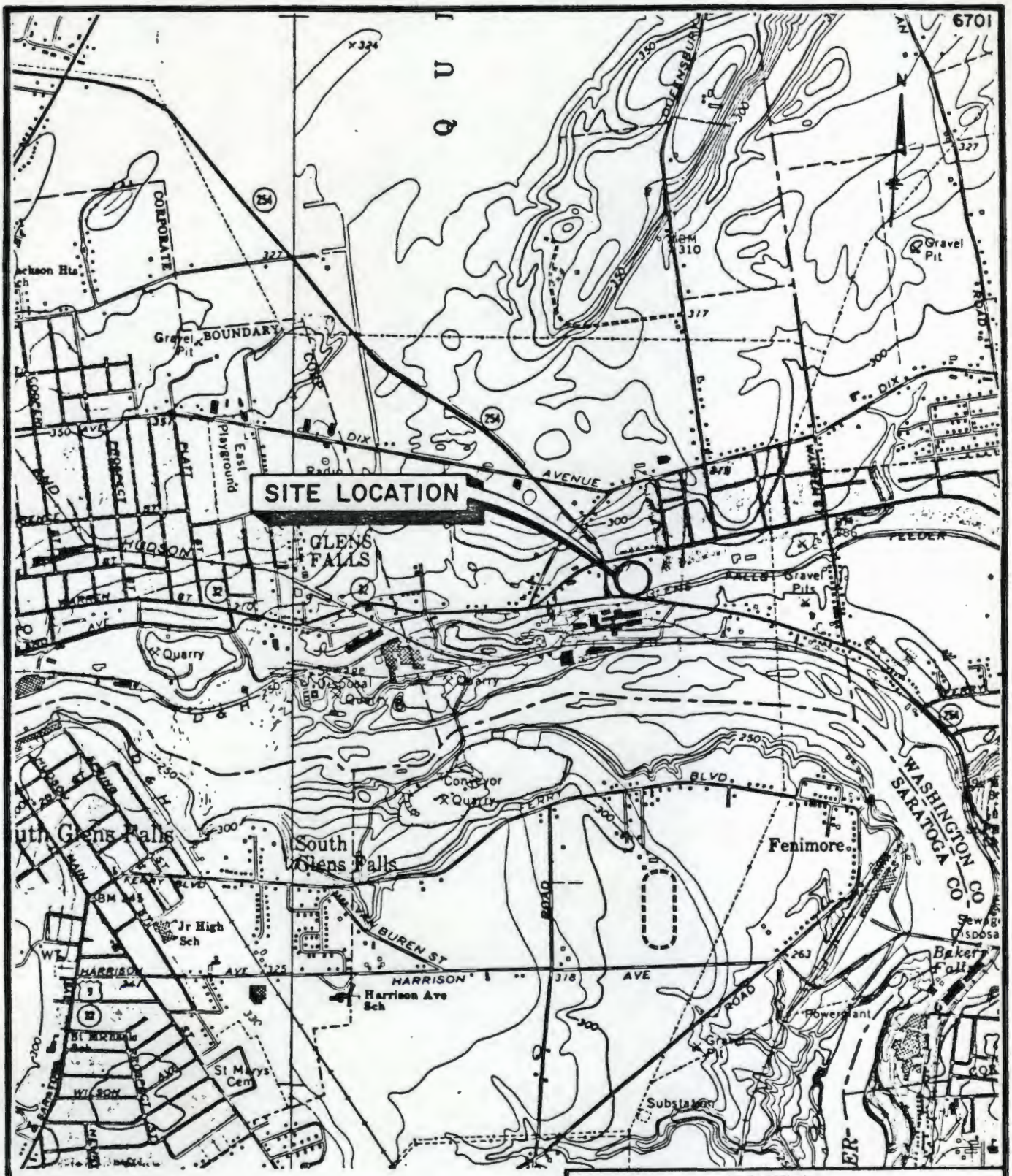
[1]The RFA Sampling Visit described in the HWM Permit is identified as a Phase I RFI in the HSWA Permit. The terminology from the HWM Permit is used in this report.



SOURCE: GLENS FALLS, N.Y. (1966)
HUDSON FALLS, N.Y. (1966)
N.Y. 7.5' QUADRANGLE

2000 0 2000
scale feet

FIGURE 1-1

SITE LOCATION MAP
RFA SAMPLING VISIT
PRETREATMENT PLANT

HERCULES INCORPORATED
CIBA-GEIGY PLANT SITE
GLENS FALLS, N.Y.

ECKENFELDER INC.
Nashville, Tennessee
Mahwah, New Jersey

2.0 SITE BACKGROUND

2.1 SITE LOCATION AND DESCRIPTION

The Pretreatment Plant at the CIBA-GEIGY Site is located north of the Feeder Canal and Lower Warren Street and east of Quaker Road (see Figure 2-1). The area is generally flat and consists of both paved and unpaved areas. Many former structures were removed being marked by remnant foundations. Several operating structures exist including a treatment building and several above-ground wastewater storage tanks.

2.2 BRIEF HISTORY OF THE PRETREATMENT PLANT

In 1972-73, Hercules constructed a wastewater treatment plant (now the Pretreatment Plant). The treatment process neutralized acidity with slaked lime and removed solids by settling. A second treatment stage was added in 1974-75, which removed heavy metals by closer control of pH in addition to utilizing fine sand and press filtration (Schmiesing, 1991-personal communication).

A major portion of the Pretreatment Plant was decommissioned in 1990 in conjunction with decommissioning/demolition of the plant. A scaled-down treatment facility remains in operation to treat water collected in the sanitary and industrial sewer system. The treated effluent is discharged to the Glens Falls POTW via a dedicated pipeline. An integrity evaluation has been completed for the active portions of the Pretreatment Plant pursuant to the permits.

3.0 METHODS AND PROCEDURES

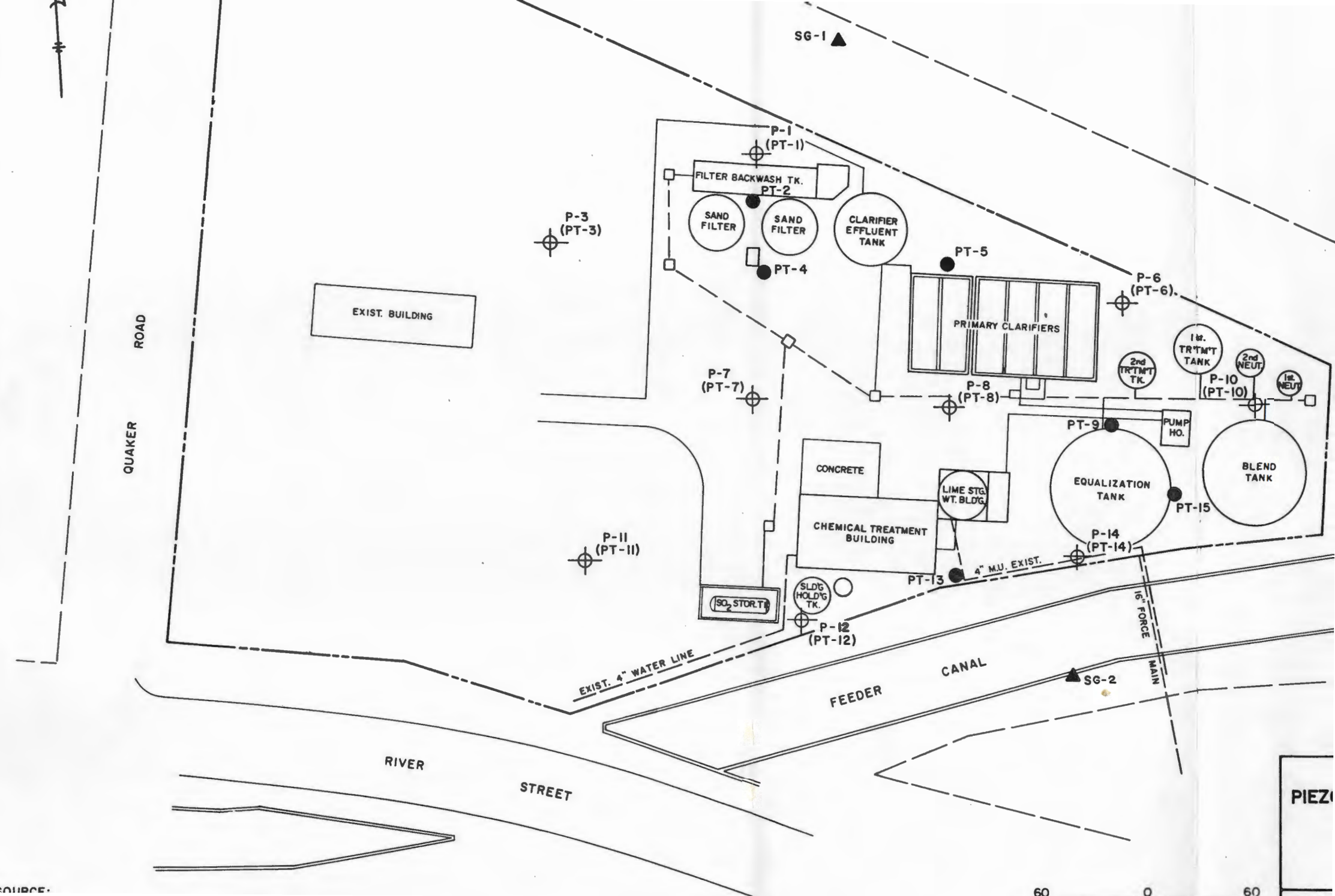
The methods and procedures implemented during the soil investigation are discussed in the sections below.

3.1 SOIL BORING/SAMPLE COLLECTION

A total of 15 soil borings, designated with a PT prefix, were drilled at the Pretreatment Plant SWMU. Piezometers, designated with a P prefix, were installed in nine of those borings. Figure 3-1 shows the locations of these piezometers and soil borings as well as former treatment plant structures for reference. The majority of these borings were located on a one hundred foot by one hundred foot grid system (unbiased array). Several of these soil borings were biasly located closer to former structures such as tanks and clarifiers.

The soil borings were drilled using a drilling rig equipped with four-inch inner diameter hollow-stem augers. Soil samples were collected continuously at two foot intervals with a three-inch diameter split-spoon during the advancement of each boring in accordance with ASTM D-1586-87 protocols. The borings were conducted to two feet into clay or refusal on bedrock as specified in the permit and work plan. If auger refusal was attributed to buried fill material (e.g., concrete), the boring was abandoned and relocated within ten feet of the original location. Soil borings in which piezometers were not installed were abandoned by backfilling the disturbed portion of the lacustrine clay unit with bentonite pellets. The remainder of the boring was then backfilled with drill-cuttings. A Hercules representative was present during this work in order to coordinate the field activities and record all pertinent observations such as blow counts, boring depths, etc.

All samples were visually examined and described in accordance with the Burmister Soils Classification System and the Unified Soils Classification System (Appendix A). This information, along with a record of the length of the recovered portion of the interval and any other distinguishing characteristics of the soil (e.g. odor, color, presence of waste) was entered into the geologist's field notebook. A portion of the sample was immediately transferred to laboratory grade sample containers for analytical testing.


SG-1
P-1
(PT-1)
FILTER BACKWASH TK.
PT-2
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
PT-4
PT-5
P-3
(PT-3)
EXIST. BUILDING
P-6
(PT-6)
PRIMARY CLARIFIERS
1st. TR'TM'T TANK
2nd TR'TM'T TK.
2nd NEUT.
1st. NEUT.
P-10
(PT-10)
P-7
(PT-7)
P-8
(PT-8)
PT-9
PUMP HO.
QUAKER ROAD
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
BLEND TANK
PT-15
CHEMICAL TREATMENT BUILDING
P-14
(PT-14)
P-11
(PT-11)
4" M.U. EXIST.
PT-13
SLD'G HOLD'G TK.
SO_2 STOR. TK.
P-12
(PT-12)
16" FORCE MAIN
EXIST. 4" WATER LINE
FEEDER CANAL
SG-2
RIVER
STREET
PIEZ
SOURCE:
60
0
60

Samples to be analyzed for volatile organics were collected immediately after the split-spoon was retrieved from the proposed sample depth to minimize volatile losses and exposure to surrounding contamination.

Samples for all non-volatile organic analyses were collected of homogenized material to minimize sample bias and recover samples representative of the soil interval. Soil remaining in the split-spoon after volatile organic sampling was placed in a stainless steel pan and mixed with a stainless steel spoon. The sample media in the pan was scraped from the sides, corners and bottom of the pan, rolled to the middle of the pan, and initially mixed. The sample was then quartered and moved to the four corners of the pan. Each quarter of the sample was mixed individually, and then rolled to the center of the container and the entire sample mixed again. Samples of the homogenous mixture were then collected in the appropriate containers for analysis.

In order to minimize the potential for sample contamination and introduction of contamination to a boring location, drilling equipment that came in contact with the soil was steam cleaned before use and between boreholes. This equipment included drill rods, bits and augers. Decontamination of sample recovery (i.e., split-spoons) and sample collection equipment (i.e., trowels, pans, and spoons) were conducted according to the nine step decontamination procedure as follows:

1. Scrub with tap water* and non-phosphate detergent;
2. Rinse with tap water*;
3. Rinse with 1% HNO_3,
4. Rinse with tap water*;
5. Rinse with methanol;
6. Rinse with hexane;
7. Rinse with deionized water,
8. Air dry; and
9. Wrap in aluminum foil or place on polyethylene sheeting until ready for use.

* Tap water was used from a municipal water treatment system.

Other measures taken to minimize cross-contamination include:

- Prior to use sample bottles and sampling equipment were maintained off site or in such a manner to reduce the possibility of casual contamination.
- Samples were collected directly into the sample bottle.
- Field monitoring equipment was cleaned appropriately.

Samples collected for analysis were documented with the use of chain-of-custody forms (Appendix C). These forms were filled out by the field sampling team prior to relinquishing the coolers, samples and chain-of-custody to the laboratory or courier.

3.2 SOIL SAMPLE SCREENING AND ANALYSIS

There is no NYSDEC certification

Soil samples were sent to Aquatec, Inc. of South Burlington, Vermont; a NYSDEC-certified laboratory for analyses. Detailed descriptions of methods and procedures are presented in the site Quality Assurance Project Plan (QAPjP) and Soil Sampling Plan. The analytical methods utilized inductively coupled plasma (ICP) for metals, and gas chromatography (GC) for organics.

The sample screening procedure for selected metals involved ICP screening of every soil sample submitted to the laboratory for analyses of a "targeted" list of metals (Table 3-1). In addition, approximately five percent of the samples were analyzed for an "expanded" list of metals.

The laboratory data sheets are provided in Appendix D. Detection limits are indicated on the data sheets by a number accompanied by a "less than" (<) sign for inorganics, and by a U for organics. The analytical data were internally validated by Aquatec and also validated by Nancy Potak, an outside NYSDEC-approved data validator. The Data Validation Report is provided in Appendix E. The laboratory Data Reports are provided in Appendix F. One copy of the Laboratory Quality Assurance Data Report is being submitted to each agency as a separate attachment.

Several soil boring intervals were resampled due to laboratory quality considerations. These considerations included exceedance of holding times for

TABLE 3-1

PARAMETERS FOR SOIL ANALYSIS

INORGANICS	ORGANICS
Sample Screening (Target List)	**Sample Screening**
Barium	Volatile Organic Compounds[1]
Cadmium	Semivolatile Organic Compounds[1]
Chromium	
Lead	
Expanded List	**Expanded List**
Arsenic	Volatile Organic Compounds
Cyanide	(USEPA Method 8240)[2]
Copper	Semivolatile Organic Compounds
Mercury	(USEPA Method 8270)[2]
Selenium	
Strontium	
Iron	

[1] Refer to specific screening methodology in QAPjP
[2] Refer to QAPjP for complete list of volatile and semivolatile organic compounds

mercury and cyanide, and insufficient recovery of surrogate spikes in semivolatile organic samples. These resamples are designated with an "A" sample number suffix (e.g., S-1A). Two of the resamples were damaged in shipping to the laboratory and required another resampling. These second generation resamples are designated with a "B" suffix (e.g., S-2B). The resamples were collected within one foot of the original sample location in accordance with the methods and procedures used to collect the original samples.

3.2.1 Analyses of Inorganics

As described in the approved work plan, four target metals were identified for the metals screening procedure. These included barium, cadmium, chromium, and lead. Five percent of the samples were selected for the "expanded" list based on the highest field screening of chromium. Due to the sampling schedule, the "expanded" list samples were pre-selected upon arrival at the laboratory. Samples were not stockpiled and then selected for the "expanded" list based on a site-wide summary of chromium values. In each case, however, the highest chromium-bearing sample per pre-selected borehole was analyzed.

3.2.2 Analyses of Organics

The target compound list of priority pollutant volatile and semi-volatile organics (Table 3-2 and 3-3) were analyzed for samples selected based on results of the organics screening test. The sample screening procedure for volatiles involved GC screening of every sample for volatile and semivolatile compounds for each boring in which one or more of the samples exhibited a positive organic screening response (above method detection limit and noted as "failed" in the data packages). All positive response samples were subjected to the applicable expanded analysis outlined in Table 3-1.

Because soil from other portions of the site is known to contain both volatile and semivolatile organic contaminants which are not necessarily found together, a dual organic screening approach was developed so that each type of contaminant was adequately identified and characterized. The volatile and semivolatile screens were to be considered independently and for each soil boring failing a given screen, two samples from that soil boring would be selected for the respective expanded analysis.

TABLE 3-2

VOLATILE ORGANIC CONSTITUENTS

	Reporting Limit (ug/l)	(ug/kg)
Benzene	5	5
Carbon Tetrachloride	5	5
1,2-Dichloroethane	5	5
1,1-Dichloroethane	5	5
1,1,2-Trichloroethane	5	5
1,1,2,2-Tetrachloroethane	5	5
Chloroethane	10	10
2-Chloroethyl vinyl ether	10	10
Chloroform	5	5
1,1-Dichloroethene	5	5
1,2-Dichloroethene	5	5
1,2-Dichloropropane	5	5
trans-1,3-dichloropropane	5	5
cis-1,3-dichloropropene	5	5
Ethylbenzene	5	5
Methylene Chloride	5	5
Chloromethane	10	10
Bromoethane	10	10
Bromoform	5	5
Bromodichloromethane	5	5
Dibromochloromethane	5	5
Tetrachloroethene	5	5
Vinyl Chloride	10	10
Acetone	10	10
2-Butanone	10	10
Carbon Disulfide	5	5
2-Hexanone	10	10
4-Methyl-2-pentanone	10	10
Styrene	5	5
Vinyl Acetate	10	10
Chlorobenzene	5	5
1,1,1-Trichloroethane	5	5
Total Xylenes	5	5
o-Dichlorobenzene	5	5

TABLE 3-3

SEMIVOLATILE ORGANIC CONSTITUENTS

	Reporting Limit (ug/l)	(ug/kg)
2,4,6-Trichlorophenol	10	330
p-Choro-m-cresol	10	330
2-Chlorophenol	10	330
2,4-Dichlorophenol	10	330
2,4-Dimethylphenol	10	330
2-Nitrophenol	10	330
4-Nitrophenol	50	1600
2,4-Dinitrophenol	50	1600
4,6-Dinitro-2-methylphenol	50	1600
Pentachlorophenol	50	1600
Phenol	10	330
Benzoic Acid	50	1600
2-Methylphenol	10	330
4-Methylphenol	10	330
2,4,5-Trichlorophenol	50	1600
Acenaphthene	10	330
1,2,4-Tichlorobenzene	10	330
Hexachlorobenzene	10	330
Hexachloroethane	10	330
bis(2-chloroethyl)ether	10	330
2-Chloronaphthalene	10	330
1,2-Dichlorobenzene	10	330
1,3-Dichlorobenzene	10	330
1,4-Dichlorobenzene	10	330
3,3'-Dichlorobenzidine	20	660
2,4-Dinitrotoluene	10	330
2,6-Dinitrotoluene	10	330
Fluoranthene	10	330
4-Chlorophenyl phenyl ether	10	330
4-Bromophenyl phenyl ether	10	330
bis(2-chloroisopropyl)ether	10	330
bis(2-chloroethoxy)methane	10	330
Hexachlorobutadiene	10	330
Hexachlorocyclopentadiene	10	330
Isophorone	10	330
Naphthalene	10	330
Nitrobenzene	10	330
N-nitrosodiphenylamine	10	330
N-nitrosodipropylamine	10	330

TABLE 3-3 (CONTINUED)

SEMIVOLATILE ORGANIC CONSTITUENTS

	Reporting Limit (ug/l)	(ug/kg)
bis(2-ethylhexyl)phthalate	10	330
Benzyl butyl phthalate	10	330
Di-n-butyl phthalate	10	330
Di-n-octyl phthalate	10	330
Diethyl phthalate	10	330
Dimethyl phthalate	10	330
Benzo(a)anthracene	10	330
Benzo(a)pyrene	10	330
Benzo(b)fluoranthene	10	330
Benzo(k)fluoranthene	10	330
Chrysene	10	330
Acenaphthylene	10	330
Anthracene	10	330
Benzo(g,h,i)perylene	10	330
Fluorene	10	330
Phenanthrene	10	330
Dibenzo(a,h)anthracene	10	330
Indeno(1,2,3-cd)pyrene	10	330
Pyrene	10	330
Benzyl Alcohol	10	330
4-Chloroaniline	10	330
Dibenzofuran	10	330
2-Methylnaphthalene	10	330
2-Nitroaniline	50	1600
3-Nitroaniline	50	1600
4-Nitroaniline	50	1600
Aniline	50	1600
Benzidine	20	660

Often, a sample with a very low positive screen result was chosen as the secondary sample to provide a check of the accuracy of the screening methods at low levels, typically selected from a depth that was on the edge of the pass/fail boundary. This depth was chosen to provide information on the vertical extent of organic detection. The results of organic screens (not required as a laboratory deliverable) are available upon request.

Quality Assurance/Quality Control

As part of the quality assurance/quality control (QA/QC) program, analytical matrix spikes (MS) and replicates (REP) were conducted on five percent of the soil samples which entered the laboratory. Trip blanks (TB) and field equipment blanks (EB) were conducted daily during the soil sampling program. A quality control sample analysis summary is provided in Table 3-4.

3.3 PIEZOMETER INSTALLATION

One-inch diameter PVC piezometers were installed in nine boreholes (Figure 3-1) to determine the direction of groundwater flow beneath the Pretreatment Plant. A typical piezometer construction diagram is depicted on Figure 3-2. Staff gauges were installed in surface waters within the site vicinity. Each of the borings, piezometers, and staff gauges was surveyed for horizontal locations (New York State Plane Coordinates) and elevation ($\pm$ 0.01 feet, USGS datum). Survey work was conducted by a New York State licensed surveyor from Thermo Consulting Engineers of South Burlington, Vermont.

3.4 GROUNDWATER INVESTIGATION

As specified in the permits, a minimum of three groundwater monitoring wells will be installed at the Pretreatment Plant. To determine the optimum well placement and direction of overburden groundwater flow, several episodes of water level measurements have been performed on the nine piezometers. Multiple episodes were performed to observe seasonal variations in the potentiometric surface, and to compare water levels measured at both the drained and filled stages of the Glens Falls Feeder Canal.

TABLE 3-4

QUALITY ASSURANCE ANALYSES SUMMARY OF INORGANICS

Boring Name	Sample Number	Depth (feet)	Date	Description	Barium	Cadmium	Chromium	Lead	Volatile Screen	Semi-Volatile Screen	Arsenic	Copper	Mercury	Selenium	Strontium	Iron	Cyanide
PT-2	1	0.0-2.0	07-Nov-91	Sand	21	1.23	7.9	BMDL	PS	FL(e)	--	--	--	--	--	--	--
PT-2	1(MS)	0.0-2.0	07-Nov-91	Matrix Spike	199	5	22	27	--	--	--	--	--	--	--	--	--
PT-2	1(REP)	0.0-2.0	07-Nov-91	Lab Replicate	25.5	1.51	7.4	8.8	--	--	--	--	--	--	--	--	--
PT-3	1	0.0-2.0	13-Nov-91	Sand	87	7.9	197	159	PS	FL	6.4	17.1	.72	BMDL	24	13300	BMDL
PT-3	S-1B	0.0-2.0	12-Feb-92	Re-sample	--	--	--	--	--	--	--	--	.88	--	--	--	20
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	112	7.9	165	155	PS	FL	3.2	24	.77	BMDL	29	23000	110
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	.94	--	--	--	14.5
PT-6	2	2.0-4.0	08-Nov-91	Sand	65	2.5	36	63	PS	PS	--	--	--	--	--	--	--
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	--	--	--	--	--
PT-7	2	2.0-4.0	06-Nov-91	Sand	23	1.72	5.9	BMDL	PS	PS	--	--	--	--	--	--	--
PT-7	3	2.0-4.0	06-Nov-91	Replicate #2	28	1.92	7.6	BMDL	PS	PS	--	--	--	--	--	--	--
PT-9	4	6.0-8.0	08-Nov-91	Clay	177	5.5	34	BMDL	PS	PS	--	--	--	--	--	--	--
PT-9	4(MS)	6.0-8.0	08-Nov-91	Matrix Spike	380	9.9	51	40	--	--	--	--	--	--	--	--	--
PT-9	4(REP)	6.0-8.0	08-Nov-91	Lab Replicate	240	6.3	41	BMDL	--	--	--	--	--	--	--	--	--
PT-10	1	0.0-2.0	12-Nov-91	Sand	980	470	550	2700	PS	FL	3.8	310	31	2.7	156	11300	290
PT-10	S-1A	0.0-2.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	.64	--	--	--	20
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	84	28	18.6	17.3	PS	PS	--	--	--	--	--	--	--
PT-10	4	4.0-6.0	12-Nov-91	Replicate #3	182	20	37	BMDL	PS	PS	--	--	--	--	--	--	--
PT-11	1	0.0-2.0	05-Nov-91	Sand	66	6.3	135	109	PS	FL	4.4	14.9	.9	BMDL	70	11700	1.5
PT-11	1(MS)	0.0-2.0	05-Nov-91	Matrix Spike	230	9.3	138	131	--	--	10.9	37	1.04	1.21	85	13400	1.9

All parameters measured in mg/Kg; PS indicates sample passed screening test; FL indicates sample fialed screening test; BMDL inidcates parameter below minimum detection limit

TABLE 3-4 (continued)

QUALITY ASSURANCE ANALYSES SUMMARY OF INORGANICS

Boring Name	Sample Number	Depth (feet)	Date	Description	Barium	Cadmium	Chromium	Lead	Volatile Screen	Semi-Volatile Screen	Arsenic	Copper	Mercury	Selenium	Strontium	Iron	Cyanide
PT-11	1(REP)	0.0-2.0	05-Nov-91	Lab Replicate	73	6.3	148	113	--	--	4.5	13.3	.91	BMDL	78	11600	1.6
PT-11	S-1B	0.0-2.0	12-Feb-92	Re-sample	--	--	--	--	--	--	--	--	.66	--	--	--	1.7
PT-12	1	0.0-2.0	06-Nov-91	Sand	220	9.3	128	270	PS	FL	4.2	93	1.74	BMDL	34	15700	7.7
PT-12	S-1A	0.0-2.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	1.29	--	--	--	4.1
PT-13	3	4.0-6.0	13-Nov-91	Sand	24	1.05	8.9	BMDL	PS	PS	--	--	--	--	--	--	--
PT-13	4	4.0-6.0	13-Nov-91	Replicate #3	22	1.24	7.6	BMDL	PS	PS	--	--	--	--	--	--	--
PT-14	2	2.0-4.0	12-Nov-91	Sand	61	2.4	11.5	6.9	PS	PS	--	--	--	--	--	--	--
PT-14	3	2.0-4.0	12-Nov-91	Replicate #2	54	2.3	9.3	BMDL	PS	PS	--	--	--	--	--	--	--
PT-15	1	0.0-2.0	12-Nov-91	Sand	1100	23	610	1250	PS	FL	8.5	380	2.9	.8	200	67000	51
PT-15	S-1A	0.0-2.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	0.84	--	--	--	5.0
FB	11/05	--	05-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/06	--	06-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/07	--	07-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/08	--	08-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/12	--	12-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/13	--	13-Nov-91	Field Blank	--	--	--	--	FL	--	--	--	--	--	--	--	--

All parameters measured in mg/Kg; PS indicates sample passed screening test; FL indicates sample fialed screening test; BMDL inidcates parameter below minimum detection limit

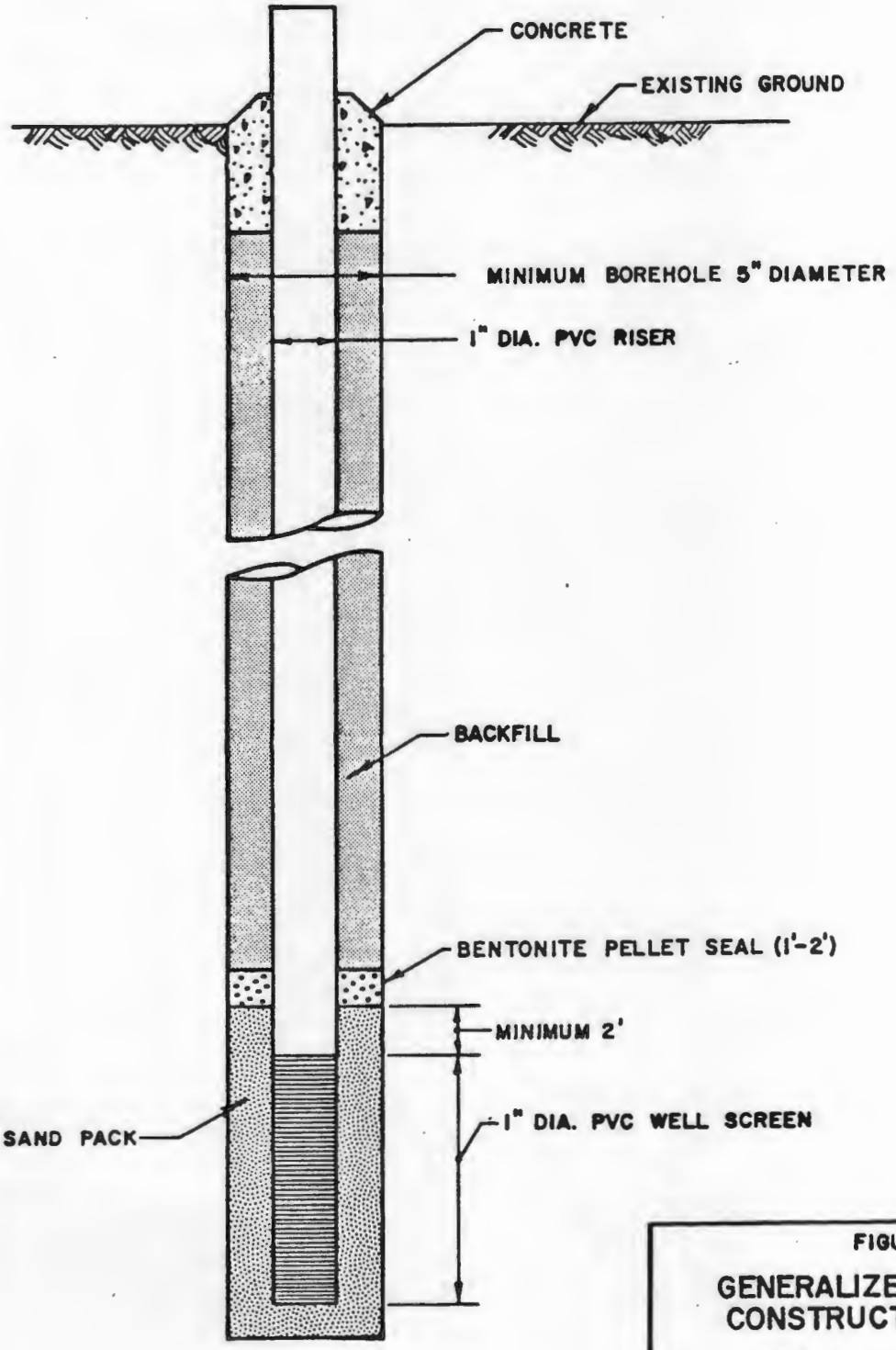


FIGURE 3-2

GENERALIZED PIEZOMETER CONSTRUCTION DIAGRAM

HERCULES INCORPORATED
CIBA-GEIGY PLANT SITE
GLENS FALLS, N.Y.

ECKENFELDER INC.
Nashville, Tennessee
Mahwah, New Jersey

TABLE 3-5

WATER QUALITY PARAMETERS FOR ANALYSIS
TARGET LIST

Volatile Organic Constituents

benzene
carbon tetrachloride
1,2-dichloroethane
1,1-dichloroethane
1,1,2-trichloroethane
1,1,2,2-tetrachloroethane
chloroethane
2-chloroethyl vinyl ether
chloroform
1,1-dichloroethene
1,2-dichloroethene
1,2-dichloropropane
trans-1,3-dichloropropane
ethylbenzene
methylene chloride
chloromethane
bromomethane
bromoform
bromodichloromethane
dibromochloromethane
tetrachloroethene
vinyl chloride
acetone
2-butanone
carbon disulfide
2-hexanone
4-methyl-2-pentanone
styrene
vinyl acetate
chlorobenzene
1,1,1-trichloroethane
total xylenes
0-dichlorobenzene

Metals

arsenic
barium
cadmium
chromium (total)
chromium (hexavalent)
lead
mercury
sodium
zinc

Indicators and Field Parameters

chloride
cyanide
sulfate
TDS
TOX
pH (field)
specific conductivity (field)
temperature (field)

TABLE 3-6

WATER QUALITY PARAMETERS FOR ANALYSIS
EXPANDED LIST

I. Each of the volatile organic constituents, metals, indicators and field parameters listed on Table 2-2.

II. Semivolatile Organic Constituents

2,4,6-trichlorophenol
p-chloro-m-cresol
2-chlorophenol
2,4-dichlorophenol
2,4-dimethylphenol
2-nitrophenol
4-nitrophenol
2,4-dinitrophenol
4,6-dinitro-2-methylphenol
pentachlorophenol
phenol
benzoic acid
2-methylphenol
4-methylphenol
2,4,5-trichlorophenol
acenaphthene
1,2,4-trichlorobenzene
hexachlorobenzene
hexachloroethane
bis(2-chloroethyl)ether
2-chloronaphthalene
1,2-dichlorobenzene
1,3-dichlorobenzene
1,4-dichlorobenzene
3,3'-dichlorobenzidine
2,4-dinitrotoluene
2,6-dinitrotoluene
fluoranthene
4-chlorophenyl phenyl ether
4-bromophenyl phenyl ether
bis(2-chloroisopropyl) ether
bis(2-chloroethyoxy)methane
hexachlorobutadiene
hexachlorocyclopentadiene
isophorone
naphthalene
nitrobenzene
n-nitrosodiphenylamine
n-nitrosodipropylamine
bis(2-ethylhexyl)phthalate
benzyl butyl phthalate
di-n-butyl phthalate
di-n-octyl phthalate
diethyl phthalate
dimethyl phthalate
benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
benzo(k)fluornathene
chrysene
acenaphthylene
anthracene
benzo(g,h,i)perylene
fluorene
phenanthrene
dibenzo(a,h)anthracene
indeno(1,2,3-cd)pyrene
pyrene
benzyl alcohol
4-chloroaniline
dibenzofuran
2-methylnaphthalene
2-nitroaniline
3-nitroaniline
4-nitroaniline
aniline
benzidine

TABLE 3-6 (CONTINUED)

WATER QUALITY PARAMETERS FOR ANALYSIS
EXPANDED LIST

III.	Metals	
	copper	
	iron	
	selenium	
	strontium	

The groundwater monitoring wells will be sampled and analyzed during two quarters for the parameters listed in approved work plan. The wells will be sampled in conjunction with the quarterly groundwater monitoring events conducted for the facility.

4.0 INVESTIGATIVE FINDINGS

4.1 REGIONAL GEOLOGY

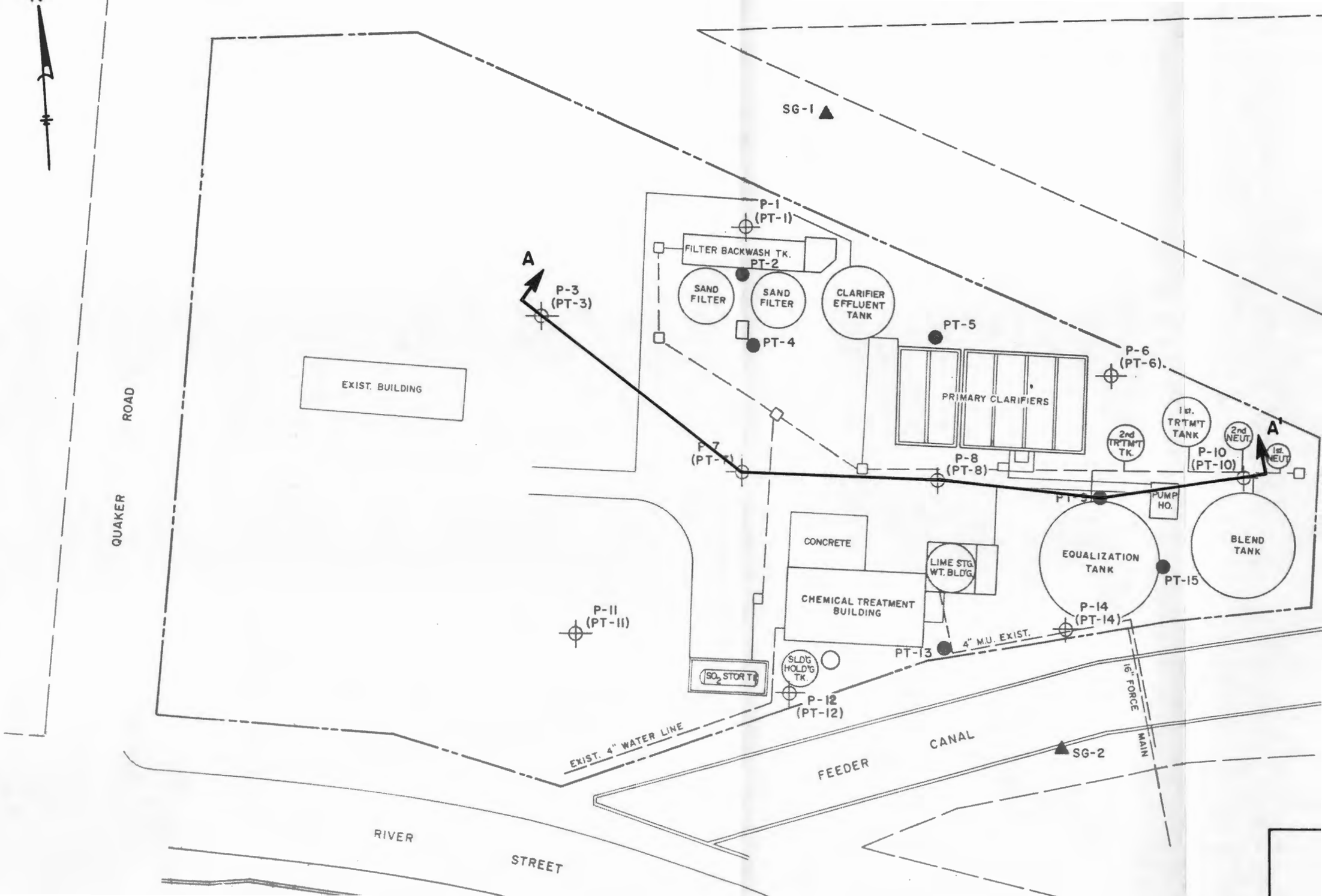
The Glens Falls area includes portions of three physiographic provinces of New York State. The Pretreatment Plant is situated within the Hudson-Champlain Lowlands which is bounded to the west and north by the Adirondack Uplands and to the east by the Taconic Uplands (Fisher, 1984). The Hudson-Champlain Lowlands is an area of low relief that effectively separates the two upland regions characterized by significant accumulations of sands, silts, and clays of glacial origin underlain by predominantly flat-lying carbonate rocks of Cambrian and Ordovician Age. Bedrock exposures generally exist along streams. The surficial sediments include sand, silt, and clay deposited in glacial Lake Albany and relatively sparse occurrences of glacial till and Holocene alluvium (Connally, 1973).

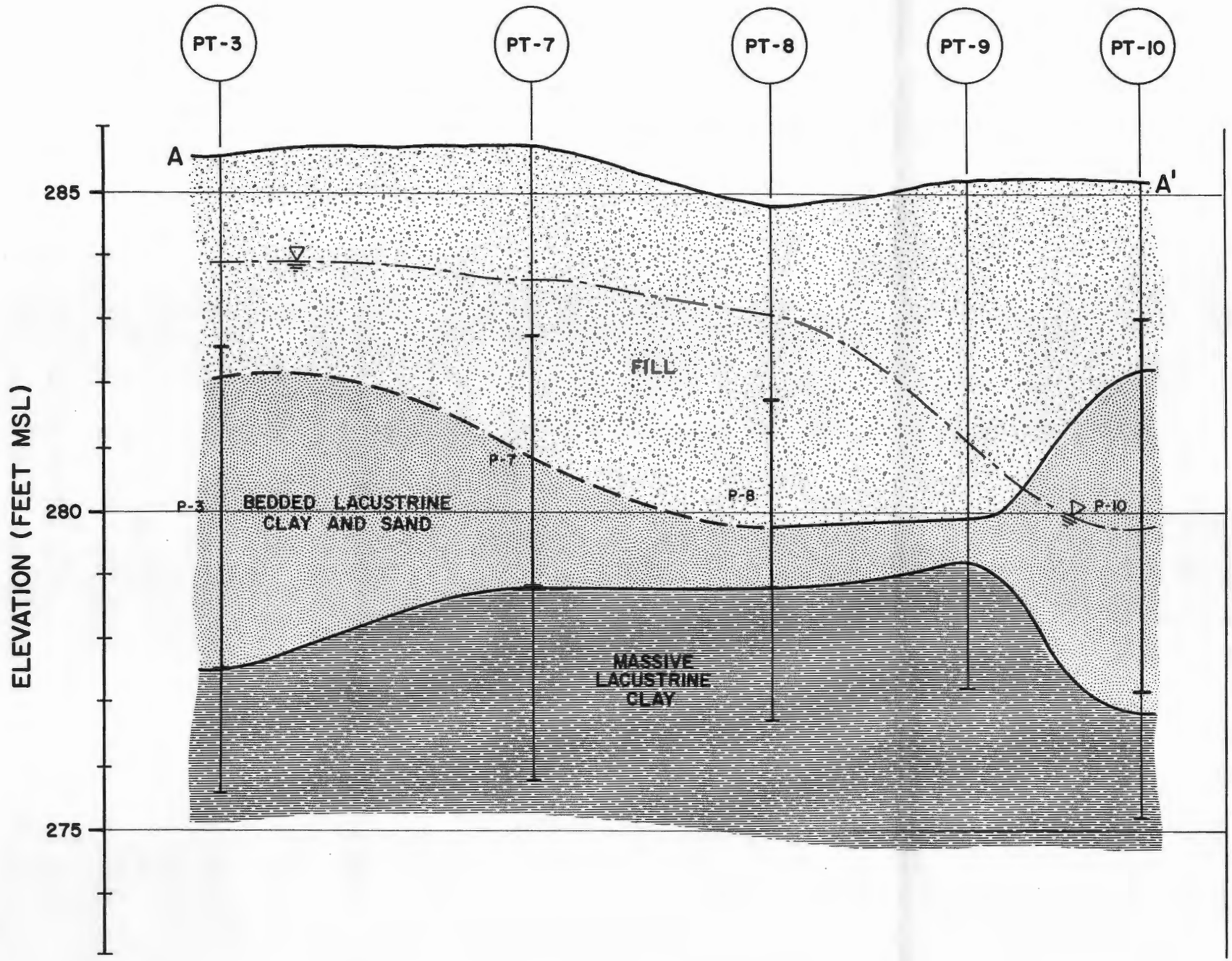
The detritus, which is typically stratified and well sorted, ranges in grain size from very fine sand to gravel. Silt is occasionally included in the very fine sand. These deposits are representative of lacustrine beach and delta deposits associated with Lake Albany (Connally, 1973).

The clay deposit, typically consisting of varved clay and silt, contains few sand partings and lenses, and occasional pebbles, cobbles, and boulders. This coarse material was likely deposited within the clay by ice rafting from icebergs which calved off the receding glacier and drifted within the waters of Lake Albany.

4.2 SITE GEOLOGY

Detailed descriptions of the materials encountered at the Pretreatment Plant during this investigation are presented on the soil boring logs in Appendix A. Soil descriptions are based on visual examination in accordance with the modified Burmister Classification and the Unified Soils Classification systems. Several soil borings have been selected to present a profile of the soil material. These borings are depicted on Figure 4-1, cross section location. The profile is presented on generalized hydrogeologic Cross-Section A-A, Figure 4-2.


SG-1
P-1
(PT-1)
FILTER BACKWASH TK.
PT-2
A
P-3
(PT-3)
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
PT-4
PT-5
P-6
(PT-6)
EXIST. BUILDING
PRIMARY CLARIFIERS
1st. TRT'M'T TANK
2nd TRT'M'T TK.
2nd NEUT.
1st. NEUT.
A'
P-10
(PT-10)
P-7
(PT-7)
P-8
(PT-8)
PUMP HO.
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
BLEND TANK
PT-15
CHEMICAL TREATMENT BUILDING
P-14
(PT-14)
P-11
(PT-11)
PT-13
4" M.U. EXIST.
SLD'G HOLD'G TK.
SO_2 STOR T'K
P-12
(PT-12)
16" FORCE MAIN
EXIST. 4" WATER LINE
FEEDER CANAL
SG-2
QUAKER ROAD
RIVER STREET


PT-3
PT-7
PT-8
PT-9
PT-10
A
A'
285
280
275
ELEVATION (FEET MSL)
FILL
P-7
P-8
P-3
P-10
BEDDED LACUSTRINE
CLAY AND SAND
MASSIVE
LACUSTRINE
CLAY


LEGEND:
PT-3
BORING IDENT
GENERALIZED
POTENTIOMET
FILL
BEDDED LACU
MASSIVE LA
P-3
PIEZOMETER
AND DESIGNA

The general character, areal extent, and significance of the various unconsolidated materials encountered are discussed in the following sections.

4.2.1 Fill

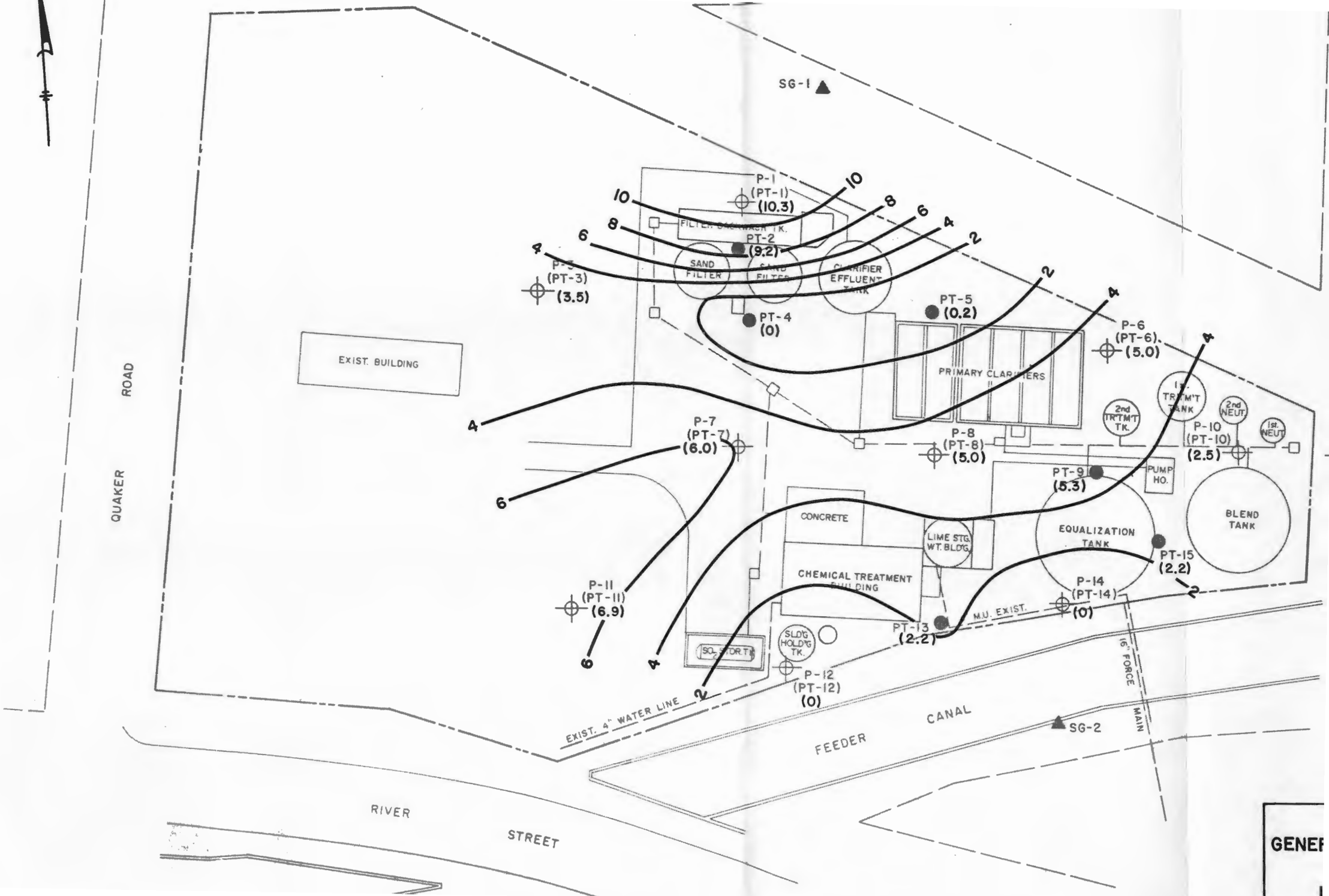
Clean fill material consisting of sand, silt, limestone, gravel, and occasional concrete fragments was encountered over most of the site. The isopachous map of total fill thickness (Figure 4-3) indicates the configuration of fill throughout the site. The fill thickness ranges from not present in borings PT-4, PT-12, and PT-14, to 10.3 feet in the northern portion of the Pretreatment Plant (PT-1).

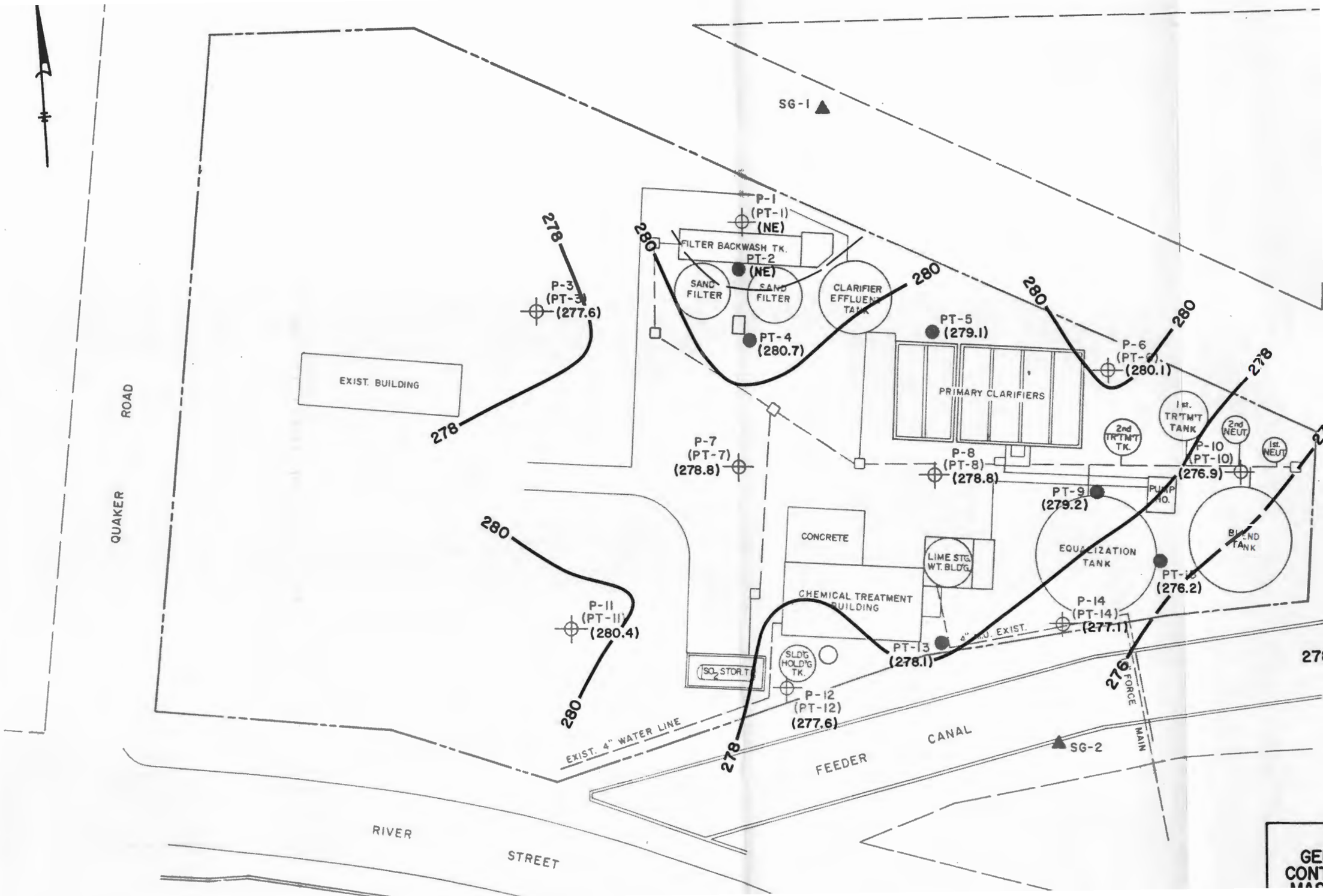
4.2.2 Lacustrine Deposits

A discontinuous unit composed of lacustrine sand, silt and thin clay interbeds overlies the massive lacustrine clay at the Pretreatment Plant. Sand is the primary grain size with subordinate amounts of silt. The lacustrine sand is often interbedded with clay and exhibits normal grading with coarser material at the base overlying the massive clay. The unit is typically stratified and well-sorted, ranging in color from light brown to a darker gray-brown.

The lacustrine clay unit comprises a relatively thick accumulation of predominantly silty clay to clay. It is typically varved, exhibiting silt and sandy partings. The clay, which is characteristically cohesive and dense is important hydrogeologically due to its relatively low hydraulic conductivity. Groundwater flow direction in the overburden is likely influenced by the topography of the clay surface. In addition, the clay retards the downward percolation of groundwater to the bedrock.

Figure 4-4 depicts the configuration of the top of the lacustrine clay unit. The top of the massive lacustrine clay which sometimes underlies interbedded lacustrine clay and sand was used to generate this map. The top of clay surface was not established at the top of the interbedded clay and sand because field observations revealed saturated soils within the interbedded clay and sand, perched above the massive clay. The elevation of the clay beneath the Pretreatment Plant ranges from 276.2 (PT-15) to 280.7 (PT-4) feet MSL exhibiting a relief of approximately 4.5 feet.


SG-1
P-1
(PT-1)
(10.3)
PT-2
(9.2)
P-3
(PT-3)
(3.5)
PT-4
(0)
PT-5
(0.2)
P-6
(PT-6)
(5.0)
EXIST. BUILDING
QUAKER ROAD
SAND FILTER
CLARIFIER EFFLUENT TANK
PRIMARY CLARIFIERS
2nd TR'TM'T TK.
1st TR'TM'T TANK
2nd NEUT.
1st. NEUT.
P-7
(PT-7)
(6.0)
P-8
(PT-8)
(5.0)
P-10
(PT-10)
(2.5)
PT-9
(5.3)
PUMP HO.
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
BLEND TANK
PT-15
(2.2)
P-11
(PT-11)
(6.9)
CHEMICAL TREATMENT BUILDING
P-14
(PT-14)
(0)
M.U. EXIST.
PT-13
(2.2)
SLD'G HOLD'G TK.
SLD'G DR'T'R
P-12
(PT-12)
(0)
EXIST. 4" WATER LINE
16" FORCE MAIN
FEEDER CANAL
SG-2
RIVER
STREET


SG-1
P-1
(PT-1)
(NE)
FILTER BACKWASH TK.
PT-2
(NE)
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
PT-4
(280.7)
PT-5
(279.1)
P-6
(PT-6)
(280.1)
PRIMARY CLARIFIERS
P-3
(PT-3)
(277.6)
EXIST. BUILDING
QUAKER ROAD
P-7
(PT-7)
(278.8)
P-8
(PT-8)
(278.8)
2nd TR'TM'T TK.
1st. TR'TM'T TANK
2nd NEUT.
1st. NEUT.
P-10
(PT-10)
(276.9)
PT-9
(279.2)
PUMP NO.
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
BLEND TANK
P-11
(PT-11)
(280.4)
CHEMICAL TREATMENT BUILDING
PT-13
(278.1)
P-14
(PT-14)
(277.1)
PT-15
(276.2)
4" DIA. EXIST.
SLDG. HOLD'G TK.
SO2 STOR. T.
P-12
(PT-12)
(277.6)
EXIST. 4" WATER LINE
FEEDER CANAL
SG-2
FORCE MAIN
RIVER STREET
280
278
276

The massive clay was not encountered in borings PT-1 and PT-2 being absent in the vicinity of the former filter backwash tank, possibly removed by excavation activities. The clay surface appears relatively flat and somewhat elevated within the majority of the Pretreatment Plant area, exhibiting a downward slope to the northwest and southeast.

4.3 GROUNDWATER FLOW

Several episodes of groundwater measurements were conducted on the piezometers and staff gauges to determine the direction of groundwater flow in the overburden. The episodes were conducted to include both full and drained stages of the Feeder Canal. Groundwater elevation data from three of these episodes are presented on Tables 4-1 through 4-3. The potentiometric surface maps for these episodes are presented on Figures 4-5 through 4-7. The survey data used to generate those maps are presented on Table 4-4.

The potentiometric surface configuration indicates that the groundwater in the overburden flows to the east towards a small stream which appears to act as a local groundwater sink. The relationship between the clay surface and potentiometric surface is depicted on Figure 4-2.

A staff gauge located to monitor the water level of the canal indicates that the canal water elevation is several feet lower than the overburden groundwater elevation measured in piezometer P-14, which is located approximately 25 feet north of the canal. During seasonally low groundwater levels, it appears that the canal water and overburden groundwater are effectively separated by the canal concrete liner. Any hydraulic communication between the canal and overburden groundwater due to potential leaks in the liner would result in the canal acting as a local discharge for groundwater flow. During seasonally high groundwater levels there appears to be a southern component of groundwater flow towards the canal. This may be resultant from a southern slope in the clay surface beneath the canal rather than discharge into the canal.

TABLE 4-1

WATER LEVEL MEASUREMENTS
DECEMBER 4, 1991

Location Name	Depth To Water (a) (feet)	Reference Elevation (b) (feet)	Groundwater Elevation (feet)
P-1	4.53	287.76	283.23
P-3	1.26	287.37	286.11
P-6	dry @ 6.90	287.75	< 280.85
P-7	5.15	288.18	283.03
P-8	4.66	286.95	282.29
P-10	9.43	287.82	278.39
P-11	8.58	291.06	282.48
P-12	5.76	287.81	282.05
P-14	6.52	287.41	280.89
SG-1	2.08	283.96	281.88
SG-2	NA (c)	281.06	NA

(a) Measurement taken from top of PVC riser, for all piezometers; SG-1 referenced from top of stake; SG-2 referenced from mark on Feeder Canal wall

(b) Survey performed by Thermo Consulting Engineers, Williston, VT, relative to the National Geodetic Vertical Datum

(c) Measurement was not available, Feeder Canal frozen

TABLE 4-2

WATER LEVEL MEASUREMENTS
FEBRUARY 12, 1992

Location Name	Depth To Water (a) (feet)	Reference Elevation (b) (feet)	Groundwater Elevation (feet)
P-1	6.56	287.76	281.20
P-3	5.60	287.37	281.77
P-6	dry @ 6.90	287.75	< 280.85
P-7	6.64	288.18	281.54
P-8	6.03	286.95	280.92
P-10	dry @ 10.28	287.82	< 277.54
P-11	10.13	291.06	280.93
P-12	6.38	287.81	281.43
P-14	7.81	287.41	279.60
SG-1	2.90	283.96	281.06
SG-2	4.85	281.06	276.21

(a) Measurement taken from top of PVC riser, for all piezometers; SG-1 referenced from top of stake; SG-2 referenced from mark on Feeder Canal wall

(b) Survey performed by Thermo Consulting Engineers, Williston, VT, relative to the National Geodetic Vertical Datum

TABLE 4-3

WATER LEVEL MEASUREMENTS
APRIL 22, 1992

Location Name	Depth To Water (a) (feet)	Reference Elevation (b) (feet)	Groundwater Elevation (feet)
P-1	4.13	287.76	283.63
P-3	3.41	287.37	283.96
P-6	5.57	287.75	282.18
P-7	4.55	288.18	283.63
P-8	3.84	286.95	283.11
P-10	8.13	287.82	279.69
P-11	8.01	291.06	283.05
P-12	5.30	287.81	282.51
P-14	6.22	287.41	281.19
SG-1	2.11	283.96	281.85
SG-2	4.65	281.06	276.41

(a) Measurement taken from top of PVC riser, for all piezometers; SG-1 referenced from top of stake; SG-2 referenced from mark on Feeder Canal wall

(b) Survey performed by Thermo Consulting Engineers, Williston, VT, relative to the National Geodetic Vertical Datum

TABLE 4-4

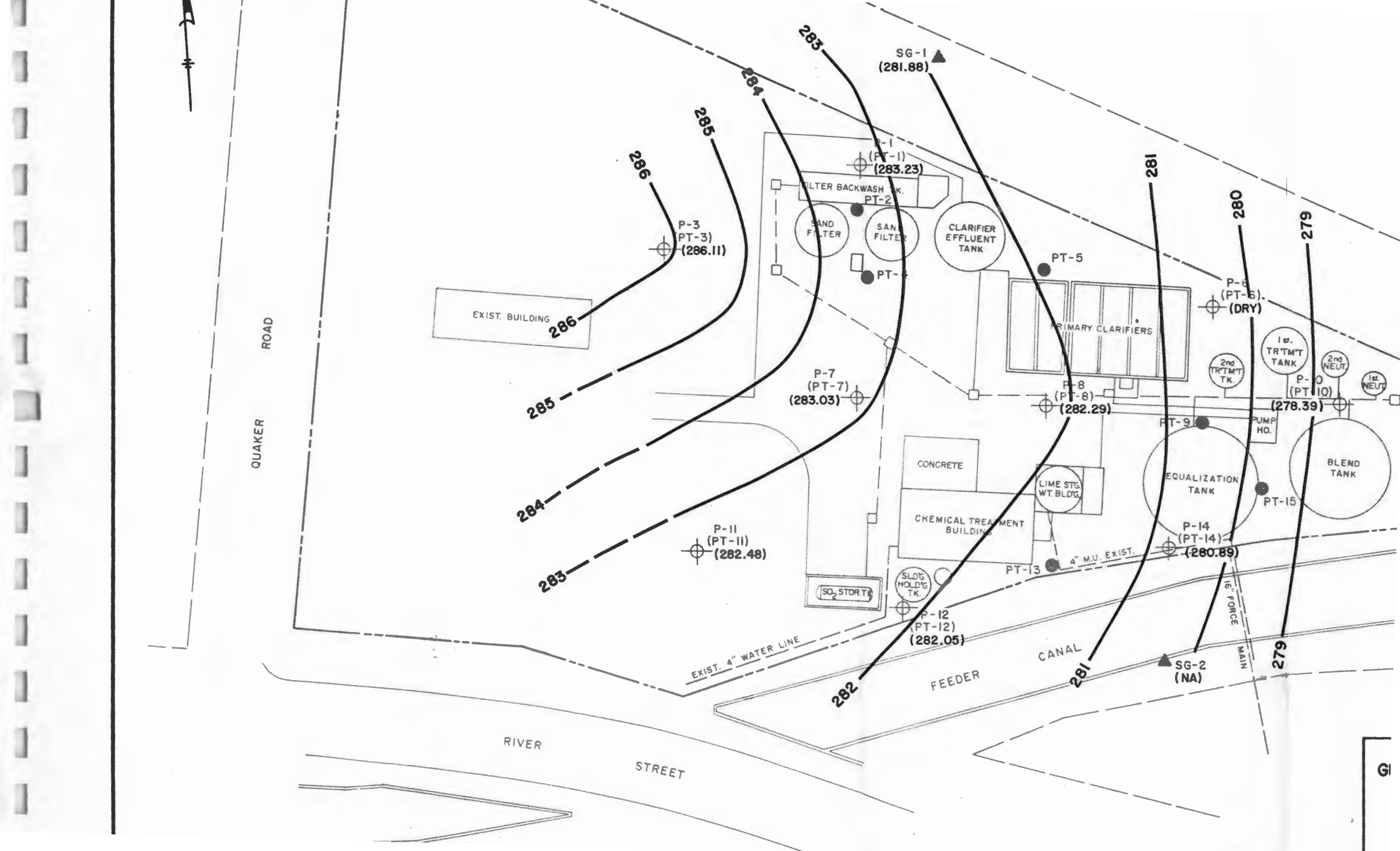
SURVEY DATA (a)

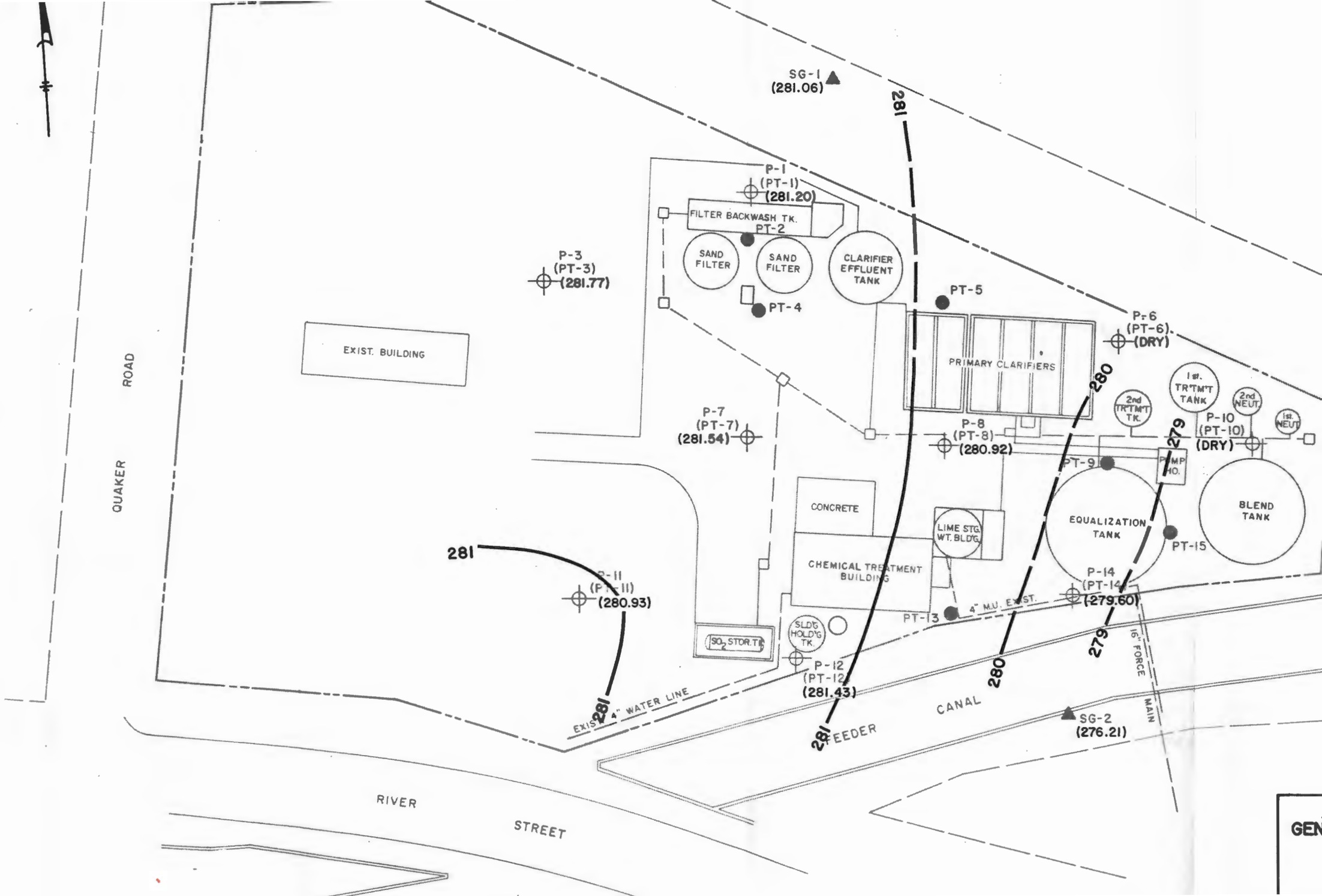
Location Name	NY State Plane Coordinates		Ground Surface Elevation (feet)	Reference Elevation (b) (feet)
	Northing	Easting		
P-1	1207614.36	693295.50	284.7	287.76
PT-2	1207587.17	693299.14	285.1	NA (c)
P-3	1207541.47	693189.38	285.6	287.37
PT-4	1207548.60	693312.03	284.7	NA
PT-5	1207572.98	693415.56	285.1	NA
P-6	1207570.41	693518.73	285.1	287.75
P-7	1207476.84	693319.59	285.8	288.18
P-8	1207493.57	693431.10	284.8	286.95
PT-9	1207497.68	693526.19	285.2	NA
P-10	1207527.94	693603.41	285.2	287.82
P-11	1207368.55	693243.24	288.4	291.06
P-12	1207359.05	693371.31	285.6	287.81
PT-13	1207399.88	693453.83	284.8	NA
P-14	1207423.26	693520.23	285.1	287.41
PT-15	1207468.87	693563.65	285.2	NA
SG-1	1207688.70	693330.10	NA	283.94
SG-2	1207353.80	693526.80	NA	281.06

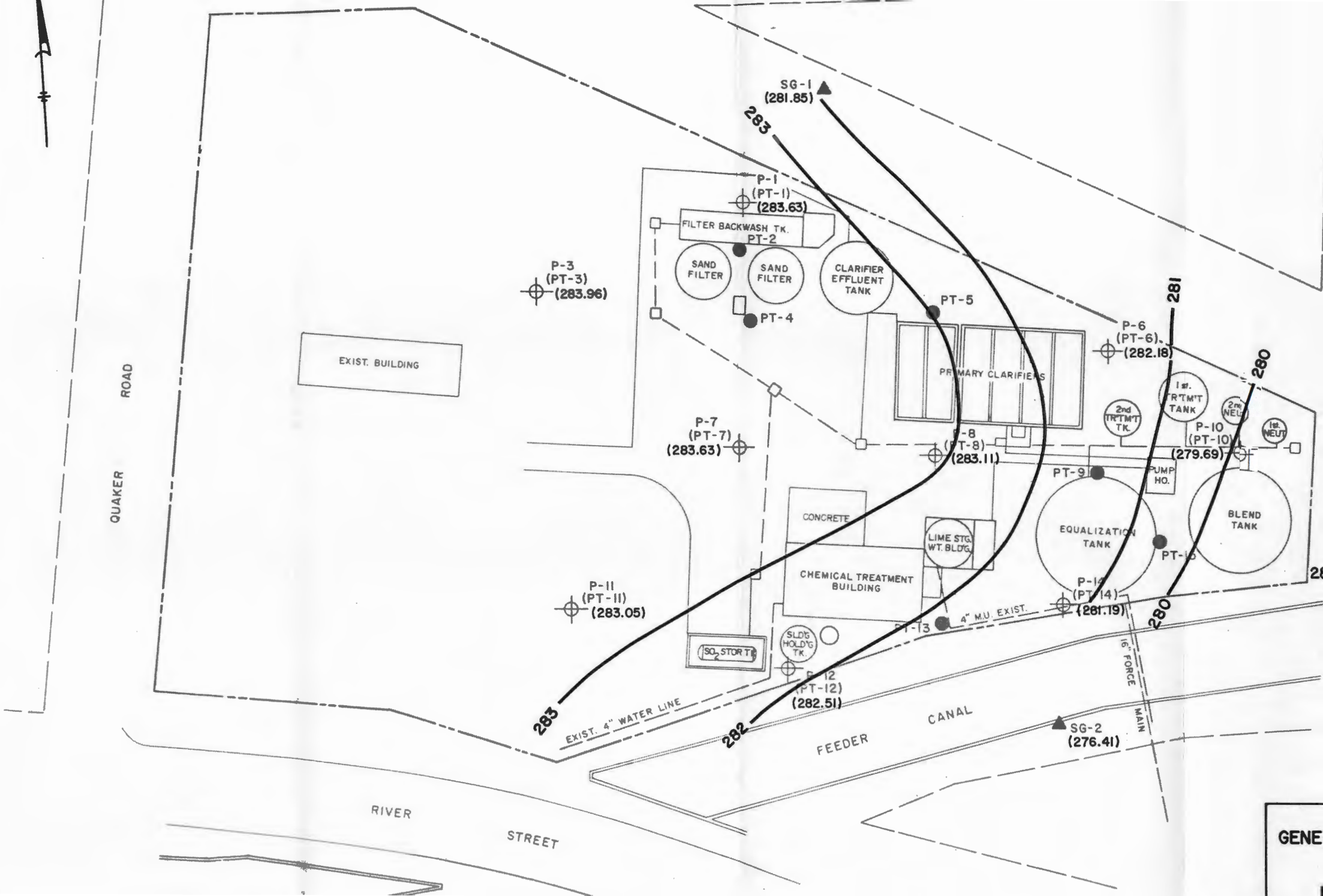
(a) Survey performed by Thermo Consulting Engineers, Williston, VT in 1991 relative to the National Geodetic Vertical Datum

(b) Piezometers referenced from top of PVC; SG-1 referenced from top of stake; SG-2 referenced from mark on Feeder Canal wall

(c) NA indicates information not applicable


SG-1
(281.88)
283
284
285
286
281
280
279
282
P-1
(PT-1)
(283.23)
FILTER BACKWASH TK.
PT-2
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
PT-5
PT-4
P-3
(PT-3)
(286.11)
EXIST. BUILDING
P-6
(PT-6)
(DRY)
PRIMARY CLARIFIERS
2nd TR'TM'T TK.
1st. TR'TM'T TANK
2nd NEUT.
1st. NEUT.
P-7
(PT-7)
(283.03)
P-8
(PT-8)
(282.29)
P-10
(PT-10)
(278.39)
PT-9
PUMP HO.
QUAKER ROAD
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
BLEND TANK
PT-15
CHEMICAL TREATMENT BUILDING
P-14
(PT-14)
(280.89)
P-11
(PT-11)
(282.48)
PT-13
4" M.U. EXIST.
SLD'G HOLD'G TK.
SO2 STOR. TK.
16" FORCE MAIN
P-12
(PT-12)
(282.05)
EXIST. 4" WATER LINE
FEEDER CANAL
SG-2
(NA)
RIVER
STREET


SG-1
(281.06)
281
P-1
(PT-1)
(281.20)
FILTER BACKWASH TK.
PT-2
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
PT-4
P-3
(PT-3)
(281.77)
EXIST. BUILDING
PT-5
P-6
(PT-6)
(DRY)
PRIMARY CLARIFIERS
280
1st. TR'TM'T TANK
2nd TR'TM'T TK.
2nd NEUT.
1st. NEUT.
P-10
(PT-10)
(DRY)
279
P-7
(PT-7)
(281.54)
P-8
(PT-8)
(280.92)
PT-9
PUMP NO.
QUAKER ROAD
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
BLEND TANK
PT-15
281
P-11
(PT-11)
(280.93)
CHEMICAL TREATMENT BUILDING
P-14
(PT-14)
(279.60)
PT-13
4" M.U. EXIST.
SLD'G HOLD'G TK.
SO_2 STOR. TK.
P-12
(PT-12)
(281.43)
EXIST. 4" WATER LINE
281
280
279
16" FORCE MAIN
FEEDER CANAL
SG-2
(276.21)
RIVER
STREET


SG-1
(281.85)
283
281
280
P-1
(PT-1)
(283.63)
FILTER BACKWASH TK.
PT-2
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
PT-4
PT-5
P-3
(PT-3)
(283.96)
EXIST. BUILDING
QUAKER ROAD
P-6
(PT-6)
(282.18)
PRIMARY CLARIFIERS
1st. TRTM'T TANK
2nd TRTM'T TK.
2nd NEUT.
1st. NEUT.
P-7
(PT-7)
(283.63)
P-8
(PT-8)
(283.11)
P-10
(PT-10)
(279.69)
PT-9
PUMP HO.
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
BLEND TANK
CHEMICAL TREATMENT BUILDING
P-11
(PT-11)
(283.05)
P-14
(PT-14)
(281.19)
PT-13
4" M.U. EXIST.
SLD'G HOLD'G TK
SO_2 STOR T'K
P-12
(PT-12)
(282.51)
EXIST. 4" WATER LINE
16" FORCE MAIN
FEEDER CANAL
SG-2
(276.41)
RIVER STREET

4.4 ANALYTICAL RESULTS

A varied and extensive suite of inorganic and organic compounds were analyzed during this investigation. The results are summarized in Appendix B. Concentration maps for total lead, chromium, mercury, and cyanide were constructed to depict the spatial distribution for these parameters (Figures 4-8 through 4-10). The plotted concentrations represent the maximum concentration detected in each borehole. Analytical values reported as not detected are plotted on the maps as ND. The values presented are also expressed as totals and do not differentiate between elemental species of the parameters.

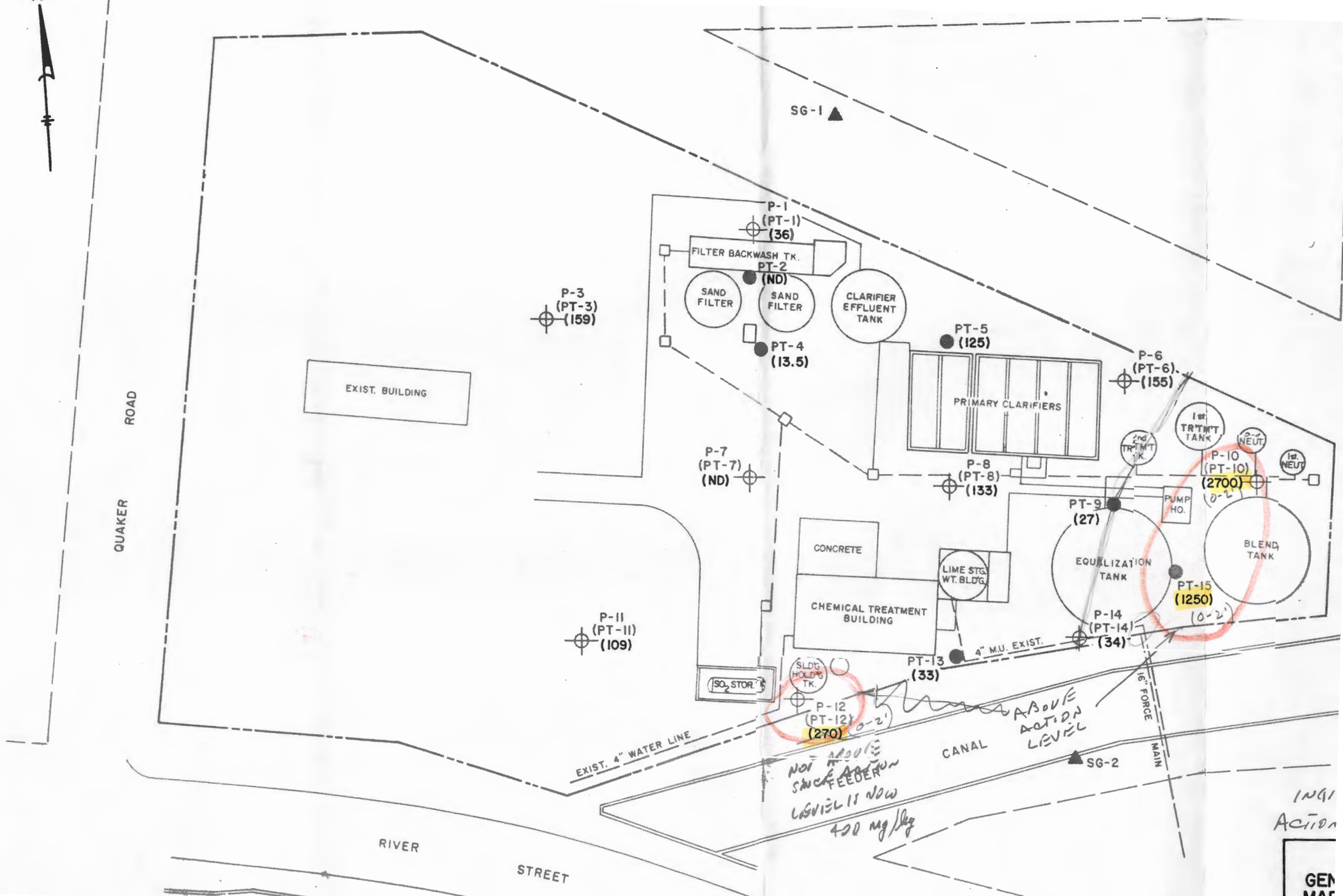
4.4.1 Spatial Distribution of Parameters

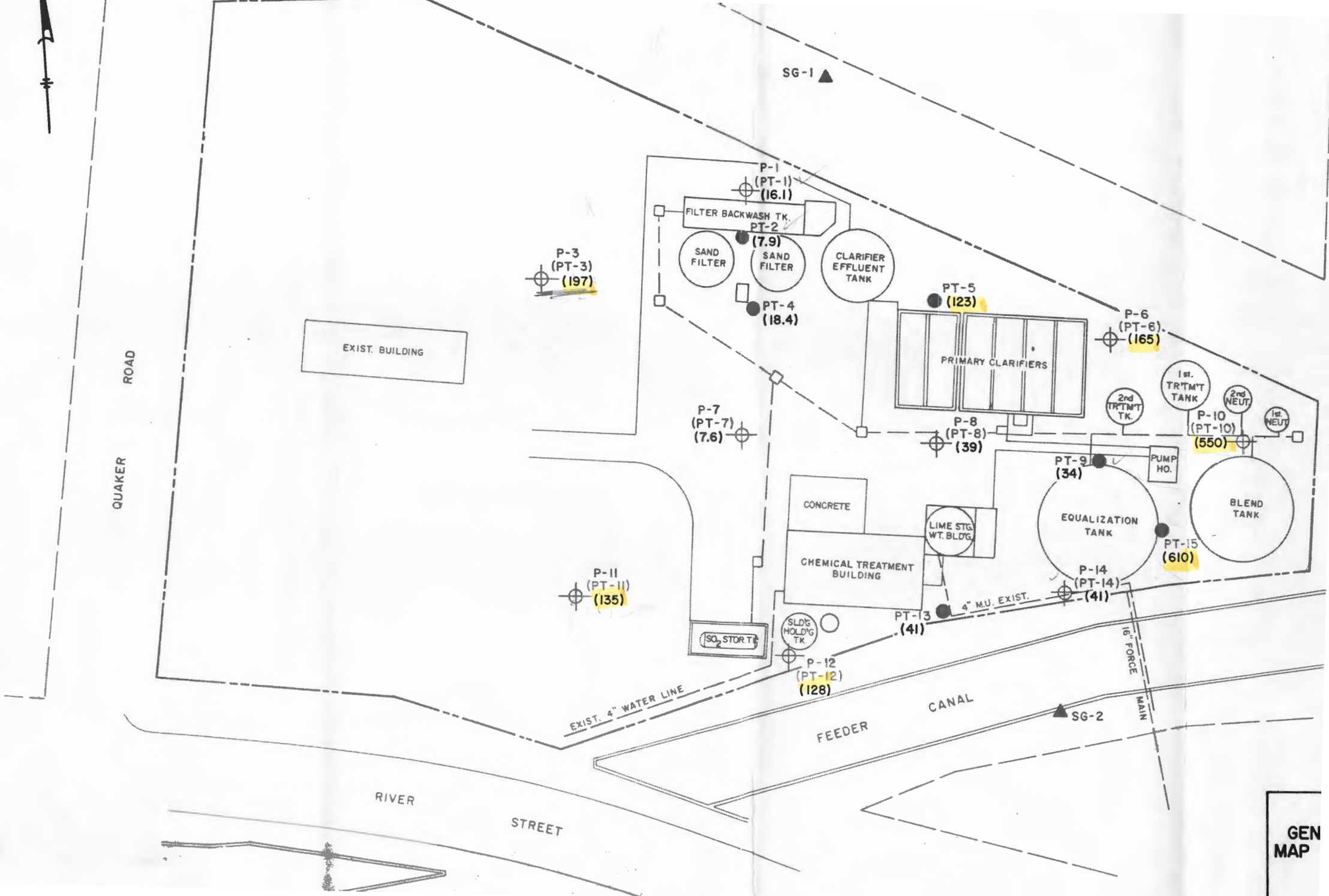
4.4.1.1 Lead. Total lead (Figure 4-8) was detected in 36 samples at concentrations ranging from ND to a maximum of 2,700 mg/kg in boring PT-10. The highest values of lead were detected in borings PT-10 and PT-15 located within the easternmost section of the Pretreatment Plant. Three borings, (PT-10, PT-11, and PT-15) exhibit maximum total lead in excess of the NYSDEC Draft Cleanup Policy and Guidelines action level for soils of 250 mg/kg.

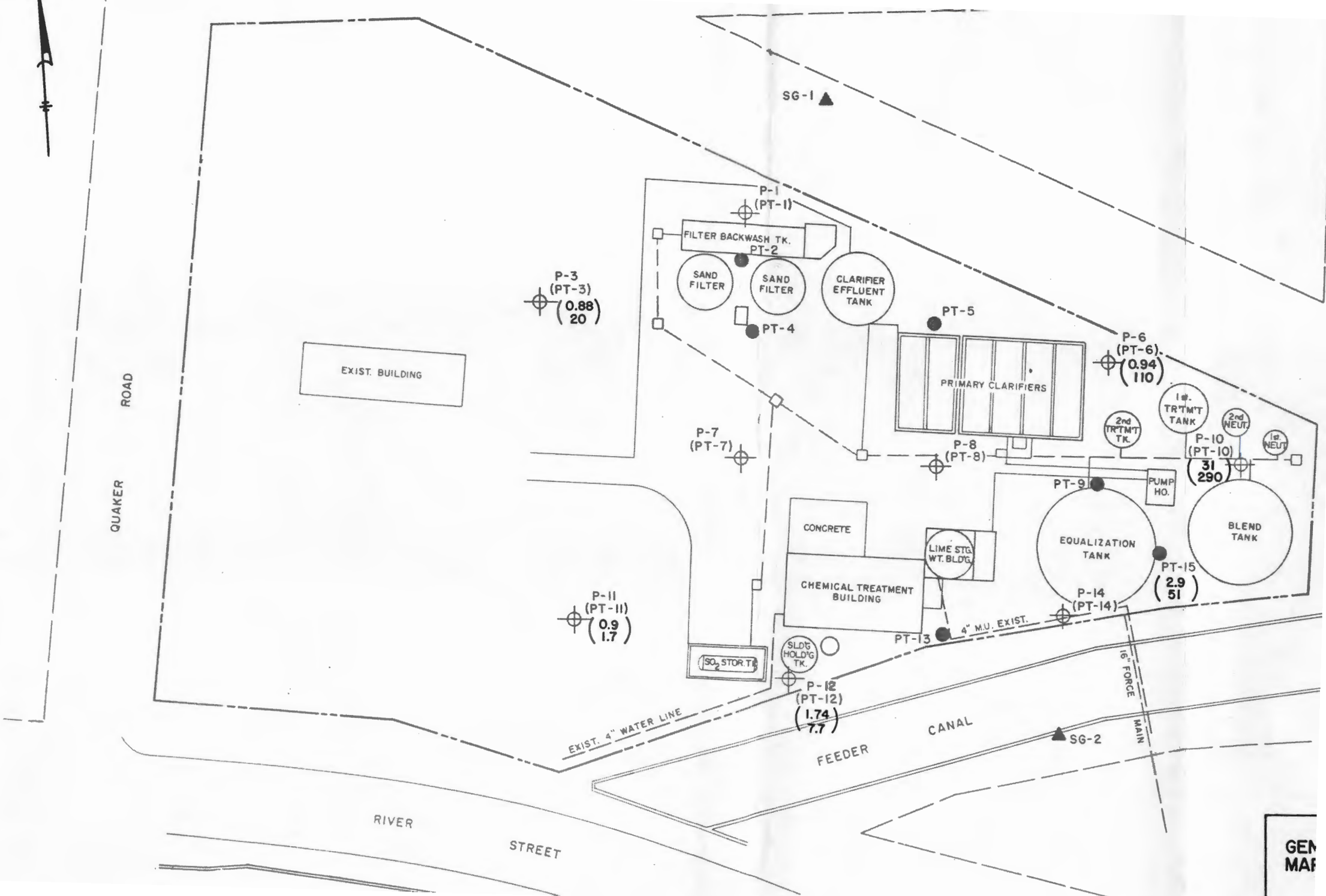
4.4.1.2 Chromium. Total chromium (Figure 4-9) was detected in 73 samples at concentrations ranging from 3.8 to 610 mg/kg in boring PT-15. The highest values of chromium were detected in borings PT-10 and PT-15 located within the eastern most section of the Pretreatment Plant. The concentrations of total chromium cannot be compared to the NYSDEC Draft Cleanup Policy and Guideline action levels for soils because action levels for total chromium are not available. The action level for trivalent chromium is 80,000 mg/kg and the action level for hexavalent chromium is 400 mg/kg.

4.4.1.3 Mercury. Total mercury (Figure 4-10) was detected in 14 samples ranging from 0.66 to 31 mg/kg in boring PT-10. Of these fourteen samples one exhibited mercury concentrations in excess of the NYSDEC Draft Cleanup Policy and Guidelines action level for soils of 20 mg/kg.

A number of the samples analyzed for mercury and cyanide exceeded the specified holding time and consequently were resampled. Both the values from the initial


SG-1
P-1
(PT-1)
(36)
FILTER BACKWASH TK.
PT-2
(ND)
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
PT-4
(13.5)
P-3
(PT-3)
(159)
EXIST. BUILDING
PT-5
(125)
PRIMARY CLARIFIERS
P-6
(PT-6)
(155)
1st TRTMT TANK
2nd NEUT.
2nd TRTMT TK.
1st NEUT.
P-10
(PT-10)
(2700)
(0-2')
P-7
(PT-7)
(ND)
P-8
(PT-8)
(133)
PUMP HO.
PT-9
(27)
CONCRETE
LIME STG. WT. BLDG.
EQUALIZATION TANK
BLEND TANK
PT-15
(1250)
(0-2')
CHEMICAL TREATMENT BUILDING
P-14
(PT-14)
(34)
P-11
(PT-11)
(109)
4" M.U. EXIST.
PT-13
(33)
SLDG HOLDG TK.
SO2 STOR.
P-12
(PT-12)
(270)
0-2'
ABOVE ACTION LEVEL
NOT ABOVE SAUCE ACTION LEVEL IS NOW 400 mg/kg
FEEDER
CANAL
SG-2
16" FORCE MAIN
EXIST. 4" WATER LINE
QUAKER ROAD
RIVER
STREET


SG-1
P-1
(PT-1)
(16.1)
FILTER BACKWASH TK.
PT-2
(7.9)
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
P-3
(PT-3)
(197)
PT-4
(18.4)
PT-5
(123)
P-6
(PT-6)
(165)
EXIST. BUILDING
PRIMARY CLARIFIERS
1st. TR'TM'T TANK
2nd NEUT.
2nd TR'TM'T TK.
1st. NEUT.
P-7
(PT-7)
(7.6)
P-8
(PT-8)
(39)
P-10
(PT-10)
(550)
PT-9
(34)
PUMP HO.
QUAKER ROAD
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
BLEND TANK
PT-15
(610)
CHEMICAL TREATMENT BUILDING
P-14
(PT-14)
(41)
P-11
(PT-11)
(135)
4" M.U. EXIST.
PT-13
(41)
SLD'G HOLD'G TK.
SO2 STOR. TK.
16" FORCE MAIN
P-12
(PT-12)
(128)
EXIST. 4" WATER LINE
FEEDER CANAL
SG-2
RIVER STREET
GEN
MAP


SG-1
P-1
(PT-1)
FILTER BACKWASH TK.
PT-2
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
P-3
(PT-3)
0.88
20
PT-4
PT-5
P-6
(PT-6)
0.94
110
EXIST. BUILDING
PRIMARY CLARIFIERS
1st. TR'TM'T TANK
2nd TR'TM'T TK.
2nd NEUT.
1st NEUT.
P-10
(PT-10)
31
290
P-7
(PT-7)
P-8
(PT-8)
PT-9
PUMP HO.
QUAKER ROAD
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
BLEND TANK
PT-15
2.9
51
CHEMICAL TREATMENT BUILDING
P-14
(PT-14)
P-11
(PT-11)
0.9
1.7
PT-13
4" M.U. EXIST.
SLD'G HOLD'G TK.
SO2 STOR. T.
16" FORCE MAIN
P-12
(PT-12)
1.74
7.7
EXIST. 4" WATER LINE
FEEDER CANAL
SG-2
RIVER
STREET

sampling and the resampling are reported in Appendix B. In several instances the original sample exhibited higher concentrations than the resample. The values of highest concentrations are represented on the concentration map.

4.4.1.4 Cyanide. Total cyanide (Figure 4-10) was detected in 14 samples ranging from 0.88 to a maximum of 290 mg/kg in boring PT-10. Of these 14 samples all concentrations were below the NYSDEC Draft Cleanup Policy and Guidelines action level for soils of 2,000 mg/kg.

4.4.1.5 Volatile Organics. Quantifiable levels of volatile organic compounds were not detected in Pretreatment Plant soil samples being restricted to estimated concentrations (below detection limit) of the compounds chloroform, methylene chloride, and acetone in borings PT-4, PT-11, and PT-9. These compounds are common laboratory contaminants and it is likely that their presence is an analytical artifact. Furthermore, methylene chloride and acetone were detected in field, trip and method blank samples.

4.4.1.6 Semivolatile Organics. Estimated concentrations (below method detection limit) of many semivolatile compounds are common and widespread in Pretreatment Plant soil borings, however, the compounds 3,3-dichlorobenzidine and dimethyl phthalate were detected at higher concentrations in two samples (1,900 mg/kg 3,3-dichlorobenzidine in PT-10, and 1,900 mg/kg dimethyl phthalate in PT-15). The majority of the compounds occurred in the surface samples (0-2 feet in depth) within the eastern area of the site and adjacent to the filter backwash tank.

4.4.1.7 Other Compounds. The PCB compounds Aroclor 1232 and Arochlor 1248 were detected in the surface soil sample of boring PT-10. Aroclor 1232 was detected at a concentration of 3,800 µg/kg, and Aroclor 1248 was detected at a concentration of 780 µg/kg. This total PCB concentration (4,580 µg/Kg) exceeds the NYSDEC Draft Cleanup Policy and Guidelines action level for total PCBs in soil of 1,000 µg/Kg.

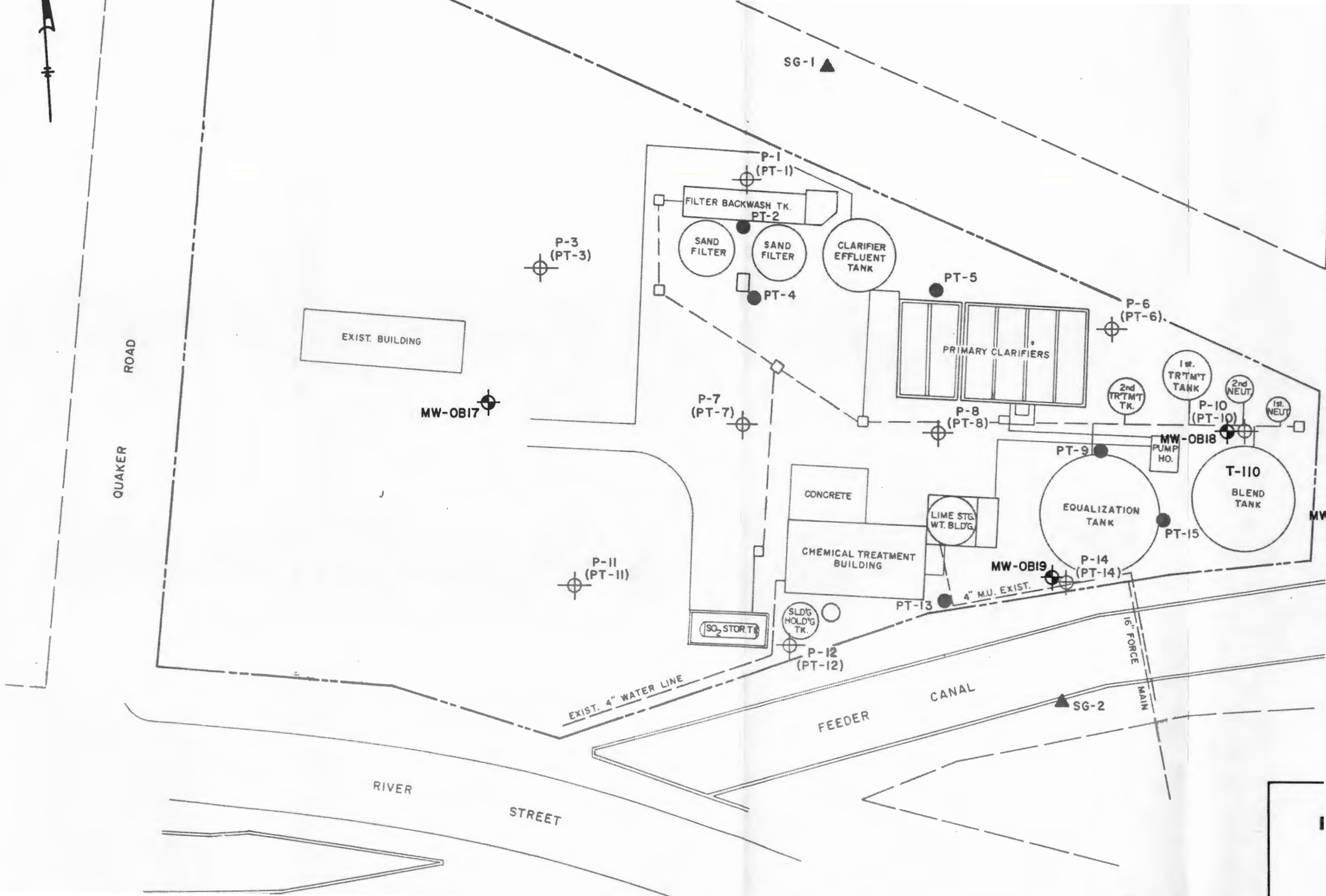
4.5 DATA VALIDATION

As required by the NYSDEC, twenty-five percent of the analytical data was subjected to validation by an outside independent data validator. The validation

report indicates that the data are suitable for use. No significant problems were detected in the data with the exception of a typographical error in the laboratory report for chromium in sample SB-5 S-1 which was corrected on the maps and tables used in this report, and low lead matrix spike recoveries in three samples. The data validation report is presented in Appendix E.

4.6 WELL PLACEMENT

As specified in Appendix III-E of the HWM Permit, and Appendix E of the HSWA permit a minimum of three groundwater monitoring wells are to be installed at the Pretreatment Plant. Two of the wells are to be located downgradient of sewers and treatment equipment.


SG-1
P-1
(PT-1)
FILTER BACKWASH TK.
PT-2
SAND FILTER
SAND FILTER
CLARIFIER EFFLUENT TANK
PT-4
PT-5
P-3
(PT-3)
EXIST. BUILDING
QUAKER ROAD
MW-0817
P-6
(PT-6)
PRIMARY CLARIFIERS
1st. TR'TM'T TANK
2nd TR'TM'T TK.
2nd NEUT.
1st. NEUT.
P-7
(PT-7)
P-8
(PT-8)
P-10
(PT-10)
MW-0818
PT-9
PUMP HO.
T-110
BLEND TANK
CONCRETE
LIME STG. WT. BLD'G.
EQUALIZATION TANK
PT-15
CHEMICAL TREATMENT BUILDING
P-11
(PT-11)
MW-0819
P-14
(PT-14)
PT-13
4" M.U. EXIST.
SLD'G HOLD'G TK.
SO2 STOR. T.
P-12
(PT-12)
16" FORCE MAIN
EXIST. 4" WATER LINE
FEEDER CANAL
SG-2
RIVER
STREET

5.0 RECOMMENDATIONS

Locate the upgradient monitoring well (MW-OB17) along the entrance road. Locate the downgradient monitoring wells (MW-18 and MW-19) just north of Tank 110 and adjacent to piezometer P-14, respectively.

The proposed locations of the pretreatment monitoring wells are presented on Figure 4-11. One well (MW-OB17) is proposed to be located upgradient of the facility. The two downgradient wells are proposed to be located in the eastern section of the Pretreatment Plant. Based on the area occupied by the Pretreatment Plant and the direction of groundwater flow three wells will satisfy the objectives of the investigation. Monitoring well MW-OB18 is proposed to be located downgradient of the primary clarifiers, the treatment tanks, and the tile line (it should be noted however, that based on information from piezometer P-10, this well location may be seasonally dry). A second downgradient monitoring well (MW-OB19) is proposed to be located downgradient of the old chemical treatment building and several former storage tanks.

REFERENCES

Aquatech, Inc., 1992. Quality Assurance Project Plan, CIBA-GEIGY Plant Site, Glens Falls, New York.

Connally, G. Gordon, 1973. Surficial Geology of the Glens Falls Region, New York, New York State Museum Map and Chart Series, No. 23: University of the State of New York, State Educational Department, Albany, New York.

ECKENFELDER INC., 1989. Soil Sampling Plan, CIBA-GEIGY Main Plant Site.

ECKENFELDER INC., 1991. Work Plan for RFA Sampling Visit of the Pretreatment Plant, CIBA-GEIGY Site, Glens Falls, New York.

EPA, 1991. Hazardous and Solid Waste Amendments Permit.

Fisher, Donald W., 1984. Bedrock Geology of the Glens Falls Region, New York, New York State Museum Map and Chart Series, No. 25: University of State of New York, State Educational Department, Albany, New York.

NYSDEC, 1991. Hazardous Waste Management Permit.

Schmiesing, Glen, 1991. Personnal Communication.

APPENDIX A

SOIL BORING LOGS

THE BURMISTER SOILS CLASSIFICATION SYSTEM

The Burmister system, also referred to as the American Society for Engineering Education (ASEE) system, provides a definitive shorthand nomenclature. Percentage ranges in weight for various granular components are given as: AND, >50%; and, 35-50%; some, 20-35%; little, 10-20%; trace, 1-10%. The percentages are estimated from experience, or by the use of the "ball moisture test" [see Burmister (1949) and Table 5.36].

Silts and clays can be identified by the smallest diameter thread that can be rolled with a saturated specimen as given on Table 5.35.

An example sample description is "Coarse to fine SAND, some fine Gravel, little Silt", or in shorthand nomenclature: "c-f S, s.f G, l. S.".

Field Determinations

A guide to determining the various soil components on the basis of characteristics and diagnostic procedures is given on Table 5.36, and a guide to the identification of the fine-grained fractions is given on Table 5.37.

Field Descriptions

The elements of field descriptions, including the significance of color, and nomenclature for structure and fabric are given on Table 5.38. The importance of complete field descriptions cannot be overstressed, since they provide the basic information for evaluations.

Burmister, D.M., 1949, "Principles and Techniques of Soil Identification," Proc. 29th Annual Mtg., Highway Research Board, Washington, DC.

TABLE 5.34
ASEE SYSTEM OF DEFINITION FOR VISUAL IDENTIFICATION OF SOILS*

DEFINITION OF SOIL COMPONENTS AND FRACTIONS

Granular material	Symbol	Fraction	Sieve size and definition
Boulders	Bldr		9 in +
Cobbles	Cbl		3 to 9 in
Gravel	G	Coarse (c)	1 to 3 in
		Medium (m)	¾ to 1 in
		Fine (f)	No. 10 to ¾ in
Sand	S	Coarse (c)	No. 30 to no. 10
		Medium (m)	No. 60 to no. 30
		Fine (f)	No. 200 to no. 60
Silt	S		Passing no. (0.074 mm). (Material nonplastic and exhibits little or no strength when air-dried.)
Organic silt	OS		Material passing no. 200, exhibiting: (1) plastic properties within a certain range of moisture content and (2) fine granular and organic characteristics.
Clay	See below		Material passing no. 200 which can be made to exhibit plasticity and clay qualities within a certain range of moisture content, and which exhibits considerable strength when air-dried.

Clay material	Symbol	Plasticity	Plasticity index
Clayey SILT	CyS	Slight (SL)	1 to 5
SILT and CLAY	S&C	Low (L)	5 to 10
CLAY and SILT	C&S	Medium (M)	10 to 20
Silty CLAY	SyC	High (H)	20 to 40
CLAY	C	Very high (VH)	40+

DEFINITION OF COMPONENT PROPORTIONS

Component	Written	Portions	Symbol	Percentage range by weight†
Principal	CAPITALS			50 or more
Minor	Lower case	And	a	35 to 50
		some	s	20 to 35
		little	l	10 to 20
		trace	t	1 to 10

*After Burmister (1948).[31]

†Minus sign (−) signifies lower limit, plus sign (+) upper limit, no sign middle range.

TABLE 5.35
IDENTIFICATION OF COMPOSITE CLAY SOILS ON AN OVERALL PLASTICITY BASIS*

Degree of overall plasticity	PI	Identification (Burmister system)	Smallest diameter of rolled threads, mm
Nonplastic	0	SILT	None
Slight	1-5	Clayey Silt	6
Low	5-10	SILT and CLAY	3
Medium	10-20	CLAY and SILT	1.5
High	20-40	Silty CLAY	0.8
Very high	>40	CLAY	0.4

*After Burmister (1951c).[33] Reprinted with permission from the *Annual Book of ASTM Standards*, Part 19, copyright, American Society for Testing and Materials.

TABLE 5.36
FIELD DETERMINATION OF SOIL COMPONENTS*

Component	Characteristic	Determination
Gravel	Dia. 5-76 mm	Measurable.
Sand		
Coarse	Dia. 2-5 mm	Visible to eye, measurable.
Medium	Dia. 0.4-2.0 mm	Visible to eye.
Fine	Dia. 0.074-0.4 mm	Barely discernible to unaided eye.
Silt: coarse	Dia. 0.02-0.074 mm	Distinguishable with hand lens.
Sand-silt mixtures	Apparent cohesion	Measured by ball test [Burmister (1949)[32]].
		Form ball in hand by compacting moist soil to diameter 1½ in (37 mm).
		Medium to fine sand forms weak ball with difficulty; cannot be picked up between thumb and forefinger without crushing.
		Ball can be picked up with difficulty: 20% silt
		Ball readily picked up: 35 to 50% silt.
Silt vs. clay	Dia. <0.074 mm	See also Table 5.37.
Silt	Strength	Low when air-dried, crumbles easily.
	Dilatancy test	Mixed with water to thick paste consistency. Appears wet and shiny when shaken in palm of hand, but when palm is cupped and sample squeezed, surface immediately dulls and dries.
	Dispersion test	Mixed with water in container; particles settle out in ¼ to 1 hour (L = >10 cm).
	Thread test	Rolls into thin threads in wet state but threads break when picked up by one end.
Clay	Strength	High when air-dried, breaks with difficulty.
	Plasticity	When mixed with water to form paste and squeezed in hand, specimen merely deforms and surface does not change in appearance.
	Dispersion test	Remains in suspension from several hours to several days in container.
	Thread test	Can be rolled into fine threads that remain intact. Fineness depends on clay content and mineralogy.
		Thread diameter when saturated vs. PI and identification given on Table 5.35.
	Adhesion	Sticky and greasy feel when smeared between fingers.
Organic Soils	Strength	Relatively high when air-dried.
	Odor	Decayed organic matter; gases.
	Organic matter	Root fibers, etc.
	Shrinkage	Very high.

TABLE 5.37
IDENTIFICATION OF FINE-GRAINED SOIL FRACTIONS FROM MANUAL TESTS*

Material	Dry strength	Dilatency reaction	Toughness of plastic thread	Plasticity description
Sandy silt	None-very low	Rapid	Weak, soft	None-low
Silt	Very low-low	Rapid	Weak, soft	None-low
Clayey silt	Low-medium	Rapid-slow	Medium stiff	Slight-medium
Sandy clay	Low-high	Slow-none	Medium stiff	Slight-medium
Silty clay	Medium-high	Slow-none	Medium stiff	Slight-medium
Clay	High-very high	None	Very stiff	High
Organic silt	Low-medium	Slow	Weak, soft	Slight
Organic clay	Medium-very high	None	Medium stiff	Medium-high

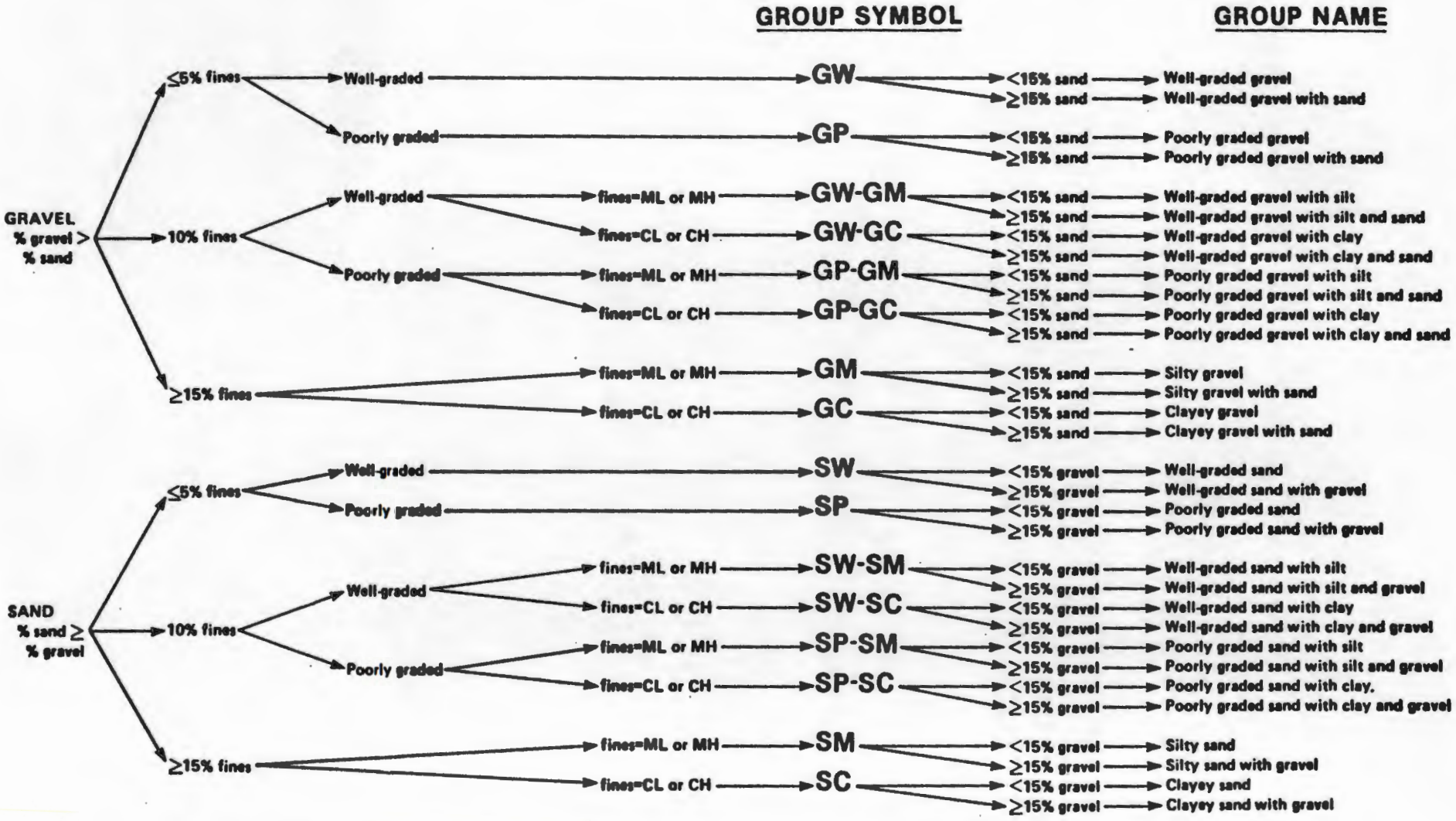
*From ASTM D2488. Reprinted with permission of the American Society for Testing and Materials.

TABLE 5.38
SOIL IDENTIFICATION: ELEMENTS OF FIELD DESCRIPTIONS

Elements	Importance	Description
Gradation	Components	See Table 5.36.
Grain shape	Strength	Rounded, subrounded, subangular, angular.
Mineral constituents	Strength	From Table 5.5.
Color	Provides information on soil minerals and environment	Tone: Function of soil moisture; the wetter the deeper the color. Red, yellow, brown: Good drainage and aeration. Deep reds: Indicate iron oxides. Pale yellow, yellow browns: Hydrated iron oxides. Bluish gray: Reduced bivalent iron compound, poor drainage and aerobic conditions. Light grays: Due to leaching. Mottled colors: Restricted permeability, or poor drainage and aeration. Black, dark brown, or gray: Organic soils; or caused by dark minerals (manganese, titanium, magnetite). Green: Glauconite (hydrous silicate, K and Fe). White: Silica, lime, gypsum, kaolin clay.
Compactness in situ	Compressibility of granular soils	From SPT (see *Table* 3.28) or visual estimate.
Consistency in situ	Strength of clay soils	From hand test or SPT (see *Table* 3.29).
Field moisture	Estimate GWL depth	From sample appearance: Dry, moist, wet (saturated).
Homogeneity	Permeability estimates (k_h vs. k_v)	Fabric or structure: Terms not universally defined. Homogeneous: Without stratification; uniform fabric. Stratified: Partings—very fine, barely visible, form weakness planes Lenses—from very fine to 5 mm Seams—5 mm to 2 cm Layers—>2 cm Varves—interbedded seams Pockets: Foreign irregularly shaped mass in matrix. Heterogeneous: very irregular, without definite form.
Cementation	Strength	Reaction with dilute HCl: None, weak, strong.

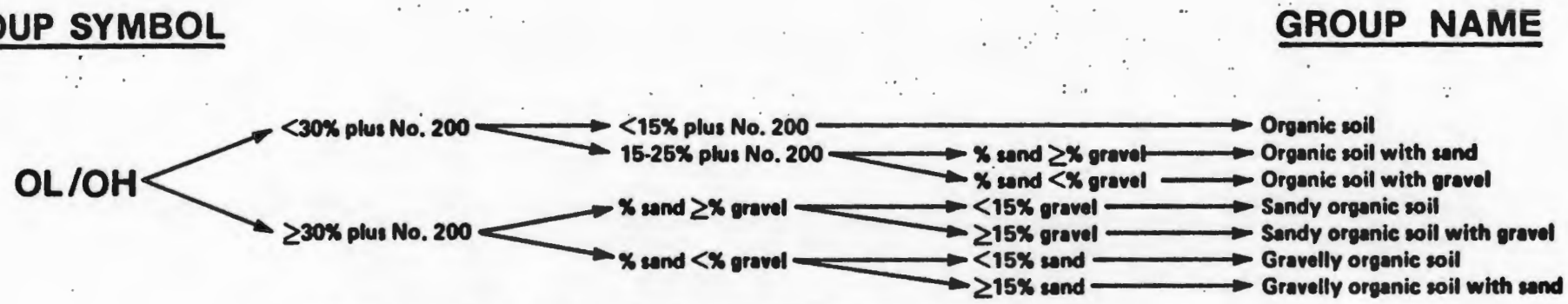
NOTE: Example: "Medium compact, tan, silty coarse to fine sand (subrounded, quartz, with some shell fragments) with lenses and seams of dark gray silt; moist."

THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)



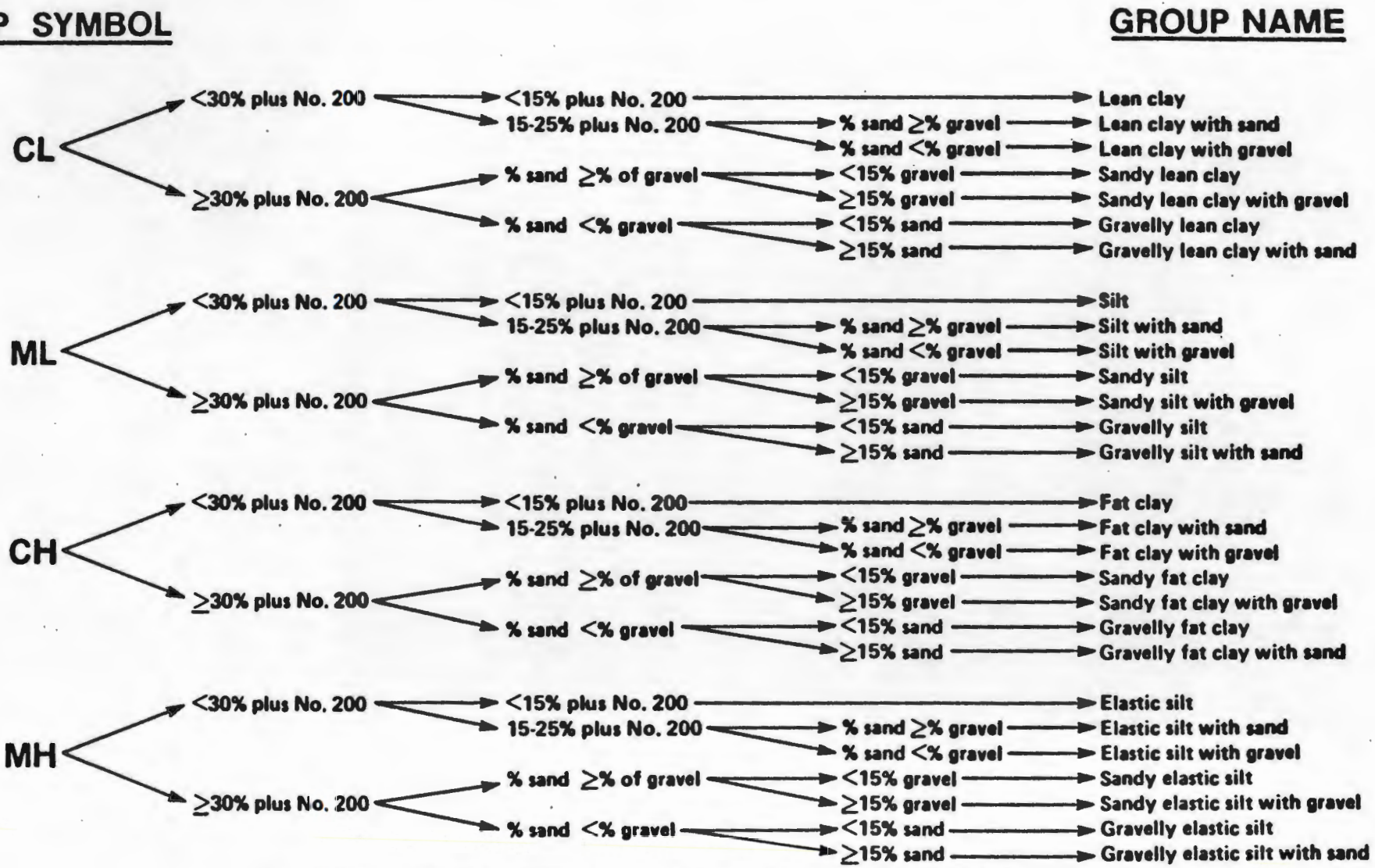
NOTE—Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5%.

FIG. 2 Flow Chart for Identifying Coarse-Grained Soils (less than 50 % fines)



NOTE—Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5 %.

FIG. 1b Flow Chart for Identifying Organic Fine-Grained Soil (50 % or more fines)



NOTE—Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5 %.

FIG. 1a Flow Chart for Identifying Inorganic Fine-Grained Soil (50 % or more fines)

KEY TO SOILS IDENTIFICATION

Granular Soils – Particle Size Classification

Material		Fractions	Passing	Retains On
BOULDERS	Material retained on the 9-in. sieve			9 in.
COBBLES	Material passing on the 9-in. sieve and retained on the 3-in. sieve		9 in.	3 in.
GRAVEL	Material passing on the 3 in. sieve and retained on the No. 10 sieve	Coarse(c) Medium (m) Fine (f)	3 in. 1 in. 3/8 in.	1 in. 3/8 in. No. 10
SAND	Material passing the No. 10 sieve and retained on the No. 200 sieve	Coarse(c) Medium (m) Fine (f)	No. 10 No. 30 No. 60	No. 30 No. 60 No. 200
SILT	Material passing the No. 200 sieve that is non-plastic in character and exhibits little or no strength when air dried.		No. 200	

Clay Soils – Plasticity Classification

Material*	Degree of Overall Plasticity	Overall Plasticity Index Sand - Silt - Clay Compounds
Clayey SILT	Slight	1 to 5
SILT & CLAY	Low	5 to 10
CLAY & SILT	Medium	10 to 20
Silty CLAY	High	20 to 40
CLAY	Very High	40 and greater

* Soils passing the No. 200 sieve which can be made to exhibit plasticity and clay qualities within a certain range of moisture content, and which exhibits considerable strength when air dried.

Penetration Resistance and Soil Properties On Basis of the Standard Penetration Test

(After Peck, Hanson and Thornburg, 1974)

Sands (Fairly Reliable)		Clays (Rather Unreliable)	
Number of Blows Per Foot, N	Relative Density	Number of Blows Per Foot, N	Consistency
0-4	Very Loose	Below 2	Very Soft
4-10	Loose	2-4	Soft
10-30	Medium	4-8	Medium
30-50	Dense	8-15	Stiff
Over 50	Very Dense	15-30	Very Stiff
		Over 30	Hard

Terms Identifying Composition of Soil

Written*	Defining Range of Percentage by Weight
and	35 to 50
some	20 to 35
little	10 to 20
trace	0 to 10

* Plus (+) or minus (-) sign used after identifying term denotes extremes of range; e.g., "some (-) Gravel" indicates 20 to 24 percent Gravel; "some (+) Gravel" indicates 31 to 35 percent Gravel.

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: PT-1 & P-1

Project: *RFA Sampling Visit at the Pretreatment Plant* | Project No.: *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/07/91*

Finish Date: *11/07/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soil Investigations, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*1 inch*	*1 inch*
Coupling:	*Flush-Threaded*	*Flush-Threaded*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *284.7*

TWC: *287.76*

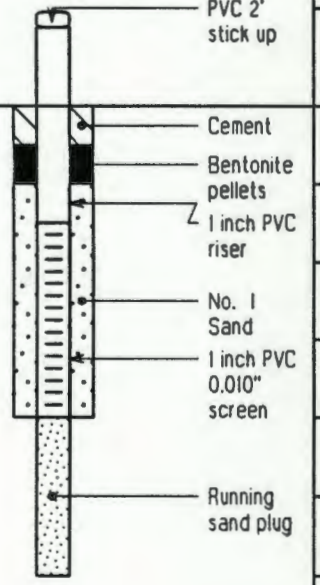
TPC: *NA*

North: *1207614.36*

East: *693295.50*

Geophysical Log: ☐ yes ☒ no

Comments:



Depth (feet)	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	S-1	/-14-11-10	0.8	SM		ASPHALT 0.8 Gray f SAND, concrete fragments FILL Brown cmf SAND, trace Silt, wet	
	S-2	4-8-9-8	2.0			@ depth 3.8' black CLAY with seams of f SAND, trace Silt	
5	S-3	9-7-8-5	0.0	CL			No Recovery
	S-4	4-12-14-8	2.0	SW		@ depth 6.0' brown cmf SAND, trace f Gravel, trace Silt, large pieces of concrete	Saturated at 6.0 feet.
	S-5	4-3-4-5	1.3	CH		@ depth 9.0' gray CLAY, some to no c Gravel, concrete frags	Running sands inside augers resulted in piezometer set at total depth of 8 feet.
10	S-6	8-16-47-50	1.8	SM CH		11.1 BEDROCK 12.0 Black limestone fragments End of Boring at 12.0 feet.	
15							
20							
25							
30							

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-2**

Project: *RFA Sampling Visit at the Pretreatment Plant* **Project No.:** *6701.02*

Client: *Hercules Inc. – Glens Falls, NY*

Start Date: *11/07/91*

Finish Date: *11/07/91*

DRILLING DATA

Inspector: *RSS and JAH*

Contractor: *Patrick Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C – Skid Rig*

Method: *4 1/4 ID, 6 1/4 OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*NA*	*NA*
Diameter (ID):	*NA*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *285.05*

TWC: *NA*

TPC: *NA*

North: *1207587.17*

East: *693299.14*

Geophysical Log: ☐ yes ☒ no

Comments:

Depth (feet)	WELL CONSTRUCTION	soil/rock	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.) / Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0			S-1	/-5-4-4	1.2			ASPHALT 0.5 FILL Brown mf SAND, trace (+) Silt, with seams of Silty CLAY, wet	
			S-2	3-5-3-4	1.9	SM			
5	Backfilled with cuttings		S-3	4-2-1-3	0.8			@ depth 8' brown cmf SAND, trace (+) cmf Gravel, trace Silt, cement fragments, limestone fragments, wet	
			S-4	3-4-7-11	1.9	GM			
10			S-5	7-8-7-50	2.0			Gray cmf SAND, cement fragments 9.7 BEDROCK Black Limestone End of Boring at 10.0 feet.	
15									
20									
25									
30									

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-3 & P-3**

Project: *RFA Sampling Visit at the Pretreatment Plant* Project No.: *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/13/91*

Finish Date: *11/13/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*1 inch*	*1 inch*
Coupling:	*Flush-Threaded*	*Flush-Threaded*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *285.6*

TWC: *287.37*

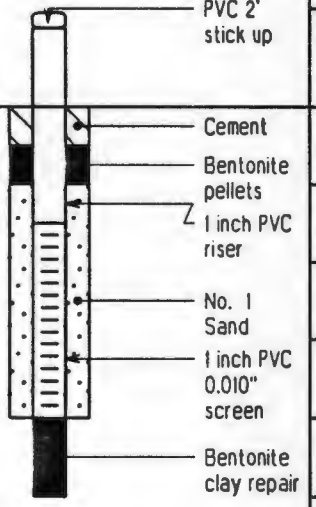
TPC: *NA*

North: *1207541.47*

East: *693189.3846*

Geophysical Log: ☐ yes ☒ no

Comments:



Depth (feet)	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	S-1	2-2-3-3	1.5	SP		TOPSOIL/FILL Dark brown mf SAND, little organic Silt Dark brown to orange-tan cmf SAND, trace (+) f Gravel, little to trace Silt, saturated	Saturated at depth 2.0 feet.
3.5	S-2	8-9-9-7	1.8				
5	S-3	4-5-8-14	1.5	CL		LACUSTRINE DEPOSITS Gray Silty CLAY interbedded with CLAY & SILT; and light brown f SAND, some Silt, wet	
	S-4	5-3-4-9	2.0				
8.0	S-5	2-2-2-2	2.0	CH		@ depth 8.0' gray CLAY, dense	
10						End of Boring at 10.0 feet.	
15							
20							
25							
30							

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-4**

Project: *RFA Sampling Visit at the Pretreatment Plant*
Client: *Hercules Inc./CIBA-GEIGY Plant Site*
Project No.: *6701.02*
Start Date: *11/06/91*
Finish Date: *11/06/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*
Contractor: *P. Norton, Empire Soils Investigation, Inc.*
Equipment: *CME 45C - Skid Rig*
Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*NA*	*NA*
Diameter (ID):	*NA*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*
Duration: *NA*
Gals. Purged: *NA*
Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *284.7*
TWC: *NA*
TPC: *NA*
North: *1207518.60*
East: *693312.03*

Geophysical Log: ☐ yes ☒ no
Comments:

Depth (feet)	WELL CONSTRUCTION	soil / rock	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	backfilled with cuttings		S-1	2-7-13-11	1.8	SW		LACUSTRINE DEPOSITS Medium brown cmf SAND, little fn Gravel, little Silt, dry	
			S-2	8-9-7-8	1.8				
5	Bentonite clay repair		S-3	2-2-2-4	1.2	CH		@ depth 4' dark gray CLAY, dense, moist	
								6.0 End of Boring at 6.0 feet.	
10									
15									
20									
25									
30									

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-5**

Project: *RFA Sampling Visit at the Pretreatment Plant* **Project No.:** *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/07/91*

Finish Date: *11/07/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*NA*	*NA*
Diameter (ID):	*NA*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA

DATUM: NGVD

Grade: *285.1*

TWC: *NA*

TPC: *NA*

North: *1207572.98*

East: *693415.56*

Geophysical Log: ☐ yes ☒ no

Comments:

Depth (feet)	WELL CONSTRUCTION	soil / rock	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.) / Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0			S-1	3-8-12-14	1.5	SW		TOPSOIL Black f SAND, some Silt, dry	
			S-2	11-11-11-9	1.5			0.2 LACUSTRINE DEPOSITS Medium brown cmf SAND, little to trace cmf Gravel, with lenses of brown CLAY, dry to moist	
5	backfilled with cuttings		S-3	5-7-3-3	1.5	SC		@ depth 4' gray CLAY interbedded with yellow cmf SAND	
	Bentonite clay repair		S-4	2-3-2-4	1.5	CH		@ depth 6' dark gray CLAY, dense	
10								8.0 End of Boring at 8.0 feet.	
15									
20									
25									
30									

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-6 & P-6**

Project: *RFA Sampling Visit at the Pretreatment Plant* **Project No.:** *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/08/91*

Finish Date: *11/08/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*1 inch*	*1 inch*
Coupling:	*Flush-Threaded*	*Flush-Threaded*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *285.1*

TWC: *287.75*

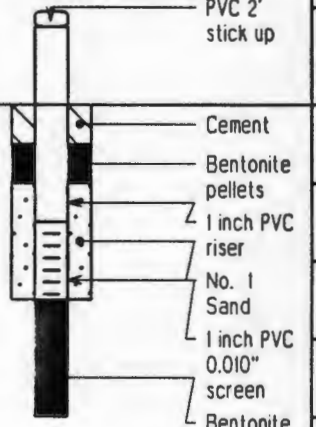
TPC: *NA*

North: *1207570.41*

East: *693518.73*

Geophysical Log: ☐ yes ☒ no

Comments:



Depth (feet)	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	S-1	5-5-7-10	1.7	SW		FILL Brown cmf SAND, little (-) f Gravel, trace (+) Silt, concrete fragments with partings of brown CLAY, moist	
	S-2	8-13-13-18	2.0			@ depth 4.0' brown cmf SAND, trace Silt, wet	
5	S-3	3-2-4-5	1.3	SM		5.0 LACUSTRINE DEPOSITS Orange-brown to gray CLAY, dense, varved	First attempt to retrieve S-3 resulted in the loss of the split spoon in the hole. Moved over and started hole again from 4 feet.
	S-4	3-3-4-5	2.0	CH		8.0 End of Boring at 8.0 feet.	
10							
15							
20							
25							
30							

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-7 & P-7**

Project: *RFA Sampling Visit at the Pretreatment Plant* **Project No.:** *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/06/91*

Finish Date: *11/06/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*1 inch*	*1 inch*
Coupling:	*Flush-Threaded*	*Flush-Threaded*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *285.8*

TWC: *288.18*

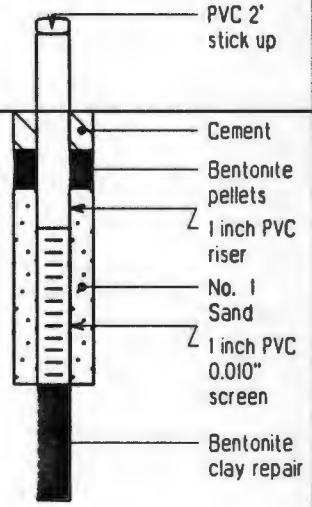
TPC: *NA*

North: *1207476.84*

East: *693319.59*

Geophysical Log: ☐ yes ☒ no

Comments:



Depth (feet)	soil/rock	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	soil	S-1	1-5-8-8	0	NA		FILL	No Recovery
	soil	S-2	11-9-10-10	1.8	SM		Orange-brown cmf SAND, little Silt, trace (+) mf Gravel, grading to brown cmf SAND, trace Silt, trace f Gravel, saturated	S-3 is a blind duplicate sample of S-2.
5	soil	S-4	12-9-7-9	0	NA		6.0	No Recovery
	soil	S-5	9-7-8-9	2.0	SM		LACUSTRINE DEPOSITS Brown cmf SAND, trace Silt	
	soil	S-6	8-10-9-9	0	CH		@ depth 7.0' gray CLAY, dense, varved	No Recovery, but small piece of dense gray clay in shoe and outside of spoon is coated with gray clay
10							10.0 End of Boring at 10.0 feet.	
15								
20								
25								
30								

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-8 & P-8**

Project: *RFA Sampling Visit at the Pretreatment Plant* **Project No.:** *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/07/91*

Finish Date: *11/07/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*1 inch*	*1 inch*
Coupling:	*Flush-Threaded*	*Flush-Threaded*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *284.8*

TNC: *286.95*

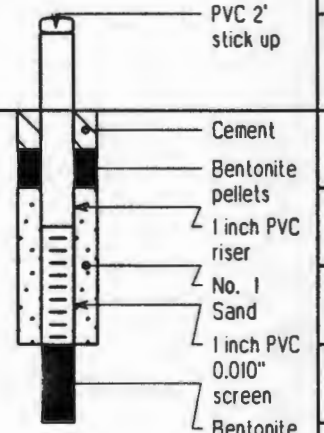
TPC: *NA*

North: *1207493.57*

East: *693431.10*

Geophysical Log: ☐ yes ☒ no

Comments:



Depth (feet)	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.) / Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	S-1	5-4-5-7	1.0	SW		FILL Orange-brown cmf SAND, little to trace mfc Gravel, trace (+) Silt, dry to moist	
	S-2	4-4-5-3	1.0			@ depth 2' Same as above with increasing Gravel size and content	
5	S-3	3-2-3-4	1.3	SC		5.0 LACUSTRINE DEPOSITS Brown to gray CLAY, seams of light brown m SAND, wet	At 5.2' a thin layered black substance was encountered, with an odor
	S-4	2-4-5-6	2.0	CH		@ depth 6' gray CLAY, dense, varved	The outside of the third & fourth sample spoons were entirely coated with this black substance
10						8.0 End of Boring at 8.0 feet.	
15							
20							
25							
30							

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-9**

Project: *RFA Sampling Visit at the Pretreatment Plant*
Client: *Hercules Inc./CIBA-GIEGY Plant Site*
Project No.: *6701.02*
Start Date: *11/08/91*
Finish Date: *11/08/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*
Contractor: *P. Norton, Empire Soils Investigation, Inc.*
Equipment: *CME 45C – Skid Rig*
Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*NA*	*NA*
Diameter (ID):	*NA*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*
Duration: *NA*
Gals. Purged: *NA*
Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *285.2*
TWC: *NA*
TPC: *NA*
North: *1207497.68*
East: *693526.19*

Geophysical Log: ☐ yes ☒ no
Comments:

Depth (feet)	WELL CONSTRUCTION	soil / rock	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0			S-1	48-34-50/0.2'	1.1	GW		ASPHALT/FILL Black-gray Asphalt Brown mf SAND, some cmf Gravel, trace (+) Silt, concrete frags	
			S-2	9-9-8-7	1.4	SP		@ depth 2.0' brown-orange cmf SAND, little to trace f Gravel, little to trace Silt, moist	
5	backfilled with cuttings		S-3	4-4-5-6	1.8			5.3	Saturated at 4.5 feet
	Bentonite clay repair					ML		LACUSTRINE DEPOSITS Gray CLAY with seams of orange-brown f SAND, little Silt	
			S-4	6-6-7-10	2.0	CH		8.0 @ depth 8.0' gray-brown CLAY, dense, varved	
10								End of Boring at 8.0 feet.	
15									
20									
25									
30									

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-10 & P-10**

Project: *RFA Sampling Visit at the Pretreatment Plant* **Project No.:** *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/12/91*

Finish Date: *11/12/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*1 inch*	*1 inch*
Coupling:	*Flush-Threaded*	*Flush-Threaded*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *285.2*

TWC: *287.82*

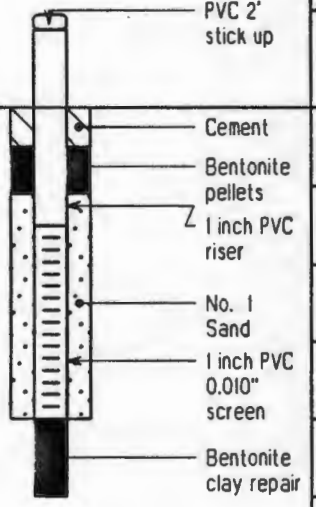
TPC: *NA*

North: *1207527.94*

East: *693603.41*

Geophysical Log: ☐ yes ☒ no

Comments:



Depth (feet)	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	S-1	/-8-8-8	1.3	SC		FILL cmf SAND grading into natural brown cmf SAND, trace Silt, trace cmf Gravel, moist	Pigments observed
2.5							
	S-2	6-7-9-8	1.0			LACUSTRINE DEPOSITS Brown CLAY interbedded with brown mf SAND, little Silt, trace Gravel; brown-gray Silty CLAY; f SAND and SILT, moist	S-4 is a blind duplicate of S-3.
5	S-3	6-5-7-10	2.0				
	S-5	9-14-15-16	1.5	ML		@ depth 6.0' gray CLAY interbedded with light brown f SAND, some Silt	
	S-6	27-12-8-8	1.8	CH		@ depth 8.3' purple-brown CLAY	
10						10.0 End of Boring at 10.0 feet.	
15							
20							
25							
30							

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-11 & P-11**

Project: *RFA Sampling Visit at the Pretreatment Plant* Project No.: *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/05/91*

Finish Date: *11/05/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*1 inch*	*1 inch*
Coupling:	*Flush-Threaded*	*Flush-Threaded*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *288.4*

TWC: *291.06*

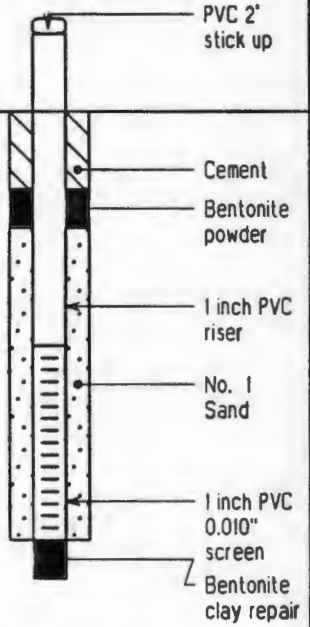
TPC: *NA*

North: *1207368.55*

East: *693243.24*

Geophysical Log: ☐ yes ☒ no

Comments:



Depth (feet)	soil/rock	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	soil	S-1	3-5-8-8	1.8	SM		TOPSOIL & FILL Dark brown mf SAND, trace (+) Silt, organic content, grading to med brown mf SAND, little to some cmf Gravel, little (-) Silt	Clay layers approximately 1.0 inch thick and sand seams approximately 0.5 inch thick
		S-2	5-8-9-23	1.8				
5		S-3	4-3-7-8	1.4	GM		Dark brown f GRAVEL and cmf SAND, trace (+) Silt, gravel decreasing with depth	
		S-4	5-7-8-10	2.0	CL		6.0'	
		S-5	5-6-6-7	0.5	CH		LACUSTRINE DEPOSITS Light brown CLAY, interbedded with seams of light brown f SAND, trace (-) Silt	
10		S-6	8-7-8-10	1.5			@ depth 8.0' gray CLAY, dense.	
							12.0'	
15							End of Boring at 12.0 feet.	
20								
25								
30								

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-12**

Project: *RFA Sampling Visit at the Pretreatment Plant* | Project No.: *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/06/91*

Finish Date: *11/06/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*NA*	*NA*
Diameter (ID):	*NA*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *284.8*

TIC: *NA*

TPC: *NA*

North: *1207359.05*

East: *693371.31*

Geophysical Log: ☐ yes ☒ no

Comments:

Depth (feet)	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	S-1	3-3-6-8	1.2		SP		LACUSTRINE DEPOSITS Dark brown to yellow cmf SAND, little f Gravel, with seams of brown CLAY, dry	
	S-2	4-3-7-10	1.5		SP		Medium brown cmf SAND, trace f Gravel, moist	Saturated at 4.0 feet
5	S-3	4-3-4-9	1.5				@ depth 3.5' brown-gray-maroon CLAY, grading to Clayey Silt, wet	
	S-4	8-10-10-10	2.0		ML / SM		@ depth 6.0' medium brown cmf SAND	
							@ depth 7.0' brown-gray-maroon CLAY, grading to Clayey Silt	
10	S-5	2-3-3-9	2.0		CL		@ depth 8.0' dark gray CLAY, dense, moist 10.0' End of Boring at 10.0 feet.	
15								
20								
25								
30								

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-13**

Project: *RFA Sampling Visit at the Pretreatment Plant* | Project No.: *6701.02*

Client: *Hercules Inc./CIBA-GEIGY Plant Site*

Start Date: *11/13/91*

Finish Date: *11/13/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*NA*	*NA*
Diameter (ID):	*NA*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA

DATUM: NGVD

Grade: *284.82*

TWC: *NA*

TPC: *NA*

North: *1207399.88*

East: *693453.83*

Geophysical Log: ☐ yes ☒ no

Comments:

Depth (feet)	WELL CONSTRUCTION	soil/rock	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0			S-1	3-5-12-10	0.8		GW		FILL Brown cmf SAND, trace cmf Gravel, trace Silt, limestone gravel fragments	
			S-2	5-4-5-6	1.0		SW		2.2 LACUSTRINE DEPOSITS Brown Silty CLAY, little mf Sand	Saturated at 4.0 feet
5	Backfilled with cuttings		S-3	4-5-6-14	1.0				@ depth 2.6' brown cmf SAND, little to trace Gravel, trace Silt	S-4 is a blind duplicate of S-3
			S-5	7-6-7-9	1.8		CH		@ depth 6.7' purplish-gray to brown CLAY, dense, varved	
10	Bentonite clay repair		S-6	2-3-4-7	2.0				10 End of Boring at 10.0 feet.	
15										
20										
25										
30										

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-14 & P-14**

Project: *RFA Sampling Visit at the Pretreatment Plant* | Project No.: *6701.02*

Client: *Hercules Inc./CIBA-GIEGY Plant Site*

Start Date: *11/12/91*

Finish Date: *11/12/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4 ID, 6 1/4 OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*PVC*	*PVC*
Diameter (ID):	*1 inch*	*1 inch*
Coupling:	*Flush-Threaded*	*Flush-Threaded*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *285.1*

TWC: *287.41*

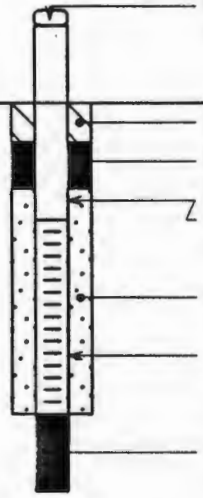
TPC: *NA*

North: *1207423.26*

East: *693520.23*

Geophysical Log: ☐ yes ☒ no

Comments:



Depth (feet)	Samp. No. / Run No.	Blows/ 6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	S-1	8-3-3-3	1.2	SM		ASPHALT/LACUSTRINE DEPOSITS Asphalt underlain by med brown cmf SAND, tr Silt, with orange-brown CLAY & SILT, little Sand, moist	
	S-2	3-3-4-4	1.5	SW		@ depth 2.0' gray to med brown cmf SAND, little f Gravel, with partings of brown CLAY, moist	S-3 is a blind duplicate of S-2.
5	S-4	5-7-9-14	1.5	CL		@ depth 4.0' brown-red CLAY interbedded with brown-orange SILT, dry to moist	
	S-5	12-11-11-14	1.5				
10	S-6	4-4-5-6	1.5	CH		@ depth 8.0' dark gray to brown CLAY, dense, varved, moist to wet	
						10.0' End of Boring at 10.0 feet.	
15							
20							
25							
30							

ECKENFELDER INC.

Subsurface Boring Log

Well Name/Location: **PT-15**

Project: *RFA Sampling Visit at the Pretreatment Plant* | Project No.: *6701.02*

Client: *Hercueles Inc./CIBA-GEIGY Plant Site*

Start Date: *11/12/91*

Finish Date: *11/12/91*

DRILLING DATA

Inspector: *R. Steinberg, J. Higgins*

Contractor: *P. Norton, Empire Soils Investigation, Inc.*

Equipment: *CME 45C - Skid Rig*

Method: *4 1/4" ID, 6 1/4" OD Hollow Stem Augers*

SAMPLING METHODS

	Sampler	Tube	Core
Type:	*Split Spoon*	*NA*	*NA*
Diameter:	*3 inch*	*NA*	*NA*
Other:	*140 lb/30 inch*	*NA*	*NA*

WELL CONSTRUCTION

	Riser	Screen
Material:	*NA*	*NA*
Diameter (ID):	*NA*	*NA*
Coupling:	*NA*	*NA*

WELL DEVELOPMENT

Method: *NA*

Duration: *NA*

Gals. Purged: *NA*

Slug Test: *NA* (cm/sec)

SURVEY DATA DATUM: NGVD

Grade: *285.16*

TWC: *NA*

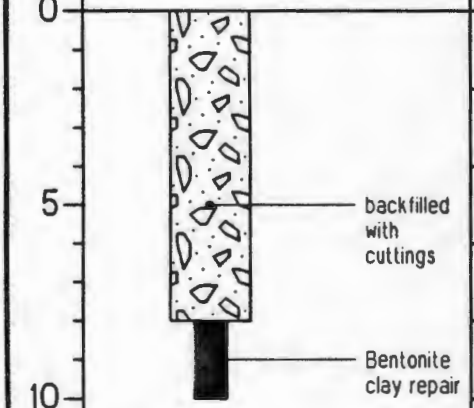
TPC: *NA*

North: *1207468.87*

East: *693563.65*

Geophysical Log: ☐ yes ☒ no

Comments:



Depth (feet)	Samp. No. / Run No.	Blows/6 in. / Hydraul. Cond. cm/sec	Rec. (ft.)	USCS / RQD	PID (ppm)	VISUAL CLASSIFICATION	REMARKS
0	S-1	2-8-55-23	1.0	GW		FILL Brown cmf SAND, trace (+) Silt, trace f Gravel, concrete fragments	S-3 was a blind duplicate of S-2.
	S-2	7-5-5-4	1.2	SM / CL		2.2 LACUSTRINE DEPOSITS Black to light brown cmf SAND, trace Silt, moist	
5	S-4	6-8-5-8	1.65	SM		@ depth 3' brown CLAY @ depth 4' orange cmf to mf SAND, trace Silt, wet	
	S-5	7-11-10-18	1.4	CL		@ depth 5' brown, gray, black, CLAY, with seams of brown f SAND, little Silt, wet	
10	S-6	5-8-4-7	2.0	CH		10.0 @ depth 9' purplish-gray CLAY, dense, varved End of Boring at 10.0 feet.	
15							
20							
25							
30							

ATTACHMENT I

TO

FINAL RFA REPORT

APPENDIX B

ANALYTICAL RESULTS SUMMARY

PRETREATMENT PLANT

mg/Kg

RESULTS OF INORGANIC ANALYSES OF SOIL SAMPSAMPLES

Boring Name	Sample Number	Depth (feet)	Date	Description	Barium	Cadmium	Chromium	Lead	Volatile Screen	Semi-Volatile Screen	Arsenic	Copper	Mercury	Selenium	Strontium	Iron	Cyanide
PT-1	1	00-2.0	07-Nov-91	Sand	45	2.2	36	36	PS(b)	PS	--(c)	--	--	--	--	--	--
PT-1	2	2.0-4.0	07-Nov-91	Sand	30	1.36	8.6	BMDL(d)	PS	PS	--	--	--	--	--	--	--
PT-1	4	6.0-8.0	07-Nov-91	Sand	33	1.84	16.1	21	PS	PS	--	--	--	--	--	--	--
PT-1	5	8.0-10.0	07-Nov-91	Sand/Clay	25	1.35	6.5	BMDL	PS	PS	--	--	--	--	--	--	--
PT-1	6	10.0-12.0	07-Nov-91	Sand/bedrock	24	1.36	7.6	BMDL	PS	PS	--	--	--	--	--	--	--
PT-2	1	0.0-2.0	07-Nov-91	Sand	21	1.23	7.9	BMDL	PS	FL(e)	--	--	--	--	--	--	--
PT-2	1(MS)	0.0-2.0	07-Nov-91	Matrix Spike	199	5	22	27	--	--	--	--	--	--	--	--	--
PT-2	1(REP)	0.0-2.0	07-Nov-91	Lab Replicate	25.5	1.51	7.4	8.8	--	--	--	--	--	--	--	--	--
PT-2	2	2.0-4.0	07-Nov-91	Sand	29	1.47	7.5	BMDL	PS	FL	--	--	--	--	--	--	--
PT-2	3	4.0-6.0	07-Nov-91	Sand	15.6	.87	4.4	BMDL	PS	FL	--	--	--	--	--	--	--
PT-2	4	6.0-8.0	07-Nov-91	Sand	22	1.51	5.9	BMDL	PS	FL	--	--	--	--	--	--	--
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	25	1.17	4.5	BMDL	PS	PS	--	--	--	--	--	--	--
PT-3	1	0.0-2.0	13-Nov-91	Sand	87	7.9	197	159	PS	FL	6.4	17.1	.72	BMDL	24	13300	BMDL
PT-3	2	2.0-4.0	13-Nov-91	Sand	46	1.99	17.2	BMDL	PS	PS	--	--	--	--	--	--	--
PT-3	3	4.0-6.0	13-Nov-91	Clay & Silt	102	3.6	21	BMDL	PS	PS	--	--	--	--	--	--	--
PT-3	4	6.0-8.0	13-Nov-91	Clay	230	5.7	42	BMDL	PS	PS	--	--	--	--	--	--	--
PT-3	5	8.0-10.0	13-Nov-91	Clay	260	5.4	40	BMDL	PS	PS	--	--	--	--	--	--	--
PT-3	S-1B	0.0-2.0	12-Feb-92	Re-sample	--	--	--	--	--	--	--	--	.88	--	--	--	20
PT-4	1	0.5-2.0	06-Nov-91	Sand	54	2.4	11.2	12.9	PS	PS	--	--	--	--	--	--	--
PT-4	2	2.0-4.0	06-Nov-91	Sand	32	2.7	9.8	BMDL	FL	PS	--	--	--	--	--	--	--
PT-4	3	4.0-6.0	06-Nov-91	Clay	106	3.9	18.4	13.5	PS	PS	--	--	--	--	--	--	--
PT-5	1	0.0-2.0	07-Nov-91	Sand	134	5.8		125	PS	FL	--	--	--	--	--	--	--
PT-5	2	2.0-4.0	07-Nov-91	Sand	29	1.45	9.2	BMDL	PS	PS	--	--	--	--	--	--	--
PT-5	3	4.0-6.0	07-Nov-91	Clay	95	4.6	62	43	PS	FL	--	--	--	--	--	--	--
PT-5	4	6.0-8.0	07-Nov-91	Clay	138	4.6	20	10	PS	PS	--	--	--	--	--	--	--
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	112	7.9	165	155	PS	FL	3.2	24	.77	BMDL	29	23000	110
PT-6	2	2.0-4.0	08-Nov-91	Sand	65	2.5	36	63	PS	PS	--	--	--	--	--	--	--
PT-6	3	4.0-6.0	08-Nov-91	Sand/Clay	199	5.2	36	10.6	PS	PS	--	--	--	--	--	--	--

All parameters measured in mg/Kg; PS indicates sample passed screening test; FL indicates sample fialed screening test; BMDL inidcates parameter below minimum detection limit

RESULTS OF INORGANIC ANALYSES OF SOIL SAMPSAMPLES

Boring Name	Sample Number	Depth (feet)	Date	Description	Barium	Cadmium	Chromium	Lead	Volatile Screen	Semi-Volatile Screen	Arsenic	Copper	Mercury	Selenium	Strontium	Iron	Cyanide
ACTION LEVEL →					4,000	80	400 (HEX)	250			80	NONE AVAIL	20	NONE AVAIL	NONE AVAIL	NONE AVAIL	2,000
PT-6	4	6.0-8.0	08-Nov-91	Clay	148	5	26	13.2	PS	PS	--	--	--	--	--	--	--
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	.94	--	--	--	14.5
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	--	--	--	--	--
PT-7	2	2.0-4.0	06-Nov-91	Sand	23	1.72	5.9	BMDL	PS	PS	--	--	--	--	--	--	--
PT-7	3	2.0-4.0	06-Nov-91	Sand	28	1.92	7.6	BMDL	PS	PS	--	--	--	--	--	--	--
PT-7	5	6.0-8.0	06-Nov-91	Clay	24	1.26	5.6	BMDL	PS	PS	--	--	--	--	--	--	--
PT-8	1	0.0-2.0	07-Nov-91	Sand	48	40	39	133	PS	PS	--	--	--	--	--	--	--
PT-8	2	2.0-4.0	07-Nov-91	Sand	51	19.7	24	50	PS	PS	--	--	--	--	--	--	--
PT-8	3	4.0-6.0	07-Nov-91	Sand/Clay	1070	9.3	23	22	PS	PS	--	--	--	--	--	--	--
PT-8	4	6.0-8.0	07-Nov-91	Clay	220	5.1	25	BMDL	PS	PS	--	--	--	--	--	--	--
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	37	2.4	21	27	FL	FL	--	--	--	--	--	--	--
PT-9	2	2.0-4.0	08-Nov-91	Sand	49	3.6	15.3	14.7	PS	PS	--	--	--	--	--	--	--
PT-9	3	4.0-6.0	08-Nov-91	Sand/Clay	60	3.7	15.3	BMDL	PS	PS	--	--	--	--	--	--	--
PT-9	4	6.0-8.0	08-Nov-91	Clay	177	5.5	34	BMDL	PS	PS	--	--	--	--	--	--	--
PT-9	4(MS)	6.0-8.0	08-Nov-91	Matrix Spike	380	9.9	51	40	--	--	--	--	--	--	--	--	--
PT-9	4(REP)	6.0-8.0	08-Nov-91	Lab Replicate	240	6.3	41	BMDL	--	--	--	--	--	--	--	--	--
PT-10	1	0.0-2.0	12-Nov-91	Sand	980	470	550	2700	PS	FL	3.8	310	31	2.7	156	11300	290
PT-10	2	2.0-4.0	12-Nov-91	Sand	380	125	97	280	PS	FL	--	--	--	--	--	--	--
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	84	28	18.6	17.3	PS	PS	--	--	--	--	--	--	--
PT-10	4	4.0-6.0	12-Nov-91	Replicate #3	182	20	37	BMDL	PS	PS	--	--	--	--	--	--	--
PT-10	5	6.0-8.0	12-Nov-91	Clay/Sand	116	20	25	28	PS	PS	--	--	--	--	--	--	--
PT-10	6	8.0-10.0	12-Nov-91	Clay	220	5.8	40	BMDL	PS	PS	--	--	--	--	--	--	--
PT-10	S-1A	0.0-2.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	.64	--	--	--	20
PT-11	1	0.0-2.0	05-Nov-91	Sand	66	6.3	135	109	PS	FL	4.4	14.9	.9	BMDL	70	11700	1.5
PT-11	1(MS)	0.0-2.0	05-Nov-91	Matrix Spike	230	9.3	138	131	--	--	10.9	37	1.04	1.21	85	13400	1.9
PT-11	1(REP)	0.0-2.0	05-Nov-91	Lab Replicate	73	6.3	148	113	--	--	4.5	13.3	.91	BMDL	78	11600	1.6
PT-11	2	2.0-4.0	05-Nov-91	Sand	29	2.1	24	16.1	PS	FL	--	--	--	--	--	--	--
PT-11	3	4.0-6.0	05-Nov-91	Sand	42	3.7	46	50	FL	FL	--	--	--	--	--	--	--

All parameters measured in mg/Kg; PS indicates sample passed screening test; FL indicates sample failed screening test; BMDL inidcates parameter below minimum detection limit

RESULTS OF INORGANIC ANALYSES OF SOIL SAMPSAMPLES

Boring Name	Sample Number	Depth (feet)	Date	Description	Barium	Cadmium	Chromium	Lead	Volatile Screen	Semi-Volatile Screen	Arsenic	Copper	Mercury	Selenium	Strontium	Iron	Cyanide
PT-11	4	6.0-8.0	05-Nov-91	Sand/Clay	78	3.5	16.7	BMDL	PS	PS	--	--	--	--	--	--	--
PT-11	5	8.0-10.0	05-Nov-91	Clay	163	5	32	BMDL	PS	--	--	--	--	--	--	--	--
PT-11	6	10.0-12.0	05-Nov-91	Clay	170	4.9	31	11	PS	FL	--	--	--	--	--	--	--
PT-11	S-1B	0.0-2.0	12-Feb-92	Re-sample	--	--	--	--	--	--	--	--	.66	--	--	--	1.7
PT-12	1	0.0-2.0	06-Nov-91	Sand	220	9.3	128	270	PS	FL	4.2	93	1.74	BMDL	34	15700	7.7
PT-12	2	2.0-4.0	06-Nov-91	Sand	12.5	1.27	3.8	BMDL	PS	PS	--	--	--	--	--	--	--
PT-12	3	4.0-6.0	06-Nov-91	Sand/Clay	144	5.7	37	11.6	PS	PS	--	--	--	--	--	--	--
PT-12	4	6.0-8.0	06-Nov-91	Sand/Clay	64	3.7	18.2	22	PS	PS	--	--	--	--	--	--	--
PT-12	5	8.0-10.0	06-Nov-91	Clay	172	5.3	24	BMDL	PS	PS	--	--	--	--	--	--	--
PT-12	S-1A	0.0-2.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	1.29	--	--	--	4.1
PT-13	1	0.0-2.0	13-Nov-91	Sand	51	3.1	41	29	PS	PS	--	--	--	--	--	--	--
PT-13	2	2.0-4.0	13-Nov-91	Sand	85	3.7	32	33	PS	PS	--	--	--	--	--	--	--
PT-13	3	4.0-6.0	13-Nov-91	Sand	24	1.05	8.9	BMDL	PS	PS	--	--	--	--	--	--	--
PT-13	4	4.0-6.0	13-Nov-91	Replicate #3	22	1.24	7.6	BMDL	PS	PS	--	--	--	--	--	--	--
PT-13	5	6.0-8.0	13-Nov-91	Sand/Clay	18.2	1.32	7.7	BMDL	PS	PS	--	--	--	--	--	--	--
PT-13	6	8.0-10.0	13-Nov-91	Clay	147	3.8	22	BMDL	PS	PS	--	--	--	--	--	--	--
PT-14	1	0.0-2.0	12-Nov-91	Sand	60	3	27	34	PS	FL	--	--	--	--	--	--	--
PT-14	2	2.0-4.0	12-Nov-91	Sand	61	2.4	11.5	6.9	PS	PS	--	--	--	--	--	--	--
PT-14	3	2.0-4.0	12-Nov-91	Replicate #2	54	2.3	9.3	BMDL	PS	PS	--	--	--	--	--	--	--
PT-14	4	4.0-6.0	12-Nov-91	Clay/Silt	220	6.1	43	BMDL	PS	PS	--	--	--	--	--	--	--
PT-14	5	6.0-8.0	12-Nov-91	Clay & Silt	179	5.1	32	BMDL	PS	PS	--	--	--	--	--	--	--
PT-14	6	8.0-10.0	12-Nov-91	Clay	230	5.1	41	BMDL	PS	PS	--	--	--	--	--	--	--
PT-15	1	0.0-2.0	12-Nov-91	Sand	1100	23	610	1250	PS	FL	8.5	380	2.9	.8	200	67000	51
PT-15	2	2.0-4.0	12-Nov-91	Sand	390	9.7	200	410	PS	PS	--	--	--	--	--	--	--
PT-15	3	2.0-4.0	12-Nov-91	Sand	340	8.5	153	320	PS	FL	--	--	--	--	--	--	--
PT-15	4	4.0-6.0	12-Nov-91	Sand/Clay	62	4.2	27	59	PS	PS	--	--	--	--	--	--	--
PT-15	5	6.0-8.0	12-Nov-91	Clay/Sand	230	4.9	40	BMDL	PS	PS	--	--	--	--	--	--	--
PT-15	6	8.0-10.0	12-Nov-91	Clay	290	5.7	46	BMDL	PS	PS	--	--	--	--	--	--	--

All parameters measured in mg/Kg; PS indicates sample passed screening test; FL indicates sample fialed screening test; BMDL inidcates parameter below minimum detection limit

RESULTS OF INORGANIC ANALYSES OF SOIL SAMPSAMPLES

Boring Name	Sample Number	Depth (feet)	Date	Description	Barium	Cadmium	Chromium	Lead	Volatile Screen	Semi-Volatile Screen	Arsenic	Copper	Mercury	Selenium	Strontium	Iron	Cyanide
PT-15	S-1A	0.0-2.0	07-Feb-92	Re-sample	--	--	--	--	--	--	--	--	0.84	--	--	--	5.0
FB	11/05	--	05-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/06	--	06-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/07	--	07-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/08	--	08-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/12	--	12-Nov-91	Field Blank	--	--	--	--	PS	--	--	--	--	--	--	--	--
FB	11/13	--	13-Nov-91	Field Blank	--	--	--	--	FL	--	--	--	--	--	--	--	--

All parameters measured in mg/Kg; PS indicates sample passed icree ning test; FL indicates sample fialed screening test; BMDL inidcates parameter below minimum detection limit

RESULTS OF VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 1 of 4)

Boring Number	Sample Number	Depth	Date	Description	ug/kg Benzene	Carbon Tetra-chloride	Chloro-benzene	1,2-Dichloro-ethane	1,1,1-Trichloro-ethane	1,1-Dichloro-ethane	1,1,2-Trichloro-ethane	1,1,2,2-Tetrachloro-ethane	Chloro-Ethane	bis(2-Chloroethyl-vinyl Ether
PT-4	2	2.0-4.0	06-Nov-91	2.0-4.0	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	11 U	11 U
PT-4	3	4.0-6.0	06-Nov-91	4.0-6.0	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	14 U	14 U
PT-9	1	0.0-2.0	08-Nov-91	0.0-2.0	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	11 U	11 U
PT-9	2	2.0-4.0	08-Nov-91	2.0-4.0	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	11 U	11 U
PT-11	3	4.0-6.0	05-Nov-91	4.0-6.0	5 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	11 U	11 U
PT-11	5	8.0-10.0	05-Nov-91	8.0-10.0	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
FB	02/07/92		07-Feb-92	Field Blank	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
FB	11/13/91		13-Nov-91	Field Blank	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U
TB	02/07/92		07-Feb-92	Trip Blank	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U

Units are in ug/Kg, except blanks which are in ug/L; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 2 of 4)

Boring Number	Sample Number	Depth	Date	Description	Chloroform	1,1-Dichloro-ethylene	1,2-Dichloro-ethylene	1,2-Dichloro-propane	trans-1,3-Dichloro-propene	cis-1,3-Dichloro-propene	Ethyl-benzene	1,2-Dichloro-benzene	Methylene Chloride	Chloro-methane
PT-4	2	2.0-4.0	06-Nov-91	2.0-4.0	6 U	6 U	6 U	6 U	6 U	6 U	6 U	--	6 U	11 U
PT-4	3	4.0-6.0	06-Nov-91	4.0-6.0	7 U	7 U	7 U	7 U	7 U	7 U	7 U	--	7 U	14 U
PT-9	1	0.0-2.0	08-Nov-91	0.0-2.0	6 U	6 U	6 U	6 U	6 U	6 U	6 U	--	2 JB	11 U
PT-9	2	2.0-4.0	08-Nov-91	2.0-4.0	6 U	6 U	6 U	6 U	6 U	6 U	6 U	--	2 JB	11 U
PT-11	3	4.0-6.0	05-Nov-91	4.0-6.0	6 U	6 U	6 U	6 U	6 U	6 U	6 U	--	2 JB	11 U
PT-11	5	8.0-10.0	05-Nov-91	8.0-10.0	3 J	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	10 U
FB	02/07/92		07-Feb-92	Field Blank	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 B	10 U
FB	11/13/91		13-Nov-91	Field Blank	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	10 U
TB	02/07/92		07-Feb-92	Trip Blank	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	3 JB	10 U

Units are in ug/Kg, except blanks which are in ug/L; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES

(Group 3 of 4)

Boring Number	Sample Number	Depth	Date	Description	Bromo-methane	Bromoform	Bromo-dichloro-methane	Dibromo-chloro-methane	Tetrachloro-ethylene	Toluene	Trichloro-ethylene	Vinyl Chloride	Acetone	2-Butanone
PT-4	2	2.0-4.0	06-Nov-91	2.0-4.0	11 U	6 U	6 U	6 U	6 U	6 U	6 U	11 U	3 JB	11 U
PT-4	3	4.0-6.0	06-Nov-91	4.0-6.0	14 U	7 U	7 U	7 U	7 U	7 U	7 U	14 U	14 B	14 U
PT-9	1	0.0-2.0	08-Nov-91	0.0-2.0	11 U	6 U	6 U	6 U	6 U	6 U	6 U	11 U	5 JB	11 U
PT-9	2	2.0-4.0	08-Nov-91	2.0-4.0	11 U	6 U	6 U	6 U	6 U	6 U	6 U	11 U	11 U	11 U
PT-11	3	4.0-6.0	05-Nov-91	4.0-6.0	11 U	6 U	6 U	6 U	6 U	6 U	6 U	11 U	9 JB	11 U
PT-11	5	8.0-10.0	05-Nov-91	8.0-10.0	10 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U
FB	02/07/92		07-Feb-92	Field Blank	10 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 JB	10 U
FB	11/13/91		13-Nov-91	Field Blank	10 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U
TB	02/07/92		07-Feb-92	Trip Blank	10 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U

Units are in ug/Kg, except blanks which are in ug/L; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 4 of 4)

Boring Number	Sample Number	Depth	Date	Description	Carbon Disulfide	2-Hexanone	4-Methyl-2-Pentanone	Styrene	Vinyl Acetate	Total Xylenes
PT-4	2	2.0-4.0	06-Nov-91	2.0-4.0	6 U	11 U	11 U	6 U	11 U	6 U
PT-4	3	4.0-6.0	06-Nov-91	4.0-6.0	7 U	14 U	14 U	7 U	14 U	7 U
PT-9	1	0.0-2.0	08-Nov-91	0.0-2.0	6 U	11 U	11 U	6 U	11 U	6 U
PT-9	2	2.0-4.0	08-Nov-91	2.0-4.0	6 U	11 U	11 U	6 U	11 U	6 U
PT-11	3	4.0-6.0	05-Nov-91	4.0-6.0	6 U	11 U	11 U	6 U	11 U	6 U
PT-11	5	8.0-10.0	05-Nov-91	8.0-10.0	5 U	10 U	10 U	5 U	10 U	5 U
FB	02/07/92		07-Feb-92	Field Blank	5 U	10 U	10 U	5 U	10 U	5 U
FB	11/13/91		13-Nov-91	Field Blank	5 U	10 U	10 U	5 U	10 U	5 U
TB	02/07/92		07-Feb-92	Trip Blank	5 U	10 U	10 U	5 U	10 U	5 U

Units are in ug/Kg, except blanks which are in ug/L; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF SEMI-VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 1 of 9)

Boring Number	Sample Number	Depth	Date	Description	Acenaph-thene	1,2,4-Trichloro-benzene	Hexachloro-benzene	Hexachloro-ethane	bis (2-chloroethyl) ether	2-chloro-naphthalene	1,2-Dichloro-benzene	1,3-Dichloro-benzene
PT-2	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-3	1	0.0-2.0	13-Nov-91	Sand	430 U	430 U	430 U	430 U	430 U	430 U	430 U	430 U
PT-3	2	2.0-4.0	13-Nov-91	Sand	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-5	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-5	3	4.0-6.0	07-Nov-91	Clay	430 U	430 U	430 U	430 U	430 U	430 U	430 U	430 U
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-6	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-9	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-10	1	0.0-2.0	12-Nov-91	Sand	360 U	110 J	190 J	360 U	360 U	360 U	120 J	360 U
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-11	3	4.0-6.0	05-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-11	6	10.0-12.0	05-Nov-91	Clay	460 U	460 U	460 U	460 U	460 U	460 U	460 U	460 U
PT-12	1	0.0-2.0	06-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-12	2	2.0-4.0	06-Nov-91	Sand	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
PT-14	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-14	2	2.0-4.0	12-Nov-91	Sand	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U

Paramters measured in ug/Kg; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

action Level 1,600 ug/kg

action Level 3,000 ug/kg

RESULTS OF SEMI-VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 2 of 9)

Boring Number	Sample Number	Depth	Date	Description	1,4-Dichloro-benzene	3,3'-Dichloro-benzidine	2,4-Dinitro-toluene	2,6-Dinitro-toluene	Fluoran-thene	4-Chlorophenyl Phenyl Ether	4-Bromophenyl Phenyl Ether	bis(2-chloro-isopropyl) Ether
PT-2	1	0.0-2.0	07-Nov-91	Sand	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	400 U	790 U	400 U	400 U	91 J	400 U	400 U	400 U
PT-3	1	0.0-2.0	13-Nov-91	Sand	430 U	860 U	430 U	430 U	100 J	430 U	430 U	430 U
PT-3	2	2.0-4.0	13-Nov-91	Sand	400 U	790 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-5	1	0.0-2.0	07-Nov-91	Sand	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-5	3	4.0-6.0	07-Nov-91	Clay	430 U	860 U	430 U	430 U	430 U	430 U	430 U	430 U
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	400 U	790 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-6	2	2.0-4.0	08-Nov-91	Sand	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-9	2	2.0-4.0	08-Nov-91	Sand	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
EAST PT-10	1	0.0-2.0	12-Nov-91	Sand	290 J	1900	360 U	360 U	78 J	360 U	360 U	360 U
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	400 U	790 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-11	3	4.0-6.0	05-Nov-91	Sand	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-11	6	10.0-12.0	05-Nov-91	Clay	460 U	920 U	460 U	460 U	460 U	460 U	460 U	460 U
PT-12	1	0.0-2.0	06-Nov-91	Sand	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-12	2	2.0-4.0	06-Nov-91	Sand	330 U	660 U	330 U	330 U	330 U	330 U	330 U	330 U
PT-14	1	0.0-2.0	12-Nov-91	Sand	360 U	730 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-14	2	2.0-4.0	12-Nov-91	Sand	400 U	790 U	400 U	400 U	400 U	400 U	400 U	400 U

Paramters measured in ug/Kg; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF SEMI-VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 3 of 9)

Boring Number	Sample Number	Depth	Date	Description	bis(2-chloro-ethoxy) Ether	Hexachloro-butadiene	Hexachloro-cyclo-pentadiene	Isophorone	Naphthalene	Nitro-benzene	N-nitroso-diphenyl-amine+
PT-2	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-3	1	0.0-2.0	13-Nov-91	Sand	430 U	430 U	430 U	430 U	430 U	430 U	430 U
PT-3	2	2.0-4.0	13-Nov-91	Sand	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-5	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-5	3	4.0-6.0	07-Nov-91	Clay	430 U	430 U	430 U	430 U	430 U	430 U	430 U
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-6	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-9	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-10	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	280 J	360 U
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-11	3	4.0-6.0	05-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-11	6	10.0-12.0	05-Nov-91	Clay	460 U	460 U	460 U	460 U	460 U	460 U	460 U
PT-12	1	0.0-2.0	06-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-12	2	2.0-4.0	06-Nov-91	Sand	330 U	330 U	330 U	330 U	330 U	330 U	330 U
PT-14	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-14	2	2.0-4.0	12-Nov-91	Sand	400 U	400 U	400 U	400 U	400 U	400 U	400 U

Paramters measured in ug/Kg; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

action Level 50 ug/kg

RESULTS OF SEMI-VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 4 of 9)

Boring Number	Sample Number	Depth	Date	Description	N-nitroso-dipropyl-amine+	bis (2-ethylhexyl) phthalate	Benzyl Butyl-phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Diethyl phthalate	Dimethyl phthalate	Benzo(a) anthracene
PT-2	1	0.0-2.0	07-Nov-91	Sand	360 U	160 JB	360 U	360 U	360 U	360 U	360 U	360 U
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	400 U	430 B	400 U	400 U	400 U	400 U	400 U	400 U
PT-3	1	0.0-2.0	13-Nov-91	Sand	430 U	430 U	430 U	430 U	430 U	430 U	430 U	430 U
PT-3	2	2.0-4.0	13-Nov-91	Sand	400 U	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-5	1	0.0-2.0	07-Nov-91	Sand	360 U	100 JB	360 U	360 U	360 U	360 U	360 U	360 U
PT-5	3	4.0-6.0	07-Nov-91	Clay	430 U	320 JB	430 U	430 U	430 U	430 U	430 U	430 U
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	360 U	83 JB	360 U	360 U	360 U	360 U	360 U	360 U
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	400 U	98 J	400 U	400 U	400 U	400 U	400 U	400 U
PT-6	2	2.0-4.0	08-Nov-91	Sand	360 U	120 JB	360 U	360 U	360 U	360 U	360 U	71 J
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sanple	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	360 U	130 JB	79 J	360 U	360 U	360 U	360 U	68 J
PT-9	2	2.0-4.0	08-Nov-91	Sand	360 U	100 JB	360 U	360 U	360 U	360 U	360 U	360 U
PT-10	1	0.0-2.0	12-Nov-91	Sand	360 U	460 B	360 U	110 J	360 U	360 U	360 U	360 U
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	400 U	160 JB	400 U	400 U	400 U	400 U	400 U	400 U
PT-11	3	4.0-6.0	05-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-11	6	10.0-12.0	05-Nov-91	Clay	460 U	460 U	460 U	460 U	460 U	460 U	460 U	460 U
PT-12	1	0.0-2.0	06-Nov-91	Sand	360 U	320 J	360 U	360 U	360 U	360 U	360 U	360 U
PT-12	2	2.0-4.0	06-Nov-91	Sand	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U
PT-14	1	0.0-2.0	12-Nov-91	Sand	360 U	520 B	360 U	360 U	360 U	360 U	240 J	98 J
PT-14	2	2.0-4.0	12-Nov-91	Sand	400 U	180 JB	400 U	400 U	400 U	400 U	400 U	73 J

Paramters measured in ug/Kg; U indicates compound analyzedfor but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF SEMI-VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 5 of 9)

Boring Number	Sample Number	Depth	Date	Description	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Acenaph-thalene	Anthracene	Benzo(ghi) perylene
PT-2	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-3	1	0.0-2.0	13-Nov-91	Sand	430 U	110 J	430 U	430 U	430 U	430 U	430 U
PT-3	2	2.0-4.0	13-Nov-91	Sand	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-5	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-5	3	4.0-6.0	07-Nov-91	Clay	430 U	430 U	430 U	430 U	430 U	430 U	430 U
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-6	2	2.0-4.0	08-Nov-91	Sand	120 J	94 J	91 J	66 J	360 U	360 U	140 J
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	360 U	65 J	360 U	360 U	360 U	360 U	360 U
PT-9	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-10	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-11	3	4.0-6.0	05-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-11	6	10.0-12.0	05-Nov-91	Clay	460 U	460 U	460 U	460 U	460 U	460 U	460 U
PT-12	1	0.0-2.0	06-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-12	2	2.0-4.0	06-Nov-91	Sand	330 U	330 U	330 U	330 U	330 U	330 U	330 U
PT-14	1	0.0-2.0	12-Nov-91	Sand	130 J	130 J	90 J	99 J	360 U	360 U	170 J
PT-14	2	2.0-4.0	12-Nov-91	Sand	400 U	400 U	400 U	400 U	400 U	400 U	79 J

Paramters measured in ug/Kg; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF SEMI-VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 6 of 9)

Boring Number	Sample Number	Depth	Date	Description	Fluorene	Phenanthrene	Dibenzo(ah) anthracene	Indeno-(1,2,4-cd) pyrene	Pyrene	Benzyl Alcohol	4-Chloro-aniline
PT-2	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	400 U	400 U	400 U	400 U	84 J	400 U	400 U
PT-3	1	0.0-2.0	13-Nov-91	Sand	430 U	430 U	430 U	430 U	98 J	430 U	430 U
PT-3	2	2.0-4.0	13-Nov-91	Sand	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-5	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-5	3	4.0-6.0	07-Nov-91	Clay	430 U	430 U	430 U	430 U	430 U	430 U	430 U
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-6	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	120 J	110 J	360 U	360 U	360 U
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	360 U	61 J	360 U	360 U	71 J	360 U	360 U
PT-9	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-10	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	360 U	360 U	190 J	360 U	360 U
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	400 U	400 U	400 U	400 U	400 U	400 U	400 U
PT-11	3	4.0-6.0	05-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-11	6	10.0-12.0	05-Nov-91	Clay	460 U	460 U	460 U	460 U	460 U	460 U	460 U
PT-12	1	0.0-2.0	06-Nov-91	Sand	360 U	360 U	360 U	360 U	360 U	360 U	360 U
PT-12	2	2.0-4.0	06-Nov-91	Sand	330 U	330 U	330 U	330 U	330 U	330 U	330 U
PT-14	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	130 J	150 J	360 U	360 U	360 U
PT-14	2	2.0-4.0	12-Nov-91	Sand	400 U	400 U	72 J	400 U	400 U	400 U	400 U

Paramters measured in ug/Kg; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF SEMI-VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 7 of 9)

Boring Number	Sample Number	Depth	Date	Description	Dibenzo-furan	2-Methyl-naphthalene	2-Nitro-aniline	3-Nitro-aniline	4-Nitro-aniline	2,4,6-Trichloro-phenol	p-Chloro-m-cresol
PT-2	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	400 U	400 U	1900 U	1900 U	1900 U	400 U	400 U
PT-3	1	0.0-2.0	13-Nov-91	Sand	430 U	430 U	2100 U	2100 U	2100 U	430 U	430 U
PT-3	2	2.0-4.0	13-Nov-91	Sand	400 U	400 U	1900 U	1900 U	1900 U	400 U	400 U
PT-5	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-5	3	4.0-6.0	07-Nov-91	Clay	430 U	430 U	2100 U	2100 U	2100 U	430 U	430 U
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	400 U	400 U	1900 U	1900 U	1900 U	400 U	400 U
PT-6	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-9	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-10	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	400 U	400 U	1900 U	1900 U	1900 U	400 U	400 U
PT-11	3	4.0-6.0	05-Nov-91	Sand	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-11	6	10.0-12.0	05-Nov-91	Clay	460 U	460 U	2200 U	2200 U	2200 U	460 U	460 U
PT-12	1	0.0-2.0	06-Nov-91	Sand	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-12	2	2.0-4.0	06-Nov-91	Sand	330 U	330 U	1600 U	1600 U	1600 U	330 U	330 U
PT-14	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	1800 U	1800 U	1800 U	360 U	360 U
PT-14	2	2.0-4.0	12-Nov-91	Sand	400 U	400 U	1900 U	1900 U	1900 U	400 U	400 U

Paramters measured in ug/Kg; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF SEMI-VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 8 of 9)

Boring Number	Sample Number	Depth	Date	Description	2-Chloro-phenol	2,4-Dichloro-phenol	2,4-Dimethyl-phenol	2-Nitro phenol	4-Nitro phenol	2,4-Dinitro-phenol	4,6-Dinitro-2-methyl phenol	Penta-chloro-phenol
PT-2	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	400 U	400 U	400 U	400 U	1900 U	1900 U	1900 U	1900 U
PT-3	1	0.0-2.0	13-Nov-91	Sand	430 U	430 U	430 U	430 U	2100 U	2100 U	2100 U	2100 U
PT-3	2	2.0-4.0	13-Nov-91	Sand	400 U	400 U	400 U	400 U	1900 U	1900 U	1900 U	1900 U
PT-5	1	0.0-2.0	07-Nov-91	Sand	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-5	3	4.0-6.0	07-Nov-91	Clay	430 U	430 U	430 U	430 U	2100 U	2100 U	2100 U	2100 U
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	400 U	400 U	400 U	400 U	1900 U	1900 U	1900 U	1900 U
PT-6	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-9	2	2.0-4.0	08-Nov-91	Sand	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-10	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	400 U	400 U	400 U	400 U	1900 U	1900 U	1900 U	1900 U
PT-11	3	4.0-6.0	05-Nov-91	Sand	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-11	6	10.0-12.0	05-Nov-91	Clay	460 U	460 U	460 U	460 U	2200 U	2200 U	2200 U	2200 U
PT-12	1	0.0-2.0	06-Nov-91	Sand	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-12	2	2.0-4.0	06-Nov-91	Sand	330 U	330 U	330 U	330 U	1600 U	1600 U	1600 U	1600 U
PT-14	1	0.0-2.0	12-Nov-91	Sand	360 U	360 U	360 U	360 U	1800 U	1800 U	1800 U	1800 U
PT-14	2	2.0-4.0	12-Nov-91	Sand	400 U	400 U	400 U	400 U	1900 U	1900 U	1900 U	1900 U

Paramters measured in ug/Kg; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

RESULTS OF SEMI-VOLATILE ORGANIC ANALYSES OF SOIL SAMPLES
(Group 9 of 9)

Boring Number	Sample Number	Depth	Date	Description	Phenol	Benzoic Acid	2-methyl phenol	4-methyl-phenol	2,4,5-Trichloro-phenol	Aniline	Benzidine
PT-2	1	0.0-2.0	07-Nov-91	Sand	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-2	5	8.0-10.0	07-Nov-91	Sand/bedrock	400 U	1900 U	400 U	400 U	1900 U	--	--
PT-3	1	0.0-2.0	13-Nov-91	Sand	430 U	2100 U	430 U	430 U	2100 U	--	--
PT-3	2	2.0-4.0	13-Nov-91	Sand	400 U	1900 U	400 U	400 U	1900 U	--	--
PT-5	1	0.0-2.0	07-Nov-91	Sand	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-5	3	4.0-6.0	07-Nov-91	Clay	430 U	2100 U	430 U	430 U	2100 U	--	--
PT-6	1	0.0-2.0	08-Nov-91	Sand/Clay	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-6	S-1A	0.0-2.0	07-Feb-92	Re-sample	400 U	1900 U	400 U	400 U	1900 U	--	--
PT-6	2	2.0-4.0	08-Nov-91	Sand	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-6	S-2A	2.0-4.0	07-Feb-92	Re-sample	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-9	1	0.0-2.0	08-Nov-91	Asphalt/Sand	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-9	2	2.0-4.0	08-Nov-91	Sand	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-10	1	0.0-2.0	12-Nov-91	Sand	98 J	1800 U	360 U	360 U	1800 U	--	--
PT-10	3	4.0-6.0	12-Nov-91	Sand and Silt	400 U	1900 U	400 U	400 U	1900 U	--	--
PT-11	3	4.0-6.0	05-Nov-91	Sand	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-11	6	10.0-12.0	05-Nov-91	Clay	46O U	2200 U	460 U	460 U	2200 U	--	--
PT-12	1	0.0-2.0	06-Nov-91	Sand	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-12	2	2.0-4.0	06-Nov-91	Sand	330 U	1600 U	330 U	330 U	1600 U	--	--
PT-14	1	0.0-2.0	12-Nov-91	Sand	360 U	1800 U	360 U	360 U	1800 U	--	--
PT-14	2	2.0-4.0	12-Nov-91	Sand	400 U	1900 U	400 U	400 U	1900 U	--	--

Paramters measured in ug/Kg; U indicates compound analyzed for but not detected; J indicates an estimated value; B indicates compound was present in the method blank

APPENDIX C

CHAIN-OF-CUSTODY REPORT

CHAIN OF CUSTODY RECORD

F-0056

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: Glens Falls, NY

Client: Hercules Inc.

Address: Wilmington, DE

Comments:

Project Name: RFA - SV

Project No.: 6701.02

Quote No.:

Collection Date: 11/5/91

Sampler(s): Robin Steinberg, Jennie Higgins

Container Type / No. of: soil glass 40 ml vial; soil 8 oz glass; soil 8 oz plastic; water 40 ml glass vials

Sample Identification	Collection Time	Comp	Grab	Matrix	Analysis / Remarks	soil glass 40 ml vial	soil 8 oz glass	soil 8 oz plastic	water 40 ml glass vials		
SB-11 S-1	12:30		✓	soil	VOA, BNA, Metals	2	1	1			
SB-11 S-2	12:44		✓	Soil	VOA, BNA, Metals	2	1	1			
SB-11 S-3	12:59		✓	soil	VOA, BNA, Metals	2	1	1			
SB-11 S-4	13:37		✓	soil	VOA, BNA, Metals	2	1	1			
SB-11 S-5	14:04		✓	soil	VOA, Metals	2		1			
SB-11 S-6	14:20		✓	soil	VOA, BNA, Metals	2	1	1			
Tripblanks	–			water	VOA				2		
Fieldblanks	15:10		✓	water	VOA				2		

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 [signature]	ECKENFELDER INC	11/5/91 15:30	1 [signature]	Aquatec	11/5/91 @ 19:45
2			2		
3			3		

September '91

CHAIN OF CUSTODY RECORD

F-K

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: Glenns Falls NY

Client: HERCULES INC.

Address: WILMINGTON DELAWARE

Comments:

Project Name: RFA-SI

Project No.: 6701.02

Quote No.:

Collection Date: 11/6/91

Sampler(s): JENNIE HIGGINS & ROBIN STEINBERG

Container Type / No. of

Sample Identification	Collection Time	Comp	Grab	Matrix	Analysis / Remarks	40 ml VOA	250ml BNA	500ml METALS		
SB 7 S-2	9:02		✓	SOIL	VOA, BNA, METALS	2	1	1		
SB 7 S-3	9:10		✓	SOIL	VOA, BNA, METALS	2	1	1		
SB 7 S-5	9:26		✓	SOIL	VOA, BNA, METALS	2	1	1		
SB12 S-1	12:28		✓	SOIL	VOA, BNA, METALS	2	1	1		
SB12 S-2	12:33		✓	SOIL	VOA, BNA, METALS	2	1	1		
SB12 S-3	12:43		✓	SOIL	VOA, BNA, METALS	2	1	1		
SB12 S-4	12:50		✓	SOIL	VOA, BNA, METALS	2	1	1		
SB12 S-5	13:07		✓	SOIL	VOA, BNA, METALS	2	1	1		
SB4 S-1	14:00		✓	SOIL	VOA, BNA, METALS	2	1	1		
SB4 S-2	14:05		✓	SOIL	VOA, ANA, METALS	2	1	1		
SB4 S-3	14:10		✓	SOIL	VOA, BNA, METALS	2	1	1		
Field Blank 116	15:00		✓	WATER	VOA	2				

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 Jennifer A. Higgins	Ecology & Environment INC	11/6/91 15:30	1 [signature]	Aquatec	11-06-91 @ 18:[illegible]
2			2		
3			3		

CHAIN OF CUSTODY RECORD

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

000043

Client's Reference: Glens Falls

Client: Hercules Inc.

Address: Wilmington DE

Comments:

Project Name: RFA - SV

Project No.: 6701.02

Quote No.:

Collection Date: 11/6/91

Sampler(s): Jeanie Higgins & Robin Steinberg

Container Type / No. of: VOA 40ml

Sample Identification	Collection Time	Comp	Grab	Matrix	Analysis / Remarks	VOA 40ml				
(X) TRIP BLANK 11E			✓	WATER	VOA					

	Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1	[illegible]	CLFENFELDER INC	11/6/91 15:30	[illegible]	Aquatec	11/6/91 @ 1800
2						
3						

(X) Vials rec 11.01.91 as date.

CHAIN OF CUSTODY RECORD

F-0036

Page 1 of 2

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

0004 44

Client's Reference: Glens Falls, NY

Client: Hercules Inc

Address: Wilmington, DE

Comments:

Project Name: REA - SA

Project No.: 1070.1.02

Quote No.:

Collection Date: 11/7/91

Sampler(s): R. Steinberg, J. Higgins

Sample Identification	Collection Time	Comp	Grab	Matrix	Analysis / Remarks	Container Type / No. of: Total Glass	500 mL Plastic	250 mL Glass	500 mL Glass		
SB-2 S-1	8:05		✓	Soil	VOA, BNA, METALS	2	1	1			
SB-2 S-2	8:10		✓			2	1	1			
SB-2 S-3	8:21		✓			2	1	1			
SB-2 S-4	8:30		✓			2			1		
SB-2 S-5	8:45		✓			2			1		
SB-1 S-1	9:25		✓			2			1		
SB-1 S-2	9:30		✓			2			1		
SB-1 S-4	9:50		✓			2			1		
SB-1 S-5	10:10		✓			2			1		
SB-1 S-6	10:30		✓			2			1		
SB-5 S-1	12:58		✓			2			1		
SB-5 S-2	13:05		✓			2			1		

	Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1		ELKENFELDER	11/7/91 15:30			15:30
2						
3					Aquatec	10/7/11 @ 1805

CHAIN OF CUSTODY RECORD

F-0036

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

000415

Client's Reference: Glens Falls, NY
Client: Hercules Inc.
Address: Wilmington, DE
Comments:

Project Name: RFA - SA
Project No.: 6701.02
Quote No.:
Collection Date: 11/7/91
Sampler(s): R. Steinberg, J. Higgins

Sample Identification	Collection Time	Comp	Grab	Matrix	Analysis / Remarks	Container Type / No. of: 40 mL Glass	250 mL Glass				
SB-5 S-3	13:10		✓	soil	VOA, BNA, METALS	2	1				
SB-5 S-4	13:20		✓	↓	↓	2	1				
SB-8 S-1	13:59		✓			2	1				
SB-8 S-2	13:55		✓			2	1				
SB-8 S-3	14:10		✓			2	1				
SB-8 S-4	14:25		✓	↓	↓	2	1				
Fieldblank 117	15:00		✓	water	VOA	2					
(*) Tripblank	"			water	VOA	2					

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 [signature]	ELKENFELDER	11/7/91 15:30	1 [signature]	PRIORITY EXP	11/7/91 15:30
2			2 Edward R. Mikolajczyk		
3			3 [signature]	Aquatec	11.7.91 @1805

(*) Date on trip blank is 11.05.91.

2916 8/15/91

CHAIN OF CUSTODY RECORD

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

000416

Client's Reference: Glens Falls, NY
Client: Hercules Inc.
Address: Wilmington, DE
Comments:

Project Name: RFA - SA
Project No.: 6701.02
Quote No.:
Collection Date: 11/8/91
Sampler(s): R. Steinberg, J. Higgins

Sample Identification	Collection Time	Comp	Grab	Matrix	Analysis / Remarks	40 mL Vials Glass	500 mL Glass				
SB-6 S-1	8:10		✓	soil	VOA, BNA, Metals	2	1				
SB-6 S-2	8:17		✓	↓	↓	2	1				
SB-6 S-3	9:12		✓			2	1				
SB-6 S-4	9:23		✓			2	1				
SB-9 S-1	10:00		✓			2	1				
SB-9 S-2	11:05		✓			2	1				
SB-9 S-3	11:13		✓			2	1				
SB-9 S-4	11:26		✓	↓	↓	2	1				
Fieldblank 118	11:50		✓	water	VOA	2					
Tripblank			✓	water	VOA	2					

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 Robin L. Steinberg	ECKENFELDER	11/8/91 13:10	1 [signature]	PRIORITY AIR	11/8/91 13:10
2			2 [signature]	Aquatec	11.8.91 @ 1600
3			3		

CHAIN OF CUSTODY RECORD

F - 0058

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

000447

Client's Reference: Glens Falls, NY

Client: Hercules Inc.

Address: Wilmington, DE

Comments:

Project Name: RFA-SA

Project No.: 6701.02

Quote No.:

Collection Date: 11/12/91

Sampler(s): R. Steinberg, J. Higgins

Sample Identification	Collection Time	Comp.	Grab	Matrix	Analysis / Remarks	40mL Glass	500mL Amber Glass				
SB-15 S-1	8:00		✓	soil	VOA, BNA, Metals	2	1				
SB-15 S-2	8:05		✓	↓	↓	2	1				
SB-15 S-3	8:05		✓			2	1				
SB-15 S-4	8:20		✓			2	1				
SB-15 S-5	8:33		✓			2	1				
SB-15 S-6	8:50		✓			2	1				
SB-10 S-1	10:50		✓			2	1				
SB-10 S-2	10:55		✓			2	1				
SB-10 S-3	11:06		✓			2	1				
SB-10 S-4	11:06		✓			2	1				
SB-10 S-5	11:14		✓			2	1				
SB-10 S-6	11:31		✓	↓	↓	2	1				

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 [signature]	ECKENFELDER	11/12/91 15:19	[signature]	Priority Air	11/12/91 1519
2			2 [signature]	Aquatec	11.12.91 @ 1845
3			3		

(September '90)

CHAIN OF CUSTODY RECORD

F-0058

000448

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: Glens Falls, NY

Client: Hercules Inc.

Address: Wilmington, DE

Comments:

Project Name: RFA - SA

Project No.: 6701.02

Quote No.:

Collection Date: 11/12/91

Sampler(s): R. Steinberg, J. Higgins

Sample Identification	Collection Time	Comp.	Grab	Matrix	Analysis / Remarks	Container Type / No. of: 40mL Glass	500mL Amber Glass				
SB-14 S-1	13:14		✓	Soil	VOA, BNA, metals	2	1				
SB-14 S-2	13:19		✓	Soil	↓	2	1				
SB+14 S-3	13:19		✓	Soil	↓	2	1				
SB-14 S-~~8~~4	13:30		✓	Soil	↓	2	1				
SB-14 S-~~6~~5	13:39		✓	Soil	↓	2	1				
SB-14 S-6	13:54		✓	Soil	↓	2	1				
Tripblank	-			water	VOA	2					
Fieldblank 1112	14:50		✓	water	↓	2					
DIblank	14:47		✓	water	↓	2					

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 [signature]	ECKENFELDER	11/12/91 15:19	1 [signature]	[illegible]	11/12/91 15:19
2			2 J. [signature]	Aquatec	11.12.91 @ 1845
3			3		

(September '90)

CHAIN OF CUSTODY RECORD

F - 0058

Page 1 of 1

000449

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: _____

Client: Hercules / Ciba-Geigy

Address: Lower Warren St. Glens Falls, NY

Comments: _____

Project Name: _____

Project No.: 91120

Quote No.: _____

Collection Date: 11/6/91

Sampler(s): Chris Anderson

Sample Identification	Collection Time	Comp.	Grab	Matrix	Analysis / Remarks	Container Type / No. of: 40ml vial
Trip Blank	1115		✓	Water	1196013	6

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 Christopher J. Anderson	Aquatec	11/6/91 1230	1		
2			2		
3			3		

(September '90)

TYPICAL

CHAIN OF CUSTODY RECORD

F-0056

Page 1 of 2

000450

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: Glens Falls, NY

Client: Hercules Inc.

Address: Wilmington, DE

Comments:

Project Name: RFA - SA

Project No.: 6701.02

Quote No.:

Collection Date: 11/13/91

Sampler(s): R. Steinberg, J. Higgins

Sample Identification	Collection Time	Comp	Grab	Matrix	Analysis / Remarks	Container Type / No. of: 40ml Glass	500mL Amber Glass				
✓ SB-13 S-1	9:03		✓	Soil	VOA, BNA, METALS	2	1				
✓ SB-13 S-2	9:10		✓	Soil		2	1				
✓ SB-13 S-3	9:20		✓	Soil		2	1				
✓ SB-13 S-4	9:20		✓	Soil		2	1				
✓ SB-13 S-5	9:28		✓	Soil		2	1				
✓ SB-13 S-6	9:39		✓	Soil		2	1				
✓ SB-3 S-1	11:52		✓	Soil		2	1				
✓ SB-3 S-2	11:56		✓	Soil		2	1				
✓ SB-3 S-3	12:05		✓	Soil		2	1				
✓ SB-3 S-4	12:23		✓	Soil		2	1				
✓ SB-3 S-5	12:33		✓	Soil		2	1				

	Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1	Robin A. Steinberg	ECKENFELDER	11/13/91 15:29		PRIORITY ZIP	11/13/91 15:25
2						
3					AQUATEC	11-13-91@1815

TYPICAL

CHAIN OF CUSTODY RECORD

F - 0054

Page 2 of 2

000451

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: Glens Falls, NY

Client: Hercules Inc.

Address: Wilmington, DE

Comments:

Project Name: RFA-SA

Project No.: 6701.02

Quote No.:

Collection Date: 11/13/91

Sampler(s): R. Steinberg, J. Higgins

Sample Identification	Collection Time	Comp	Grab	Matrix	Analysis / Remarks	Container Type / No. of: 40 ml Glass					
						2	A				
✓ DI Blank 2 —	13:18		✓	water	VOA	2					
✓ Field blank 111.3 —	13:20		✓	water	↓	2					
✓ Trip blank —	-		✓	water	↓	2					

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1	ECKENFELDER	11/13/91 15:29	1	PRIORITY	11/13/91 15:29
2			2		
3			3	Aquatec	11-13-91 @ 15

CHAIN OF CUSTODY RECORD

F - 0058

Page _____ of _____

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: _____

Client: Ciba-Geigy

Address: _____

Comments: _____

Project Name: _____

Project No.: _____

Quote No.: _____

Collection Date: 11/5/91

Sampler(s): J. L Banks

Sample Identification	Collection Time	Comp.	Grab	Matrix	Analysis / Remarks	Container Type / No. of
Trip Blank	1320		X	Water	Lot# 1170043	2 40ml VOA

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 J L Banks	Aquatec	11/5/91 @ 1325	1		
			2		
3			3		

(September '90)

CHAIN OF CUSTODY RECORD

F - 0058

Page 2 of 2

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: Glens Falls, NY

Client: Hercules Inc.

Address: Wilmington, DE

Comments:

Project Name: Soil Sampling

Project No.: 6702

Quote No.:

Collection Date: 2/1/92

Sampler(s): RSS, JAH

Sample Identification	Collection Time	Comp.	Grab	Matrix	Analysis / Remarks	Container Type / No. of: Soil Amber	Voa Glass				000039
SB-6 S-1A	1210		✓	soil	Hg, CN, SVOA	1					
SB-6 S-2A	1215		✓		# SVOA	1					
SB-10 S-1A	1245		✓		Hg, CN	1					
SB-12 S-1A	1300		✓		Hg, CN	1					
SB-11 S-1A	1310		✓		Hg, CN	1					
SB-3 S-1A	1330		✓		Hg, CN, SVOA	1					
tripblanks	—			water	VOA		2				
Fieldblank a-7	1100		✓	water	VOA		2				

	Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1	Robin Steng	ECKENFELDER	2/1/92 1430	1 FEDEX		
2				2 Maureen L. Kenn	Aquatec	2-10-92 0945
3				3		

(September '90)

500ml amber was received broken.

COPY Original WTETR 30331

CHAIN OF CUSTODY RECORD

F-0056

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: Glens Falls, NY

Client: Hercules Inc.

Address: Wilmington DE

Comments:

Project Name: Soil Sampling

Project No.: 6702

Quote No.:

Collection Date: 2/6/92 - 2/7/92

Sampler(s): RSS, JAH

Container Type / No. of: 125 mL Glass; 500 mL amber

Sample Identification	Collection Time	Comp.	Grab	Matrix	Analysis / Remarks	125 mL Glass	500 mL amber				
WP-19-1	2/6/92 1541		✓	Soil	VOA, Ext/Met	1	1				
WP-19-2	2/6/92 1550		✓	soil	↓	1	1				
WP-19-3	2/6/92 1610		✓	Soil	↓	1	1				
WP-19-4	2/6/92 1620		✓	Soil	↓	1	1				
WP-19-5	2/6/92 1643		✓	soil	↓	1	1				
WP-20-1	2/7/92 0930		✓	Soil	VOA Ext/Met	1	1				
WP-20-2	2/7/92 0938		✓	↓	↓	1	1				
WP-20-3	2/7/92 0955		✓	↓	↓	1	1				
WP-20-4	2/7/92 1005		✓	↓	↓	1	1				
WP-20-5	2/7/92 1025		✓	↓	↓	1	1				
WP-20-6	2/7/92 1043		✓	↓	↓	1	1				
SB-15 S-1A	2/7/92 1226		✓	Soil	Hg, CN	1	1				

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 Robin Stainsby	ECKENFELDER	2/7/92 1430	1 FEDEX		
2			2 M Henry	Aquatec	2/10/92 [illegible]
3			3		

CHAIN OF CUSTODY RECORD

F - 0058

Page _____ of _____

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: 10

Client: Hercules, Inc.

Address: _____

Comments: _____

Project Name: _____

Project No.: _____

Quote No.: _____

Collection Date: 2/4/92

Sampler(s): J. L Banks

Sample Identification	Collection Time	Comp.	Grab	Matrix	Analysis / Remarks	Container Type / No. of: 40 ml vials	250 mL Amber
Trip Blank	1240		✓	Water	Lot # 1134013	2	
VOA Blank Water	1240		✓	"	" 1331022		1

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 J. L Banks	Aquatec	2/4/92 1310	1		
2			2		
3			3		

(September '90)

000031

CHAIN OF CUSTODY RECORD

F-0056

Page ____ of ____

Aquatec, Inc. 75 Green Mountain Drive South Burlington, VT 05403 (802) 658-1074 / FAX: (802) 658-3189

Client's Reference: Eckenfelder RFA-SV/GW

Client: Hercules Inc / Ciba Geigy Plant Site

Address: Glens Falls, NY

Comments: Check Lab instruction (Routine) for Soils analysis

Project Name: RFA-SV / GW Samp

Project No.: 6701.02, 6518.03

Quote No.:

Collection Date: 2/12/92

Sampler(s): John Robinson

Container Type / No. of: 250 ml glass; 1000 ml glass

Sample Identification	Collection Time	Comp	Grab	Matrix	Analysis / Remarks	250 ml glass	1000 ml glass
(Y) SB-11 S-1B 11:30	2/12/92	X		Soil	Cr, Hg, or Semi Volatiles	1	
X SB-3 S-1B 11:30		X		Soil	Cr, Hg, or Semi Volatiles	1	
AW-C3	12:00		X	Water	Phenol		1

Signature	Company	Date/Time Relinquished	Signature	Company	Date/Time Received
1 [signature]	Eckenfelder	2/12/92 5:00	1 [signature]	Aquatec.	2/13/92@1000
2			2		
3			3		

(Y) Bottle was taken at 1200. X Bottle was date 2-12-92 @ 1200

FIGURE 1

000032

APPENDIX D

LABORATORY DATA SHEETS

ANALYTICAL REPORTS

SCREEN DATA
INORGANIC PARAMETERS

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/27/92
ETR Number : 29071
Project No.: 91120
No. Samples: 12
Arrived : 11/05/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148011	Trip Blank:(Water)	
QSOA	Volatile Screen	11/09/91 PS
148012	Field Blank:11/05/91 @1510(Water)	
QSOA	Volatile Screen	11/09/91 PS
148013	SB-11 S-1:11/05/91 @1230(Soil)	
6010	Barium, Total	66 f
6010	Cadmium, Total	6.3 f
6010	Chromium, Total	135 f
6010	Lead, Total	109 f
QSOA	Volatile Screen	11/07/91 PS
QSOA	Semivolatile Screen	11/09/91 FL
IN623	Solids, Total	87.1 c
9010A	Cyanide, Total	1.5 f
7471	Mercury, Total	0.90 f
7060	Arsenic, Total	4.4 f
6010	Copper, Total	14.9 f
7740	Selenium, Total	<0.4 f
6010	Strontium, Total	70 f
6010	Iron, Total	11700 f

Comments/Notes

PS = Screen passed on the date shown.
f = mg/Kg dry weight
FL = Screen failed on the date shown.
c = %W/W as received

< Cont. Next Page >

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
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COLCHESTER, VT 05446

LABORATORY LOCATIONS
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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

*Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/27/92
ETR Number : 29071
Project No.: 91120
No. Samples: 12
Arrived : 11/05/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148013MS	SB-11 S-1:[MS]11/05/91 @1230(Soil)	
6010	Barium, Total	230 f
6010	Cadmium, Total	9.3 f
6010	Chromium, Total	138 f
6010	Lead, Total	131 f
IN623	Solids, Total	87.3 c
9010A	Cyanide, Total	1.9 f
7471	Mercury, Total	1.04 f
7060	Arsenic, Total	10.9 f
6010	Copper, Total	37 f
7740	Selenium, Total	1.21 f
6010	Strontium, Total	85 f
6010	Iron, Total	13400 f
148013DP	SB-11 S-1:[REP]11/05/91 @1230(Soil)	
6010	Barium, Total	73 f
6010	Cadmium, Total	6.3 f
6010	Chromium, Total	148 f
6010	Lead, Total	113 f
IN623	Solids, Total	87.7 c
9010A	Cyanide, Total	1.6 f
7471	Mercury, Total	0.91 f
7060	Arsenic, Total	4.5 f
6010	Copper, Total	13.3 f
7740	Selenium, Total	<0.4 f

Comments/Notes

f = mg/Kg dry weight
c = %W/W as received

000004

< Cont. Next Page >

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/27/92
ETR Number : 29071
Project No.: 91120
No. Samples: 12
Arrived : 11/05/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148013DP	SB-11 S-1:[REP]11/05/91 @1230(Soil)	
6010	Strontium, Total	78 f
6010	Iron, Total	11600 f
148014	SB-11 S-2:11/05/91 @1244(Soil)	
6010	Barium, Total	29 f
6010	Cadmium, Total	2.1 f
6010	Chromium, Total	24 f
6010	Lead, Total	16.1 f
QSOA	Volatile Screen	11/07/91 PS
QSOA	Semivolatile Screen	11/09/91 FL
IN623	Solids, Total	90.7 c
148015	SB-11 S-3:11/05/91 @1259(Soil)	
6010	Barium, Total	42 f
6010	Cadmium, Total	3.7 f
6010	Chromium, Total	46 f
6010	Lead, Total	50 f
QSOA	Volatile Screen	11/07/91 FL
QSOA	Semivolatile Screen	11/09/91 FL
IN623	Solids, Total	88.8 c

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
FL = Screen failed on the date shown.
c = %W/W as received

000005

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aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/27/92
ETR Number : 29071
Project No.: 91120
No. Samples: 12
Arrived : 11/05/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148016	SB-11 S-4:11/05/91 @1337(Soil)	
6010	Barium, Total	78 f
6010	Cadmium, Total	3.5 f
6010	Chromium, Total	16.7 f
6010	Lead, Total	<10 f
QSOA	Volatile Screen	11/07/91 PS
QSOA	Semivolatile Screen	11/09/91 PS
IN623	Solids, Total	74.6 c
148017	SB-11 S-5:11/05/91 @1404(Soil)	
6010	Barium, Total	163 f
6010	Cadmium, Total	5.0 f
6010	Chromium, Total	32 f
6010	Lead, Total	<20 f
QSOA	Volatile Screen	11/07/91 PS
IN623	Solids, Total	68.4 c
148018	SB-11 S-6:11/05/91 @1420(Soil)	
6010	Barium, Total	170 f
6010	Cadmium, Total	4.9 f
6010	Chromium, Total	31 f
6010	Lead, Total	11.0 f
QSOA	Volatile Screen	11/07/91 PS
QSOA	Semivolatile Screen	11/09/91 FL

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received
FL = Screen failed on the date shown.

000006

< Cont. Next Page >

aquatec INC.
An Inchcape Company

CORPORATE OFFICE
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/27/92
ETR Number : 29071
Project No.: 91120
No. Samples: 12
Arrived : 11/05/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148018	SB-11 S-6:11/05/91 @1420(Soil)	
IN623	Solids, Total	71.7 c

Comments/Notes

c = %W/W as received

000007

< Last Page > Submitted By : R. Mason Mussers Aquatec Inc.

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
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LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/26/92
ETR Number : 29090
Project No.: 91120
No. Samples: 13
Arrived : 11/06/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148072	Trip Blank 116:(Water)	
QSOA	Volatile Screen	11/09/91 PS
148073	Field Blank 116:11/06/91 @1500(Water)	
QSOA	Volatile Screen	11/09/91 PS
148074	SB-4 S-1:11/06/91 @1400(Soil)	
6010	Barium, Total	54 f
6010	Cadmium, Total	2.4 f
6010	Chromium, Total	11.2 f
6010	Lead, Total	12.9 f
QSOA	Volatile Screen	11/07/91 PS
QSOA	Semivolatile Screen	11/12/91 PS
IN623	Solids, Total	93.0 c
148075	SB-4 S-2:11/06/91 @1405(Soil)	
6010	Barium, Total	32 f
6010	Cadmium, Total	2.7 f
6010	Chromium, Total	9.8 f
6010	Lead, Total	<8 f
QSOA	Volatile Screen	11/07/91 FL
QSOA	Semivolatile Screen	11/12/91 PS
IN623	Solids, Total	89.6 c

Comments/Notes

PS = Screen passed on the date shown.
f = mg/Kg dry weight
c = %W/W as received
FL = Screen failed on the date shown.

000008

< Cont. Next Page >

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/26/92
ETR Number : 29090
Project No.: 91120
No. Samples: 13
Arrived : 11/06/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148076	SB-4 S-3:11/06/91 @1410(Soil)		
6010	Barium, Total	106	f
6010	Cadmium, Total	3.9	f
6010	Chromium, Total	18.4	f
6010	Lead, Total	13.5	f
QSOA	Volatile Screen	11/07/91	PS
QSOA	Semivolatile Screen	11/12/91	PS
IN623	Solids, Total	72.2	c
148077	SB-7 S-2:11/06/91 @0902(Soil)		
6010	Barium, Total	23	f
6010	Cadmium, Total	1.72	f
6010	Chromium, Total	5.9	f
6010	Lead, Total	<7	f
QSOA	Volatile Screen	11/07/91	PS
QSOA	Semivolatile Screen	11/12/91	PS
IN623	Solids, Total	87.2	c
148078	SB-7 S-3:11/06/91 @0910(Soil)		
6010	Barium, Total	28	f
6010	Cadmium, Total	1.92	f
6010	Chromium, Total	7.6	f
6010	Lead, Total	<6	f
QSOA	Volatile Screen	11/07/91	PS

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/26/92
ETR Number : 29090
Project No.: 91120
No. Samples: 13
Arrived : 11/06/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148078	SB-7 S-3:11/06/91 @0910(Soil)		
QSOA	Semivolatile Screen	11/12/91	PS
IN623	Solids, Total	87.2	c
148079	SB-7 S-5:11/06/91 @0926(Soil)		
6010	Barium, Total	24	f
6010	Cadmium, Total	1.26	f
6010	Chromium, Total	5.6	f
6010	Lead, Total	<9	f
QSOA	Volatile Screen	11/07/91	PS
QSOA	Semivolatile Screen	11/12/91	PS
IN623	Solids, Total	83.9	c
148080	SB-12 S-1:11/06/91 @1228(Soil)		
6010	Barium, Total	220	f
6010	Cadmium, Total	9.3	f
6010	Chromium, Total	128	f
6010	Lead, Total	270	f
QSOA	Volatile Screen	11/07/91	PS
QSOA	Semivolatile Screen	11/12/91	FL
IN623	Solids, Total	89.9	c
9010A	Cyanide, Total	7.7	f
7471	Mercury, Total	1.74	f

Comments/Notes

PS = Screen passed on the date shown.
c = %W/W as received
f = mg/Kg dry weight
FL = Screen failed on the date shown.

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aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/26/92
ETR Number : 29090
Project No.: 91120
No. Samples: 13
Arrived : 11/06/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148080	SB-12 S-1:11/06/91 @1228(Soil)		
7060	Arsenic, Total	4.2	f
6010	Copper, Total	93	f
7740	Selenium, Total	<0.9	f
6010	Strontium, Total	34	f
6010	Iron, Total	15700	f
148081	SB-12 S-2:11/06/91 @1233(Soil)		
6010	Barium, Total	12.5	f
6010	Cadmium, Total	1.27	f
6010	Chromium, Total	3.8	f
6010	Lead, Total	<7	f
QSOA	Volatile Screen	11/07/91	PS
QSOA	Semivolatile Screen	11/12/91	PS
IN623	Solids, Total	94.8	c
148082	SB-12 S-3:11/06/91 @1243(Soil)		
6010	Barium, Total	144	f
6010	Cadmium, Total	5.7	f
6010	Chromium, Total	37	f
6010	Lead, Total	11.6	f
QSOA	Volatile Screen	11/08/91	PS
QSOA	Semivolatile Screen	11/12/91	PS
IN623	Solids, Total	79.1	c

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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aquatec INC.
An Inchcape Company

CORPORATE OFFICE
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/26/92
ETR Number : 29090
Project No.: 91120
No. Samples: 13
Arrived : 11/06/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148083	SB-12 S-4:11/06/91 @1250(Soil)	
6010	Barium, Total	64 f
6010	Cadmium, Total	3.7 f
6010	Chromium, Total	18.2 f
6010	Lead, Total	22 f
QSOA	Volatile Screen	11/08/91 PS
QSOA	Semivolatile Screen	11/12/91 PS
IN623	Solids, Total	74.2 c
148084	SB-12 S-5:11/06/91 @1307(Soil)	
6010	Barium, Total	172 f
6010	Cadmium, Total	5.3 f
6010	Chromium, Total	24 f
6010	Lead, Total	<20 f
QSOA	Volatile Screen	11/08/91 PS
QSOA	Semivolatile Screen	11/12/91 PS
IN623	Solids, Total	67.9 c

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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< Last Page > Submitted By : Aquatec Inc.

R. Mason McBeen

aquatec INC.
An Inchcape Company

CORPORATE OFFICE
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Date : 01/26/92
ETR Number : 29125
Project No.: 91120
No. Samples: 5
Arrived : 11/07/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148239	Trip Blank:(Water)	
QSOA	Volatile Screen	11/09/91 PS
148240	Field Blank 117:11/07/91 @1500(Water)	
QSOA	Volatile Screen	11/09/91 PS
148241	SB-1 S-1:11/07/91 @0925(Soil)	
6010	Barium, Total	45 f
6010	Cadmium, Total	2.2 f
6010	Chromium, Total	36 f
6010	Lead, Total	36 f
QSOA	Volatile Screen	11/08/91 PS
QSOA	Semivolatile Screen	11/12/91 PS
IN623	Solids, Total	92.5 c
148242	SB-1 S-2:11/07/91 @0930(Soil)	
6010	Barium, Total	30 f
6010	Cadmium, Total	1.36 f
6010	Chromium, Total	8.6 f
6010	Lead, Total	<20 f
QSOA	Volatile Screen	11/08/91 PS
QSOA	Semivolatile Screen	11/12/91 PS
IN623	Solids, Total	84.5 c

Comments/Notes

PS = Screen passed on the date shown.
f = mg/Kg dry weight
c = %W/W as received

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< Cont. Next Page >

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date : 01/26/92
ETR Number : 29125
Project No.: 91120
No. Samples: 5
Arrived : 11/07/91
P.O. Number: *

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148011

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148243	SB-1 S-4:11/07/91 @0950(Soil)		
6010	Barium, Total	33	f
6010	Cadmium, Total	1.84	f
6010	Chromium, Total	16.1	f
6010	Lead, Total	21	f
QSOA	Volatile Screen	11/08/91	PS
QSOA	Semivolatile Screen	11/12/91	PS
IN623	Solids, Total	85.1	c

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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< Last Page > Submitted By : Aquatec Inc.

R. Mason McKeen

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date : 01/26/92
ETR Number : 29126
Project No.: 91120
No. Samples: 20
Arrived : 11/07/91
P.O. Number: *

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148244	SB-1 S-5:11/07/91 @1010(Soil)		
6010	Barium, Total	25	f
6010	Cadmium, Total	1.35	f
6010	Chromium, Total	6.5	f
6010	Lead, Total	<9	f
QSOA	Volatile Screen	11/08/91	PS
QSOA	Semivolatile Screen	11/12/91	PS
IN623	Solids, Total	81.9	c
148245	SB-1 S-6:11/07/91 @1030(Soil)		
6010	Barium, Total	24	f
6010	Cadmium, Total	1.36	f
6010	Chromium, Total	7.6	f
6010	Lead, Total	<9	f
QSOA	Volatile Screen	11/08/91	PS
QSOA	Semivolatile Screen	11/12/91	PS
IN623	Solids, Total	82.6	c
148246	SB-2 S-1:11/07/91 @0805(Soil)		
6010	Barium, Total	21	f
6010	Cadmium, Total	1.23	f
6010	Chromium, Total	7.9	f
6010	Lead, Total	<10	f
QSOA	Volatile Screen	11/08/91	PS

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Date : 01/26/92
ETR Number : 29126
Project No.: 91120
No. Samples: 20
Arrived : 11/07/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148246	SB-2 S-1:11/07/91 @0805(Soil)	
QSOA	Semivolatile Screen	11/13/91 FL
IN623	Solids, Total	89.4 c
148247	SB-2 S-2:11/07/91 @0810(Soil)	
6010	Barium, Total	29 f
6010	Cadmium, Total	1.47 f
6010	Chromium, Total	7.5 f
6010	Lead, Total	<10 f
QSOA	Volatile Screen	11/08/91 PS
QSOA	Semivolatile Screen	11/13/91 FL
IN623	Solids, Total	85.1 c
148248	SB-2 S-3:11/07/91 @0821(Soil)	
6010	Barium, Total	15.6 f
6010	Cadmium, Total	0.87 f
6010	Chromium, Total	4.4 f
6010	Lead, Total	<20 f
QSOA	Volatile Screen	11/08/91 PS
QSOA	Semivolatile Screen	11/13/91 FL
IN623	Solids, Total	86.6 c

Comments/Notes

FL = Screen failed on the date shown.
c = %W/W as received
f = mg/Kg dry weight
PS = Screen passed on the date shown.

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aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Date : 01/26/92
ETR Number : 29126
Project No.: 91120
No. Samples: 20
Arrived : 11/07/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148249	SB-2 S-4:11/07/91 @0830(Soil)	
6010	Barium, Total	22 f
6010	Cadmium, Total	1.51 f
6010	Chromium, Total	5.9 f
6010	Lead, Total	<7 f
QSOA	Volatile Screen	11/08/91 PS
QSOA	Semivolatile Screen	11/13/91 FL
IN623	Solids, Total	83.3 c
148250	SB-2 S-5:11/07/91 @0845(Soil)	
6010	Barium, Total	25 f
6010	Cadmium, Total	1.17 f
6010	Chromium, Total	4.5 f
6010	Lead, Total	<20 f
QSOA	Volatile Screen	11/08/91 PS
QSOA	Semivolatile Screen	11/13/91 PS
IN623	Solids, Total	84.0 c
148251	SB-5 S-1:11/07/91 @1258(Soil)	
6010	Barium, Total	134 f
6010	Cadmium, Total	5.8 f
6010	Chromium, Total	5.8 f
6010	Lead, Total	125 f

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
FL = Screen failed on the date shown.
c = %W/W as received

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aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Date : 01/26/92
ETR Number : 29126
Project No.: 91120
No. Samples: 20
Arrived : 11/07/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148251	SB-5 S-1:11/07/91 @1258(Soil)		
QSOA	Volatile Screen	11/08/91	PS
QSOA	Semivolatile Screen	11/13/91	FL
IN623	Solids, Total	90.5	c
148252	SB-5 S-2:11/07/91 @1305(Soil)		
6010	Barium, Total	29	f
6010	Cadmium, Total	1.45	f
6010	Chromium, Total	9.2	f
6010	Lead, Total	<8	f
QSOA	Volatile Screen	11/08/91	PS
QSOA	Semivolatile Screen	11/13/91	PS
IN623	Solids, Total	91.4	c
148253	SB-5 S-3:11/07/91 @1310(Soil)		
6010	Barium, Total	95	f
6010	Cadmium, Total	4.6	f
6010	Chromium, Total	62	f
6010	Lead, Total	43	f
QSOA	Volatile Screen	11/08/91	PS
QSOA	Semivolatile Screen	11/13/91	FL
IN623	Solids, Total	78.4	c

Comments/Notes

PS = Screen passed on the date shown.
FL = Screen failed on the date shown.
c = %W/W as received
f = mg/Kg dry weight

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aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Date : 01/26/92
ETR Number : 29126
Project No.: 91120
No. Samples: 20
Arrived : 11/07/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148254	SB-5 S-4:11/07/91 @1320(Soil)		
6010	Barium, Total	138	f
6010	Cadmium, Total	4.6	f
6010	Chromium, Total	20	f
6010	Lead, Total	10.0	f
QSOA	Volatile Screen	11/08/91	PS
QSOA	Semivolatile Screen	11/13/91	PS
IN623	Solids, Total	74.6	c
148255	SB-8 S-1:11/07/91 @1359(Soil)		
6010	Barium, Total	48	f
6010	Cadmium, Total	40	f
6010	Chromium, Total	39	f
6010	Lead, Total	133	f
QSOA	Volatile Screen	11/08/91	PS
QSOA	Semivolatile Screen	11/13/91	PS
IN623	Solids, Total	93.4	c
148256	SB-8 S-2:11/07/91 @1355(Soil)		
6010	Barium, Total	51	a
6010	Cadmium, Total	19.7	f
6010	Chromium, Total	24	f
6010	Lead, Total	50	f

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received
a = ug/l

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000019

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Date : 01/26/92
ETR Number : 29126
Project No.: 91120
No. Samples: 20
Arrived : 11/07/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148256	SB-8 S-2:11/07/91 @1355(Soil)	
QSOA	Volatile Screen	11/08/91 PS
QSOA	Semivolatile Screen	11/13/91 PS
IN623	Solids, Total	89.6 c
148257	SB-8 S-3:11/07/91 @1410(Soil)	
6010	Barium, Total	1070 f
6010	Cadmium, Total	9.3 f
6010	Chromium, Total	22 f
6010	Lead, Total	22 f
QSOA	Volatile Screen	11/09/91 PS
QSOA	Semivolatile Screen	11/13/91 PS
IN623	Solids, Total	78.7 c
148258	SB-8 S-4:11/07/91 @1500(Soil)	
6010	Barium, Total	220 f
6010	Cadmium, Total	5.1 f
6010	Chromium, Total	25 f
6010	Lead, Total	<20 f
QSOA	Volatile Screen	11/09/91 PS
QSOA	Semivolatile Screen	11/13/91 PS
IN623	Solids, Total	72.4 c

Comments/Notes

PS = Screen passed on the date shown.
c = %W/W as received
f = mg/Kg dry weight

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000020

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Date : 01/26/92
ETR Number : 29145
Project No.: 91120
No. Samples: 7
Arrived : 11/08/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148477	Trip Blank:(Water)	
QSOA	Volatile Screen	11/09/91 PS
148478	Field Blank 118:11/08/91 @1150(Water)	
QSOA	Volatile Screen	11/09/91 PS
148479	SB-6 S-1:11/08/91 @0810(Soil)	
6010	Barium, Total	112 f
6010	Cadmium, Total	7.9 f
6010	Chromium, Total	165 f
6010	Lead, Total	155 f
QSOA	Volatile Screen	11/09/91 PS
QSOA	Semivolatile Screen	11/14/91 FL
IN623	Solids, Total	91.3 c
9010A	Cyanide, Total	110 f
7471	Mercury, Total	0.77 f
7060	Arsenic, Total	3.2 f
6010	Copper, Total	24 f
7740	Selenium, Total	<0.6 f
6010	Strontium, Total	29 f
6010	Iron, Total	23000 f

Comments/Notes

PS = Screen passed on the date shown.
f = mg/Kg dry weight
FL = Screen failed on the date shown.
c = %W/W as received

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aquatec INC.
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CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Date : 01/26/92
ETR Number : 29126
Project No.: 91120
No. Samples: 20
Arrived : 11/07/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148246MS	SB-2 S-1:[MS]11/07/91 @0805(Soil)		
6010	Barium, Total	199	f
6010	Cadmium, Total	5.0	f
6010	Chromium, Total	22	f
6010	Lead, Total	27	f
IN623	Solids, Total	89.7	c
148246DP	SB-2 S-1:[REP]11/07/91 @0805(Soil)		
6010	Barium, Total	25.5	f
6010	Cadmium, Total	1.51	f
6010	Chromium, Total	7.4	f
6010	Lead, Total	8.8	f
IN623	Solids, Total	89.2	c

Comments/Notes

f = mg/Kg dry weight
c = %W/W as received

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< Last Page > Submitted By : Aquatec Inc.

R. Mason McKeen

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Date : 01/26/92
ETR Number : 29145
Project No.: 91120
No. Samples: 7
Arrived : 11/08/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148480	SB-6 S-2:11/08/91 @0817(Soil)		
6010	Barium, Total	65	f
6010	Cadmium, Total	2.5	f
6010	Chromium, Total	36	f
6010	Lead, Total	63	f
QSOA	Volatile Screen	11/09/91	PS
QSOA	Semivolatile Screen	11/14/91	PS
IN623	Solids, Total	92.2	c
148481	SB-6 S-3:11/08/91 @0912(Soil)		
6010	Barium, Total	199	f
6010	Cadmium, Total	5.2	f
6010	Chromium, Total	36	f
6010	Lead, Total	10.6	f
QSOA	Volatile Screen	11/09/91	PS
QSOA	Semivolatile Screen	11/14/91	PS
IN623	Solids, Total	69.7	c
148482	SB-6 S-4:11/08/91 @0923(Soil)		
6010	Barium, Total	148	f
6010	Cadmium, Total	5.0	f
6010	Chromium, Total	26	f
6010	Lead, Total	13.2	f
QSOA	Volatile Screen	11/09/91	PS

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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ANALYTICAL REPORT

Date : 01/26/92
ETR Number : 29145
Project No.: 91120
No. Samples: 7
Arrived : 11/08/91
P.O. Number: *

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148244

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148482	SB-6 S-4:11/08/91 @0923(Soil)		
QSOA	Semivolatile Screen	11/14/91	PS
IN623	Solids, Total	69.0	c
148483	SB-9 S-1:11/08/91 @1000(Soil)		
6010	Barium, Total	37	f
6010	Cadmium, Total	2.4	f
6010	Chromium, Total	21	f
6010	Lead, Total	27	f
QSOA	Volatile Screen	11/09/91	FL
QSOA	Semivolatile Screen	11/14/91	FL
IN623	Solids, Total	95.3	c

Comments/Notes

PS = Screen passed on the date shown.
c = %W/W as received
f = mg/Kg dry weight
FL = Screen failed on the date shown.

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< Last Page > Submitted By : Aquatec Inc.

R. Mason McLean

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148483

Date : 01/26/92
ETR Number : 29146
Project No.: 91120
No. Samples: 5
Arrived : 11/08/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148484	SB-9 S-2:11/08/91 @1105(Soil)		
6010	Barium, Total	49	f
6010	Cadmium, Total	3.6	f
6010	Chromium, Total	15.3	f
6010	Lead, Total	14.7	f
QSOA	Volatile Screen	11/09/91	PS
QSOA	Semivolatile Screen	11/14/91	PS
IN623	Solids, Total	89.5	c
148485	SB-9 S-3:11/08/91 @1113(Soil)		
6010	Barium, Total	60	f
6010	Cadmium, Total	3.7	f
6010	Chromium, Total	15.3	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/09/91	PS
QSOA	Semivolatile Screen	11/14/91	PS
IN623	Solids, Total	77.3	c
148486	SB-9 S-4:11/08/91 @1126(Soil)		
6010	Barium, Total	177	f
6010	Cadmium, Total	5.5	f
6010	Chromium, Total	34	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/09/91	PS

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

SDG:148483

Date : 01/26/92
ETR Number : 29146
Project No.: 91120
No. Samples: 5
Arrived : 11/08/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148486	SB-9 S-4:11/08/91 @1126(Soil)	
QSOA	Semivolatile Screen	11/14/91 PS
IN623	Solids, Total	71.6 c
148486MS	SB-9 S-4:[MS]11/08/91 @1126(Soil)	
6010	Barium, Total	380 f
6010	Cadmium, Total	9.9 f
6010	Chromium, Total	51 f
6010	Lead, Total	40 f
IN623	Solids, Total	71.8 c
148486DP	SB-9 S-4:[REP]11/08/91 @1126(Soil)	
6010	Barium, Total	240 f
6010	Cadmium, Total	6.3 f
6010	Chromium, Total	41 f
6010	Lead, Total	<20 f
IN623	Solids, Total	69.8 c

Comments/Notes

PS = Screen passed on the date shown.
c = %W/W as received
f = mg/Kg dry weight

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< Last Page > Submitted By : Aquatec Inc.

R. Mason McKeen

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

Date : 01/28/92
ETR Number : 29186
Project No.: 91120
No. Samples: 17
Arrived : 11/12/91
P.O. Number: *

JOB:6701.02 SDG:148483

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148798	Trip Blank:11/01/91 (Water)	
QSOA	Volatile Screen	11/13/91 PS
148799	Field Blank 1112:11/12/91 (Water)	
QSOA	Volatile Screen	11/13/91 PS
148800	DI Blank:11/12/91 (Water)	
QSOA	Volatile Screen	11/13/91 PS
148801	SB-10 S-1:11/12/91 (Soil)	
6010	Barium, Total	980 f
6010	Cadmium, Total	470 f
6010	Chromium, Total	550 f
6010	Lead, Total	2700 f
QSOA	Volatile Screen	11/13/91 PS
QSOA	Semivolatile Screen	11/19/91 FL
1N623	Solids, Total	87.9 c
9010A	Cyanide, Total	290 f
7471	Mercury, Total	31 f
7060	Arsenic, Total	3.8 f
6010	Copper, Total	310 f
7740	Selenium, Total	2.7 f
6010	Strontium, Total	156 f

Comments/Notes

PS = Screen passed on the date shown.
f = mg/Kg dry weight
FL = Screen failed on the date shown.
c = %W/W as received

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

JOB:6701.02 SDG:148483

Date : 01/28/92
ETR Number : 29186
Project No.: 91120
No. Samples: 17
Arrived : 11/12/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148801	SB-10 S-1:11/12/91 (Soil)		
6010	Iron, Total	11300	f
148802	SB-10 S-2:11/12/91 (Soil)		
6010	Barium, Total	380	f
6010	Cadmium, Total	125	f
6010	Chromium, Total	97	f
6010	Lead, Total	280	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	FL
IN623	Solids, Total	85.6	c
148803	SB-10 S-3:11/12/91 (Soil)		
6010	Barium, Total	84	f
6010	Cadmium, Total	28	f
6010	Chromium, Total	18.6	f
6010	Lead, Total	17.3	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	84.7	c

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
FL = Screen failed on the date shown.
c = %W/W as received

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aquatec INC.
An Inchcape Company

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55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
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SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date : 01/28/92
ETR Number : 29186
Project No.: 91120
No. Samples: 17
Arrived : 11/12/91
P.O. Number: *

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

JOB:6701.02 SDG:148483

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148804	SB-10 S-4:11/12/91 (Soil)		
6010	Barium, Total	182	f
6010	Cadmium, Total	20	f
6010	Chromium, Total	37	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	72.5	c
148805	SB-10 S-5:11/12/91 (Soil)		
6010	Barium, Total	116	f
6010	Cadmium, Total	20	f
6010	Chromium, Total	25	f
6010	Lead, Total	26	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	79.1	c
148806	SB-10 S-6:11/12/91 (Soil)		
6010	Barium, Total	220	f
6010	Cadmium, Total	5.8	f
6010	Chromium, Total	40	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/13/91	PS

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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aquatec INC.
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CORPORATE OFFICES
55 SOUTH PARK DRIVE
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LABORATORY LOCATIONS
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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

JOB:6701.02 SDG:148483

Date : 01/28/92
ETR Number : 29186
Project No.: 91120
No. Samples: 17
Arrived : 11/12/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148806	SB-10 S-6:11/12/91 (Soil)	
QSOA	Semivolatile Screen	11/19/91 PS
IN623	Solids, Total	66.9 c
148807	SB-14 S-1:11/12/91 (Soil)	
6010	Barium, Total	60 f
6010	Cadmium, Total	3.0 f
6010	Chromium, Total	27 f
6010	Lead, Total	34 f
QSOA	Volatile Screen	11/13/91 PS
QSOA	Semivolatile Screen	11/19/91 FL
IN623	Solids, Total	89.3 c
148808	SB-14 S-2:11/12/91 (Soil)	
6010	Barium, Total	61 f
6010	Cadmium, Total	2.4 f
6010	Chromium, Total	11.5 f
6010	Lead, Total	6.9 f
QSOA	Volatile Screen	11/13/91 PS
QSOA	Semivolatile Screen	11/19/91 PS
IN623	Solids, Total	83.4 c

Comments/Notes

PS = Screen passed on the date shown.
c = %W/W as received
f = mg/Kg dry weight
FL = Screen failed on the date shown.

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aquatec INC.
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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

Date : 01/28/92
ETR Number : 29186
Project No.: 91120
No. Samples: 17
Arrived : 11/12/91
P.O. Number: *

CC Results to : John Robinson

JOB:6701.02 SDG:148483

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148809	SB-14 S-3:11/12/91 (Soil)		
6010	Barium, Total	54	f
6010	Cadmium, Total	2.3	f
6010	Chromium, Total	9.3	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	84.2	c
148810	SB-14 S-4:11/12/91 (Soil)		
6010	Barium, Total	220	f
6010	Cadmium, Total	6.1	f
6010	Chromium, Total	43	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	73.4	c
148811	SB-14 S-5:11/12/91 (Soil)		
6010	Barium, Total	179	f
6010	Cadmium, Total	5.1	f
6010	Chromium, Total	32	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/13/91	PS

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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aquatec INC.
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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

Date : 01/28/92
ETR Number : 29186
Project No.: 91120
No. Samples: 17
Arrived : 11/12/91
P.O. Number: *

JOB:6701.02 SDG:148483

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148811	SB-14 S-5:11/12/91 (Soil)		
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	74.1	c
148812	SB-14 S-6:11/12/91 (Soil)		
6010	Barium, Total	230	f
6010	Cadmium, Total	5.1	f
6010	Chromium, Total	41	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	64.8	c
148813	SB-15 S-1:11/12/91 (Soil)		
6010	Barium, Total	1100	f
6010	Cadmium, Total	23	f
6010	Chromium, Total	610	f
6010	Lead, Total	1250	f
QSOA	Volatile Screen	11/14/91	PS
QSOA	Semivolatile Screen	11/19/91	FL
IN623	Solids, Total	89.5	c
9010A	Cyanide, Total	51	f
7471	Mercury, Total	2.9	f

Comments/Notes

PS = Screen passed on the date shown.
c = %W/W as received
f = mg/Kg dry weight
FL = Screen failed on the date shown.

< Cont. Next Page >

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aquatec INC.
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COLCHESTER, VT 05446

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

JOB:6701.02 SDG:148483

Date : 01/28/92
ETR Number : 29186
Project No.: 91120
No. Samples: 17
Arrived : 11/12/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148813	SB-15 S-1:11/12/91 (Soil)	
7060	Arsenic, Total	8.5 f
6010	Copper, Total	380 f
7740	Selenium, Total	0.80 f
6010	Strontium, Total	200 f
6010	Iron, Total	67000 f
148814	SB-15 S-2:11/12/91 (Soil)	
6010	Barium, Total	390 f
6010	Cadmium, Total	9.7 f
6010	Chromium, Total	200 f
6010	Lead, Total	410 f
QSOA	Volatile Screen	11/13/91 PS
QSOA	Semivolatile Screen	11/19/91 PS
IN623	Solids, Total	91.1 c

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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< Last Page > Submitted By : Aquatec Inc.

R. Mason McKee

aquatec INC.
An Inchcape Company

CORPORATE OFFICE
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

Job:6701.02 SDG:148815

Date : 01/26/92
ETR Number : 29188
Project No.: 91120
No. Samples: 4
Arrived : 11/12/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148815	SB-15 S-3:11/12/91 (Soil)		
6010	Barium, Total	340	f
6010	Cadmium, Total	8.5	f
6010	Chromium, Total	153	f
6010	Lead, Total	320	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	FL
IN623	Solids, Total	91.9	c
148816	SB-15 S-4:11/12/91 (Soil)		
6010	Barium, Total	62	f
6010	Cadmium, Total	4.2	f
6010	Chromium, Total	27	f
6010	Lead, Total	59	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	90.2	c
148817	SB-15 S-5:11/12/91 (Soil)		
6010	Barium, Total	230	f
6010	Cadmium, Total	4.9	f
6010	Chromium, Total	40	f
6010	Lead, Total	<20	f

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
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c = %W/W as received

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ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

Job:6701.02 SDG:148815

Date : 01/26/92
ETR Number : 29188
Project No.: 91120
No. Samples: 4
Arrived : 11/12/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148817	SB-15 S-5:11/12/91 (Soil)		
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	72.2	c
148818	SB-15 S-6:11/12/91 (Soil)		
6010	Barium, Total	290	f
6010	Cadmium, Total	5.7	f
6010	Chromium, Total	46	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/13/91	PS
QSOA	Semivolatile Screen	11/19/91	PS
IN623	Solids, Total	62.2	c

Comments/Notes

PS = Screen passed on the date shown.
c = %W/W as received
f = mg/Kg dry weight

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< Last Page > Submitted By : Aquatec Inc.

R. Mason McKeen

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date : 01/26/92
ETR Number : 29213
Project No.: 91120
No. Samples: 14
Arrived : 11/13/91
P.O. Number: *

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

Job:6701.02 SDG:148815

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148881	DI Blank 2:11/13/91 @1318(Water)	
QSOA	Volatile Screen	11/14/91 PS
148882	Field Blank 1113:11/13/91 @1320(Water)	
QSOA	Volatile Screen	11/14/91 FL
148883	Trip Blank:(Water)	
QSOA	Volatile Screen	11/14/91 PS
148884	SB-3 S-1:11/13/91 @1152(Soil)	
6010	Barium, Total	87 f
6010	Cadmium, Total	7.9 f
6010	Chromium, Total	197 f
6010	Lead, Total	159 f
QSOA	Volatile Screen	11/14/91 PS
QSOA	Semivolatile Screen	11/18/91 FL
IN623	Solids, Total	79.5 c
9010A	Cyanide, Total	<0.67 f
7471	Mercury, Total	0.72 f
7060	Arsenic, Total	6.4 f
6010	Copper, Total	17.1 f
7740	Selenium, Total	<0.6 f
6010	Strontium, Total	24 f

Comments/Notes

PS = Screen passed on the date shown.
FL = Screen failed on the date shown.
f = mg/Kg dry weight
c = %W/W as received

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CORPORATE OFFICES
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COLCHESTER, VT 05446

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ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

Job:6701.02 SDG:148815

Date : 01/26/92
ETR Number : 29213
Project No.: 91120
No. Samples: 14
Arrived : 11/13/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148884	SB-3 S-1:11/13/91 @1152(Soil)		
6010	Iron, Total	13300	f
148885	SB-3 S-2:11/13/91 @1156(Soil)		
6010	Barium, Total	46	f
6010	Cadmium, Total	1.99	f
6010	Chromium, Total	17.2	f
6010	Lead, Total	<10	f
QSOA	Volatile Screen	11/14/91	PS
QSOA	Semivolatile Screen	11/18/91	PS
IN623	Solids, Total	86.5	c
148886	SB-3 S-3:11/13/91 @1205(Soil)		
6010	Barium, Total	102	f
6010	Cadmium, Total	3.6	f
6010	Chromium, Total	21	f
6010	Lead, Total	<10	f
QSOA	Volatile Screen	11/14/91	PS
QSOA	Semivolatile Screen	11/18/91	PS
IN623	Solids, Total	73.1	c
148887	SB-3 S-4:11/13/91 @1223(Soil)		
6010	Barium, Total	230	f
6010	Cadmium, Total	5.7	f

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

Job:6701.02 SDG:148815

Date : 01/26/92
ETR Number : 29213
Project No.: 91120
No. Samples: 14
Arrived : 11/13/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148887	SB-3 S-4:11/13/91 @1223(Soil)		
6010	Chromium, Total	42	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/14/91	PS
QSOA	Semivolatile Screen	11/18/91	PS
IN623	Solids, Total	62.7	c
148888	SB-3 S-5:11/13/91 @1233(Soil)		
6010	Barium, Total	260	f
6010	Cadmium, Total	5.4	f
6010	Chromium, Total	40	f
6010	Lead, Total	<20	f
QSOA	Volatile Screen	11/14/91	PS
QSOA	Semivolatile Screen	11/18/91	PS
IN623	Solids, Total	62.6	c
148889	SB-13 S-1:11/13/91 @0903(Soil)		
6010	Barium, Total	51	f
6010	Cadmium, Total	3.1	f
6010	Chromium, Total	41	f
6010	Lead, Total	29	f
QSOA	Volatile Screen	11/14/91	PS
QSOA	Semivolatile Screen	11/18/91	PS
IN623	Solids, Total	90.8	c

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
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ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

Job:6701.02 SDG:148815

Date : 01/26/92
ETR Number : 29213
Project No.: 91120
No. Samples: 14
Arrived : 11/13/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result	
148890	SB-13 S-2:11/13/91 @0910(Soil)		
6010	Barium, Total	85	f
6010	Cadmium, Total	3.7	f
6010	Chromium, Total	32	f
6010	Lead, Total	33	f
QSOA	Volatile Screen	11/14/91	PS
QSOA	Semivolatile Screen	11/18/91	PS
IN623	Solids, Total	89.6	c
148891	SB-13 S-3:11/13/91 @0920(Soil)		
6010	Barium, Total	24	f
6010	Cadmium, Total	1.05	f
6010	Chromium, Total	8.9	f
6010	Lead, Total	<8	f
QSOA	Volatile Screen	11/14/91	PS
QSOA	Semivolatile Screen	11/18/91	PS
IN623	Solids, Total	85.2	c
148892	SB-13 S-4:11/13/91 @0920(Soil)		
6010	Barium, Total	22	f
6010	Cadmium, Total	1.24	f
6010	Chromium, Total	7.6	f
6010	Lead, Total	<8	f
QSOA	Volatile Screen	11/15/91	PS

Comments/Notes

f = mg/Kg dry weight
PS = Screen passed on the date shown.
c = %W/W as received

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CORPORATE OFFICES
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ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : John Robinson

Job:6701.02 SDG:148815

Date : 01/26/92
ETR Number : 29213
Project No.: 91120
No. Samples: 14
Arrived : 11/13/91
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
148892	SB-13 S-4:11/13/91 @0920(Soil)	
QSOA	Semivolatile Screen	11/18/91 PS
IN623	Solids, Total	86.7 c
148893	SB-13 S-5:11/13/91 @0928(Soil)	
6010	Barium, Total	18.2 f
6010	Cadmium, Total	1.32 f
6010	Chromium, Total	7.7 f
6010	Lead, Total	<20 f
QSOA	Volatile Screen	11/15/91 PS
QSOA	Semivolatile Screen	11/18/91 PS
IN623	Solids, Total	84.7 c
148894	SB-13 S-6:11/13/91 @0939(Soil)	
6010	Barium, Total	147 f
6010	Cadmium, Total	3.8 f
6010	Chromium, Total	22 f
6010	Lead, Total	<20 f
QSOA	Volatile Screen	11/15/91 PS
QSOA	Semivolatile Screen	11/18/91 PS
IN623	Solids, Total	69.6 c

Comments/Notes

PS = Screen passed on the date shown.
c = %W/W as received
f = mg/Kg dry weight

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R. Mason McBeen

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CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
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ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : Mr. John Robinson

Date : 03/09/92
ETR Number : 30371
Project No.: 91120
No. Samples: 3
Arrived : 02/13/92
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
153860	SB-3 S-1B:02/12/92 (Soil)	
9010	Cyanide, Total	20 f
7471	Mercury, Total	0.88 f
IN623	Solids, Total	72.6 c
153861	SB-11 S-1B:02/12/92 (Soil)	
9010	Cyanide, Total	1.7 f
7471	Mercury, Total	0.66 f
IN623	Solids, Total	77.7 c

Comments/Notes

f = mg/Kg dry weight
c = %W/W as received

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R. Mason McRae

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CORPORATE OFFICES
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ANALYTICAL REPORT

Hercules Incorporated
Hercules Plaza 5, Room 5130NW
Wilmington, DE 19894

Attention : Glen Schmiesing

CC Results to : Mr. John Robinson

Date : 03/09/92
ETR Number : 30330
Project No.: 91120
No. Samples: 5
Arrived : 02/10/92
P.O. Number: *

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
153614	SB-6 S-1A:02/07/92 @1210(Soil)	
9010	Cyanide, Total	14.5 f
7471	Mercury, Total	0.94 f
IN623	Solids, Total	81.2 c
153615	SB-6 S-2A:02/07/92 @1215(Solid)	
IN623	Solids, Total	87.7 c
153616	SB-10 S-1A:02/07/92 @1245(Solid)	
9010	Cyanide, Total	20 f
7471	Mercury, Total	0.64 f
IN623	Solids, Total	90.9 c
153617	SB-12 S-1A:02/07/92 @1300(Solid)	
9010	Cyanide, Total	4.1 f
7471	Mercury, Total	1.29 f
IN623	Solids, Total	87.6 c
153618	SB-15 S-1A:02/07/92 @1226(Soil)	
9010	Cyanide, Total	5.0 f
7471	Mercury, Total	0.84 f
IN623	Solids, Total	87.9 c

Comments/Notes

f = mg/Kg dry weight
c = %W/W as received

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< Last Page > Submitted By : R. Mawn McKeen Aquatec Inc.

ANALYTICAL REPORTS

VOLATILE ORGANIC COMPOUNDS

aquatec
A Member of the Inchcape Environmental Group
55 South Park Drive, Colchester, Vermont 05446
TEL. 802/655-1203 FAX 802 655-1248

ANALYTICAL REPORT

Date: 01 December 1991
Aquatec Lab No.: 148015
ETR No.: 29071, Project No.: 91120
Sample Received On: 05 November 1991, Analyzed On: 09 November 1991
Sample Identification: Hercules, Inc., soil sample labeled SB-11 S-3, 11/05/91 at 1259 hours.

Volatile Organic Compounds in ug/Kg Dry
EPA Method 8240

benzene	6 U	methylene chloride	2JB
carbon tetrachloride	6 U	chloromethane	11 U
chlorobenzene	6 U	bromomethane	11 U
1,2-dichloroethane	6 U	bromoform	6 U
1,1,1-trichloroethane	6 U	bromodichloromethane	6 U
1,1-dichloroethane	6 U	dibromochloromethane	6 U
1,1,2-trichloroethane	6 U	tetrachloroethene	6 U
1,1,2,2-tetrachloroethane	6 U	toluene	6 U
chloroethane	11 U	trichloroethene	6 U
2-chloroethyl vinyl ether	11 U	vinyl chloride	11 U
chloroform	6 U	acetone	9JB
1,1-dichloroethene	6 U	2-butanone	11 U
1,2-dichloroethenes	6 U	carbon disulfide	6 U
1,2-dichloropropane	6 U	2-hexanone	11 U
trans-1,3-dichloropropene	6 U	4-methyl-2-pentanone	11 U
cis-1,3-dichloropropene	6 U	styrene	6 U
ethylbenzene	6 U	vinyl acetate	11 U
		total xylenes	6 U

% Solids = 91

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	88
toluene-d_8	95
p-bromofluorobenzene	92

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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55 South Park Drive, Colchester, Vermont 05446
TEL. 802/655-1203 FAX 802 655-1248

ANALYTICAL REPORT

Date: 01 December 1991
Aquatec Lab No.: 148017
ETR No.: 29071, Project No.: 91120
Sample Received On: 05 November 1991, Analyzed On: 12 November 1991
Sample Identification: Hercules, Inc., soil sample labeled SB-11 S-5, 11/05/91 at 1404 hours.

Volatile Organic Compounds in ug/Kg Dry
EPA Method 8240

benzene	5 U	methylene chloride	5 U
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	3J	acetone	10 U
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5 U

% Solids = 70

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	98
toluene-d_8	114
p-bromofluorobenzene	104

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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aquatec
A Member of the Inchcape Environmental Group
55 South Park Drive, Colchester, Vermont 05446
TEL. 802 655-1203 FAX 802 655-1248

ANALYTICAL REPORT

Date: 01 December 1991
Aquatec Lab No.: 148075
ETR No.: 29090, Project No.: 91120
Sample Received On: 06 November 1991, Analyzed On: 13 November 1991
Sample Identification: Hercules, Inc., soil sample labeled SB-4 S-2, 11/06/91 at 1405 hours.

Volatile Organic Compounds in ug/Kg Dry
EPA Method 8240

benzene	6 U	methylene chloride	6 U
carbon tetrachloride	6 U	chloromethane	11 U
chlorobenzene	6 U	bromomethane	11 U
1,2-dichloroethane	6 U	bromoform	6 U
1,1,1-trichloroethane	6 U	bromodichloromethane	6 U
1,1-dichloroethane	6 U	dibromochloromethane	6 U
1,1,2-trichloroethane	6 U	tetrachloroethene	6 U
1,1,2,2-tetrachloroethane	6 U	toluene	6 U
chloroethane	11 U	trichloroethene	6 U
2-chloroethyl vinyl ether	11 U	vinyl chloride	11 U
chloroform	6 U	acetone	3JB
1,1-dichloroethene	6 U	2-butanone	11 U
1,2-dichloroethenes	6 U	carbon disulfide	6 U
1,2-dichloropropane	6 U	2-hexanone	11 U
trans-1,3-dichloropropene	6 U	4-methyl-2-pentanone	11 U
cis-1,3-dichloropropene	6 U	styrene	6 U
ethylbenzene	6 U	vinyl acetate	11 U
		total xylenes	6 U

% Solids = 89

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	102
toluene-d_8	111
p-bromofluorobenzene	110

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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55 South Park Drive, Colchester, Vermont 05446
TEL. 802/655-1203 FAX 802 655-1248

ANALYTICAL REPORT

Date: 01 December 1991
Aquatec Lab No.: 148076
ETR No.: 29090, Project No.: 91120
Sample Received On: 06 November 1991, Analyzed On: 13 November 1991
Sample Identification: Hercules, Inc., soil sample labeled SB-4 S-3, 11/06/91 at 1410 hours.

Volatile Organic Compounds in ug/Kg Dry
EPA Method 8240

benzene	7 U	methylene chloride	7 U
carbon tetrachloride	7 U	chloromethane	14 U
chlorobenzene	7 U	bromomethane	14 U
1,2-dichloroethane	7 U	bromoform	7 U
1,1,1-trichloroethane	7 U	bromodichloromethane	7 U
1,1-dichloroethane	7 U	dibromochloromethane	7 U
1,1,2-trichloroethane	7 U	tetrachloroethene	7 U
1,1,2,2-tetrachloroethane	7 U	toluene	7 U
chloroethane	14 U	trichloroethene	7 U
2-chloroethyl vinyl ether	14 U	vinyl chloride	14 U
chloroform	7 U	acetone	14B
1,1-dichloroethene	7 U	2-butanone	14 U
1,2-dichloroethenes	7 U	carbon disulfide	7 U
1,2-dichloropropane	7 U	2-hexanone	14 U
trans-1,3-dichloropropene	7 U	4-methyl-2-pentanone	14 U
cis-1,3-dichloropropene	7 U	styrene	7 U
ethylbenzene	7 U	vinyl acetate	14 U
		total xylenes	7 U

% Solids = 73

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	100
toluene-d_8	106
p-bromofluorobenzene	98

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 01 December 1991
Aquatec Lab No.: 148483
ETR No.: 29145, Project No.: 91120
Sample Received On: 08 November 1991, Analyzed On: 14 November 1991
Sample Identification: Hercules, Inc., soil sample labeled SB-9 S-1, 11/08/91 at 1000 hours.

Volatile Organic Compounds in ug/Kg Dry
EPA Method 8240

benzene	6 U	methylene chloride	2JB
carbon tetrachloride	6 U	chloromethane	11 U
chlorobenzene	6 U	bromomethane	11 U
1,2-dichloroethane	6 U	bromoform	6 U
1,1,1-trichloroethane	6 U	bromodichloromethane	6 U
1,1-dichloroethane	6 U	dibromochloromethane	6 U
1,1,2-trichloroethane	6 U	tetrachloroethene	6 U
1,1,2,2-tetrachloroethane	6 U	toluene	6 U
chloroethane	11 U	trichloroethene	6 U
2-chloroethyl vinyl ether	11 U	vinyl chloride	11 U
chloroform	6 U	acetone	5JB
1,1-dichloroethene	6 U	2-butanone	11 U
1,2-dichloroethenes	6 U	carbon disulfide	6 U
1,2-dichloropropane	6 U	2-hexanone	11 U
trans-1,3-dichloropropene	6 U	4-methyl-2-pentanone	11 U
cis-1,3-dichloropropene	6 U	styrene	6 U
ethylbenzene	6 U	vinyl acetate	11 U
		total xylenes	6 U

% Solids = 94

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	106
toluene-d_8	105
p-bromofluorobenzene	104

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 01 December 1991
Aquatec Lab No.: 148484
ETR No.: 29146, Project No.: 91120
Sample Received On: 08 November 1991, Analyzed On: 14 November 1991
Sample Identification: Hercules, Inc., soil sample labeled SB-9 S-2, 11/08/91 at 1105 hours.

Volatile Organic Compounds in ug/Kg Dry
EPA Method 8240

benzene	6 U	methylene chloride	2JB
carbon tetrachloride	6 U	chloromethane	11 U
chlorobenzene	6 U	bromomethane	11 U
1,2-dichloroethane	6 U	bromoform	6 U
1,1,1-trichloroethane	6 U	bromodichloromethane	6 U
1,1-dichloroethane	6 U	dibromochloromethane	6 U
1,1,2-trichloroethane	6 U	tetrachloroethene	6 U
1,1,2,2-tetrachloroethane	6 U	toluene	6 U
chloroethane	11 U	trichloroethene	6 U
2-chloroethyl vinyl ether	11 U	vinyl chloride	11 U
chloroform	6 U	acetone	11 U
1,1-dichloroethene	6 U	2-butanone	11 U
1,2-dichloroethenes	6 U	carbon disulfide	6 U
1,2-dichloropropane	6 U	2-hexanone	11 U
trans-1,3-dichloropropene	6 U	4-methyl-2-pentanone	11 U
cis-1,3-dichloropropene	6 U	styrene	6 U
ethylbenzene	6 U	vinyl acetate	11 U
		total xylenes	6 U

% Solids = 88

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	102
toluene-d_8	104
p-bromofluorobenzene	96

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

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B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 01 December 1991
Aquatec Lab No.: 148882
ETR No.: 29213, Project No.: 91120
Sample Received On: 13 November 1991, Analyzed On: 20 November 1991
Sample Identification: Hercules, Inc., water sample labeled Field Blank 1113, 11/13/91 at 1320 hours.

Volatile Organic Compounds in ug/l
EPA Method 8240

benzene	5 U	methylene chloride	5 U
carbon tetrachloride	5 U	chloromethane	10 U
chlorobenzene	5 U	bromomethane	10 U
1,2-dichloroethane	5 U	bromoform	5 U
1,1,1-trichloroethane	5 U	bromodichloromethane	5 U
1,1-dichloroethane	5 U	dibromochloromethane	5 U
1,1,2-trichloroethane	5 U	tetrachloroethene	5 U
1,1,2,2-tetrachloroethane	5 U	toluene	5 U
chloroethane	10 U	trichloroethene	5 U
2-chloroethyl vinyl ether	10 U	vinyl chloride	10 U
chloroform	5 U	acetone	10 U
1,1-dichloroethene	5 U	2-butanone	10 U
1,2-dichloroethenes	5 U	carbon disulfide	5 U
1,2-dichloropropane	5 U	2-hexanone	10 U
trans-1,3-dichloropropene	5 U	4-methyl-2-pentanone	10 U
cis-1,3-dichloropropene	5 U	styrene	5 U
ethylbenzene	5 U	vinyl acetate	10 U
		total xylenes	5 U

Summary of Surrogate Recoveries

	% Rec
1,2-dichloroethane-d_4	105
toluene-d_8	102
p-bromofluorobenzene	100

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

ANALYTICAL REPORTS

SEMIVOLATILE ORGANIC COMPOUNDS

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ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148015 Re-extract
ETR No.: 29071, Project No.: 91120
Sample Received On: 11/05/91; Extracted On: 11/08/91 and 01/16/92;
Analyzed On: 12/06/91 and 01/19/92
Sample Identification: Hercules, Inc., soil sample labeled SB-11 S-3, 11/05/91 at 1259 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	360 U
1,2-dichlorobenzene	360 U	benzo(a)pyrene	360 U
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	360 U
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	360 U
3,3'-dichlorobenzidine	730 U	chrysene	360 U
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	360 U	4-nitroaniline	1800 U

% Solids = 89

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000048

+ Cannot be separated from diphenylamine.

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148015 Re-extract
ETR No.: 29071, Project No.: 91120
Sample Received On: 11/05/91; Extracted On: 11/08/91 and 01/16/92;
Analyzed On: 12/06/91 and 01/19/92
Sample Identification: Hercules, Inc., soil sample labeled SB-11 S-3, 11/05/91 at 1259 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 89

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	66	nitrobenzene-d_5	65
phenol-d_6	66	2-fluorobiphenyl	83
2,4,6-tribromophenol	75	terphenyl-d_{14}	105

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148018 Re-extract
ETR No.: 29071, Project No.: 91120
Sample Received On: 11/05/91; Extracted On: 11/08/91 and 01/16/92;
Analyzed On: 12/06/91 and 01/19/92
Sample Identification: Hercules, Inc., soil sample labeled SB-11 S-6, 11/05/91 at 1420 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	460 U	benzyl butyl phthalate	460 U
1,2,4-trichlorobenzene	460 U	di-n-butyl phthalate	460 U
hexachlorobenzene	460 U	di-n-octyl phthalate	460 U
hexachloroethane	460 U	diethyl phthalate	460 U
bis (2-chloroethyl) ether	460 U	dimethyl phthalate	460 U
2-chloronaphthalene	460 U	benzo(a)anthracene	460 U
1,2-dichlorobenzene	460 U	benzo(a)pyrene	460 U
1,3-dichlorobenzene	460 U	benzo(b)fluoranthene	460 U
1,4-dichlorobenzene	460 U	benzo(k)fluoranthene	460 U
3,3'-dichlorobenzidine	920 U	chrysene	460 U
2,4-dinitrotoluene	460 U	acenaphthylene	460 U
2,6-dinitrotoluene	460 U	anthracene	460 U
fluoranthene	460 U	benzo(ghi)perylene	460 U
4-chlorophenyl phenyl ether	460 U	fluorene	460 U
4-bromophenyl phenyl ether	460 U	phenanthrene	460 U
bis (2-chloroisopropyl) ether	460 U	dibenzo(ah)anthracene	460 U
bis (2-chloroethoxy)methane	460 U	indeno(1,2,3-cd)pyrene	460 U
hexachlorobutadiene	460 U	pyrene	460 U
hexachlorocyclopentadiene	460 U	benzyl alcohol	460 U
isophorone	460 U	4-chloroaniline	460 U
naphthalene	460 U	dibenzofuran	460 U
nitrobenzene	460 U	2-methylnaphthalene	460 U
N-nitrosodiphenylamine+	460 U	2-nitroaniline	2200 U
N-nitrosodipropylamine	460 U	3-nitroaniline	2200 U
bis (2-ethylhexyl) phthalate	460	4-nitroaniline	2200 U

% Solids = 72

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

+ Cannot be separated from diphenylamine.

000050

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ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148018 Re-extract
ETR No.: 29071, Project No.: 91120
Sample Received On: 11/05/91; Extracted On: 11/08/91 and 01/16/92;
Analyzed On: 12/06/91 and 01/19/92
Sample Identification: Hercules, Inc., soil sample labeled SB-11 S-6, 11/05/91 at 1420 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	460 U
p-chloro-m-cresol	460 U
2-chlorophenol	460 U
2,4-dichlorophenol	460 U
2,4-dimethylphenol	460 U
2-nitrophenol	460 U
4-nitrophenol	2200 U
2,4-dinitrophenol	2200 U
4,6-dinitro-2-methylphenol	2200 U
pentachlorophenol	2200 U
phenol	460 U
benzoic acid	2200 U
2-methylphenol	460 U
4-methylphenol	460 U
2,4,5-trichlorophenol	2200 U

% Solids = 72

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	56	nitrobenzene-d_5	55
phenol-d_6	56	2-fluorobiphenyl	63
2,4,6-tribromophenol	58	terphenyl-d_{14}	78

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 December 1991
Aquatec Lab No.: 148080
ETR No.: 29090, Project No.: 91120
Sample Received On: 11/06/91; Extracted On: 11/11/91; Analyzed On: 12/09/91
Sample Identification: Hercules, Inc., soil sample labeled SB-12 S-1, 11/06/91 at 1228 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	360 U
1,2-dichlorobenzene	360 U	benzo(a)pyrene	360 U
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	360 U
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	360 U
3,3'-dichlorobenzidine	730 U	chrysene	360 U
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	320J	4-nitroaniline	1800 U

% Solids = 90

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

+ Cannot be separated from diphenylamine.

000052

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ANALYTICAL REPORT

Date: 26 December 1991
Aquatec Lab No.: 148080
ETR No.: 29090, Project No.: 91120
Sample Received On: 11/06/91; Extracted On: 11/11/91; Analyzed On: 12/09/91
Sample Identification: Hercules, Inc., soil sample labeled SB-12 S-1, 11/06/91 at 1228 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 90

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	37	nitrobenzene-d_5	54
phenol-d_6	48	2-fluorobiphenyl	59
2,4,6-tribromophenol	17*	terphenyl-d_{14}	66

*Out of QC limits.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 26 December 1991
Aquatec Lab No.: 148081
ETR No.: 29090, Project No.: 91120
Sample Received On: 11/06/91; Extracted On: 11/11/91; Analyzed On: 12/09/91
Sample Identification: Hercules, Inc., soil sample labeled SB-12 S-2, 11/06/91 at 1233 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	330 U	benzyl butyl phthalate	330 U
1,2,4-trichlorobenzene	330 U	di-n-butyl phthalate	330 U
hexachlorobenzene	330 U	di-n-octyl phthalate	330 U
hexachloroethane	330 U	diethyl phthalate	330 U
bis (2-chloroethyl) ether	330 U	dimethyl phthalate	330 U
2-chloronaphthalene	330 U	benzo(a)anthracene	330 U
1,2-dichlorobenzene	330 U	benzo(a)pyrene	330 U
1,3-dichlorobenzene	330 U	benzo(b)fluoranthene	330 U
1,4-dichlorobenzene	330 U	benzo(k)fluoranthene	330 U
3,3'-dichlorobenzidine	660 U	chrysene	330 U
2,4-dinitrotoluene	330 U	acenaphthylene	330 U
2,6-dinitrotoluene	330 U	anthracene	330 U
fluoranthene	330 U	benzo(ghi)perylene	330 U
4-chlorophenyl phenyl ether	330 U	fluorene	330 U
4-bromophenyl phenyl ether	330 U	phenanthrene	330 U
bis (2-chloroisopropyl) ether	330 U	dibenzo(ah)anthracene	330 U
bis (2-chloroethoxy)methane	330 U	indeno(1,2,3-cd)pyrene	330 U
hexachlorobutadiene	330 U	pyrene	330 U
hexachlorocyclopentadiene	330 U	benzyl alcohol	330 U
isophorone	330 U	4-chloroaniline	330 U
naphthalene	330 U	dibenzofuran	330 U
nitrobenzene	330 U	2-methylnaphthalene	330 U
N-nitrosodiphenylamine+	330 U	2-nitroaniline	1600 U
N-nitrosodipropylamine	330 U	3-nitroaniline	1600 U
bis (2-ethylhexyl) phthalate	330 U	4-nitroaniline	1600 U

% Solids = 95

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

+ Cannot be separated from diphenylamine.

000054

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LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 December 1991
Aquatec Lab No.: 148081
ETR No.: 29090, Project No.: 91120
Sample Received On: 11/06/91; Extracted On: 11/11/91; Analyzed On: 12/09/91
Sample Identification: Hercules, Inc., soil sample labeled SB-12 S-2, 11/06/91 at 1233 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	330 U
p-chloro-m-cresol	330 U
2-chlorophenol	330 U
2,4-dichlorophenol	330 U
2,4-dimethylphenol	330 U
2-nitrophenol	330 U
4-nitrophenol	1600 U
2,4-dinitrophenol	1600 U
4,6-dinitro-2-methylphenol	1600 U
pentachlorophenol	1600 U
phenol	330 U
benzoic acid	1600 U
2-methylphenol	330 U
4-methylphenol	330 U
2,4,5-trichlorophenol	1600 U

% Solids = 95

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	58	nitrobenzene-d_5	47
phenol-d_6	80	2-fluorobiphenyl	56
2,4,6-tribromophenol	14*	terphenyl-d_{14}	60

*Out of QC limits.
Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148246 Re-extract
ETR No.: 29126, Project No.: 91120
Sample Received On: 11/07/91; Extracted On: 11/12/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-2 S-1, 11/07/91 at 0805 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	360 U
1,2-dichlorobenzene	360 U	benzo(a)pyrene	360 U
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	360 U
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	360 U
3,3'-dichlorobenzidine	730 U	chrysene	360 U
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	160JB	4-nitroaniline	1800 U

% Solids = 89

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000056

+ Cannot be separated from diphenylamine.

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SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148246 Re-extract
ETR No.: 29126, Project No.: 91120
Sample Received On: 11/07/91; Extracted On: 11/12/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-2 S-1, 11/07/91 at 0805 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 89

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	75	nitrobenzene-d_5	90
phenol-d_6	77	2-fluorobiphenyl	82
2,4,6-tribromophenol	57	terphenyl-d_{14}	80

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148250 Re-extract
ETR No.: 29126, Project No.: 91120
Sample Received On: 11/07/91; Extracted On: 11/12/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-2 S-5, 11/07/91 at 0845 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	400 U	benzyl butyl phthalate	400 U
1,2,4-trichlorobenzene	400 U	di-n-butyl phthalate	400 U
hexachlorobenzene	400 U	di-n-octyl phthalate	400 U
hexachloroethane	400 U	diethyl phthalate	400 U
bis (2-chloroethyl) ether	400 U	dimethyl phthalate	400 U
2-chloronaphthalene	400 U	benzo(a)anthracene	400 U
1,2-dichlorobenzene	400 U	benzo(a)pyrene	400 U
1,3-dichlorobenzene	400 U	benzo(b)fluoranthene	400 U
1,4-dichlorobenzene	400 U	benzo(k)fluoranthene	400 U
3,3'-dichlorobenzidine	790 U	chrysene	400 U
2,4-dinitrotoluene	400 U	acenaphthylene	400 U
2,6-dinitrotoluene	400 U	anthracene	400 U
fluoranthene	91J	benzo(ghi)perylene	400 U
4-chlorophenyl phenyl ether	400 U	fluorene	400 U
4-bromophenyl phenyl ether	400 U	phenanthrene	400 U
bis (2-chloroisopropyl) ether	400 U	dibenzo(ah)anthracene	400 U
bis (2-chloroethoxy)methane	400 U	indeno(1,2,3-cd)pyrene	400 U
hexachlorobutadiene	400 U	pyrene	84J
hexachlorocyclopentadiene	400 U	benzyl alcohol	400 U
isophorone	400 U	4-chloroaniline	400 U
naphthalene	400 U	dibenzofuran	400 U
nitrobenzene	400 U	2-methylnaphthalene	400 U
N-nitrosodiphenylamine+	400 U	2-nitroaniline	1900 U
N-nitrosodipropylamine	400 U	3-nitroaniline	1900 U
bis (2-ethylhexyl) phthalate	430B	4-nitroaniline	1900 U

% Solids = 84

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000058

+ Cannot be separated from diphenylamine.

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148250 Re-extract
ETR No.: 29126, Project No.: 91120
Sample Received On: 11/07/91; Extracted On: 11/12/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-2 S-5, 11/07/91 at 0845 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	400 U
p-chloro-m-cresol	400 U
2-chlorophenol	400 U
2,4-dichlorophenol	400 U
2,4-dimethylphenol	400 U
2-nitrophenol	400 U
4-nitrophenol	1900 U
2,4-dinitrophenol	1900 U
4,6-dinitro-2-methylphenol	1900 U
pentachlorophenol	1900 U
phenol	400 U
benzoic acid	1900 U
2-methylphenol	400 U
4-methylphenol	400 U
2,4,5-trichlorophenol	1900 U

% Solids = 84

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	74	nitrobenzene-d_5	91
phenol-d_6	80	2-fluorobiphenyl	86
2,4,6-tribromophenol	59	terphenyl-d_{14}	87

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000059

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148251 Re-extract
ETR No.: 29126, Project No.: 91120
Sample Received On: 11/07/91; Extracted On: 11/12/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-5 S-1, 11/07/91 at 1258 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	360 U
1,2-dichlorobenzene	360 U	benzo(a)pyrene	360 U
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	360 U
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	360 U
3,3'-dichlorobenzidine	730 U	chrysene	360 U
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	100JB	4-nitroaniline	1800 U

% Solids = 90

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000060

+ Cannot be separated from diphenylamine.

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148251 Re-extract
ETR No.: 29126, Project No.: 91120
Sample Received On: 11/07/91; Extracted On: 11/12/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-5 S-1, 11/07/91 at 1258 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 90

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	83	nitrobenzene-d_5	91
phenol-d_6	84	2-fluorobiphenyl	82
2,4,6-tribromophenol	70	terphenyl-d_{14}	86

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000061

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148253 Re-extract
ETR No.: 29126, Project No.: 91120
Sample Received On: 11/07/91; Extracted On: 11/12/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-5 S-3, 11/07/91 at 1310 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	430 U	benzyl butyl phthalate	430 U
1,2,4-trichlorobenzene	430 U	di-n-butyl phthalate	430 U
hexachlorobenzene	430 U	di-n-octyl phthalate	430 U
hexachloroethane	430 U	diethyl phthalate	430 U
bis (2-chloroethyl) ether	430 U	dimethyl phthalate	430 U
2-chloronaphthalene	430 U	benzo(a)anthracene	430 U
1,2-dichlorobenzene	430 U	benzo(a)pyrene	430 U
1,3-dichlorobenzene	430 U	benzo(b)fluoranthene	430 U
1,4-dichlorobenzene	430 U	benzo(k)fluoranthene	430 U
3,3'-dichlorobenzidine	860 U	chrysene	430 U
2,4-dinitrotoluene	430 U	acenaphthylene	430 U
2,6-dinitrotoluene	430 U	anthracene	430 U
fluoranthene	430 U	benzo(ghi)perylene	430 U
4-chlorophenyl phenyl ether	430 U	fluorene	430 U
4-bromophenyl phenyl ether	430 U	phenanthrene	430 U
bis (2-chloroisopropyl) ether	430 U	dibenzo(ah)anthracene	430 U
bis (2-chloroethoxy)methane	430 U	indeno(1,2,3-cd)pyrene	430 U
hexachlorobutadiene	430 U	pyrene	430 U
hexachlorocyclopentadiene	430 U	benzyl alcohol	430 U
isophorone	430 U	4-chloroaniline	430 U
naphthalene	430 U	dibenzofuran	430 U
nitrobenzene	430 U	2-methylnaphthalene	430 U
N-nitrosodiphenylamine+	430 U	2-nitroaniline	2100 U
N-nitrosodipropylamine	430 U	3-nitroaniline	2100 U
bis (2-ethylhexyl) phthalate	320JB	4-nitroaniline	2100 U

% Solids = 78

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000052

+ Cannot be separated from diphenylamine.

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148253 Re-extract
ETR No.: 29126, Project No.: 91120
Sample Received On: 11/07/91; Extracted On: 11/12/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-5 S-3, 11/07/91 at 1310 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	430 U
p-chloro-m-cresol	430 U
2-chlorophenol	430 U
2,4-dichlorophenol	430 U
2,4-dimethylphenol	430 U
2-nitrophenol	430 U
4-nitrophenol	2100 U
2,4-dinitrophenol	2100 U
4,6-dinitro-2-methylphenol	2100 U
pentachlorophenol	2100 U
phenol	430 U
benzoic acid	2100 U
2-methylphenol	430 U
4-methylphenol	430 U
2,4,5-trichlorophenol	2100 U

% Solids = 78

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	68	nitrobenzene-d_5	82
phenol-d_6	71	2-fluorobiphenyl	75
2,4,6-tribromophenol	56	terphenyl-d_{14}	70

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000063

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ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148479 Re-extract
ETR No.: 29145, Project No.: 91120
Sample Received On: 11/08/91; Extracted On: 11/13/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-6 S-1, 11/08/91 at 0810 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	360 U
1,2-dichlorobenzene	360 U	benzo(a)pyrene	360 U
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	360 U
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	360 U
3,3'-dichlorobenzidine	730 U	chrysene	360 U
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	83JB	4-nitroaniline	1800 U

% Solids = 91

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

+ Cannot be separated from diphenylamine.

000084

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LABORATORY LOCATIONS
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75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148479 Re-extract
ETR No.: 29145, Project No.: 91120
Sample Received On: 11/08/91; Extracted On: 11/13/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/07/92
Sample Identification: Hercules, Inc., soil sample labeled SB-6 S-1, 11/08/91 at 0810 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 91

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	78	nitrobenzene-d_5	99
phenol-d_6	84	2-fluorobiphenyl	88
2,4,6-tribromophenol	62	terphenyl-d_{14}	87

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000053

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CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148480 Re-extract
ETR No.: 29145, Project No.: 91120
Sample Received On: 11/08/91; Extracted On: 11/13/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/08/92
Sample Identification: Hercules, Inc., soil sample labeled SB-6 S-2, 11/08/91 at 0817 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	71J
1,2-dichlorobenzene	360 U	benzo(a)pyrene	120J
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	94J
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	91J
3,3'-dichlorobenzidine	730 U	chrysene	66J
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	140J
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	120J
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	110J
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	120JB	4-nitroaniline	1800 U

% Solids = 92

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000066

+ Cannot be separated from diphenylamine.

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55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148480 Re-extract
ETR No.: 29145, Project No.: 91120
Sample Received On: 11/08/91; Extracted On: 11/13/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/08/92
Sample Identification: Hercules, Inc., soil sample labeled SB-6 S-2, 11/08/91 at 0817 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 92

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	74	nitrobenzene-d_5	78
phenol-d_6	75	2-fluorobiphenyl	86
2,4,6-tribromophenol	62	terphenyl-d_{14}	100

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000067

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COLCHESTER VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148483 Re-extract
ETR No.: 29145, Project No.: 91120
Sample Received On: 11/08/91; Extracted On: 11/13/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/08/92
Sample Identification: Hercules, Inc., soil sample labeled SB-9 S-1, 11/08/91 at 1000 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	79J
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	68J
1,2-dichlorobenzene	360 U	benzo(a)pyrene	360 U
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	65J
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	360 U
3,3'-dichlorobenzidine	730 U	chrysene	360 U
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	61J
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	71J
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	130JB	4-nitroaniline	1800 U

% Solids = 95

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000065

+ Cannot be separated from diphenylamine.

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CORPORATE OFFICE
55 SOUTH PARK DRIVE
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LABORATORY OFFICE
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148483 Re-extract
ETR No.: 29145, Project No.: 91120
Sample Received On: 11/08/91; Extracted On: 11/13/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/08/92
Sample Identification: Hercules, Inc., soil sample labeled SB-9 S-1, 11/08/91 at 1000 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 95

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	72	nitrobenzene-d_5	82
phenol-d_6	78	2-fluorobiphenyl	85
2,4,6-tribromophenol	63	terphenyl-d_{14}	106

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000063

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CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148484 Re-extract
ETR No.: 29146, Project No.: 91120
Sample Received On: 11/08/91; Extracted On: 11/13/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/08/92
Sample Identification: Hercules, Inc., soil sample labeled SB-9 S-2, 11/08/91 at 1105 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	360 U
1,2-dichlorobenzene	360 U	benzo(a)pyrene	360 U
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	360 U
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	360 U
3,3'-dichlorobenzidine	730 U	chrysene	360 U
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	100JB	4-nitroaniline	1800 U

% Solids = 90

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000070

+ Cannot be separated from diphenylamine.

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CORPORATE HEADQUARTERS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148484 Re-extract
ETR No.: 29146, Project No.: 91120
Sample Received On: 11/08/91; Extracted On: 11/13/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/08/92
Sample Identification: Hercules, Inc., soil sample labeled SB-9 S-2, 11/08/91 at 1105 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 90

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	73	nitrobenzene-d_5	82
phenol-d_6	76	2-fluorobiphenyl	86
2,4,6-tribromophenol	60	terphenyl-d_{14}	104

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000071

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55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

76 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148801
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91; Analyzed On: 12/23/91.
Sample Identification: Hercules, Inc., soil sample labeled SB-10 S-1, 11/12/91.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	110J	di-n-butyl phthalate	110J
hexachlorobenzene	190J	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	360 U
1,2-dichlorobenzene	120J	benzo(a)pyrene	360 U
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	360 U
1,4-dichlorobenzene	290J	benzo(k)fluoranthene	360 U
3,3'-dichlorobenzidine	1900	chrysene	360 U
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	78J	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	190J
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	280J	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	460B	4-nitroaniline	1800 U

% Solids = 88

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

+ Cannot be separated from diphenylamine.

000072

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CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148801
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91; Analyzed On: 12/23/91.
Sample Identification: Hercules, Inc., soil sample labeled SB-10 S-1, 11/12/91.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	98J
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 88

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	38	nitrobenzene-d_5	41
phenol-d_6	44	2-fluorobiphenyl	52
2,4,6-tribromophenol	66	terphenyl-d_{14}	65

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000073

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CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148803
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91; Analyzed On: 12/12/91.
Sample Identification: Hercules, Inc., soil sample labeled SB-10 S-3, 11/12/91.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	400 U	benzyl butyl phthalate	400 U
1,2,4-trichlorobenzene	400 U	di-n-butyl phthalate	400 U
hexachlorobenzene	400 U	di-n-octyl phthalate	400 U
hexachloroethane	400 U	diethyl phthalate	400 U
bis (2-chloroethyl) ether	400 U	dimethyl phthalate	400 U
2-chloronaphthalene	400 U	benzo(a)anthracene	400 U
1,2-dichlorobenzene	400 U	benzo(a)pyrene	400 U
1,3-dichlorobenzene	400 U	benzo(b)fluoranthene	400 U
1,4-dichlorobenzene	400 U	benzo(k)fluoranthene	400 U
3,3'-dichlorobenzidine	790 U	chrysene	400 U
2,4-dinitrotoluene	400 U	acenaphthylene	400 U
2,6-dinitrotoluene	400 U	anthracene	400 U
fluoranthene	400 U	benzo(ghi)perylene	400 U
4-chlorophenyl phenyl ether	400 U	fluorene	400 U
4-bromophenyl phenyl ether	400 U	phenanthrene	400 U
bis (2-chloroisopropyl) ether	400 U	dibenzo(ah)anthracene	400 U
bis (2-chloroethoxy)methane	400 U	indeno(1,2,3-cd)pyrene	400 U
hexachlorobutadiene	400 U	pyrene	400 U
hexachlorocyclopentadiene	400 U	benzyl alcohol	400 U
isophorone	400 U	4-chloroaniline	400 U
naphthalene	400 U	dibenzofuran	400 U
nitrobenzene	400 U	2-methylnaphthalene	400 U
N-nitrosodiphenylamine+	400 U	2-nitroaniline	1900 U
N-nitrosodipropylamine	400 U	3-nitroaniline	1900 U
bis (2-ethylhexyl) phthalate 160JB		4-nitroaniline	1900 U

% Solids = 85

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

+ Cannot be separated from diphenylamine.

000074

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CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148803
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91; Analyzed On: 12/12/91.
Sample Identification: Hercules, Inc., soil sample labeled SB-10 S-3, 11/12/91.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	400 U
p-chloro-m-cresol	400 U
2-chlorophenol	400 U
2,4-dichlorophenol	400 U
2,4-dimethylphenol	400 U
2-nitrophenol	400 U
4-nitrophenol	1900 U
2,4-dinitrophenol	1900 U
4,6-dinitro-2-methylphenol	1900 U
pentachlorophenol	1900 U
phenol	400 U
benzoic acid	1900 U
2-methylphenol	400 U
4-methylphenol	400 U
2,4,5-trichlorophenol	1900 U

% Solids = 85

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	44	nitrobenzene-d_5	40
phenol-d_6	42	2-fluorobiphenyl	50
2,4,6-tribromophenol	36	terphenyl-d_{14}	63

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000075

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CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER, VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148807
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91;
Analyzed On: 12/12/91 and 01/06/92
Sample Identification: Hercules, Inc., soil sample labeled SB-14 S-1, 11/12/91.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	240J
2-chloronaphthalene	360 U	benzo(a)anthracene	98J
1,2-dichlorobenzene	360 U	benzo(a)pyrene	130J
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	130J
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	90J
3,3'-dichlorobenzidine	730 U	chrysene	99J
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	170J
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	130J
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	150J
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	520B	4-nitroaniline	1800 U

% Solids = 89

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000076

+ Cannot be separated from diphenylamine.

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LABORATORY LOCATIONS
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SOUTH BURLINGTON, VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148807
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91;
Analyzed On: 12/12/91 and 01/06/92
Sample Identification: Hercules, Inc., soil sample labeled SB-14 S-1, 11/12/91.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 89

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	42	nitrobenzene-d_5	52
phenol-d_6	47	2-fluorobiphenyl	53
2,4,6-tribromophenol	32	terphenyl-d_{14}	51

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148808
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91;
Analyzed On: 12/12/91 and 01/01/92.
Sample Identification: Hercules, Inc., soil sample labeled SB-14 S-2, 11/12/91.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	400 U	benzyl butyl phthalate	400 U
1,2,4-trichlorobenzene	400 U	di-n-butyl phthalate	400 U
hexachlorobenzene	400 U	di-n-octyl phthalate	400 U
hexachloroethane	400 U	diethyl phthalate	400 U
bis (2-chloroethyl) ether	400 U	dimethyl phthalate	400 U
2-chloronaphthalene	400 U	benzo(a)anthracene	73J
1,2-dichlorobenzene	400 U	benzo(a)pyrene	400 U
1,3-dichlorobenzene	400 U	benzo(b)fluoranthene	400 U
1,4-dichlorobenzene	400 U	benzo(k)fluoranthene	400 U
3,3'-dichlorobenzidine	790 U	chrysene	400 U
2,4-dinitrotoluene	400 U	acenaphthylene	400 U
2,6-dinitrotoluene	400 U	anthracene	400 U
fluoranthene	400 U	benzo(ghi)perylene	79J
4-chlorophenyl phenyl ether	400 U	fluorene	400 U
4-bromophenyl phenyl ether	400 U	phenanthrene	400 U
bis (2-chloroisopropyl) ether	400 U	dibenzo(ah)anthracene	72J
bis (2-chloroethoxy)methane	400 U	indeno(1,2,3-cd)pyrene	400 U
hexachlorobutadiene	400 U	pyrene	400 U
hexachlorocyclopentadiene	400 U	benzyl alcohol	400 U
isophorone	400 U	4-chloroaniline	400 U
naphthalene	400 U	dibenzofuran	400 U
nitrobenzene	400 U	2-methylnaphthalene	400 U
N-nitrosodiphenylamine+	400 U	2-nitroaniline	1900 U
N-nitrosodipropylamine	400 U	3-nitroaniline	1900 U
bis (2-ethylhexyl) phthalate	180JB	4-nitroaniline	1900 U

% Solids = 83

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000078

+ Cannot be separated from diphenylamine.

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148808
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91;
Analyzed On: 12/12/91 and 01/01/92.
Sample Identification: Hercules, Inc., soil sample labeled SB-14 S-2, 11/12/91.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	400 U
p-chloro-m-cresol	400 U
2-chlorophenol	400 U
2,4-dichlorophenol	400 U
2,4-dimethylphenol	400 U
2-nitrophenol	400 U
4-nitrophenol	1900 U
2,4-dinitrophenol	1900 U
4,6-dinitro-2-methylphenol	1900 U
pentachlorophenol	1900 U
phenol	400 U
benzoic acid	1900 U
2-methylphenol	400 U
4-methylphenol	400 U
2,4,5-trichlorophenol	1900 U

% Solids = 83

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	34	nitrobenzene-d_5	35
phenol-d_6	37	2-fluorobiphenyl	44
2,4,6-tribromophenol	21	terphenyl-d_{14}	51

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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150 HERMAN MELVILLE BOULEVARD
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ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148813
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91;
Analyzed On: 12/12/91 and 12/30/91
Sample Identification: Hercules, Inc., soil sample labeled SB-15 S-1, 11/12/91.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	1900
2-chloronaphthalene	360 U	benzo(a)anthracene	110J
1,2-dichlorobenzene	360 U	benzo(a)pyrene	67J
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	79J
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	71J
3,3'-dichlorobenzidine	730 U	chrysene	110J
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	240J	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	270J
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	190J
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	960B	4-nitroaniline	1800 U

% Solids = 90

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000080

+ Cannot be separated from diphenylamine.

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148813
ETR No.: 29186, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91;
Analyzed On: 12/12/91 and 12/30/91
Sample Identification: Hercules, Inc., soil sample labeled SB-15 S-1, 11/12/91.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 90

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	47	nitrobenzene-d_5	48
phenol-d_6	51	2-fluorobiphenyl	60
2,4,6-tribromophenol	35	terphenyl-d_{14}	66

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000091

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ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148816 Re-extract
ETR No.: 29188, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/08/92
Sample Identification: Hercules, Inc., soil sample labeled SB-15 S-4, 11/12/91.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1,2,4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	230J
2-chloronaphthalene	360 U	benzo(a)anthracene	360 U
1,2-dichlorobenzene	360 U	benzo(a)pyrene	360 U
1,3-dichlorobenzene	360 U	benzo(b)fluoranthene	360 U
1,4-dichlorobenzene	360 U	benzo(k)fluoranthene	360 U
3,3'-dichlorobenzidine	730 U	chrysene	360 U
2,4-dinitrotoluene	360 U	acenaphthylene	360 U
2,6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1,2,3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	410B	4-nitroaniline	1800 U

% Solids = 90

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000082

+ Cannot be separated from diphenylamine.

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148816 Re-extract
ETR No.: 29188, Project No.: 91120
Sample Received On: 11/12/91; Extracted On: 11/17/91 and 12/31/91;
Analyzed On: 12/12/91 and 01/08/92
Sample Identification: Hercules, Inc., soil sample labeled SB-15 S-4, 11/12/91.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 90

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	74	nitrobenzene-d_5	79
phenol-d_6	74	2-fluorobiphenyl	89
2,4,6-tribromophenol	61	terphenyl-d_{14}	100

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000083

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ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148884 Re-extract
ETR No.: 29213, Project No.: 91120
Sample Received On: 11/13/91; Extracted On: 11/15/91 and 12/31/91;
Analyzed On: 01/10/92
Sample Identification: Hercules, Inc., soil sample labeled SB-3 S-1, 11/13/91 at 1152 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	430 U	benzyl butyl phthalate	430 U
1,2,4-trichlorobenzene	430 U	di-n-butyl phthalate	430 U
hexachlorobenzene	430 U	di-n-octyl phthalate	430 U
hexachloroethane	430 U	diethyl phthalate	430 U
bis (2-chloroethyl) ether	430 U	dimethyl phthalate	430 U
2-chloronaphthalene	430 U	benzo(a)anthracene	430 U
1,2-dichlorobenzene	430 U	benzo(a)pyrene	430 U
1,3-dichlorobenzene	430 U	benzo(b)fluoranthene	110J
1,4-dichlorobenzene	430 U	benzo(k)fluoranthene	430 U
3,3'-dichlorobenzidine	860 U	chrysene	430 U
2,4-dinitrotoluene	430 U	acenaphthylene	430 U
2,6-dinitrotoluene	430 U	anthracene	430 U
fluoranthene	100J	benzo(ghi)perylene	430 U
4-chlorophenyl phenyl ether	430 U	fluorene	430 U
4-bromophenyl phenyl ether	430 U	phenanthrene	430 U
bis (2-chloroisopropyl) ether	430 U	dibenzo(ah)anthracene	430 U
bis (2-chloroethoxy)methane	430 U	indeno(1,2,3-cd)pyrene	430 U
hexachlorobutadiene	430 U	pyrene	98J
hexachlorocyclopentadiene	430 U	benzyl alcohol	430 U
isophorone	430 U	4-chloroaniline	430 U
naphthalene	430 U	dibenzofuran	430 U
nitrobenzene	430 U	2-methylnaphthalene	430 U
N-nitrosodiphenylamine+	430 U	2-nitroaniline	2100 U
N-nitrosodipropylamine	430 U	3-nitroaniline	2100 U
bis (2-ethylhexyl) phthalate	430 U	4-nitroaniline	2100 U

% Solids = 80

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000084

+ Cannot be separated from diphenylamine.

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148884 Re-extract
ETR No.: 29213, Project No.: 91120
Sample Received On: 11/13/91; Extracted On: 11/15/91 and 12/31/91;
Analyzed On: 01/10/92
Sample Identification: Hercules, Inc., soil sample labeled SB-3 S-1, 11/13/91 at 1152 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	430 U
p-chloro-m-cresol	430 U
2-chlorophenol	430 U
2,4-dichlorophenol	430 U
2,4-dimethylphenol	430 U
2-nitrophenol	430 U
4-nitrophenol	2100 U
2,4-dinitrophenol	2100 U
4,6-dinitro-2-methylphenol	2100 U
pentachlorophenol	2100 U
phenol	430 U
benzoic acid	2100 U
2-methylphenol	430 U
4-methylphenol	430 U
2,4,5-trichlorophenol	2100 U

% Solids = 80

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	87	nitrobenzene-d_5	79
phenol-d_6	86	2-fluorobiphenyl	80
2,4,6-tribromophenol	65	terphenyl-d_{14}	88

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000085

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ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148885 Re-extract
ETR No.: 29213, Project No.: 91120
Sample Received On: 11/13/91; Extracted On: 11/15/91 and 12/31/91;
Analyzed On: 01/10/92
Sample Identification: Hercules, Inc., soil sample labeled SB-3 S-2, 11/13/91 at 1156 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	400 U	benzyl butyl phthalate	400 U
1,2,4-trichlorobenzene	400 U	di-n-butyl phthalate	400 U
hexachlorobenzene	400 U	di-n-octyl phthalate	400 U
hexachloroethane	400 U	diethyl phthalate	400 U
bis (2-chloroethyl) ether	400 U	dimethyl phthalate	400 U
2-chloronaphthalene	400 U	benzo(a)anthracene	400 U
1,2-dichlorobenzene	400 U	benzo(a)pyrene	400 U
1,3-dichlorobenzene	400 U	benzo(b)fluoranthene	400 U
1,4-dichlorobenzene	400 U	benzo(k)fluoranthene	400 U
3,3'-dichlorobenzidine	790 U	chrysene	400 U
2,4-dinitrotoluene	400 U	acenaphthylene	400 U
2,6-dinitrotoluene	400 U	anthracene	400 U
fluoranthene	400 U	benzo(ghi)perylene	400 U
4-chlorophenyl phenyl ether	400 U	fluorene	400 U
4-bromophenyl phenyl ether	400 U	phenanthrene	400 U
bis (2-chloroisopropyl) ether	400 U	dibenzo(ah)anthracene	400 U
bis (2-chloroethoxy)methane	400 U	indeno(1,2,3-cd)pyrene	400 U
hexachlorobutadiene	400 U	pyrene	400 U
hexachlorocyclopentadiene	400 U	benzyl alcohol	400 U
isophorone	400 U	4-chloroaniline	400 U
naphthalene	400 U	dibenzofuran	400 U
nitrobenzene	400 U	2-methylnaphthalene	400 U
N-nitrosodiphenylamine+	400 U	2-nitroaniline	1900 U
N-nitrosodipropylamine	400 U	3-nitroaniline	1900 U
bis (2-ethylhexyl) phthalate	400 U	4-nitroaniline	1900 U

% Solids = 86

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

000086

+ Cannot be separated from diphenylamine.

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NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 26 January 1992
Aquatec Lab No.: 148885 Re-extract
ETR No.: 29213, Project No.: 91120
Sample Received On: 11/13/91; Extracted On: 11/15/91 and 12/31/91;
Analyzed On: 01/10/92
Sample Identification: Hercules, Inc., soil sample labeled SB-3 S-2, 11/13/91 at 1156 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	400 U
p-chloro-m-cresol	400 U
2-chlorophenol	400 U
2,4-dichlorophenol	400 U
2,4-dimethylphenol	400 U
2-nitrophenol	400 U
4-nitrophenol	1900 U
2,4-dinitrophenol	1900 U
4,6-dinitro-2-methylphenol	1900 U
pentachlorophenol	1900 U
phenol	400 U
benzoic acid	1900 U
2-methylphenol	400 U
4-methylphenol	400 U
2,4,5-trichlorophenol	1900 U

% Solids = 86

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	84	nitrobenzene-d_5	83
phenol-d_6	80	2-fluorobiphenyl	88
2,4,6-tribromophenol	62	terphenyl-d_{14}	99

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 28 February 1992
Aquatec Lab No.: 153614
ETR No.: 30330, Project No.: 91120
Sample Received On: 02/10/92; Extracted On: 02/10/92; Analyzed On: 02/12/92
Sample Identification: Hercules, Inc., soil sample labeled SB-6 S-1A, 02/07/92 at 1210 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	400 U	benzyl butyl phthalate	400 U
1,2,4-trichlorobenzene	400 U	di-n-butyl phthalate	400 U
hexachlorobenzene	400 U	di-n-octyl phthalate	400 U
hexachloroethane	400 U	diethyl phthalate	400 U
bis (2-chloroethyl) ether	400 U	dimethyl phthalate	400 U
2-chloronaphthalene	400 U	benzo(a)anthracene	400 U
1,2-dichlorobenzene	400 U	benzo(a)pyrene	400 U
1,3-dichlorobenzene	400 U	benzo(b)fluoranthene	400 U
1,4-dichlorobenzene	400 U	benzo(k)fluoranthene	400 U
3,3'-dichlorobenzidine	790 U	chrysene	400 U
2,4-dinitrotoluene	400 U	acenaphthylene	400 U
2,6-dinitrotoluene	400 U	anthracene	400 U
fluoranthene	400 U	benzo(ghi)perylene	400 U
4-chlorophenyl phenyl ether	400 U	fluorene	400 U
4-bromophenyl phenyl ether	400 U	phenanthrene	400 U
bis (2-chloroisopropyl) ether	400 U	dibenzo(ah)anthracene	400 U
bis (2-chloroethoxy)methane	400 U	indeno(1,2,3-cd)pyrene	400 U
hexachlorobutadiene	400 U	pyrene	400 U
hexachlorocyclopentadiene	400 U	benzyl alcohol	400 U
isophorone	400 U	4-chloroaniline	400 U
naphthalene	400 U	dibenzofuran	400 U
nitrobenzene	400 U	2-methylnaphthalene	400 U
N-nitrosodiphenylamine+	400 U	2-nitroaniline	1900 U
N-nitrosodipropylamine	400 U	3-nitroaniline	1900 U
bis (2-ethylhexyl) phthalate	98J	4-nitroaniline	1900 U

% Solids = 81

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

+ Cannot be separated from diphenylamine.

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ANALYTICAL REPORT

Date: 28 February 1992
Aquatec Lab No.: 153614
ETR No.: 30330, Project No.: 91120
Sample Received On: 02/10/92; Extracted On: 02/10/92; Analyzed On: 02/12/92
Sample Identification: Hercules, Inc., soil sample labeled SB-6 S-1A, 02/07/92 at 1210 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	400 U
p-chloro-m-cresol	400 U
2-chlorophenol	400 U
2,4-dichlorophenol	400 U
2,4-dimethylphenol	400 U
2-nitrophenol	400 U
4-nitrophenol	1900 U
2,4-dinitrophenol	1900 U
4,6-dinitro-2-methylphenol	1900 U
pentachlorophenol	1900 U
phenol	400 U
benzoic acid	1900 U
2-methylphenol	400 U
4-methylphenol	400 U
2,4,5-trichlorophenol	1900 U

% Solids = 81

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	86	nitrobenzene-d_5	92
phenol-d_6	91	2-fluorobiphenyl	91
2,4,6-tribromophenol	84	terphenyl-d_{14}	92

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 28 February 1992
Aquatec Lab No.: 153615
ETR No.: 30330, Project No.: 91120
Sample Received On: 02/10/92; Extracted On: 02/10/92; Analyzed On: 02/12/92
Sample Identification: Hercules, Inc., soil sample labeled SB-6 S-2A, 02/07/92 at 1215 hours.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

acenaphthene	360 U	benzyl butyl phthalate	360 U
1.2.4-trichlorobenzene	360 U	di-n-butyl phthalate	360 U
hexachlorobenzene	360 U	di-n-octyl phthalate	360 U
hexachloroethane	360 U	diethyl phthalate	360 U
bis (2-chloroethyl) ether	360 U	dimethyl phthalate	360 U
2-chloronaphthalene	360 U	benzo(a)anthracene	360 U
1.2-dichlorobenzene	360 U	benzo(a)pyrene	360 U
1.3-dichlorobenzene	360 U	benzo(b)fluoranthene	360 U
1.4-dichlorobenzene	360 U	benzo(k)fluoranthene	360 U
3.3'-dichlorobenzidine	730 U	chrysene	360 U
2.4-dinitrotoluene	360 U	acenaphthylene	360 U
2.6-dinitrotoluene	360 U	anthracene	360 U
fluoranthene	360 U	benzo(ghi)perylene	360 U
4-chlorophenyl phenyl ether	360 U	fluorene	360 U
4-bromophenyl phenyl ether	360 U	phenanthrene	360 U
bis (2-chloroisopropyl) ether	360 U	dibenzo(ah)anthracene	360 U
bis (2-chloroethoxy)methane	360 U	indeno(1.2.3-cd)pyrene	360 U
hexachlorobutadiene	360 U	pyrene	360 U
hexachlorocyclopentadiene	360 U	benzyl alcohol	360 U
isophorone	360 U	4-chloroaniline	360 U
naphthalene	360 U	dibenzofuran	360 U
nitrobenzene	360 U	2-methylnaphthalene	360 U
N-nitrosodiphenylamine+	360 U	2-nitroaniline	1800 U
N-nitrosodipropylamine	360 U	3-nitroaniline	1800 U
bis (2-ethylhexyl) phthalate	360 U	4-nitroaniline	1800 U

% Solids = 88

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

+ Cannot be separated from diphenylamine.

000006

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ANALYTICAL REPORT

Date: 28 February 1992
Aquatec Lab No.: 153615
ETR No.: 30330, Project No.: 91120
Sample Received On: 02/10/92; Extracted On: 02/10/92; Analyzed On: 02/12/92
Sample Identification: Hercules, Inc., soil sample labeled SB-6 S-2A, 02/07/92 at 1215 hours.

Acid Extractable Semivolatile Organic Compounds in ug/Kg Dry
EPA Method 8270

2,4,6-trichlorophenol	360 U
p-chloro-m-cresol	360 U
2-chlorophenol	360 U
2,4-dichlorophenol	360 U
2,4-dimethylphenol	360 U
2-nitrophenol	360 U
4-nitrophenol	1800 U
2,4-dinitrophenol	1800 U
4,6-dinitro-2-methylphenol	1800 U
pentachlorophenol	1800 U
phenol	360 U
benzoic acid	1800 U
2-methylphenol	360 U
4-methylphenol	360 U
2,4,5-trichlorophenol	1800 U

% Solids = 88

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	95	nitrobenzene-d_5	102
phenol-d_6	102	2-fluorobiphenyl	97
2,4,6-tribromophenol	95	terphenyl-d_{14}	95

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

B - The compound was present in the method blank. The result reported here is not blank corrected.

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ANALYTICAL REPORT

Date: 28 February 1992
ETR No.: 30330, Project No.: 91120
Blank Identification: Blank HB210L4S for Aquatec Lab No.'s 153614 and 153615.

Base/Neutral Extractable Semivolatile Organic Compounds in ug/Kg
EPA Method 8270

acenaphthene	330 U	benzyl butyl phthalate	330 U
1,2,4-trichlorobenzene	330 U	di-n-butyl phthalate	330 U
hexachlorobenzene	330 U	di-n-octyl phthalate	330 U
hexachloroethane	330 U	diethyl phthalate	330 U
bis (2-chloroethyl) ether	330 U	dimethyl phthalate	330 U
2-chloronaphthalene	330 U	benzo(a)anthracene	330 U
1,2-dichlorobenzene	330 U	benzo(a)pyrene	330 U
1,3-dichlorobenzene	330 U	benzo(b)fluoranthene	330 U
1,4-dichlorobenzene	330 U	benzo(k)fluoranthene	330 U
3,3'-dichlorobenzidine	660 U	chrysene	330 U
2,4-dinitrotoluene	330 U	acenaphthylene	330 U
2,6-dinitrotoluene	330 U	anthracene	330 U
fluoranthene	330 U	benzo(ghi)perylene	330 U
4-chlorophenyl phenyl ether	330 U	fluorene	330 U
4-bromophenyl phenyl ether	330 U	phenanthrene	330 U
bis (2-chloroisopropyl) ether	330 U	dibenzo(ah)anthracene	330 U
bis (2-chloroethoxy)methane	330 U	indeno(1,2,3-cd)pyrene	330 U
hexachlorobutadiene	330 U	pyrene	330 U
hexachlorocyclopentadiene	330 U	benzyl alcohol	330 U
isophorone	330 U	4-chloroaniline	330 U
naphthalene	330 U	dibenzofuran	330 U
nitrobenzene	330 U	2-methylnaphthalene	330 U
N-nitrosodiphenylamine+	330 U	2-nitroaniline	1600 U
N-nitrosodipropylamine	330 U	3-nitroaniline	1600 U
bis (2-ethylhexyl) phthalate	330 U	4-nitroaniline	1600 U

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

+ Cannot be separated from diphenylamine.

000009

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150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Date: 28 February 1992
ETR No.: 30330, Project No.: 91120
Blank Identification: Blank HB210L4S for Aquatec Lab No.'s 153614 and 153615.

Acid Extractable Semivolatile Organic Compounds in ug/Kg
EPA Method 8270

2,4,6-trichlorophenol	330 U
p-chloro-m-cresol	330 U
2-chlorophenol	330 U
2,4-dichlorophenol	330 U
2,4-dimethylphenol	330 U
2-nitrophenol	330 U
4-nitrophenol	1600 U
2,4-dinitrophenol	1600 U
4,6-dinitro-2-methylphenol	1600 U
pentachlorophenol	1600 U
phenol	330 U
benzoic acid	1600 U
2-methylphenol	330 U
4-methylphenol	330 U
2,4,5-trichlorophenol	1600 U

Summary of Surrogate Recoveries

	% Rec		% Rec
2-fluorophenol	86	nitrobenzene-d_5	89
phenol-d_6	92	2-fluorobiphenyl	87
2,4,6-tribromophenol	79	terphenyl-d_{14}	86

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the method specified reporting limit.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the method specified reporting limit.

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APPENDIX E

DATA VALIDATION REPORT

SUMMARY OF THE ANALYTICAL DATA VALIDATION
For Samples Collected at the
Ciba Geigy Plant Site, Glens Falls, New York

Inorganic Analyses
Soil Samples
Sample Delivery Group: 148011
Laboratory Reference Numbers:

SB-11 S-1	148013
SB-11 S-3	148015
SB-11 S-6	148018
SB-4 S-3	148076
SB-7 S-5	148079
SB-12 S-1	148080
SB-12 S-5	148084
SB-1 S-4	148243
SB-2 S-2	148247
SB-5 S-1	148251
SB-8 S-1	148255
SB-8 S-4	148258
SB-6 S-1	148479
SB-9 S-1	148483
SB-9 S-4	148486
SB-10 S-1	148801
SB-10 S-2	148802
SB-14 S-6	148812
SB-15 S-1	148813
SB-3 S-1	148884

Water samples were received for inorganic organic analyses for the TCL analyte list by SW-846 protocols. A complete analytical validation was performed based upon the following parameters:

* - Chain of Custody
* - Data Completeness
* - Holding Times
* - Calibration Verification
- CRDL Standard
- Laboratory Control Sample
* - Laboratory Blanks
- Field Blanks
- Matrix Spike
* - Duplicate Analyses
* - Detection Limit Results
- Furnace Atomic Absorption Results
- Sample Results

* - Indicates that all criteria were met for this parameter.

Data Validation Summary

Twenty five percent of the samples of this delivery group were selected for validation. Samples collected throughout the sampling period were included for validation.

The analytical reports were prepared in accordance with the specifications requested in the December 13, 1991 analysis plan. Items specifically designated for inclusion into the final data package were:

A. Chronology Collection Date and Time
   1. Digestion/Extraction Dates
   2. Analysis Dates and Times
   3. Relevant Holding Times
   4. Collection Dates

B. Methodology
   1. Methods
   2. Reporting Limits (method detection limit)
   3. Instrument Detection Limit (where applicable)
   4. Any clean-up procedures used

C. Calibration Data
   1. Curve coefficients

D. Chain-of-Custody Packaging and Review Documentation
   1. Discussion of abnormalities, inconsistencies
   2. Temperature on Receipt of Sample Cooler

This report format did not follow any of the standard NYS DEC or EPA deliverable requirements.

Documentation of the temperature of the samples upon receipt was not found in the analytical report. With this one exception, all of the above quality assurance deliverable requirements were verified during the data validation.

A complete data validation was performed for the furnace analyses since all raw data was included in the analytical report. Instrument generated sample result summaries and calibration summaries were provided for all ICP analyses, but the exact sequence and time of analysis could not be directly verified. (Note: this was not required according to the analytical work plan for this site).

Specific items noted in the data validation are discussed in detail below. The 1989 NYS DEC Analytical Services Protocols were used for the basis of the

validation. If specific standard ASP deliverables were not required in the project quality assurance plan (such as the CRDL standard analysis), they were noted below. This notation does not indicate that the laboratory was nonconformant in the adherence to the analytical or deliverable requirements.

No signifiacnt problems were detected in the data with the following exceptions:

The chromium value reported for sample SB-5 S-1 (5.8 mg/kg) could not be confirmed from the raw data. A concentration of 123 mg/kg was found in the raw data (page 139).

Lead matrix spike recoveries ranged from 55% to 69% in the three samples selected for matrix spike analyses. Actual lead concentrations reported in the samples of this delivery group may have been underestimated to some degree. The lead data for all samples should be considered as estimated values.

Holding Times

All analyses were performed within the required holding time with the exceptions of the original mercury and cyanide analyses. These parameters were resampled and the data reissued in a separate report. The validation for these samples is attached under a separate report.

CRDL Standards

CRDL standards did not appear to be analyzed for any of the ICP analyses. The ICP analyses were calibrated against an initial 4-point standard curve. The lowest standard included for all analyses was generally about twice to five times the CRDL value.

A CRDL standard was always analyzed at the start of each furnace analysis. All CRDL standards associated with the samples chosen for validation were within the acceptable range of 75% to 125%.

Note: CRDL standards are required as part of the ASP modifications to SW-846. They were not a part of the original SW-846 methodology.

Matrix Spike Recovery

Samples SB-11 S-1 (Lab #: 148013), SB-2 S-1 (Lab #: 148246) and SB-9 S-4 (Lab #: 148486) were used as the matrix spikes for barium, cadmium, chromium and copper. Sample S-11 S-1(Lab #: 148013) was also spiked for arsenic, copper, selenium and cyanide.

All spike recoveries for sample SB-11 S-1 were within the acceptable range with the exceptions of:

Analyte	% R
Arsenic	216%
Lead	60%
Selenium	173%
Cyanide	6.4%

The lead matrix spike recoveries were also outside of the acceptable range for samples SB-2 S-1 (55%) and SB-9 S-4 (69%).

Duplicate Analysis

Samples SB-11 S-1 (Lab #: 148013), SB-2 S-1 (Lab #: 148246) and SB-9 S-4 (Lab #: 148486) were used as the matrix duplicates for barium, cadmium, chromium and copper. Sample S-11 S-1(Lab #: 148013) was used as the duplicate for arsenic, copper, mercury, selenium and cyanide.

All RPD's were within the acceptable range (<20%) with the one exception of barium in sample SB-9 S-4 (30.7%). This is not an uncommon problems for this analyte.

Laboratory Control Sample

An aqueous laboratory control sample did not appear to be analyzed for many of the analyses. Whenever it was reported in the raw data it was found to be in the acceptable range.

Note: The analysis of a laboratory control sample was not a specific requirement of the quality assurance plan for this project.

Preparation Blank

Several preparation blanks were analyzed with the samples of this delivery group. None reported concentrations for any analyte greater than the CRDL.

Reference to a preparation blank for sample SB-8 S-4 (Lab #: 148258) was not found in the blank summary section of the analytical report.

Field Blanks

Field blanks were not associated with the soil inorganic analysis.

Blank Spikes

A blank spike requirement was not noted in the quality assurance work plan.

ICP Analyses

All ICP analyses appeared to be performed according to the standard ASP SW-846 protocols with the exception of the analysis of a CRDL standard.

Instrument generated sample result summaries and calibration summaries were provided for all ICP, but the exact sequence and time of analysis could not be directly verified. (Note: this was not required according to the analytical work plan for this site).

Furnace Analyses

All furnace analyses were performed in accordance with standard CLP methodologies. Post digestion spikes were added for each sample. The standard CLP reporting qualifiers "W", "E", and "+" were not reported in the final data. This did not appear to be a reporting requirement for this analytical package.

Lead was only analyzed by ICP. If it was undetected in a sample it was not reanalyzed by furnace. Generally ICP detection limits are adequate for soil analyses. The detection limits reported should be closely reviewed in terms of the data quality objectives of this specific project.

Several differences were obtained in the arsenic values calculated during the data validation and those reported by the laboratory. None of these appeared to effect the usability of the data, since arsenic was present in relatively low concentrations in all of the samples selected for review. The calculations should be examined in closer detail if the reported differences affect the usability of the data. All arsenic data appeared to be reported from standard addition analyses.

Sample Results

Sample SB-5 S-1 (Lab #: 148251)

The chromium value reported for this sample (5.8 mg/kg) could not be confirmed from the raw data. The value reported in the sample summary form (page 17) appears to be a typographical error since the concentration reported for chromium is the same as that reported for cadmium. A concentration of 123 mg/kg was found in the raw data (page 139). This was not originally reported due to the fact that this concentration was greater than the calibration range of the instrument.

The laboratory generally reanalyzses all samples greater than the calibration curve at an appropriate dilution. The concentration in the sample digest (1,441 ug/l) was less than the reported linear range of the instrument (10,000 ug/l). There should not be a significant problem with reporting this concentration.

Sample SB-12 S-1 (Lab #: 148080)

The reported arsenic data for this sample appeared to originate from a standard addition analysis that only used two of the three original spiking levels. Generally three are required. The arsenic value reported in the data validation summary table was taken from all three spikes, but the correlation coefficient was only 0.97 when all values were included. Technically the MSA analysis should have been reported in a correlation coefficient is less than 0.995. The arsenic concentration obtained from the three point MSA (5.3 mg/kg) does not appear to be high enough to affect the usability of the data.

Data Summary Table
Ciba Geigy Plant Site, Glens Falls, NY

Inorganic Analyses
Soil Samples
Sample Delivery Group: 148011

Sample / Analyte	Method Blank Conc. (PPM)	Lab. Reported Conc. (PPM)	QA Validation Reported Conc. Decision	Qualifiers	Footnotes
Sample SB-11 S-1 (Lab #: 148013) Collected 11/05/91					
Total Metals		% Solids = 87.1			
Arsenic		4.4	4.1		
Barium		66	66		
Cadmium		6.3	6.3		
Chromium		135	135		
Copper		14.9	14.9		
Iron		11700	11700		
Lead		109	109	NJ	
Selenium		0.4 U	0.4 U		
Sample SB-11 S-3 (Lab #: 148015) Collected 11/05/91					
Total Metals		% Solids = 88.8			
Barium		42	42		
Cadmium		3.7	3.7		
Chromium		46	46		
Lead		50	50	NJ	
Sample SB-11 S-6 (Lab #: 148018) Collected 11/05/91					
Total Metals		% Solids = 71.7			
Barium		170	170		
Cadmium		4.9	4.9		
Chromium		31	31		
Lead		11	11	NJ	
Sample SB-4 S-3 (Lab #: 148076) Collected 11/06/91					
Total Metals		% Solids = 72.2			
Barium		106	106		
Cadmium		3.9	3.9		
Chromium		18	18		
Lead		14	14	NJ	

Sample / Analyte	Method Blank Conc. (PPM)	Lab. Reported Conc. (PPM)	QA Validation Reported Conc. Decision		Qualifiers	Footnotes
Sample SB-5 S-1 (Lab #: 148251) Collected 11/07/91						
Total Metals		% Solids = 90.5				
Barium		134	134			
Cadmium		5.8	5.8			
Chromium		5.8	123		See Text	
Lead		125	125	NJ		
Sample SB-8 S-1 (Lab #: 148255) Collected 11/07/91						
Total Metals		% Solids = 93.4				
Barium		48	48			
Cadmium		40	40			
Chromium		39	39			
Lead		133	133	NJ		
Sample SB-8 S-4 (Lab #: 148258) Collected 11/07/91						
Total Metals		% Solids = 72.4				
Barium		220	220			
Cadmium		5.1	5.1			
Chromium		25	25			
Lead		20 U	20 U	NJ		
Sample SB-6 S-1 (Lab #: 148479) Collected 11/08/91						
Total Metals		% Solids = 91.3				
Arsenic		3.2	5.3		See Text	
Barium		112	112			
Cadmium		7.9	7.9			
Chromium		165	165			
Copper		24	24			
Iron		23000	23000			
Lead		155	155	NJ		
Selenium		0.6 U	0.6 U			
Sample SB-9 S-1 (Lab #: 148483) Collected 11/08/91						
Total Metals		% Solids = 95.3				
Barium		37	37			
Cadmium		2.4	2.4			
Chromium		21	21			
Lead		27	27	NJ		

Sample / Analyte	Method Blank Conc. (PPM)	Lab. Reported Conc. (PPM)	QA Validation Reported Conc. Decision	Qualifiers	Footnotes
Sample SB-7 S-5 (Lab #: 148079) Collected 11/06/91					
Total Metals		% Solids = 83.9			
Barium		24	24		
Cadmium		1.3	1.3		
Chromium		5.6	5.6		
Lead		9.0 U	9.0 U	NJ	
Sample SB-12 S-1 (Lab #: 148080) Collected 11/06/91					
Total Metals		% Solids = 89.9			
Arsenic		4.2	4.2		
Barium		220	220		
Cadmium		9.3	9.3		
Chromium		128	128		
Copper		93	93		
Iron		15700	15700		
Lead		270	270	NJ	
Selenium		0.9 U	0.9 U		
Sample SB-12 S-5 (Lab #: 148084) Collected 11/06/91					
Total Metals		% Solids = 67.9			
Barium		172	172		
Cadmium		5.3	5.3		
Chromium		24	24		
Lead		20 U	20 U	NJ	
Sample SB-1 S-4 (Lab #: 148243) Collected 11/07/91					
Total Metals		% Solids = 85.1			
Barium		33	33		
Cadmium		1.8	1.8		
Chromium		16	16		
Lead		21	21	NJ	
Sample SB-2 S-2 (Lab #: 148247) Collected 11/07/91					
Total Metals		% Solids = 85.1			
Barium		29	29		
Cadmium		1.5	1.5		
Chromium		7.5	7.5		
Lead		10 U	10 U	NJ	

Sample / Analyte	Method Blank Conc. (PPM)	Lab. Reported Conc. (PPM)	QA Validation Reported Conc. Decision	Qualifiers	Footnotes
Sample SB-9 S-4 (Lab #: 148486) Collected 11/08/91					
Total Metals		% Solids = 71.6			
Barium		177	177		
Cadmium		5.5	5.5		
Chromium		34	34		
Lead		20 U	20 U	NJ	
Sample SB-10 S-1 (Lab #: 148801) Collected 11/12/91					
Total Metals		% Solids = 87.9			
Arsenic		3.8	5.4	See Text	
Barium		980	980		
Cadmium		470	470		
Chromium		550	550		
Copper		310	310		
Iron		11300	11300		
Lead		2700	2700	NJ	
Selenium		2.7	2.7		
Sample SB-10 S-2 (Lab #: 148802) Collected 11/12/91					
Total Metals		% Solids = 85.6			
Barium		380	380		
Cadmium		125	125		
Chromium		97	97		
Lead		280	280	NJ	
Sample SB-14 S-6 (Lab #: 148812) Collected 11/12/91					
Total Metals		% Solids = 64.8			
Barium		230	230		
Cadmium		5.1	5.1		
Chromium		41	41		
Lead		20 U	20 U	NJ	
Sample SB-15 S-1 (Lab #: 148813) Collected 11/12/91					
Total Metals		% Solids = 89.5			
Arsenic		8.5	8.5		
Barium		1100	1100		
Cadmium		23	23		
Chromium		610	610		
Copper		380	380		
Iron		67000	67000		
Lead		1250	1250 N	J	
Selenium		0.8	0.8		

Sample / Analyte	Method Blank Conc. (PPM)	Lab. Reported Conc. (PPM)	QA Validation Reported Conc. Decision	Qualifiers	Footnotes
Sample SB-3 S-1 (Lab #: 148884) Collected 11/13/91					
Total Metals		% Solids = 79.5			
Arsenic		6.4	12.3	See Text	
Barium		87	87		
Cadmium		7.9	7.9		
Chromium		197	197		
Copper		17.1	17.1		
Iron		13300	13300		
Lead		159	159 N	J	
Selenium		0.6 U	0.6 U		

Items which were reviewed during the data validation are discussed in more detail below.

Chain of Custody and Sample Tracking

Field originated chain of custody were included with the data packages, but copies of internal laboratory custody records were not provided.

Holding Times

All samples reviewed were analyzed within 7 days of receipt by the laboratory.

Calibrations

Only the calibration summary forms were required to be submitted with the analytical report. It was not possible to validate the RF's since the quant reports were not included.

Several compounds in addition to those of the target compound list were included in the calibration standards. These were not included on the laboratory analytical report forms or in the data validation worksheets.

Surrogate Recoveries

All surrogate recoveries were reported to be within the acceptable range on the data summary forms. Quant reports were not reviewed.

Matrix Spike / Matrix Spike Duplicate

Sample 151957 was used for a MS/MSD. This sample did not appear to be from this sample delivery group, and the recoveries may not be applicable to the samples collected at this site. The amount of spike added was noted in total ug (0.250 ng) on the spike summary form. Spike additions are generally reported as concentrations. All spike recoveries and RPD's were within the acceptable range with the exception of the recovery of trichloroethene in the MSD (126%). This was just slightly greater than the upper quality assurance limit of 120%.

Samples AW-A3 (Lab #: 152351), AW-B5 (Lab #: 152355) and AW-C3 (Lab #: 152357) were used as other MS/MSD's. All recoveries and RPD's are within the acceptable range. All were collected on 1/13/92.

Generally each batch of twenty samples is required to be accompanied by a matrix spike. Samples from other delivery groups may have been

Data Summary Table
Ciba Geigy Plant Site, Glens Falls, NY

Volatile and Semivolatile Organic Analyses
Soil Samples Received: 11/5 through 11/13/91
Sample Delivery Group: 148011

Sample / Analyte	Method Blank Conc. (PPB)	Lab. Reported Conc. (PPB)	QA Validation Reported Conc. Decision	Qualifiers	Footnotes
Field Blank Received on 11/13 (Lab #: 148882)					
Volatile Organics					
None Detected					
Sample SB-10 S1 (Lab #: 148801)					
Semivolatile Organics					
1,2,4-trichlorobenzene	330 U	110 J			
hexachlorobenzene	330 U	190 J			
1,2-dichlorobenzene	330 U	120 J			
1,4-dichlorobenzene	330 U	290 J			
3,3'-dichlorobenzene	330 U	1,900			
fluoranthene	330 U	78 J			
nitrobenzene	330 U	280 J			
bis (2-ethylhexyl) phthalate	160 J	460 B		negate	1
pyrene	330 U	190 J			
phenol	330 U	89 J			
Sample SB-4 S3 (Lab#: 148076)					
Volatile Organics					
Acetone	3 J	14 B		negate	1
Sample SB-5 S1 (Lab #: 148251)	Extracted 11/12 and 12/31 Analyzed on 12/12 and 1/7				
Semivolatile Organics					
bis (2-ethylhexyl) phthalate	NR	100 JB		see text	
Sample SB-6 S1 (Lab #: 148479)					
Semivolatile Organics	Extracted 11/13 and 12/31 Analyzed on 12/12 and 1/7				
bis (2-ethylhexyl) phthalate	150 J	86 JB		negate	1

Sample / Analyte	Method Blank Conc. (PPB)	Lab. Reported Conc. (PPB)	QA Validation Reported Conc. Decision	Qualifiers	Footnotes
Sample SB-9 S1 (Lab #: 148483)					
Volatile Organics					
Methylene Chloride	1 J	2 JB		negate	1
Acetone	5 J	5 JB		negate	1
Semivolatile Organics	Extracted 11/13 and 12/31 Analyzed on 12/12 and 1/8				
bis (2-ethylhexyl) phthalate	150 J	130 JB		negate	1
benzyl butyl phthalate	330 U	79 J			
benzo(a)anthracene	330 U	68 J			
benzo(b)fluoranthene	330 U	65 J			
phenanthrene	330 U	61 J			
pyrene	330 U	71 J			
Sample SB-14 S-1					
Semivolatile Organics	Sample was extracted on 11/17 and analyzed on 12/12 and 1/6				
bis (2-ethylhexyl) phthalate	160 J	520 B		negate	1
dimethyl phthalate	330 U	240 J			
Benzo(a)anthracene	330 U	98 J			
benzo(a)pyrene	330 U	130 J			
benzo(b)fluoranthene	330 U	130 J			
benzo(k)fluoranthene	330 U	90 J			
chrysene	330 U	99 J			
benzo(ghi)perylene	330 U	170 J			
dibenzo(ah)anthracene	330 U	130 J			
indeno(1,2,3-cd)pyrene	330 U	150 J			
Sample SB-15 S1 (Lab #: 148813)					
Semivolatile Organics	Sample was extracted on 11/17 and analyzed on 12/12 and 12/30				
Fluoranthene	330 U	240 J			
bis (2-ethylhexyl) phthalate	160 J	960 B		negate	1
dimethyl phthalate	330 U	1,900			
Benzo(a)anthracene	330 U	110 J			
benzo(a)pyrene	330 U	67 J			
benzo(b)fluoranthene	330 U	79 J			
benzo(k)fluoranthene	330 U	71 J			
chrysene	330 U	110 J			
phenanthrene	330 U	270 J			
pyrene	330 U	190 J			
Sample SB-3 S1 (Lab #: 148884)					
Semivolatile Organics	Sample was extracted on 11/15 a f				
Fluoranthene	330 U	100 J			
benzo(b)fluoranthene	330 U	110 J			
pyrene	330 U	98 J			

SUMMARY OF THE ANALYTICAL DATA VALIDATION
For Samples Collected at the
Ciba Geigy Plant Site, Glens Falls, New York

Soil Inorganic Analyses
Samples Received: February 10, 1992

Sample Delivery Group: 30330
Laboratory Reference Numbers:

SB-6 S1A	153614
SB-6 S2A	153615
SB-10 S-1A	153616
SB-12 S-1A	153617
SB-15 S-1A	153618

Soil samples were received for mercury and cyanide analyses. A complete analytical validation was performed based upon the following parameters:

* - Chain of Custody
- Data Completeness
* - Holding Times
* - Calibration Verification
- Laboratory Control Sample
- Laboratory Blanks
- Field Blanks
- Matrix Spike
- Duplicate Analyses

NV - Detection Limit Results
* - Sample Results

* - Indicates that all criteria were met for this parameter.
NV - Indicates that sufficient documentation for validation was not provided

Data Validation Summary

The analytical reports were prepared in accordance with the specifications requested in the December 13, 1991 analysis plan. Items specifically designated for inclusion into the final data package were:

A. Chronology Collection Date and Time
   1. Digestion/Extraction Dates
   2. Analysis Dates and Times
   3. Relevant Holding Times
   4. Collection Dates

B. Methodology
   1. Methods
   2. Reporting Limits (method detection limit)
   3. Instrument Detection Limit (where applicable)
   4. Any clean-up procedures used

C. Calibration Data
   1. Curve coefficients

D. Chain-of-Custody Packaging and Review Documentation
   1. Discussion of abnormalities, inconsistencies
   2. Temperature on Receipt of Sample Cooler

This report format did not follow any of the standard NYS DEC or EPA deliverable requirements. Copies of raw data were included for both inorganic analyses. They were reviewed according to the standard requirements of SW-846 methodologies as amended by the NYS DEC Analytical Service Protocols.

According to the information provided in the sampling and analysis quality assurance plan, the analyses were not required to conform with the NYS DEC ASP quality assurance requirements.

With the exception of sample temperature upon receipt, all of the quality assurance information required in the sampling plan was provided in the analytical report. Deviations from the standard NYS DEC ASP quality assurance requirements are noted below.

Chain of Custody and Sample Tracking

Field originated chain of custody included with the data packages, but copies of internal laboratory custody records were not provided.

Data Completeness

The original requirements for supporting analytical data requested that the laboratory document the temperature of the sample cooler upon receipt. This information was not found in the analytical data packages.

The chain of custody form noted that samples SB-11 S-1A, and SB-3 S-1A were broken upon receipt in the laboratory. Data for these samples were not included with the analytical report.

Field Blank

A field blank was not collected with the samples of this delivery group.

Mercury Analyses

Matrix Spike

A water sample from another delivery group was used for the only matrix spike analysis. The recovery appeared to be within the acceptable limits, but data from a water sample is not applicable to the analysis of soil samples. The concentration of spike added and recoveries were not clearly noted in the raw data. A quality assurance summary was not provided.

Duplicate Analysis

A duplicate analysis was not found in the raw data.

Laboratory Control Sample

An independent LCS was not found in the raw data.

Cyanide Analyses

Method Blanks

Data for the cyanide method blank was reported in ug/l on the summary form (page 8). It was not converted to a dry weight basis. Cyanide was not detected in the method blank.

Matrix Spike Recovery

A matrix spike was not found in the raw data.

Duplicate Analysis

A duplicate analysis was not found in the raw data.

Laboratory Control Sample

An independent LCS was not found in the raw data.

Percent Solids

A duplicate and blank were not found in the raw data.

Data Summary Table
Ciba Geigy Plant Site, Glens Falls, NY

Inorganic Analyses
Soil Samples Received: 2/10/92
Sample Delivery Group: 30330

Sample / Analyte	Method Blank Conc. (PPM)	Lab. Reported Conc. (PPM)	QA Validation Reported Conc. Decision		Qualifiers	Footnotes
Sample SB-6 S-1A (Lab #: 153614)		% Solids = 81.2				
Cyanide		14.5	14.5	J	qualify	See Text
Mercury	0.25 U	0.94	0.95	J	qualify	See Text
Sample SB-10 S-1A (Lab #: 153616)		% Solids = 90.9				
Cyanide		20	20.4	J	qualify	See Text
Mercury	0.25 U	0.64	0.64	J	qualify	See Text
Sample SB-12 S-1A (Lab #: 153617)		% Solids = 87.6				
Cyanide		4.1	4.1	J	qualify	See Text
Mercury	0.25 U	1.29	1.29	J	qualify	See Text
Sample SB-15 S-1A (Lab #: 153618)		% Solids = 87.9				
Cyanide		5.0	5.0	J	qualify	See Text
Mercury	0.25 U	0.84	0.84	J	qualify	See Text

SUMMARY OF THE ANALYTICAL DATA VALIDATION
For Samples Collected at the
Ciba Geigy Plant Site, Glens Falls, New York

Soil Inorganic Analyses
Samples Received: February 13, 1992

Sample Delivery Group: 30371
Laboratory Reference Numbers:

SB-3 S1B	153860
SB-11 S1B	153861

Soil samples were received for mercury and cyanide analyses. A complete analytical validation was performed based upon the following parameters:

- Chain of Custody
- Data Completeness
- Holding Times
- Calibration Verification
- Laboratory Control Sample
- Laboratory Blanks
- Field Blanks
- Matrix Spike
- Duplicate Analyses

NV - Detection Limit Results

- Sample Results

* - Indicates that all criteria were met for this parameter.
NV - Indicates that sufficient documentation for validation was not provided

Data Validation Summary

The analytical reports were prepared in accordance with the specifications requested in the December 13, 1991 analysis plan. Items specifically designated for inclusion into the final data package were:

A. Chronology Collection Date and Time
   1. Digestion/Extraction Dates
   2. Analysis Dates and Times
   3. Relevant Holding Times
   4. Collection Dates

B. Methodology
   1. Methods
   2. Reporting Limits (method detection limit)
   3. Instrument Detection Limit (where applicable)
   4. Any clean-up procedures used

C. Calibration Data
   1. Curve coefficients

D. Chain-of-Custody Packaging and Review Documentation
   1. Discussion of abnormalities, inconsistencies
   2. Temperature on Receipt of Sample Cooler

This report format did not follow any of the standard NYS DEC or EPA deliverable requirements. Copies of raw data were included for both inorganic analyses. They were reviewed according to the standard requirements of SW-846 methodologies as amended by the NYS DEC Analytical Service Protocols.

According to the information provided in the sampling and analysis quality assurance plan, the analyses were not required to conform with the NYS DEC ASP quality assurance requirements.

With the exception of sample temperature upon receipt, all of the quality assurance information required in the sampling plan was provided in the analytical report. Deviations from the standard NYS DEC ASP quality assurance requirements are noted below.

Chain of Custody and Sample Tracking

Field originated chain of custody included with the data packages, but copies of internal laboratory custody records were not provided.

Data Completeness

The original requirements for supporting analytical data requested that the laboratory document the temperature of the sample cooler upon receipt. This information was not found in the analytical data packages.

The chain of custody form noted that samples SB-11 S-1B and SB-3 S-1B were also to be analyzed for semivolatile organics. This data was not included in this analytical package.

Sample AW-C3 was included for total phenolic analysis. The case narrative noted that this analysis was canceled due to the holding time being exceeded.

Field Blank

A field blank was not collected with the samples of this delivery group.

Mercury Analyses

Matrix Spike

A water sample from another delivery group was used for the only matrix spike analysis. The recovery appeared to be within the acceptable limits, but data from a water sample is not applicable to the analysis of soil samples. The concentration of spike added and recoveries were not clearly noted in the raw data. A quality assurance summary was not provided.

Duplicate Analysis

A duplicate analysis was not found in the raw data.

Laboratory Control Sample

An independent LCS was not found in the raw data.

Cyanide Analyses

Method Blanks

Data for the cyanide method blank was reported in ug/l on the summary form (page 8). It was not converted to a dry weight basis. Cyanide was not detected in the method blank.

Matrix Spike Recovery

A matrix spike was not found in the raw data.

Duplicate Analysis

A duplicate analysis was not found in the raw data.

Laboratory Control Sample

An independent LCS was not found in the raw data.

Percent Solids

A blank was not found in the raw data.

Data Summary Table
Ciba Geigy Plant Site, Glens Falls, NY

Inorganic Analyses
Soil Samples Received: 2/13/92
Sample Delivery Group: 30371

Sample / Analyte	Method Blank Conc. (PPM)	Lab. Reported Conc. (PPM)	QA Validation Reported Conc.	Decision	Qualifiers	Footnotes
Sample SB-3 S-1B (Lab #: 153860)		% Solids = 72.6				
Cyanide		20.0	19.7	J	qualify	See Text
Mercury	0.25 U	0.88	0.88	J	qualify	See Text
Sample SB-11 S-1B (Lab #: 153861)		% Solids = 77.7				
Cyanide		2	1.9	J	qualify	See Text
Mercury	0.25 U	0.66	0.65	J	qualify	See Text

FOOTNOTES FOR THE INORGANIC TARGET ANALYTE LIST

BLANK QUALIFIERS

1. The value reported is greater than the IDL, but is less than 5 times the concentration of the method (prep) blank. The value is negated (N).

3. The inorganic value reported was greater than 5 times the value in the method (prep) blank and is considered to be "real" (J).

4. This analyte was qualified due to the negative value of the prep blank (J).

5. The value reported is greater than the IDL, but less than 5 times the concentration of the field or trip blank. The value is negated (N).

7. The inorganic value reported was greater than 5 times the value in the field blank and is considered "real" (J).

8. This analyte was qualified due to the negative value of the calibration blank.

9. The inorganic value reported was less than 5 times the value in a calibration blank. The reported value was negated due to probable contamination.

11. The inorganic value reported was greater than 5 times the value in a calibration blank and is considered "real" (J).

12. The result of this sample was qualified due to problem with a blank which was not included in the above footnotes. Refer to the text for discussion.

13. The result of this sample was rejected due to a severe problem with the blank which was not included in the above footnotes. Refer to the text for discussion.

CALIBRATION REQUIREMENTS

15. The calibration used for this analyte could not be followed. All results should be considered tentative until the discrepancy has been resolved.

16. The CLP calibration requirements were not followed for this analyte. The significance of this is discussed in the text (J/R).

17. The midrange cyanide standard was not distilled. All results should be considered estimates (J).

18. The recovery of the initial or continuing calibration standard was outside of the required limit. The analyses should have been terminated and the instrument recalibrated. All data associated with this standard should be considered to be estimated values. See text.

CRDL STANDARD RECOVERIES

20. An **incorrect concentration** of CRDL standard was used for this analysis. Refer to the text for the significance of this on the data.

21. The recovery of the CRDL standard was **< 75%, but > 50%** or **between 121% and 150%**. All low concentrations of analytes are considered estimated.

22. The recovery of the CRDL standard was **less than 50%**. All values for low concentrations of this analyte are highly qualified. Associated data would be rejected according to the EPA HW-2 data validation guidelines if the sample concentration was within the range of +/- the CRDL concentration (A.1.9.3.3).

23. The recovery of the CRDL standard was **greater than 150%** (this footnote is not used if the analyte was not detected). Associated data would be rejected according to the EPA HW-2 data validation guidelines (A.1.9.3.3).

SPIKE RECOVERIES

30. The **CLP required spike concentration was not added** to this sample. Refer to the text for discussion of the effect on the usability of the data.

31. The recovery of the **aqueous predigestion spike was between 30% and 75%**. The results were greater than the IDL. Significant matrix interference may be present. All samples associated with this quality assurance sample have been flagged with the "N" qualifier. The matrix interference associated with them may not be the same as that of the sample chosen for the matrix spike (J).

32. The recovery of the **aqueous** predigestion spike was less than 30%. Significant problems were found with matrix interference. All samples associated with this quality assurance sample have been flagged with the "N" qualifier. The data are unusable. The matrix interference associated with them may not be the same as that of the sample chosen for the matrix spike (R). Associated data would be **rejected** according to the EPA HW-2 data validation guidelines (A.1.9.7.4).

33. The recovery of the **aqueous** predigestion spike was **greater than 125% and less than 150%**, and the sample results were greater than the IDL. This indicates that matrix interference may be present. All samples associated with this quality assurance sample have been flagged with the "N" qualifier. The matrix interference associated with them may not be the same as that of the sample chosen for the matrix spike.

34. The recovery of the **aqueous** predigestion spike was **greater than 150%** and the sample results were greater than the IDL. This indicates that severe matrix interference may be present. All samples associated with this quality assurance sample have been flagged with the "N" qualifier. The matrix interference associated with them may not be the same as that of the sample chosen for the matrix spike. Associated data would be **rejected** according to the EPA HW-2 data validation guidelines (A.1.9.7.4).

35. The recovery of the **soil** predigestion spike was **between 10% and 74%**. Significant matrix interference may be present. All samples associated with this quality assurance sample have been flagged with the "N" qualifier. The matrix interference associated with them may not be the same as that of the sample chosen for the matrix spike (J).

36. The recovery of the **soil** predigestion spike was **less than 10%**. Significant problems were found with matrix interference. All samples associated with this quality assurance sample have been flagged with the "N" qualifier. The data are unusable. The matrix interference associated with them may not be the same as that of the sample chosen for the matrix spike (R). Associated data would be **rejected** according to the EPA HW-2 data validation guidelines (A.1.9.7.5).

37. The recovery of the **soil** predigestion spike was **between 126% and 200%**, and the sample results were greater than the IDL. This indicates that matrix interference may be present. All samples associated with this quality assurance sample have been flagged with the "N" qualifier. The matrix interference associated with them may not be the same as that of the sample chosen for the matrix spike.

38. The recovery of the **soil** predigestion spike was **greater than 200%** and the sample results were greater than the IDL. This indicates that severe matrix interference may be present. All samples associated with this quality assurance sample have been flagged with the "N" qualifier. The matrix interference associated with them may not be the same as that of the sample chosen for the matrix spike. Associated data would be **rejected** according to the EPA HW-2 data validation guidelines (A.1.9.7.4).

39. The required post digestion spike was not analyzed for this element.

40. The recovery of the post digestion spike was less than 30%. Severe matrix interference is present.

41. Significant discrepancies exist between the recoveries of the predigestion and post digestion spikes. Refer to the text for a discussion of the impact of this on the data.

42. Spike data was not included for this analyte.

DUPLICATE ANALYSES

43. The relative per cent difference was **greater than 50% for waters, or greater than 100% for soils** (J).

44. The RPD data was incorrectly reported by the laboratory.

LABORATORY CONTROL SAMPLE

45. The calculations used to determine the percent recovery of the solid LCS could not be verified. The data should be considered tentative until the discrepancy has been resolved.

46. The recovery of the LCS was less than 80% for silver or antimony. A low recovery is not grounds for rejection for these two analytes.

SERIAL DILUTION

48. The laboratory failed to flag this analyte with the "E" qualifier to denote that the serial dilution results did not meet the QC limit.

SAMPLE ANALYSES

50. The raw data included in the report could not be followed. The results of this analysis should be considered tentative until the discrepancy has been resolved.

51. The value reported on FORM I does not appear to agree with that found in the raw data. The result should be considered tentative until the discrepancy has been resolved.

52. The value reported in the raw data has a significant negative drift which could affect the usability of low concentrations of this analyte. All data for low concentrations of this analyte should be considered to be estimated.

53. The analyte has been analyzed by a method which is not routinely used in this concentration range. Refer to the text for a discussion of any impact this may have on the usability of the data.

54. The results for this analyte have been qualified due to the nonconformance with the required holding time limitations.

55. The data for this analyte has been rejected. Refer to the text for discussion.

56. This sample was analyzed for dissolved metals. A dissolved matrix spike, serial dilution and duplicate were not performed. The quality assurance information for these analyses from the total metal data may not apply. Only those footnotes which concern the calibration quality assurance were noted for these samples.

57. The reported detection limit could not be confirmed from the initial calibration used for this analysis. The data was reported in the basis of the concentration of the lowest standard used in the initial calibration.

58. Raw data for this analysis was not found in the report. The data should be considered to be tentative until this is reviewed.

59. The data were qualified for a reason which is detailed in the text.

FURNACE ANALYSES

60. The results of this analyte were qualified because the linear regression of the initial calibration was less than 0.995.

61. The **duplicate injections are outside of the 20% RSD** limits and the sample has **not been rerun** once was required (J).

62. The duplicate injections were reanalyzed and the RPD was still less than 20% (J).

63. The results of the analyte are greater than the IDL, but the recovery of the post digestion spike is less than 40%.

64. The recovery of the post digestion spike is between 10% and 40%. The results of the sample are less than the IDL (UJ).

65. The recovery of the post digestion spike is less than 10% and the sample results are less than the IDL (R).

66. The sample absorbance is less than 50% of the post digestion spike absorbance, and greater than the IDL, and the post digestion spike is outside of the 85% - 115% limits.

67. The sample absorbance is less than 50% of the post digestion spike absorbance, and less than the IDL, and the post digestion spike is outside of the 85% - 115% limits.

68. The method of standard additions was required, but not performed (J).

69. The sample was analyzed by standard additions, but the required spiking concentrations were not used. (J).

70. The correlation coefficient of the method of standard addition was less than 0.995 (J).

71. The analyses were not performed according to CLP methodology. Extensive problems were found and the data should not be used (See text).

DATA VALIDATION CHECKLIST

SUMMARY OF THE ANALYTICAL DATA REVIEW
For the Ciba-Geigy Plant Site
Glens Falls, New York

Volatile & Semivolatile Organic Analyses

Soil Samples Received: November 5th through 13th, 1991

Sample Delivery Group: 148011

Laboratory Reference Numbers of Samples Selected for Review:

SB-10 S1	148801
SB-4 S3	148076
SB-5 S1	148251
SB-6 S1	148479
SB-9 S1	148483
SB-14 S1	148807
SB-15 S1	148813
SB-3 S1	148884

VOLATILE ORGANICS
INITIAL CALIBRATION SUMMARY

Instrument ID: OWAC **Level:** Low
Tune File ID: NR **Acceptable:** NR **Time Requirements Met:** NR
Initial Calibration File ID: CUS020HV **Date:** 11/4/91 **Page:** 377
Associated Samples: 148015 and CUSB002JV

TCL COMPOUND LIST

(%RSDs greater than 30% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
Chloromethane			1,1,2,2-Tetrachloroethane		
Bromomethane			1,2-Dichloropropane		
Vinyl Chloride			Trans-1,3-Dichloropropene		
Chloroethane			Trichloroethene		
Methylene Chloride			Dibromochloromethane		
Acetone			1,1,2-Trichloroethane		
Carbon Disulfide			Benzene		
1,1-Dichloroethene			cis-1,3-Dichloropropene		
1,1-Dichloroethane			2-Chloroethylvinylether		
Trans-1,2-Dichloroethane			Bromoform		
Chloroform			2-Hexanone		
1,2-Dichloroethane			4-Methyl-2-Pentanone	42%	
2-Butanone			Tetrachloroethene		
1,1,1-Trichloroethane			Toluene		
Carbon Tetrachloride			Chlorobenzene		
Vinyl Acetate			Ethylbenzene		
Bromochloromethane			Styrene		
			Total Xylenes		

Surrogates:

CCC's Acceptable: yes	Footnote:
SPCC's Acceptable: yes	Footnote:
All Compounds Average RRF > 0.05: yes	Footnote:
All Compounds %RSD less than 30%: no	Footnote: 15

CALCULATION VERIFICATION: (RRF = Ais/Ax*Cis/Cs)

SPCC:		CCC:	
PPB			
20	* 2.500 =	* 2.500 =	
50	* 1.000 =	* 1.000 =	
100	* 0.500 =	* 0.500 =	
150	* 0.333 =	* 0.333 =	
200	* 0.250 =	* 0.250 =	
AV. RRF =	%RSD = %	AV. RRF =	%RSD = %

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since quant reports were not included.

VOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY

Instrument ID: OWAC
Level: Low
Tune File ID: NR
Acceptable: NR
Time Requirements Met: NR
Calibration File ID: CUS050JHV
Date: 11/9/91
Page: 378
Initial Calibration File ID: CUS020HV
Date: 11/4/91
Page: 377
Associated Samples: 148015 and CUSB002JV

TCL COMPOUND LIST

(%RSDs greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
Chloromethane			1,1,2,2-Tetrachloroethane		
Bromomethane			1,2-Dichloropropane		
Vinyl Chloride			Trans-1,3-Dichloropropene		
Chloroethane			Trichloroethene		
Methylene Chloride			Dibromochloromethane		
Acetone			1,1,2-Trichloroethane		
Carbon Disulfide			Benzene		
1,1-Dichloroethene			cis-1,3-Dichloropropene		
1,1-Dichloroethane			2-Chloroethylvinylether	313%	
Trans-1,2-Dichloroethane			Bromoform	29%	
Chloroform			2-Hexanone		
1,2-Dichloroethane			4-Methyl-2-Pentanone		
2-Butanone			Tetrachloroethene		
1,1,1-Trichloroethane			Toluene		
Carbon Tetrachloride			Chlorobenzene		
Vinyl Acetate	27.7%		Ethylbenzene		
Bromochloromethane			Styrene		
			Total Xylenes		

Surrogates:

CCC's Acceptable:	Footnote:
SPCC's Acceptable:	Footnote:
All Compounds Average RRF > 0.05:	Footnote:
All Compounds %RSD less than 25%:	Footnote:

CALCULATION VERIFICATION: (RRF = Ais/Ax*Cis/Cs)

SPCC:		**CCC:**
PPB		
50	* 1.000 =	* 1.000 =
% Difference:		% Difference:

METHOD BLANK: VBLK (page)

Compound	**ppb**	**CRDL**

Not reviewed, the samples associated with this calibration were not selected for validation.

Overall Assessment and Comments: RF's could not be verified since quant reports were not included.

VOLATILE ORGANICS
INITIAL CALIBRATION SUMMARY

Instrument ID: OWAE **Level:** Low
Tune File ID: NR **Acceptable:** NR **Time Requirements Met:** NR
Initial Calibration File ID: EFX020HV **Date:** 11/11/91 **Page:** 379
Associated Samples: 148017, 148017MS, 148017MSD, EFXB002BV, 148075, 148076, EFXB002CV

TCL COMPOUND LIST

(%RSDs greater than 30% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
Chloromethane			1,1,2,2-Tetrachloroethane		
Bromomethane			1,2-Dichloropropane		
Vinyl Chloride			Trans-1,3-Dichloropropene		
Chloroethane			Trichloroethene		
Methylene Chloride			Dibromochloromethane		
Acetone	27%		1,1,2-Trichloroethane		
Carbon Disulfide			Benzene		
1,1-Dichloroethene			cis-1,3-Dichloropropene		
1,1-Dichloroethane			2-Chloroethylvinylether		
Trans-1,2-Dichloroethane			Bromoform		
Chloroform			2-Hexanone		
1,2-Dichloroethane			4-Methyl-2-Pentanone	42%	
2-Butanone			Tetrachloroethene		
1,1,1-Trichloroethane			Toluene		
Carbon Tetrachloride			Chlorobenzene		
Vinyl Acetate			Ethylbenzene		
Bromochloromethane			Styrene		
			Total Xylenes		

Surrogates:

CCC's Acceptable: yes	Footnote:
SPCC's Acceptable: yes	Footnote:
All Compounds Average RRF > 0.05: yes	Footnote:
All Compounds %RSD less than 30%: no	Footnote: 15

CALCULATION VERIFICATION: (RRF = Ais/Ax*Cis/Cs)

SPCC:		CCC:	
PPB			
20	* 2.500 =	* 2.500 =	
50	* 1.000 =	* 1.000 =	
100	* 0.500 =	* 0.500 =	
150	* 0.333 =	* 0.333 =	
200	* 0.250 =	* 0.250 =	
AV. RRF =	%RSD = %	AV. RRF =	%RSD = %

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since quant reports were not included.

VOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY

Instrument ID: OWAE **Level:** Low
Tune File ID: NR **Acceptable:** NR **Time Requirements Met:** NR
Calibration File ID: EFX050BHV **Date:** 11/12/91 **Page:** 380
Initial Calibration File ID: EFX020HV **Date:** 11/11/91 **Page:** 379
Associated Samples: 148017, 148017MS, 148017MSD, EFXB002BV

TCL COMPOUND LIST

(%RSDs greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
Chloromethane			1,1,2,2-Tetrachloroethane		
Bromomethane			1,2-Dichloropropane		
Vinyl Chloride			Trans-1,3-Dichloropropene		
Chloroethane			Trichloroethene		
Methylene Chloride			Dibromochloromethane		
Acetone	25.5%		1,1,2-Trichloroethane		
Carbon Disulfide			Benzene		
1,1-Dichloroethene			cis-1,3-Dichloropropene		
1,1-Dichloroethane			2-Chloroethylvinylether	313%	
Trans-1,2-Dichloroethane			Bromoform	29%	
Chloroform			2-Hexanone		
1,2-Dichloroethane			4-Methyl-2-Pentanone		
2-Butanone			Tetrachloroethene		
1,1,1-Trichloroethane			Toluene		
Carbon Tetrachloride			Chlorobenzene		
Vinyl Acetate	27.7%		Ethylbenzene		
Bromochloromethane			Styrene		
			Total Xylenes		

Surrogates:

CCC's Acceptable:	Footnote:
SPCC's Acceptable:	Footnote:
All Compounds Average RRF > 0.05:	Footnote:
All Compounds %RSD less than 25%:	Footnote:

CALCULATION VERIFICATION: (RRF = Ais/Ax*Cis/Cs)

SPCC:		CCC:
PPB		
50	* 1.000 =	* 1.000 =
% Difference:		% Difference:

METHOD BLANK: VBLK EFXB002BV (page 371)

Compound	ppb	CRDL
Acetone	6J	10
4-methyl-2-pentanone	2J	10

Overall Assessment and Comments: The RF's could not be verified since the quant reports were not included with the data package.

VOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY

Instrument ID: OWAE **Level:** Low
Tune File ID: NR **Acceptable:** NR **Time Requirements Met:** NR
Calibration File ID: EFX050CHV **Date:** 11/12/91 **Page:** 382
Initial Calibration File ID: EFX020HV **Date:** 11/11/91 **Page:** 379
Associated Samples: EFXB002BV, 148075, 148076 (SB-4 S3), EFXB002CV

TCL COMPOUND LIST

(%RSDs greater than 25% and non SPCC RRFs less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
Chloromethane			1,1,2,2-Tetrachloroethane	25.5%	
Bromomethane			1,2-Dichloropropane		
Vinyl Chloride			Trans-1,3-Dichloropropene		
Chloroethane			Trichloroethene		
Methylene Chloride			Dibromochloromethane		
Acetone	39%		1,1,2-Trichloroethane		
Carbon Disulfide			Benzene		
1,1-Dichloroethene			cis-1,3-Dichloropropene		
1,1-Dichloroethane			2-Chloroethylvinylether		
Trans-1,2-Dichloroethane			Bromoform		
Chloroform			2-Hexanone		
1,2-Dichloroethane			4-Methyl-2-Pentanone		
2-Butanone			Tetrachloroethene		
1,1,1-Trichloroethane			Toluene		
Carbon Tetrachloride			Chlorobenzene		
Vinyl Acetate			Ethylbenzene		
Bromochloromethane			Styrene		
			Total Xylenes		

Surrogates:

CCC's Acceptable: yes	Footnote:
SPCC's Acceptable: yes	Footnote:
All Compounds Average RRF > 0.05: yes	Footnote:
All Compounds %RSD less than 25%: no	Footnote: 15

CALCULATION VERIFICATION: (RRF = Ais/Ax*Cis/Cs)

SPCC:		CCC:
PPB		
50	* 1.000 =	* 1.000 =
% Difference:		% Difference:

METHOD BLANK: VBLK EFXB002BV (page 371)

Compound	ppb	CRDL
Acetone	6J	10
4-methyl-2-pentanone	2J	10

Overall Assessment and Comments: The RF's could not be verified since the quant reports were not included with the data package.

VOLATILE ORGANICS
INITIAL CALIBRATION SUMMARY

Instrument ID: OWAC
Level: Low
Tune File ID: NR
Acceptable: NR
Time Requirements Met: NR
Initial Calibration File ID: CUS020HV
Date: 11/11/91
Page: 383
Associated Samples: 184483 (SB-9 S1), CUWB002FV

TCL COMPOUND LIST

(%RSDs greater than 30% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
Chloromethane			1,1,2,2-Tetrachloroethane		
Bromomethane			1,2-Dichloropropane		
Vinyl Chloride			Trans-1,3-Dichloropropene		
Chloroethane			Trichloroethene		
Methylene Chloride			Dibromochloromethane		
Acetone			1,1,2-Trichloroethane		
Carbon Disulfide			Benzene		
1,1-Dichloroethene			cis-1,3-Dichloropropene		
1,1-Dichloroethane			2-Chloroethylvinylether		
Trans-1,2-Dichloroethane			Bromoform		
Chloroform			2-Hexanone		
1,2-Dichloroethane			4-Methyl-2-Pentanone		
2-Butanone			Tetrachloroethene		
1,1,1-Trichloroethane			Toluene		
Carbon Tetrachloride			Chlorobenzene		
Vinyl Acetate			Ethylbenzene		
Bromochloromethane			Styrene		
			Total Xylenes		

Surrogates:

CCC's Acceptable: yes	Footnote:
SPCC's Acceptable: yes	Footnote:
All Compounds Average RRF > 0.05: yes	Footnote:
All Compounds %RSD less than 30%: yes	Footnote:

CALCULATION VERIFICATION: (RRF = Ais/Ax*Cis/Cs)

SPCC:		CCC:	
PPB			
20	* 2.500 =	* 2.500 =	
50	* 1.000 =	* 1.000 =	
100	* 0.500 =	* 0.500 =	
150	* 0.333 =	* 0.333 =	
200	* 0.250 =	* 0.250 =	
AV. RRF =	%RSD = %	AV. RRF =	%RSD = %

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since quant reports were not included.

VOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY

Instrument ID: OWAC **Level:** Low
Tune File ID: NR **Acceptable:** NR **Time Requirements Met:** NR
Calibration File ID: CUS050JHV **Date:** 11/9/91 **Page:** 378
Initial Calibration File ID: CUS020HV **Date:** 11/11/91 **Page:** 383
Associated Samples: 184483 (SB-9 S1), CUWB002FV

TCL COMPOUND LIST

(%RSDs greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
Chloromethane	30%		1,1,2,2-Tetrachloroethane		
Bromomethane			1,2-Dichloropropane		
Vinyl Chloride			Trans-1,3-Dichloropropene		
Chloroethane			Trichloroethene		
Methylene Chloride	35%		Dibromochloromethane		
Acetone			1,1,2-Trichloroethane		
Carbon Disulfide	37%		Benzene		
1,1-Dichloroethene			cis-1,3-Dichloropropene		
1,1-Dichloroethane			2-Chloroethylvinylether	313%	
Trans-1,2-Dichloroethane			Bromoform	29%	
Chloroform			2-Hexanone		
1,2-Dichloroethane			4-Methyl-2-Pentanone		
2-Butanone			Tetrachloroethene		
1,1,1-Trichloroethane			Toluene		
Carbon Tetrachloride			Chlorobenzene		
Vinyl Acetate	27.7%		Ethylbenzene		
Bromochloromethane			Styrene		
			Total Xylenes		

Surrogates:

CCC's Acceptable: yes Footnote:
SPCC's Acceptable: yes Footnote:
All Compounds Average RRF > 0.05: yes Footnote:
All Compounds %RSD less than 25%: no Footnote: 15

CALCULATION VERIFICATION: (RRF = Ais/Ax*Cis/Cs)

SPCC: **CCC:**
PPB

50 * 1.000 = * 1.000 =

% Difference: % Difference:

METHOD BLANK: VBLK CUWB002FV (page 373)

Compound	ppb	CRDL
Methylene Chloride	1J	5
Acetone	5J	10

Overall Assessment and Comments: RF's could not be verified since quant reports were not included.

SEMIVOLATILE ORGANICS
INITIAL CALIBRATION SUMMARY
(Page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR **Acceptable:** NR **Time Requirements Met:** NR
Initial Calibration File ID: HBD020BS **Date:** 12/08/91 **Page:** 410
Associated Samples: 148015MS, 148015MSD, 148813 (SB-15 S1)

TCL COMPOUND LIST

(%RSDs > 30% for CCC, all other TCL >35%, RRF's < 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene *		
Phenol *			2,4-Dinitrophenol #		
Analine			4-Nitrophenol #		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene *			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine *		
N-Nitroso-Di-n-Propylamine #			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol *		
Isophorone			Phenanthrene		
2-Nitrophenol *			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene *		
bis(2-Chloroethoxy)Methane			Benzidine		
2,4-Dichlorophenol *			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine	36%	
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene *			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol *			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate *		
Hexachlorocyclopentadiene #			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol *			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene *		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes **Footnote:**
SPCC's Acceptable: yes **Footnote:**
All Compounds Average RRF > 0.05: yes **Footnote:**
All Compounds %RSD less than 35%: no **Footnote:** 15

SEMIVOLATILE ORGANICS
INITIAL CALIBRATION SUMMARY
(Page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

Compound: PPB	SPCC	CCC:
20	* 2.000 =	* 2.000 =
50	* 0.800 =	* 0.800 =
80	* 0.500 =	* 0.500 =
120	* 0.333 =	* 0.333 =
160	* 0.250 =	* 0.250 =
	AV. RRF = %RSD =	AV. RRF = %RSD =

OVERALL ASSESSMENT AND COMMENTS: The RF's could not be verified since copies of the quant reports were not included with the data packages.

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR — **Acceptable:** NR — **Time Requirements Met:** NR
Calibration File ID: HBD050BS — **Date:** 12/08/91 — **Page:** 412
Initial Calibration File ID: HBD020BS — **Date:** 12/08/91 — **Page:** 410
Associated Samples: 148015MS, 148015MSD

TCL COMPOUND LIST

(%Diff greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene		
Phenol			2,4-Dinitrophenol		
Analine			4-Nitrophenol		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether	26%		4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine		
N-Nitroso-Di-n-Propylamine			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol		
Isophorone			Phenanthrene		
2-Nitrophenol			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene		
bis(2-Chloroethoxy)Methane			Benzidine	32%	0.047
2,4-Dichlorophenol			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine	32%	
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate		
Hexachlorocyclopentadiene			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes — Footnote:
SPCC's Acceptable: yes — Footnote:
All Compounds Average RRF > 0.05: no — Footnote: 17
All Compounds %RSD less than 25%: no — Footnote: 15

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

SPCC:		**CCC:**
PPB		
50	* 0.800 =	* 0.800 =
SPCC:		**CCC:**
% Difference:		**% Difference:**

METHOD BLANK: HB1110I9S (Page 391)

Compound	**ppb**	**CRDL**
di-n-butyl phthalate	68J	330

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since copies of the quant reports were not included in the data package.

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR — **Acceptable:** NR — **Time Requirements Met:** NR
Calibration File ID: HBD050CBS — **Date:** 12/23/91 — **Page:** 413
Initial Calibration File ID: HBD020BS — **Date:** 12/08/91 — **Page:** 410
Associated Samples: 148801

TCL COMPOUND LIST

(%Diff greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene		
Phenol			2,4-Dinitrophenol		
Analine			4-Nitrophenol		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether	26%		4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine		
N-Nitroso-Di-n-Propylamine			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol		
Isophorone			Phenanthrene		
2-Nitrophenol			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene		
bis(2-Chloroethoxy)Methane			Benzidine	41%	0.041
2,4-Dichlorophenol			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine	40%	
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate		
Hexachlorocyclopentadiene			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes — Footnote:
SPCC's Acceptable: yes — Footnote:
All Compounds Average RRF > 0.05: no — Footnote: 17
All Compounds %RSD less than 25%: no — Footnote: 15

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

SPCC: **CCC:**
PPB

50 * 0.800 = * 0.800 =

SPCC: **CCC:**

% Difference: **% Difference:**

METHOD BLANK: HB1117M8I2S (Page 401)

Compound	ppb	CRDL
bis(2-ethylhexyl)phthalate	68J	330

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since copies of the quant reports were not included in the data package.

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR — **Acceptable:** NR — **Time Requirements Met:** NR
Calibration File ID: HBD050AHBS — **Date:** 12/30/91 — **Page:** 414
Initial Calibration File ID: HBD020BS — **Date:** 12/08/91 — **Page:** 410
Associated Samples: 148813 (SB-15 S1)

TCL COMPOUND LIST

(%Diff greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene		
Phenol			2,4-Dinitrophenol		
Analine			4-Nitrophenol		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline	33%	
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine		
N-Nitroso-Di-n-Propylamine			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol		
Isophorone			Phenanthrene		
2-Nitrophenol			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene		
bis(2-Chloroethoxy)Methane			Benzidine	56%	0.031
2,4-Dichlorophenol			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine		
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate		
Hexachlorocyclopentadiene			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes Footnote:
SPCC's Acceptable: yes Footnote:
All Compounds Average RRF > 0.05: no Footnote: 17
All Compounds %RSD less than 25%: no Footnote: 15

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

SPCC:		CCC:	
PPB			
50	* 0.800 =		* 0.800 =
SPCC:		CCC:	
% Difference:		% Difference:	

METHOD BLANK: HB1117M8I2S (Page 401)

Compound	ppb	CRDL
bis (2ethylhexyl)phthalate	160J	330

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since copies of the quant reports were not included in the data package.

SEMIVOLATILE ORGANICS
INITIAL CALIBRATION SUMMARY
(Page 1 of 2)

Instrument ID: Unknown
Tune File ID: NR **Acceptable:** NR **Time Requirements Met:** NR
Initial Calibration File ID: HBE020BS **Date:** Unknown **Page:** 416
Associated Samples: 148807, 148251, 148479, 148483, 148884

TCL COMPOUND LIST

(%RSDs > 30% for CCC, all other TCL >35%, RRF's < 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene *		
Phenol *			2,4-Dinitrophenol #		
Analine			4-Nitrophenol #		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene *			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine *		
N-Nitroso-Di-n-Propylamine #			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol *		
Isophorone			Phenanthrene		
2-Nitrophenol *			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene *		
bis(2-Chloroethoxy)Methane			Benzidine		
2,4-Dichlorophenol *			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine		
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene *			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol *			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate *		
Hexachlorocyclopentadiene #			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol *			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene *		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes **Footnote:**
SPCC's Acceptable: yes **Footnote:**
All Compounds Average RRF > 0.05: yes **Footnote:**
All Compounds %RSD less than 35%: yes **Footnote:**

SEMIVOLATILE ORGANICS
INITIAL CALIBRATION SUMMARY
(Page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

Compound:	**SPCC**	**CCC:**
PPB		
20	* 2.000 =	* 2.000 =
50	* 0.800 =	* 0.800 =
80	* 0.500 =	* 0.500 =
120	* 0.333 =	* 0.333 =
160	* 0.250 =	* 0.250 =
	AV. RRF = %RSD =	AV. RRF = %RSD =

OVERALL ASSESSMENT AND COMMENTS: The RF's could not be verified since copies of the quant reports were not included with the data packages.

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR — **Acceptable:** NR — **Time Requirements Met:** NR
Calibration File ID: HBE050DBS — **Date:** 1/06/92 — **Page:** 417
Initial Calibration File ID: Unknown — **Date:** 1/03/92 — **Page:** 416
Associated Samples: 148807 (SB-14 S1)

TCL COMPOUND LIST

(%Diff greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene		
Phenol			2,4-Dinitrophenol		
Analine			4-Nitrophenol		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine		
N-Nitroso-Di-n-Propylamine			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol		
Isophorone			Phenanthrene		
2-Nitrophenol			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene		
bis(2-Chloroethoxy)Methane			Benzidine		
2,4-Dichlorophenol			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine		
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate		
Hexachlorocyclopentadiene			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes Footnote:
SPCC's Acceptable: yes Footnote:
All Compounds Average RRF > 0.05: yes Footnote:
All Compounds %RSD less than 25%: yes Footnote:

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

SPCC: PPB		CCC:	
50	* 0.800 =		* 0.800 =
SPCC:		CCC:	
% Difference:		% Difference:	

METHOD BLANK: HB1117M8I2S (Page 401)

Compound	ppb	CRDL
bis (2-ethylhexyl)phthalate	160J	330

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since copies of the quant reports were not included in the data package.

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR — **Acceptable:** NR — **Time Requirements Met:** NR
Calibration File ID: HBE050FBS — **Date:** 1/07/92 — **Page:** 418
Initial Calibration File ID: Unknown — **Date:** 1/03/92 — **Page:** 416
Associated Samples: 148251 (SB-5 S1)

TCL COMPOUND LIST

(%Diff greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene		
Phenol			2,4-Dinitrophenol		
Analine			4-Nitrophenol		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine		
N-Nitroso-Di-n-Propylamine			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol		
Isophorone			Phenanthrene		
2-Nitrophenol			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene		
bis(2-Chloroethoxy)Methane			Benzidine		
2,4-Dichlorophenol			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine		
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate		
Hexachlorocyclopentadiene			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes Footnote:
SPCC's Acceptable: yes Footnote:
All Compounds Average RRF > 0.05: yes Footnote:
All Compounds %RSD less than 25%: yes Footnote:

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

SPCC: PPB		**CCC:**
50	* 0.800 =	* 0.800 =
SPCC:		**CCC:**
% Difference:		**% Difference:**

METHOD BLANK:

Compound	**ppb**	**CRDL**

A method blank was not found associated with this sample.

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since copies of the quant reports were not included in the data package.

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR — **Acceptable:** NR — **Time Requirements Met:** NR
Calibration File ID: HBE050FBS — **Date:** 1/07/92 — **Page:** 419
Initial Calibration File ID: Unknown — **Date:** 1/03/92 — **Page:** 416
Associated Samples: 148479 (SB-6 S1)

TCL COMPOUND LIST

(%Diff greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene		
Phenol			2,4-Dinitrophenol		
Analine			4-Nitrophenol		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine		
N-Nitroso-Di-n-Propylamine			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol		
Isophorone			Phenanthrene		
2-Nitrophenol			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene		
bis(2-Chloroethoxy)Methane			Benzidine		
2,4-Dichlorophenol			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine		
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate		
Hexachlorocyclopentadiene			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes Footnote:
SPCC's Acceptable: yes Footnote:
All Compounds Average RRF > 0.05: yes Footnote:
All Compounds %RSD less than 25%: yes Footnote:

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

SPCC:		CCC:	
PPB			
50	* 0.800 =		* 0.800 =
SPCC:		CCC:	
% Difference:		% Difference:	

METHOD BLANK:

Compound	ppb	CRDL
Bis (2-ethylhexyl)phthalate	150J	330

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since copies of the quant reports were not included in the data package.

This is the same continuing calibration as that associated with the previous sample (Lab #: 148251).

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR — **Acceptable:** NR — **Time Requirements Met:** NR
Calibration File ID: HBE050HBS — **Date:** 1/08/92 — **Page:** 423
Initial Calibration File ID: Unknown — **Date:** 1/03/92 — **Page:** 416
Associated Samples: 148483 (SB-9 S1)

TCL COMPOUND LIST
(%Diff greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene		
Phenol			2,4-Dinitrophenol		
Analine			4-Nitrophenol		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine		
N-Nitroso-Di-n-Propylamine			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol		
Isophorone			Phenanthrene		
2-Nitrophenol			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene		
bis(2-Chloroethoxy)Methane			Benzidine		
2,4-Dichlorophenol			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine		
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate		
Hexachlorocyclopentadiene			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes Footnote:
SPCC's Acceptable: yes Footnote:
All Compounds Average RRF > 0.05: yes Footnote:
All Compounds %RSD less than 25%: yes Footnote:

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

SPCC: PPB		CCC:	
50	* 0.800 =		* 0.800 =
SPCC:		**CCC:**	
% Difference:		**% Difference:**	

METHOD BLANK: HB1231A9S (Page 397)

Compound	ppb	CRDL
bis (2-ethylhexyl)phthalate	150J	300

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since copies of the quant reports were not included in the data package.

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR — **Acceptable:** NR — **Time Requirements Met:** NR
Calibration File ID: HBE050KBS — **Date:** 1/09/92 — **Page:** 426
Initial Calibration File ID: Unknown — **Date:** 1/03/92 — **Page:** 416
Associated Samples: 148884 (SB-3 S1)

TCL COMPOUND LIST

(%Diff greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene		
Phenol			2,4-Dinitrophenol		
Analine			4-Nitrophenol		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine		
N-Nitroso-Di-n-Propylamine			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol		
Isophorone			Phenanthrene		
2-Nitrophenol			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid			Fluoranthene		
bis(2-Chloroethoxy)Methane			Benzidine		
2,4-Dichlorophenol			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine		
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate		
Hexachlorocyclopentadiene			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes Footnote:
SPCC's Acceptable: yes Footnote:
All Compounds Average RRF > 0.05: yes Footnote:
All Compounds %RSD less than 25%: yes Footnote:

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

SPCC: PPB		CCC:	
50	* 0.800 =		* 0.800 =
SPCC:		CCC:	
% Difference:		% Difference:	

METHOD BLANK: HB1231A9S (Page 405)

Compound	ppb	CRDL
bis (2-ethylhexyl)phthalate	150J	300

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since copies of the quant reports were not included in the data package.

SUMMARY OF THE ANALYTICAL DATA VALIDATION
For Samples Collected at the
Ciba Geigy Plant Site, Glens Falls, New York

Soil Semivolatile Analysis
Samples Received: November 5th through 13th, 1991

Sample Delivery Group: 148011
Laboratory Reference Numbers:

SB-10 S1	148801
SB-4 S3	148076
SB-5 S1	148251
SB-6 S1	148479
SB-9 S1	148483
SB-14 S1	148807
SB-15 S1	148813
SB-3 S1	148884

Soil samples were received for volatile and semivolatile organic analyses for the TCL analyte list. The analyses were performed according to the requirements of Method 8270 of SW-846. The samples noted above were selected for review from the block of samples comprising the sample delivery group. A complete analytical data validation would normally include a review of the following items:

	- Chain of Custody
	- Data Completeness
NV	- GC/MS Tuning
	- Holding Times
	- Calibrations
	- Laboratory Blanks
	- Field Blanks
	- Surrogate Recoveries
NV	- Internal Standard Recoveries
	- Matrix Spike / Matrix Spike Duplicate
	- Blank Spike
NV	- Compound Identification
NV	- Compound Quantitation
	- Method Detection Limits

* - Indicates that all criteria were met for this parameter.
NV - Indicates that sufficient documentation for validation was not provided

Data Validation Summary

The analytical reports were prepared in accordance with the specifications requested in the December 13, 1991 analysis plan. Items specifically designated for inclusion into the final data package were:

A. Chronology Collection Date and Time
   1. Digestion/Extraction Dates
   2. Analysis Dates and Times
   3. Relevant Holding Times
   4. Collection Dates

B. Methodology
   1. Methods
   2. Reporting Limits (method detection limit)
   3. Instrument Detection Limit (where applicable)
   4. Any clean-up procedures used

C. Calibration Data
   1. Curve coefficients

D. Chain-of-Custody Packaging and Review Documentation
   1. Discussion of abnormalities, inconsistencies
   2. Temperature on Receipt of Sample Cooler

This report format did not follow any of the standard NYS DEC or EPA deliverable requirements and much of the raw data was not required to be included with the data packages. As a result, the organic data could technically not be fully validated.

The data was reviewed to the fullest extent possible within the limits of the supporting documentation. Specific items which could not be reviewed included:

GC/MS Tunes
Reconstructed Ion Chromatograms (samples and standards)
Quant Reports (samples and standards)
Internal Standard Areas
Spectra
Non-target volatile and semivolatile organics

These were flagged with the "NV" notations on the first page of this summary text.

No significant nonconformances were found during the data review which would affect the usability of the data with the following exception:

The case narrative noted that several semivolatile organics in... surrogate recoveries less than the quality control limits of Method ... 846. These samples were reextracted and reanalyzed outside of the ... DEC required holding times. These samples are discussed in detail in the section on holding times.

Items which were reviewed during the data validation are discussed in more detail below

Chain of Custody and Sample Tracking

Field originated chain of custody included with the data packages, but copies of internal laboratory custody records were not provided.

Data Completeness

A total of eleven samples were originally selected for an analytical review. Samples were only analyzed by GC/MS if the GC screens indicated the possible presence of volatile or semivolatile compounds.

Of those chosen, only samples **SB-4 S3 and SB-9 S1** had failed the volatile organic screen. The field blank received on November 13th originally did not pass the screening criteria, but no target volatile compounds were detected when the sample was analyzed by GC/MS. Only the data for these three samples was included in the data review summary table.

Sample SB-4 S3 was noted in the summary forms as passing both the volatile and semivolatile organic screens. Volatile organics for this sample still appeared to have been analyzed by GC/MS. Only a low concentration of acetone was detected (14B).

Samples SB-8 S1, SB-10 S2, and **SB14 S6** were originally selected for review, but all passed both the volatile and semivolatile screens. As a result, the GC/MS analyses were not performed. Data for these samples was not included in the data validation summary table.

Sample SB-10 S-2 was noted in the summary form (page 28) as failing the semivolatile GC/MS screen, but a GC/MS analysis was not found for this sample. Sample SB-10 S3 which the summary forms had indicated as passing the semivolatile screen was analyzed for semivolatile organics by GC/MS.

The original requirements for supporting analytical data requested that the laboratory document the temperature of the sample cooler upon receipt. This information was not found in the analytical data packages.

VOLATILE ORGANICS

Holding Times

The three samples reviewed were analyzed within 7 days of receipt by the laboratory.

Calibrations

Only the calibration summary forms were required to be submitted with the analytical report. It was not possible to validate the RF's since the quant reports were not included.

Several compounds in addition to those of the target compound list were included in the calibration standards. These were not included on the laboratory analytical report forms or in the data validation worksheets.

Surrogate Recoveries

All surrogate recoveries were within the acceptable range.

Matrix Spike / Matrix Spike Duplicate

Sample 147017 was used for the MS/MSD. This sample did not appear to be from this sample delivery group, and the recoveries may not be applicable to the samples collected at this site. The amount of spike added was noted in total ug on the spike summary form. Spike additions are generally reported as concentrations. All spike recoveries and RPD's were within the acceptable range.

Method Blanks

A summary of method blank data was included in the analytical report. The method blanks associated with the two volatile organic samples analyzed by GC/MS were reviewed. Only low concentrations of acetone and methylene chloride were detected.

Trip and Field Blanks

Trip and field blanks were collected on each day of sampling. They were screened for volatile organics, but not analyzed by GC/MS unless they failed the screen criteria.

All field and trip blanks collected on the sampling dates associated with samples SB-4 S3 (11/6) and SB-9 S1 (11/8) passed the screening criteria.

The field blank collected on November 13th originally failed the screening criteria. It was analyzed by GC/MS on 11/20 and no TCL target compounds were detected.

Sample Results

Only low concentrations of acetone and / or methylene chloride were detected in the two samples chosen for review. Both of these compounds were negated according to the standard EPA data validation criteria.

SEMIVOLATILE ORGANICS

Holding Times

The NYS DEC has established a 5 day holding time to extraction and requires that the samples to be analyzed within 40 days of validated time of sample receipt.

The analytical reports indicate that the semivolatile organics were originally analyzed within the required holding time, but that a re-extraction and reanalysis was required due to poor surrogate recoveries. Since the original data was not included with the analytical report, it is not possible to verify the holding times of the original analysis.

Samples **SB-5 S1**, **SB-6 S1**, **SB-9 S1**, and **SB-3 S1** were re-extracted approximately 45 days after receipt and analyzed approximately one week after re-extraction. Samples SB-14 S1 and SB-15 S1 were extracted within the required 7 day holding time, but analyzed approximately 50 days after extraction. Low concentrations of semivolatile organics may have been overlooked in these samples.

Matrix Spike / Matrix Spike Duplicate

Sample 147015 was used for the MS/MSD. This sample did not appear to be from this sample delivery group, and the recoveries may not be applicable to the samples collected at this site. The amount of spike added was noted in total ug on the spike summary form. Spike additions are generally reported as concentrations. All spike recoveries and RPD's were within the acceptable range.

Calibrations

Only the calibration summary forms were required to be submitted with the analytical report. It was not possible to validate the RF's since the quant reports were not included.

Several compounds in addition to those of the target compound list were included in the calibration standards. These were not included on the laboratory analytical report forms or in the data validation worksheets.

The date, time and instrument associated with the initial calibration on page 416 were not reported on the laboratory's summary form.

Method Blanks

Only low concentrations of phthalates were detected in the method blanks associated with the samples. The method blanks are summarized in the data validation worksheets and are qualified according to standard EPA data validation procedures in the data validation summary table.

A method blank was not found associated with sample SB-5 S1 (Lab #: 148251). Only a low concentration of bis(2-ethylhexyl)phthalate (100JB) was detected in this sample. This is not significant in the end use of the data. The laboratory has not been asked to supply the missing blank data.

Sample Results

Samples **SB-5 S1**, **SB-6 S1**, **SB-9 S1**, and **SB-3 S1** were re-extracted approximately 45 days after receipt and analyzed approximately one week after re-extraction. Samples SB-14 S1 and SB-15 S1 were extracted within the required 7 day holding time, but analyzed approximately 50 days after extraction. Low concentrations of semivolatile organics may have been overlooked in these samples.

Data Summary Table
Ciba Geigy Plant Site, Glens Falls, NY

Volatile and Semivolatile Organic Analyses
Soil Samples Received: 11/5 through 11/13/91
Sample Delivery Group: 148011

Sample / Analyte	Method Blank Conc. (PPB)	Lab. Reported Conc. (PPB)	QA Validation Reported Conc. Decision	Qualifiers	Footnotes
Field Blank Received on 11/13 (Lab #: 148882)					
Volatile Organics					
None Detected					
Sample SB-10 S1 (Lab #: 148801)					
Semivolatile Organics					
1,2,4-trichlorobenzene	330 U	110 J			
hexachlorobenzene	330 U	190 J			
1,2-dichlorobenzene	330 U	120 J			
1,4-dichlorobenzene	330 U	290 J			
3,3'-dichlorobenzene	330 U	1,900			
fluoranthene	330 U	78 J			
nitrobenzene	330 U	280 J			
bis (2-ethylhexyl) phthalate	160 J	460 B		negate	1
pyrene	330 U	190 J			
phenol	330 U	89 J			
Sample SB-4 S3 (Lab#: 148076)					
Volatile Organics					
Acetone	3 J	14 B		negate	1
Sample SB-5 S1 (Lab #: 148251)	Extracted 11/12 and 12/31 Analyzed on 12/12 and 1/7				
Semivolatile Organics					
bis (2-ethylhexyl) phthalate	NR	100 JB		see text	
Sample SB-6 S1 (Lab #: 148479)					
Semivolatile Organics	Extracted 11/13 and 12/31 Analyzed on 12/12 and 1/7				
bis (2-ethylhexyl) phthalate	150 J	86 JB		negate	1

Sample SB-9 S1 (Lab #: 148483)

Volatile Organics				
Methylene Chloride	1 J	2 JB	negate	1
Acetone	5 J	5 JB	negate	1
Semivolatile Organics	Extracted 11/13 and 12/31 Analyzed on 12/12 and 1/8			
bis (2-ethylhexyl) phthalate	150 J	130 JB	negate	1
benzyl butyl phthalate	330 U	79 J		
benzo(a)anthracene	330 U	68 J		
benzo(b)fluoranthene	330 U	65 J		
phenanthrene	330 U	61 J		
pyrene	330 U	71 J		

Sample SB-14 S-1

Semivolatile Organics	Sample was extracted on 11/17 and analyzed on 12/12 and 1/6			
bis (2-ethylhexyl) phthalate	160 J	520 B	negate	1
dimethyl phthalate	330 U	240 J		
Benzo(a)anthracene	330 U	98 J		
benzo(a)pyrene	330 U	130 J		
benzo(b)fluoranthene	330 U	130 J		
benzo(k)fluoranthene	330 U	90 J		
chrysene	330 U	99 J		
benzo(ghi)perylene	330 U	170 J		
dibenzo(ah)anthracene	330 U	130 J		
indeno(1,2,3-cd)pyrene	330 U	150 J		

Sample SB-15 S1 (Lab #: 148813)

Semivolatile Organics	Sample was extracted on 11/17 and analyzed on 12/12 and 12/30			
Fluoranthene	330 U	240 J		
bis (2-ethylhexyl) phthalate	160 J	960 B	negate	1
dimethyl phthalate	330 U	1,900		
Benzo(a)anthracene	330 U	110 J		
benzo(a)pyrene	330 U	67 J		
benzo(b)fluoranthene	330 U	79 J		
benzo(k)fluoranthene	330 U	71 J		
chrysene	330 U	110 J		
phenanthrene	330 U	270 J		
pyrene	330 U	190 J		

Sample SB-3 S1 (Lab #: 148884)

Semivolatile Organics	Sample was extracted on 11/15 and 12/31 and analyzed 1/10			
Fluoranthene	330 U	100 J		
benzo(b)fluoranthene	330 U	110 J		
pyrene	330 U	98 J		

SUMMARY OF THE ANALYTICAL DATA VALIDATION
For Samples Collected at the
Ciba Geigy Plant Site, Glens Falls, New York

Soil Semivolatile Analyses
Samples Received: February 10, 1992

Sample Delivery Group: 30330
Laboratory Reference Numbers:

SB-6 S1A	153614
SB-6 S2A	153615

Soil samples were received for semivolatile organic analyses for the TCL analyte list. The analyses were performed according to the requirements of Method 8270 of SW-846. The samples noted above were selected for review from the block of samples comprising the sample delivery group. A complete analytical data validation would normally include a review of the following items:

*	- Chain of Custody
	- Data Completeness
NV	- GC/MS Tuning
*	- Holding Times
*	- Calibrations
*	- Laboratory Blanks
	- Field Blanks
*	- Surrogate Recoveries
NV	- Internal Standard Recoveries
	- Matrix Spike / Matrix Spike Duplicate
	- Blank Spike
NV	- Compound Identification
NV	- Compound Quantitation
NV	- Method Detection Limits

* - Indicates that all criteria were met for this parameter.
NV - Indicates that sufficient documentation for validation was not provided

Data Validation Summary

The analytical reports were prepared in accordance with the specifications requested in the December 13, 1991 analysis plan. Items specifically designated for inclusion into the final data package were:

A. Chronology Collection Date and Time
   1. Digestion/Extraction Dates
   2. Analysis Dates and Times
   3. Relevant Holding Times
   4. Collection Dates

B. Methodology
   1. Methods
   2. Reporting Limits (method detection limit)
   3. Instrument Detection Limit (where applicable)
   4. Any clean-up procedures used

C. Calibration Data
   1. Curve coefficients

D. Chain-of-Custody Packaging and Review Documentation
   1. Discussion of abnormalities, inconsistencies
   2. Temperature on Receipt of Sample Cooler

This report format did not follow any of the standard NYS DEC or EPA deliverable requirements and much of the raw data was not required to be included with the data packages. As a result, the organic data could technically not be fully validated.

The data was reviewed to the fullest extent possible within the limits of the supporting documentation. Specific items which could not be reviewed included:

GC/MS Tunes
Reconstructed Ion Chromatograms (samples and standards)
Quant Reports (samples and standards)
Internal Standard Areas
Spectra
Non-target semivolatile organics

These were flagged with the "NV" notations on the first page of this summary text.

No significant nonconformances were found during the data review which would affect the usability of the data with the following exception:

Data for a matrix spike and matrix spike duplicate were not included with this sample delivery group. These two samples had been previously analyzed beyond the required holding time. The laboratory may have omitted an MS / MSD since they were a reanalysis of samples which had been submitted as part of a previous delivery group. Technically, the laboratory is required to perform an MS / MSD with each batch of samples received.

Specific items which were reviewed during the data validation are discussed in more detail below.

Chain of Custody and Sample Tracking

Field originated chain of custody included with the data packages, but copies of internal laboratory custody records were not provided.

Data Completeness

The original requirements for supporting analytical data requested that the laboratory document the temperature of the sample cooler upon receipt. This information was not found in the analytical data packages.

The chain of custody form noted that samples SB-11 S-1A, and SB-3 S-1A were broken upon receipt in the laboratory. Data for these samples were not included with the analytical report.

Holding Times

All of the NYS DEC ASP required holding times were met for these samples.

Matrix Spike / Matrix Spike Duplicate

Data for a matrix spike and matrix spike duplicate were not included with this sample delivery group.

These two samples had been previously analyzed beyond the required holding time. The laboratory may have omitted an MS / MSD since they were a reanalysis of samples which had been submitted as part of a previous delivery group. Technically, the laboratory is required to perform an MS / MSD with each batch of samples received.

Calibrations

Only the calibration summary forms were required to be submitted with the analytical report. It was not possible to validate the RF's since the quant reports were not included.

Several compounds in addition to those of the target compound list were included in the calibration standards. These were not included on the laboratory analytical report forms or in the data validation worksheets.

Method Blanks

No compounds were detected in the one method blank associated with the samples of this delivery group.

Sample Results

No problems were detected with the analyses of the two samples associated with this delivery group.

Data Summary Table
Ciba Geigy Plant Site, Glens Falls, NY

Semivolatile Organic Analyses
Soil Samples Received: 2/10/92
Sample Delivery Group: 30330

Sample / Analyte	Method Blank Conc. (PPB)	Lab. Reported Conc. (PPB)	QA Validation Reported Conc. Decision	Qualifiers	Footnotes
Sample SB-6 S-1A (Lab #: 153614)					
Semivolatile Organics					
bis (2-ethylhexyl) phthalate	330 U	98 J	J	qualify	See Text
Sample SB-6 S-2A (Lab #: 153615)					
Semivolatile Organics					
None Detected			J	qualify	See Text

DATA VALIDATION CHECKLIST

SUMMARY OF THE ANALYTICAL DATA REVIEW
For the Ciba-Geigy Plant Site
Glens Falls, New York

Volatile & Semivolatile Organic Analyses

Soil Samples Received: February 10, 1992

Sample Delivery Group: 30330

Laboratory Reference Numbers:

SB-6 S-1A	153614
SB-6 S-2A	153615

SEMIVOLATILE ORGANICS
INITIAL CALIBRATION SUMMARY
(Page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR **Acceptable:** NR **Time Requirements Met:** NR
Initial Calibration File ID: HBJ020BS **Date:** 2/12/92 **Page:** 36
Associated Samples: SB-6 S-1A, SB-6 S-2A

TCL COMPOUND LIST
(%RSDs > 30% for CCC, all other TCL >35%, RRF's < 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene *		
Phenol *			2,4-Dinitrophenol #		
Analine			4-Nitrophenol #		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene *			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine *		
N-Nitroso-Di-n-Propylamine #			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol *		
Isophorone			Phenanthrene		
2-Nitrophenol *			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid	30.8		Fluoranthene *		
bis(2-Chloroethoxy)Methane			Benzidine		
2,4-Dichlorophenol *			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine		
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene *			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol *			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate *		
Hexachlorocyclopentadiene #			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol *			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene *		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes **Footnote:**
SPCC's Acceptable: yes **Footnote:**
All Compounds Average RRF > 0.05: yes **Footnote:**
All Compounds %RSD less than 35%: no **Footnote:** 15

SEMIVOLATILE ORGANICS
INITIAL CALIBRATION SUMMARY
(Page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

Compound:	**SPCC**	**CCC:**
PPB		
20	* 2.000 =	* 2.000 =
50	* 0.800 =	* 0.800 =
80	* 0.500 =	* 0.500 =
120	* 0.333 =	* 0.333 =
160	* 0.250 =	* 0.250 =
	AV. RRF = %RSD =	AV. RRF = %RSD =

OVERALL ASSESSMENT AND COMMENTS: The RF's could not be verified since copies of the quant reports were not included with the data packages.

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 1 of 2)

Instrument ID: IN50H
Tune File ID: NR **Acceptable:** NR **Time Requirements Met:** NR
Calibration File ID: HBJ050ABS **Date:** 2/12/92 **Page:** 37
Initial Calibration File ID: HBJ020BS **Date:** 2/12/92 **Page:** 36
Associated Samples: SB-6 S-1A, SB-6 S-2A

TCL COMPOUND LIST
(%Diff greater than 25% and non SPCC RRF's less than 0.05 are noted below.
A summary of footnotes is attached as an addendum)

	%RSD	RRF		%RSD	RRF
N-Nitosodiphenylanine			Acenaphthene		
Phenol			2,4-Dinitrophenol		
Analine			4-Nitrophenol		
bis(2-Chloroethyl)Ether			Dibenzofuran		
2-Chlorophenol			2,4-Dinitrotoluene		
1,3-Dichlorobenzene			2,6-Dinitrotoluene		
1,4-Dichlorobenzene			Diethylphthalate		
Benzyl Alcohol			4-Chlorophenyl Phenylether		
1,2-Dichlorobenzene			Fluorene		
2-Methylphenol			4-Nitroanaline		
bis(2-chloroisopyl)Ether			4,6-Dinitro-2-Methylphenol		
4-Methylphenol			N-Nitrosodiphenylamine		
N-Nitroso-Di-n-Propylamine			4-Bromophenyl-Phenylether		
Hexachloroethane			Hexachlorobenzene		
Nitrobenzene			Pentachlorophenol		
Isophorone			Phenanthrene		
2-Nitrophenol			Anthracene		
2,4-Dimethylphenol			Di-n-Butylphthalate		
Benzoic Acid	33%		Fluoranthene		
bis(2-Chloroethoxy)Methane			Benzidine		
2,4-Dichlorophenol			Pyrene		
1,2,4-Trichlorobenzene			Butylbenzlphthalate		
Naphthalene			3,3'-Dichlorobenzidine		
4-Chloroanaline			Benzo(a)Anthracene		
Hexachlorobutadiene			bis(2-ethylhexyl)Phthalate		
4-Chloro-3-Methylphenol			Chrysene		
2-Methylnaphthalene			Di-n-Octyl Phthalate		
Hexachlorocyclopentadiene			Benzo(b)Fluoranthene		
2,4,6-Trichlorophenol			Benzo(k)Fluoranthene		
2,4,5-Trichlorophenol			Benzo(a)Pyrene		
2-Chloronaphthalene			Indeno(1,2,3-cd)Pyrene		
2-Nitroanaline			Dibenz(a)Anthracene		
Dimethyl Phthalate			Benzo(a)Perylene		
Acenaphthylene			Acid Surrogates		
3-Nitroanaline			Base Neutral Surrogates		

CCC's Acceptable: yes Footnote:
SPCC's Acceptable: yes Footnote:
All Compounds Average RRF > 0.05: yes Footnote:
All Compounds %RSD less than 25%: no Footnote: 15

SEMIVOLATILE ORGANICS
CONTINUING CALIBRATION SUMMARY
(page 2 of 2)

CALCULATION VERIFICATION:

(RRF = Ais/Ax*Cis/Cs)

SPCC:		CCC:	
PPB			
50	* 0.800 =		* 0.800 =
SPCC:		CCC:	
% Difference:		% Difference:	

METHOD BLANK: HB210L4S (Page 9)

Compound	ppb	CRDL

No compounds were detected in this method blank

OVERALL ASSESSMENT AND COMMENTS: RF's could not be verified since copies of the quant reports were not included in the data package.

FOOTNOTES FOR THE ORGANIC TARGET ANALYTE LIST

BLANK QUALIFIERS

1. The reported compound was less than 5 times (10 times for the common EPA contaminants) the value of the method (prep) blank. The presence of this compound in the sample has been negated.

3. The value reported was greater than 5 times (10 times for the common EPA contaminants) the value in the method (prep) blank and is considered "real" (J).

4. This sample was diluted prior to analysis. The value reported prior to the dilution is less than 5 times (10 times for the common EPA contaminants) the value in the method blank. The presence of this compound in the sample is likely due to laboratory contamination unrelated to the actual sample.

5. The value reported was less than 5 times (10 times for the common EPA contaminants) the value in the field or trip blank. The reported value was negated due to probable contamination.

7. The value reported was greater than 5 times (10 times of the common EPA contaminants) the value on the field or trip blank and is considered "real".

8. The results of this sample was qualified due to a problem with the blank which was not included in the above footnotes. Refer to the text for discussion.

9. The result of this sample was rejected due to a severe problem with the blank which was not included in the above footnotes. Refer to the text for discussion.

10. This non-target compound was found in the method blank. The laboratory did not flag it with the "B" qualifier.

11 The laboratory used an incorrectly associated method blank. This compound was not found in the method blank and does not require the "B' qualifier.

12. Blank data was not included by the laboratory. The extent of blank contamination cannot be assessed.

CALIBRATION REQUIREMENTS

15. The compound is qualified due to the % RSD or % Difference being greater than the required limit but less than 90%. This is a non-CCC compound.

16. The recovery of the surrogate us qualified due to a % RSD or % Difference being greater than the 30% / 35% value.

17. The value for this compound is qualified because the response factor is less than 0.05.

18. The % RSD or % Difference of the semivolatile CCC compound was greater than 30% / 25%. The results of this sample are not rejected according to CLP protocols.

19. The results of this sample are rejected due to one volatile or 3 semivolatile CCC compounds being outside of their acceptable range.

20. The non-detected compound is unusable since the response factor is less than 0.05.

21. The RF of this SPCC compound is less than the required limit.

22. The % RSD of the initial or continuing calibration summary is greater than 90%. All non-detects should be considered to be unusable.

SPIKE RECOVERIES

30. The CLP required spike concentration was not added to this sample. Refer to the text for discussion of the effect the usability of the data.

31. The data were qualified due to poor recovery of the associated matrix spike or matrix spike duplicate. Only the sample used for the MS/MSD has been qualified.

32. The non-detects for this sample would be considered unusable (R) according to EPA CLP data validation guidelines due to MS and MSD recoveries both less than 10%. Only the sample used for the MS/MSD has been qualified.

33. The data for this sample are qualified as estimated values due to the poor RPD's of the matrix spike and matrix spike duplicate.

SAMPLE ANALYSES

50. The raw data included in the report could not be followed. The results of this analysis should be considered tentative until the discrepancy has been resolved.

51. The value reported on FORM I does not appear to agree with that found in the raw data. The result should be considered tentative until the discrepancy has been resolved.

52. This analyte has been analyzed by a method which is not routinely used in this concentration range. Refer to the text for a discussion of any impact this may have on the usability of the data.

53. The copies of the spectra were illegible. The spectral matches could not be verified.

54. The reported concentration is qualified due to surrogate recovery outliers.

55. The reported concentration is qualified because the concentration is below the CRQL. This is prior to any dilutions which may have been associated with this sample.

56. The presence of this compound was noted on the quant report, but a copy of the spectra was not included. It was not reported on FORM I. It is tentatively added to the TCL list until a corrected report has been received from the laboratory.

57. The spectra of this compound was not included in the report. Its presence should be considered tentative until this is received.

58. This non-target compound is usually detected in another analytical fraction. The presence of this compound should be negated.

59. The mass spectral identification of this sample has not been confirmed and the identification of this compound has been rejected. The compound should be considered an unknown.

60. The laboratory did not quantify the pesticides present in this sample. The pesticide was confirmed on a second column. The value is greater than the CRDL.

61. The concentration of the compound exceeded the calibration range of the instrument. It should have been flagged with the "E" qualifier by the laboratory and reanalyzed at a higher dilution.

62. The compound is a suspected aldol condensation product. It should have been flagged with the "A" qualifier by the laboratory. It is due to a laboratory extraction artifact.

63. The sample holding time to re-extraction and re-analysis was exceeded. All positive as well as non-detected compounds are highly qualified.

64. The non-target compound is a suspected laboratory contaminant which was not present in the associated blanks.

65. The area of the non-target compound is less than 10% of the associated internal standard. it has been negated from the TIC list.

66. The non-target compound was not added to the TIC summary on FORM I. All spectra and quant reports were included in the raw data. The compounds have been added to the data summary table during the review.

67. This non-target compound is an aldol condensation product.

68. This compound is usually considered to be an aldol condensation product. This was not flagged with the "A" qualifier by the laboratory.

69. The quant reports for the non-target compounds were not included in the data summary. The concentrations reported could not be validated.

70. The area of the internal standard used to quantify this compound was outside of the acceptable range. The result should be considered to be an estimated value.

71. A confirmation analysis was not performed for this sample. The data from the primary column cannot be confirmed.

72. The sample was analyzed with another dilution which provided more accurate data for the concentration of this compound. The data for this analyte should not be used.

73. The surrogate recoveries were outside of the acceptable limit. This sample was rerun after the allowable holding time.

74. This result does not agree with the data obtained from the undiluted analysis. The value should be considered to be an estimate.

75. The spectra for this compound was not retrievable due to a computer problem. This compound has been detected in many of the other samples collected at this site.

76. The dilutions reported for this sample are not consistent for all data. See text.

77. Values less than the CRDL were not reported by the laboratory. These have been included in the data summary. Their spectra have not been examined, so their presence cannot be verified.

78. Surrogate recoveries were outside of the acceptable limits. The sample was reextracted and reanalyzed within the required holding time and poor surrogate recoveries were again obtained. The problem appears to be due to the nature of the sample matrix. The laboratory has satisfied all EPA CLP requirements.

79. The non-target compound is a common laboratory artifact such as carbon dioxide or a siloxane. The data should not be used.

80. The sample was diluted excessively prior to analyses. The value reported is less than the quantitation limit and is reported with a "J" qualifier. It should have been reanalyzed at a lower dilution.

81. The sample was analyzed outside of the required holding time.

APPENDIX F

LABORATORY QA DATA REPORTS (UNDER SEPARATE COVER, ONE COPY EACH FOR NYSDEC AND USEPA)