Black and Decker (U.S.), Inc.

Environmental Investigation Report
Black and Decker, Incorporated
Hampstead, Maryland Facility

WESTON
MANAGERS DESIGNERS/CONSULTANTS

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ENVIRONMENTAL INVESTIGATION REPORT
BLACK AND DECKER, INCORPORATED
HAMPSTEAD, MARYLAND FACILITY

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April 1989

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EXECUTIVE SUMMARY

Black and Decker, Inc. (Black & Decker) retained Roy F. Weston, Inc. (WESTON) to conduct an environmental investigation of Black & Decker's Hampstead, Maryland facility. The study was initiated as a result of the detection of chlorinated hydrocarbons in the groundwater at the plant site.

WESTON's objectives in the investigation were to:

- Identify sources or potential sources of groundwater contamination on-site.
- Delineate the nature and extent of potential contamination on-site.
- Characterize possible routes of chlorinated hydrocarbon migration.
- Develop recommendations based on the available data.

POTENTIAL SOURCE AREA CHARACTERIZATION

Using a variety of nonintrusive and intrusive investigation techniques, the Phase I Source Area identification program efficiently achieved the objective of identifying which of the potential source areas could represent significant current sources of groundwater contaminants. Follow-up sampling was conducted on selected areas during Phase II to further define suspected source areas.

Storage Tank Areas (Zone A)

Of the three storage tank areas, the aboveground storage tank area does not appear to be a current source area. Soils in the other two areas, underground Tank Farms 1 and 2, appear to contain localized "hot spots" of both total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs). The VOCs are present mainly in soils with elevated TPH concentrations.

Tank Farm 1

Soils in the tank farm area contain TPH, toluene, ethyl benzene, and xylene in limited horizons. A comparison of the nearby groundwater quality and the Toxicity Characteristic Leaching Procedure (TCLP) leachate concentrations against proposed draft Federal drinking water standards indicates that these compounds are present below levels that have or would significantly impact groundwater quality.

Tank Farm 2

Soils in this tank farm area contain primarily TPH, PCE, and TCE in limited horizons. A comparison of the nearby groundwater quality and the TCLP leachate concentrations against Federal drinking water standards indicates that these compounds may be present at sufficiently high concentrations to impact groundwater quality. Although the potential future groundwater impacts were not quantified (i.e., using leachate generation rates, lateral groundwater flow rates, and transport characteristics), the available data indicate that soil remediation is appropriate for Tank Farm 2.

Other Potential Source Areas

The evaluation of other potential source areas generally indicates that, although previous source inputs cannot be precluded, the following areas are not current sources of PCE and TCE to the groundwater:

- Fill site near seep area (Zone B).
- Potential heat treating residues disposal areas (Zone C).
- Product (tool) disposal area (Zone D).
- Corner of Buildings 5 and 6 (Zone E).
- Past potential burn area (Zone F).
- Lagoon area (Zone G).

The overall groundwater flow and VOC distribution characterization indicate that Tank Farm 2 may not have been the only, nor the principal, source of PCE and TCE in the groundwater. More likely, historical use of solvents at the Hampstead facility may have contributed to the current quality of groundwater onsite. The current distribution of TCE and PCE probably reflects the migration of a plume or plumes of these contaminants from a source or sources, no longer existing, along pathways of preferred shallow and deep groundwater flow.

GROUNDWATER CONTAMINANT/MIGRATION CHARACTERIZATION

The investigation has confirmed that the principal direction of groundwater movement is to the south-southwest. An additional component of flow to the east has been identified in the northeastern edge of the facility. Groundwater migration pathways in the bedrock are expected to be preferentially oriented along fracture zones and schistosity planes. Shallow groundwater flow appears to be perpendicular to the hydraulic gradient, which corresponds generally with surface topography. Preferred flow pathways within the saprolite may partially reflect trends in the underlying bedrock.

Characterization of the VOC distribution in the groundwater indicates that essentially separate plumes of TCE and PCE exist on the eastern half and western half of the facility, respectively. The TCE plume appears to extend south from an origin near the aboveground storage tank area. Eastern components of flow in this area suggest that a small portion of the groundwater that contains TCE may be migrating toward Route 30. The PCE plume, with highest concentrations at production well 7, encompasses the western half of the facility. Evidence suggests that groundwater containing PCE is generally moving toward the southwest.

RECOMMENDATIONS

Tank Farm Soils

Based on field and soil-water partition data for Tank Farm 2 and the concentration of groundwater contaminants in RFW-8, remediation of the Tank Farm 2 soils is recommended to minimize the future migration of contaminants to the groundwater.

Groundwater

Based on the distribution of PCE and TCE in the groundwater on-site and groundwater flow directions, a groundwater remediation plan is recommended. The proposed plan incorporates the pumping of several recovery wells to create a hydraulic barrier to contaminated groundwater flow along the northeast and southwest property boundaries. The remedial plan is designed to recover contaminated groundwater on-site and prevent migration of contaminants off-site and to result in eventual restoration of the aquifer.

SECTION 1

INTRODUCTION

Black and Decker, Inc. (Black & Decker) retained Roy F. Weston, Inc. (WESTON) in 1987 to conduct an environmental investigation of Black & Decker's Hampstead, Maryland facility. The study was initiated as a result of the detection of chlorinated hydrocarbons in the groundwater at the plant site.

WESTON's objectives in the investigation were to:

- Identify sources or potential sources of groundwater contamination on-site.
- Delineate the nature and extent of potential contamination on-site.
- Characterize possible routes of chlorinated hydrocarbon migration.
- Develop recommendations based on the available data.

WESTON's investigation at the plant was approached in two phases. The first phase, conducted in November and December 1987, utilized soil-gas sampling, geophysical surveying, test pit excavations, soil borings, lagoon water and sediment sampling, and groundwater sampling in an effort to identify sources or potential sources of the constituents found in the groundwater. Data collected during this phase were evaluated and the resultant conclusions were incorporated in the design of the second phase.

Phase II of the investigation, conducted in June, July and December 1988, involved supplemental monitor well installation, additional soil borings, and groundwater and soil sampling and analysis. These activities aided in further definition of the extent of contamination of the on-site soil and groundwater, characterized routes of migration and provided preliminary data to be considered in developing remedial alternatives.

This report provides a comprehensive description of both Phase I and Phase II field activities, discusses the results of the data analysis, and includes recommendations for further action at the Black & Decker site.

SECTION 2

BACKGROUND

2.1 SITE DESCRIPTION

The Black & Decker facility is located in Hampstead, Maryland in northeastern Carroll County, approximately 35 miles north of Baltimore (Figure 2-1). The plant is situated on 150 acres of Black & Decker property in a predominantly rural setting. The population center of Hampstead is approximately 0.8 mile north of the plant along Hanover Road, State Route 30.

As shown in Figure 2-2, centrally located on the plant site is a large building, which serves as the center of operations. On the northwest side of this building are several single story buildings, which are used for the maintenance of plant operations. Five water supply wells line the northwest boundary of the site. A gravel road provides access to the wooded area surrounding the well houses. This road continues along the western boundary and connects with a paved road, leading to the wastewater treatment facility and lagoons on the south end of the property.

2.2 SITE ACTIVITIES

The original Black & Decker facility on the property was built in 1952 for the manufacture of power hand tools. There have been additions to the main building and construction of several ancillary buildings on-site since 1952. The main building is actually a composite of several buildings constructed in phases during the plant's operation. Various areas within the composite building have been designated Buildings 1 through 6.

Beginning in 1983, the focus of plant activities was gradually changed from manufacturing to distribution. The transformation was officially completed in July 1987; currently, the Hampstead facility serves as Black & Decker's principal distribution center on the East Coast. Subordinate activities still conducted on-site include manufacturing gears from powdered metal, heat treatment of the gears, and cleaning and treatment of power tool accessories for rust prevention.

Based on the recollections of current employees, several areas on the property were believed to be used for disposal of debris and off-specification tool products during the history of manufacturing operations. These materials were believed to be relatively inert. In addition, the manufacturing processes utilized numerous solvents and oils, which were stored in on-site aboveground and belowground tanks. The use of these materials has largely been discontinued with the change in emphasis at the

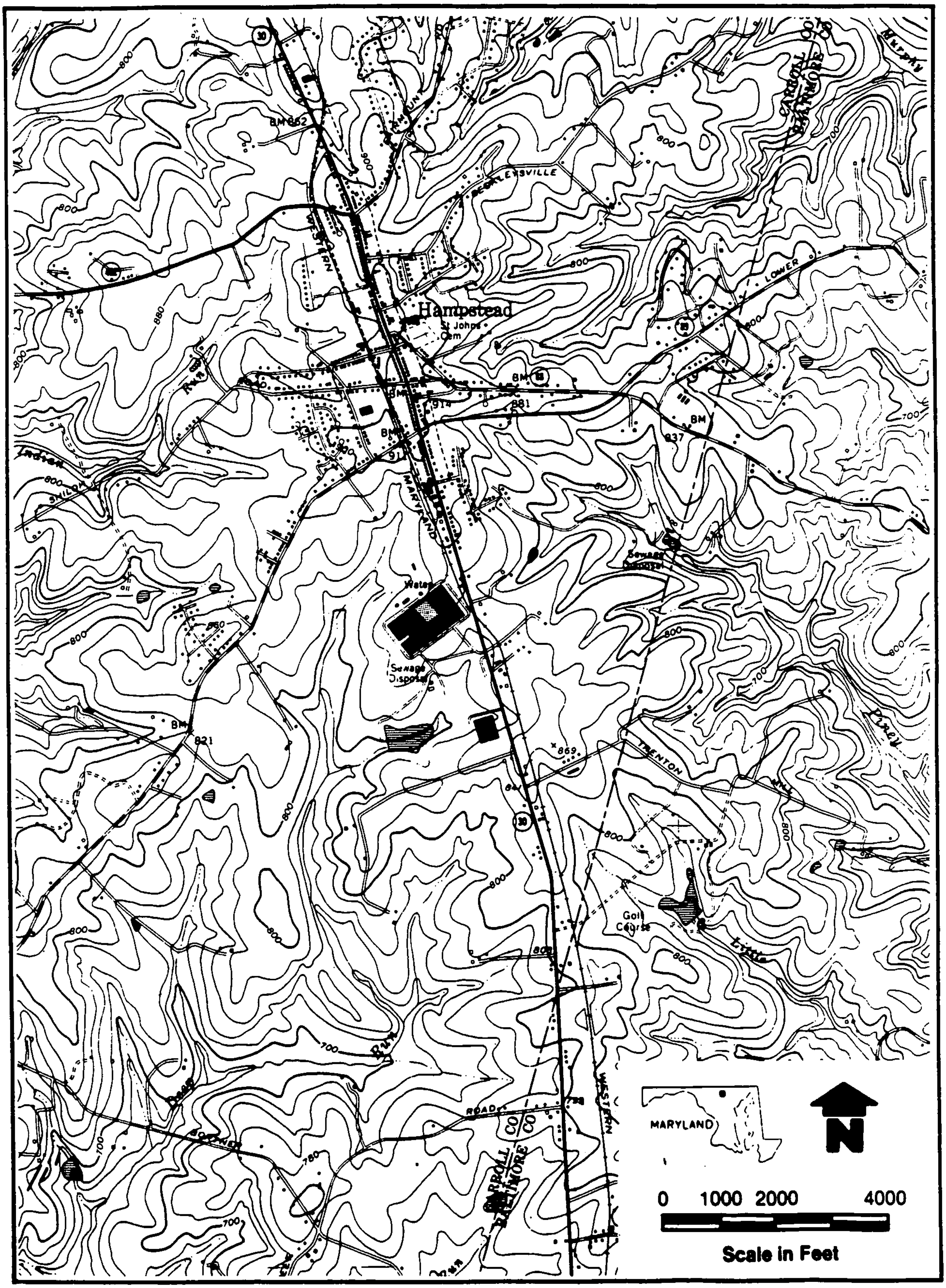

FIGURE 2-1 TOPOGRAPHIC MAP OF BLACK & DECKER PLANT, HAMPSTEAD, MD AND VICINITY

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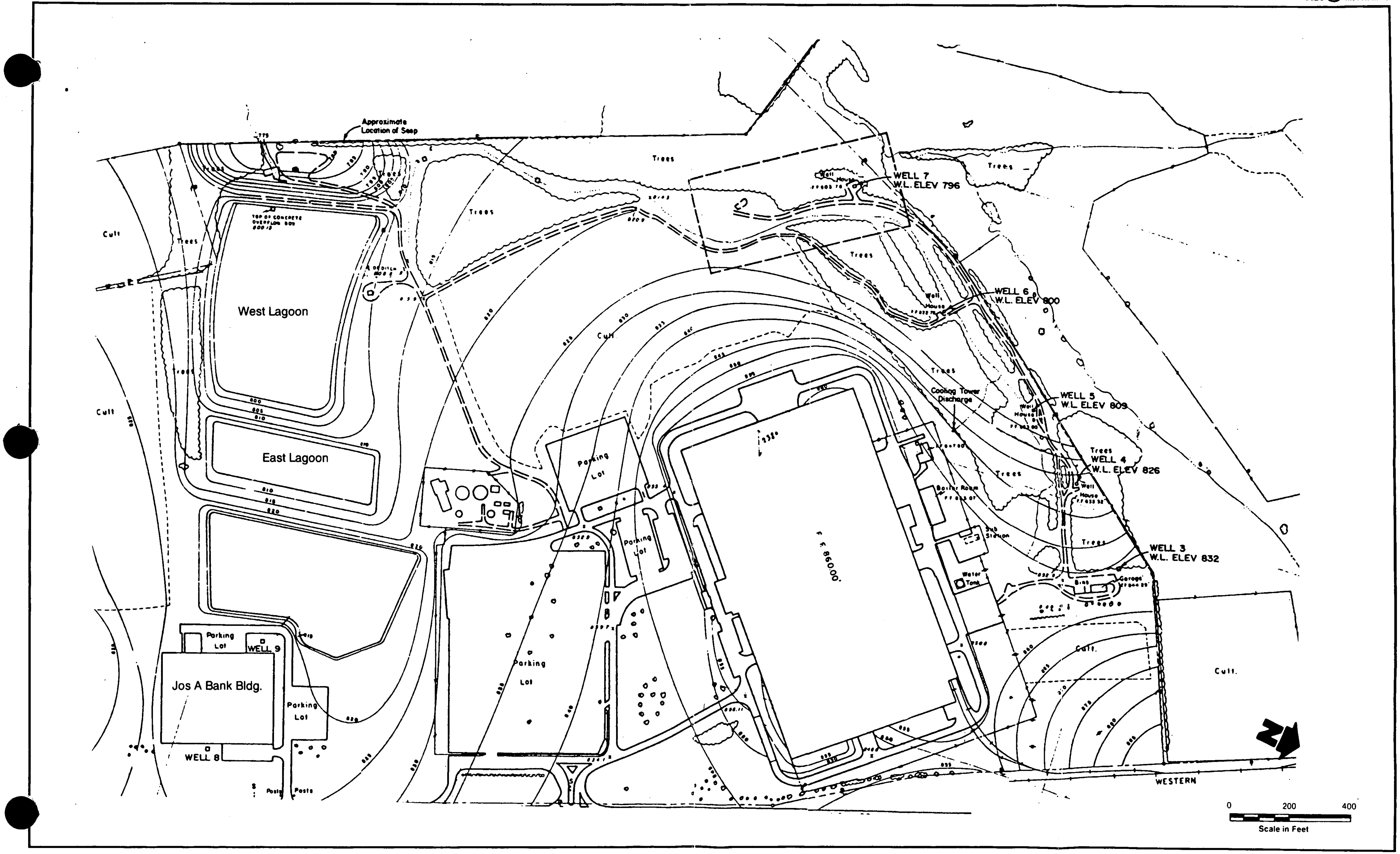

FIGURE 2-2 SITE MAP OF BLACK & DECKER FACILITY, HAMPSTEAD, MD

facility from manufacturing to distribution. All of the underground storage tanks have since been excavated, cleaned, and filled with sand.

Since 1978, the two lagoons on-site have been used by the facility for wastewater treatment. The smaller East Lagoon is used as a holding pond for the boiler blow-down water and for the effluent of the biotreatment plant. This water is, in turn, treated in the chemical treatment plant and discharged to the larger West Lagoon or "process lake." A portion of the water from the West Lagoon is recycled for use as noncontact cooling water and the excess discharged to a small stream west of the site via a NPDES permitted outfall.

In April 1984, as part of an effort to determine the impact of a gasoline spill at the Hampstead Exxon Service Station, water samples of supply wells at the Hampstead Black & Decker facility were analyzed by Carroll County officials for volatile organic compounds (VOCs). As a result of the detection of chlorinated hydrocarbons in the samples (particularly trichloroethene and tetrachloroethene), an environmental investigation was initiated by Black & Decker in conjunction with the then Maryland Department of Health and Mental Hygiene. Initial activity involved a preliminary characterization of the potential sources of the chlorinated hydrocarbons, which may have been related to past activities at the plant site. Since beginning the study, Black & Decker has provided for groundwater remediation through the use of an air stripping unit to remove moderate concentrations of VOCs from groundwater at the plant site.

2.3 ENVIRONMENTAL SETTING

2.3.1 Physiography

The plant site lies within the eastern division of the Piedmont physiographic province, which is characterized by moderate relief, gentle slopes, and rounded hills (Meyer, 1958). The climate in the Hampstead area is considered humid temperate; the average rainfall is 44 inches, and the average annual temperature is 53°F (Duigon, 1981).

As shown in Figure 2-1, the Black & Decker plant is situated on a N35°E trending ridge, which is an extension of a topographic high to the north on which the town of Hampstead lies. One hundred feet of relief (a 2° to 4° slope) separates the main building from a small stream, which follows the western perimeter of the plant site and drains south to Deep Run.

As shown in Figure 2-1, on the southeastern portion of the facility, the land surface slopes gently toward the lagoons. Storm drainage in this area is directed toward these lagoons and regionally toward Deep Run. In a small portion of the facility adjacent to the main building along the eastern perimeter of the site, the land surface slopes gradually to the east-northeast. Surface drainage in this area is directed east toward Piney Run.

2.3.2 Geology

As in most of eastern Carroll County, an indeterminate thickness of the albite-chlorite schist facies of the Wissahickon Formation underlies the Black & Decker property. This facies consists principally of tightly folded albite schist or phyllite interbedded with layers of chlorite and or muscovite schist. Cream to yellow, vitreous, micaceous quartzite veins are frequently injected along the planes of foliation.

Thin quartzite beds (<5 feet thick) are interbedded with the phyllite near the base of the formation. As is common in the Piedmont, the Wissahickon bedrock underlying the property has been highly deformed and fractured. Zones of intense fracturing may have surface expression as valleys or draws, or as other linear topographic features. Meyer (1958) reports that the strike of schistosity on the plant grounds ranges from N35°E to N46°E.

Chemical weathering has produced a 25- to 80-foot thickness of weathered schist or saprolite overlying the crystalline bedrock on-site. The saprolite grades from a micaceous, clayey reddish-brown silt at shallow depths to a medium soft, greyish-brown, slightly weathered schist/phyllite near the interface with competent bedrock. Residual quartz veins are encountered throughout the saprolite.

2.3.3 Hydrogeology

In the Hampstead area, groundwater occurs chiefly in the tension joints, fractures, and shear zones in the Wissahickon Schist, in the pore spaces of the overlying saprolite, and in fractured quartz veins. Recharge to the bedrock fractures is principally from the downward percolation of water stored in the saprolite (Meyer, 1958). Groundwater flow in the bedrock may follow preferred directions as dictated by the strike of schist foliation or principal direction of jointing. Shallow groundwater flow is generally perpendicular to the hydraulic gradient, which corresponds generally with surface topography. Preferred flow pathways within the saprolite may partially reflect trends in the underlying bedrock.

The large areal extent and moderately good water-bearing properties have made the albite-chlorite facies an important aquifer in Carroll County. A high percentage of domestic and farm water wells and several municipal and industrial supply wells tap fractures in this unit at an average depth of 100 feet. The yields of these wells average approximately 16 gpm with an average specific capacity of 1.5 gpm per foot of drawdown (Meyer, 1958).

The supply wells at Black & Decker exceed the reported area averages for the bedrock aquifer. Well records for August 1988 indicate an average yield of 32 gpm and a range of specific capacities from 0.8 to 2.8 gpm per foot of drawdown for the five wells used by the plant. Step-drawdown tests conducted by the Maryland Geological Survey in 1954 on Black & Decker supply well 3 yielded an average coefficient of transmissivity and a storage coefficient for the bedrock aquifer as 5,000 gpd per foot and 0.03, respectively. A decrease in pumping levels with increased pumping rate during the test indicates that bedrock permeability decreases with depth (Meyer, 1958).

SECTION 3

PHASE I INVESTIGATION

Seven areas at the Hampstead facility that could be possible sources of groundwater and/or soil contamination were identified based on discussions with Black & Decker employees and previous investigations. These areas, Zones A through G, were investigated in Phase I, and are illustrated in Figure 3-1.

The field investigations and analytic results specific to each zone are described in Subsections 3.1 through 3.7. The validity of all chemical analyses in this section were confirmed in accordance with the WESTON quality assurance and quality control program, as described in Appendix C of the Work Plan. Summary tables of the analytical results, as presented in the following subsections, list only the compounds that were detected in samples of the particular zone. Units of mg/kg and mg/L in the summary tables correspond to parts per million (ppm) in the text. Units of ug/L and ug/kg correspond to parts per billion (ppb). Units of ng/L correspond to parts per trillion (pptr). A complete tabulation of the results, which lists all compounds tested in each analysis, is provided in Appendix A.

The conclusions drawn from the Phase I investigation and their use in developing the Phase II investigation are discussed in Subsection 3.8.

3.1 ZONE A - STORAGE TANK AREA

3.1.1 Field Activity

Three areas in this zone were identified as locations of tanks, that previously contained solvents and cutting oils. Potential soil and groundwater contamination could have occurred as a result of inadvertent spills or possible leakage.

Tank Farm 1 consisted of 13 underground tanks, which were located immediately adjacent to the rear of the main building. The oils and solvents that were contained in the tanks are listed in Table 3-1. Tank Farm 2 consisted of five underground tanks located immediately adjacent to the east side of the main building. The tanks contained various oils used in the manufacturing processes at Black & Decker, in addition to waste oils, as listed in Table 3-1. The aboveground storage tank area consisted of two 5,000-gallon aboveground tanks containing UCAR^{TM} chemicals and trichloroethylene.

The underground tanks at the tank farms have since been excavated, cleaned, and backfilled with sand. The old TCE storage

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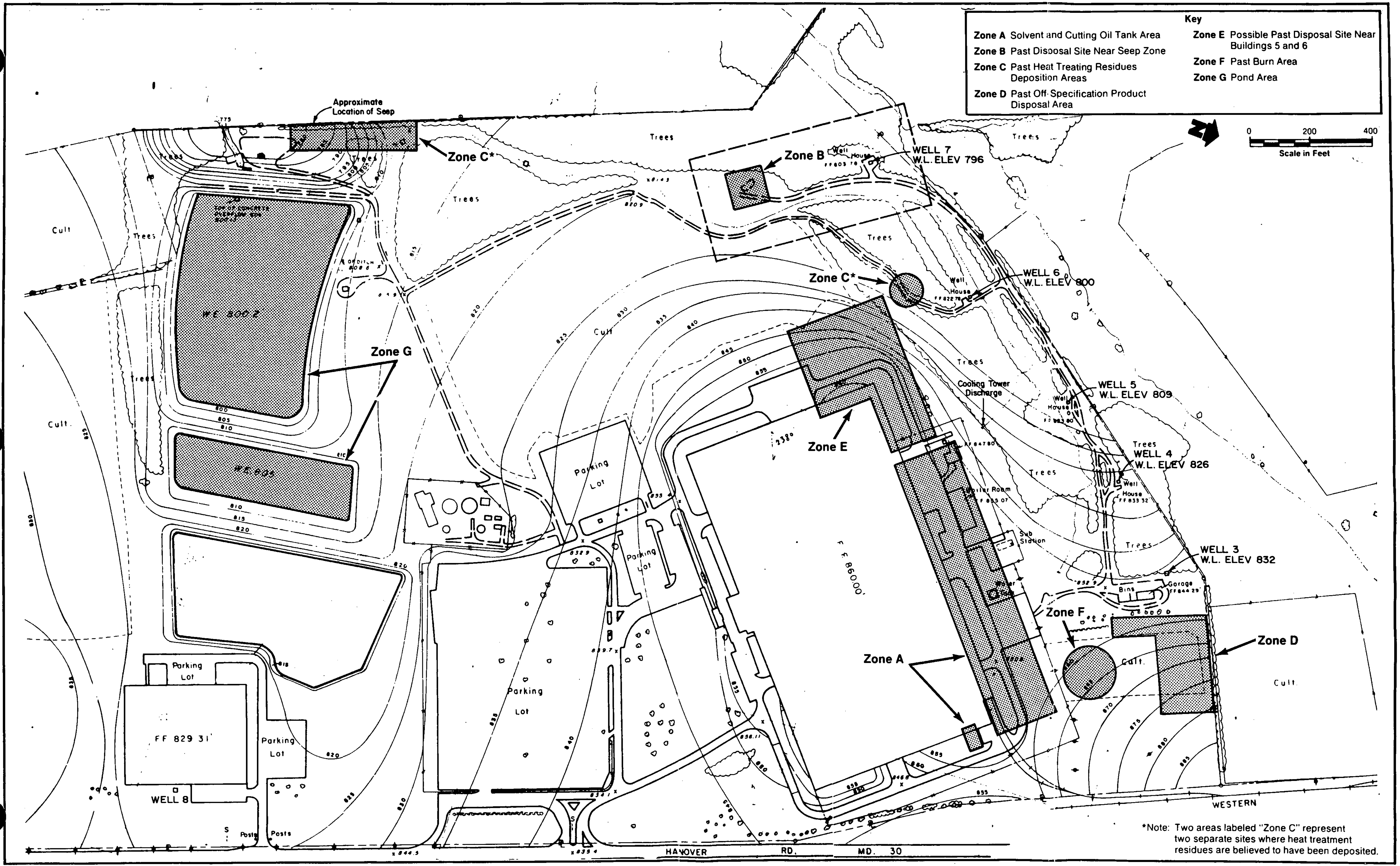


*Note: Two areas labeled "Zone C" represent two separate sites where heat treatment residues are believed to have been deposited.

FIGURE 3-1 PHASE I AREAS OF INVESTIGATION, BLACK & DECKER, HAMPSTEAD, MD

Table 3-1

Tank Farm 1 and 2 Inventory

	Tank No.	Contents	Capacity	Comments
Tank Farm 1	1-1	Toluol	1,000g	
	1-2	Acetone	1,000g	
	1-3	Acetone	1,000g	
	1-4	(Mineral spirits) Cleaning Fluid	1,000g	
	1-5	(Mineral spirits) Cleaning Fluid	1,000g	
	1-6	Empty	1,000g	Previously contained xylene and acetone
	1-7	Kerosene	1,000g	
	1-8	Solvesso 150 aromatic solvent	1,000g	
	1-9	Solvesso 100 aromatic solvent	1,000g	
	1-10	Alcohol	1,000g	
	1-11	Rust Velo	5,000g	
	1-12	Titanine clear acrylic	6,000g	
	1-13	Clear Valspar	1,000g	
Tank Farm 2	2-1	Reclaimed oil	2,000g	
	2-2	Ordnance oil	1,500g	
	2-3	Quench oil	2,000g	
	2-4	Cutting oil	8,000g	
	2-5	Lubricating oil	6,000g	

tank has been removed from the aboveground tank area. Additional aboveground tanks, including a new diked TCE storage tank and tanks for methanol and liquid nitrogen, are now present in this area.

Soil-gas analysis and soil borings were the investigative techniques used to evaluate the Tank Farm Zone for the presence of VOCs and petroleum hydrocarbons (TPH).

Soil-Gas Analysis

In Zone A, 19 soil-gas samples were collected and analyzed onsite for trichlorethene (TCE) and tetrachloroethene (PCE) using the procedure described in Appendix B. Figure 3-2 depicts the locations of the eight sampling points in Tank Farm 1; Figure 3-3 depicts the locations of the three sampling points in Tank Farm 2; Figure 3-4 depicts the locations of the eight sampling points in the aboveground tank storage area. Sample locations were concentrated around distribution pipes and the underground and aboveground tanks identified on the Black & Decker site plans.

Soil Borings

Soil borings were performed in five locations in Zone A. These locations were selected on the basis of the soil-gas results (see Subsection 3.1.2). The locations of the borings for the three tank farm areas are shown in Figures 3-2 through 3-4. Each boring was advanced with a truck-mounted hollow-stem auger drill rig. Auger refusal was encountered at 10 feet in boring SB-A-2. The other borings were completed to a depth of 16 feet. As the borings were advanced, the boreholes were screened with a Century organic vapor analyzer (OVA) for indications of VOCs.

Continuous samples of soils were taken with a split spoon using Standard Penetration Test techniques (ASTM D-1586). Visual descriptions of the soil, including color, texture, and moisture content, were made during sampling. Soil from each 2-foot interval was collected with a stainless steel trowel and contained in two 250-ml laboratory-cleaned jars. Aluminum foil was placed over the mouth of the jar designated for TPH analysis and the jar lid was fitted over the foil. At the conclusion of the boring, within 5 hours of sample collection, the headspace of the jar designated for TPH analysis was screened by inserting the OVA probe through the foil after the jar lid had been removed. The screening was conducted at room temperature, between 75° and 80°F. The sample with the highest OVA reading was submitted for petroleum hydrocarbon analysis. The companion sample from that interval was submitted for VOC analysis. Two sample intervals were analyzed from SB-A-9 since both intervals had comparably high OVA readings. A duplicate

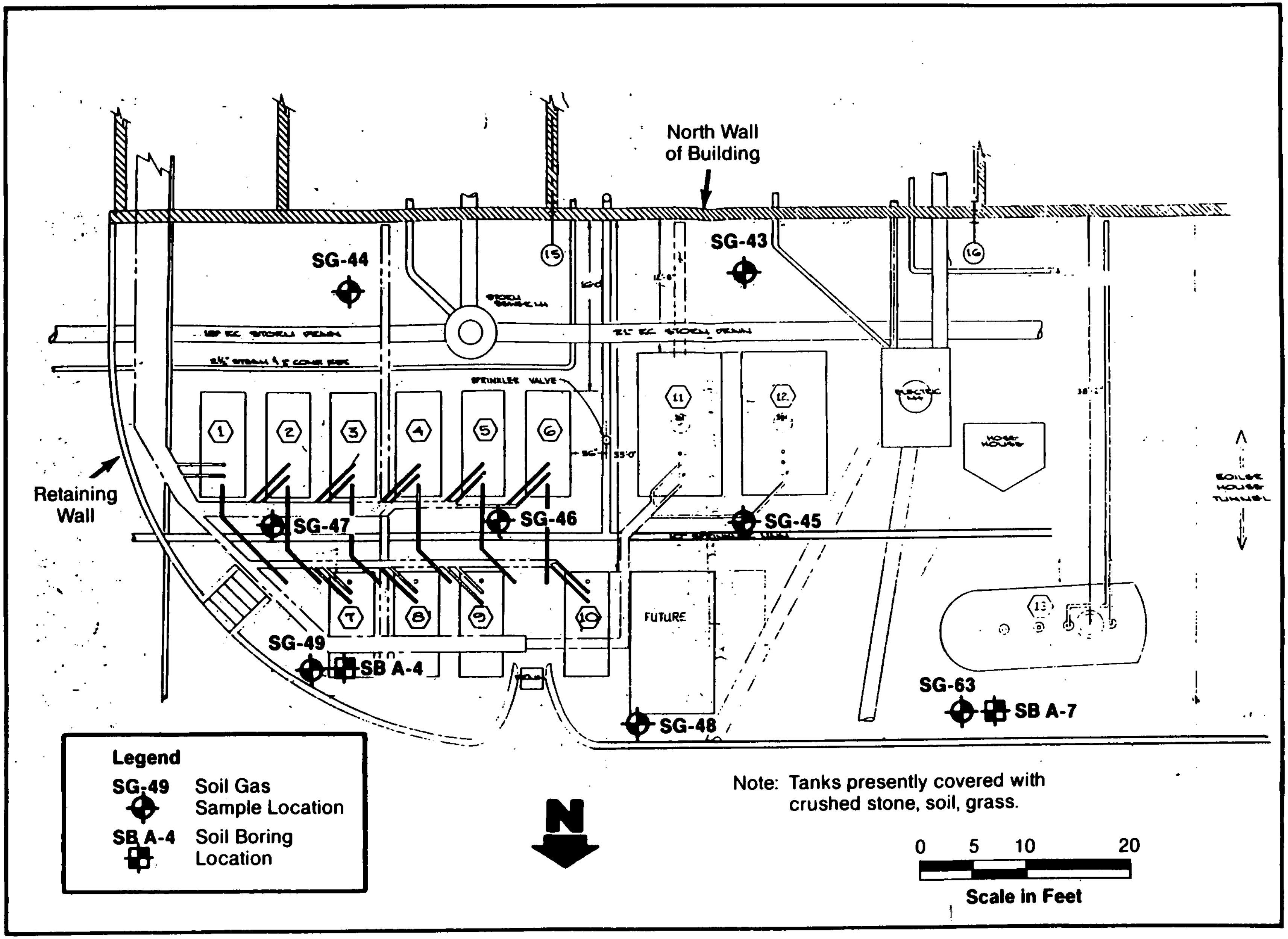


FIGURE 3-2 LOCATION OF PHASE I SAMPLING POINTS, TANK FARM 1, BLACK & DECKER, HAMPSTEAD, MD

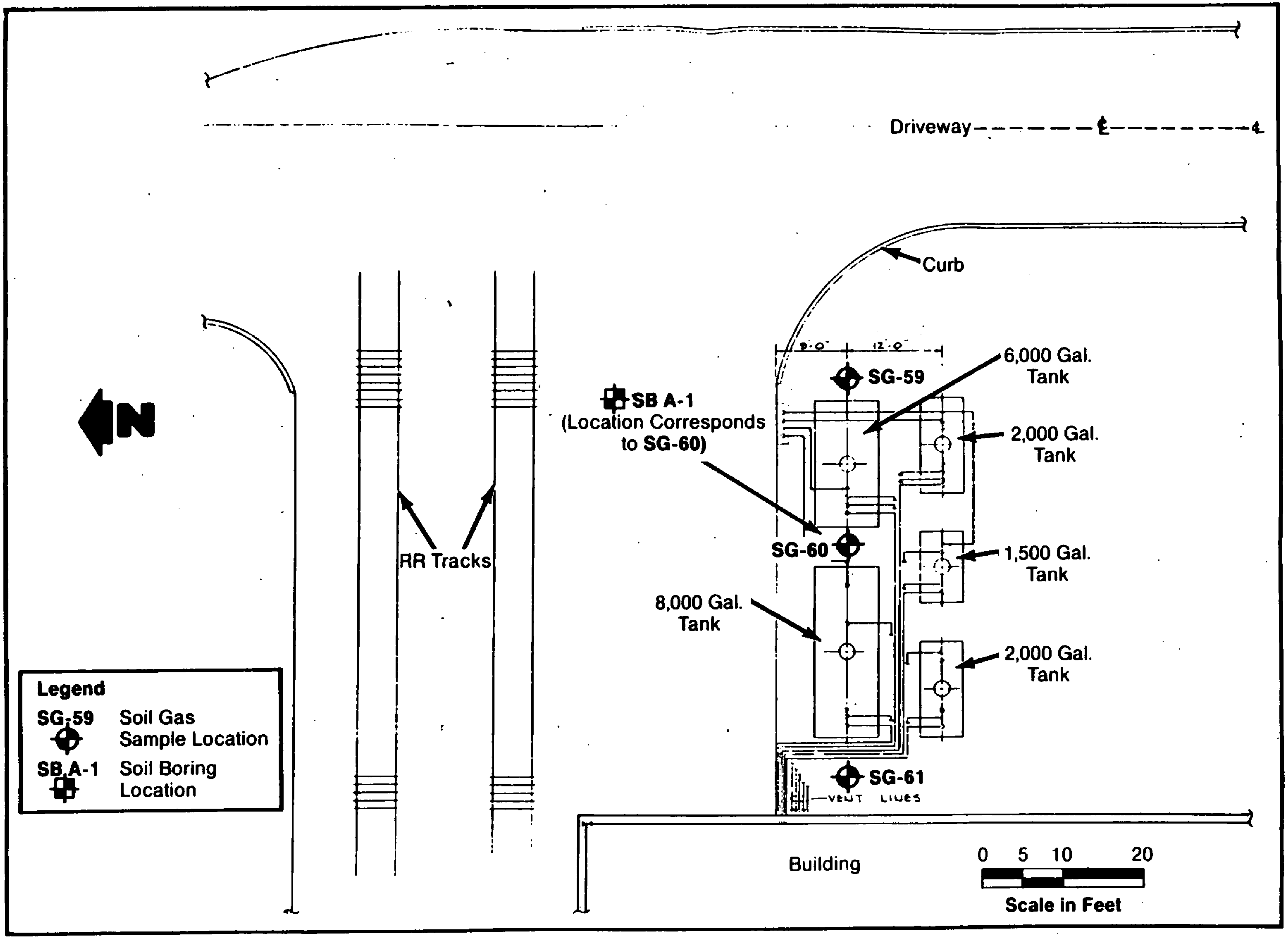


FIGURE 3-3 LOCATION OF PHASE I SAMPLING POINTS, TANK FARM 2, BLACK & DECKER, HAMPSTEAD, MD

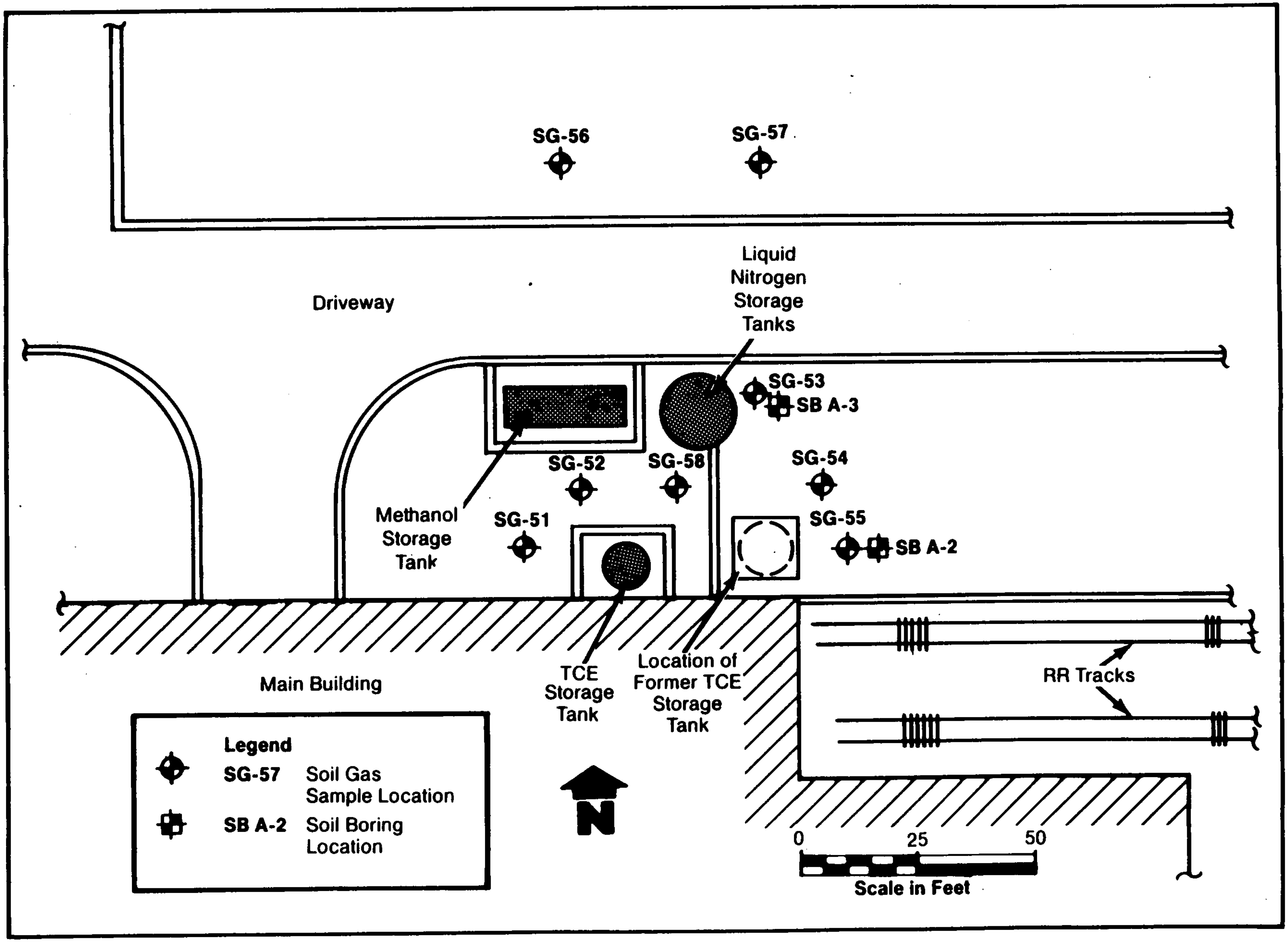


FIGURE 3-4 LOCATION OF PHASE I SAMPLING POINTS, ABOVE GROUND TANK STORAGE TANK AREA, BLACK & DECKER, HAMPSTEAD, MD

sample was collected at SB-A-4 for VOC analysis. A field blank was collected of HPLC water, which had been poured over a decontaminated split spoon in the field. The field blank was submitted for TPH and VOC analysis.

Sample spoons and trowels were cleaned with Alconox and water, with a potable water rinse followed by a deionized water rinse, after each sampled interval. The back of the rig, augers, and spoons were steam cleaned between borings.

Latex gloves were worn for sampling and changed between sample intervals. At the conclusion of drilling, these shallow boreholes were backfilled with cuttings.

3.1.2 Analytical Results

Soil-Gas

The results of the soil-gas analysis for TCE and PCE are presented in Table 3-2 and Figures 3-5, 3-6, and 3-7. The detection limits for TCE and PCE were 0.06 pptr and 0.08 pptr, respectively. J values represent quantities that were noted as present but at concentrations below the quantification limit.

In general, both PCE and TCE were detected at very low levels in the soil-gas. PCE was typically found at levels less than 1.0 pptr. Concentrations at this level and lower were insignificant, especially since both TCE and PCE were detected in one air blank (11-21-87) at approximately 0.5 pptr. Relative to the rest of the samples, higher concentrations (several hundred parts per trillion) of TCE were detected in samples SG-60, SG-55, and SG-53 from Tank Farm 2 and the aboveground storage tank area. The locations of soil borings SB-A-1, SB-A-2, and SB-A-3 completed in Zone A correspond to these three soil-gas sampling locations.

Soil Borings

Soils sampled in the tank zones were generally described as brown silty loam to silt to clayey silt. Quartzite fragments were frequently found distributed through the finer-grained sediment. Fill was encountered above some of the underground tanks. Complete boring logs are included in Appendix C.

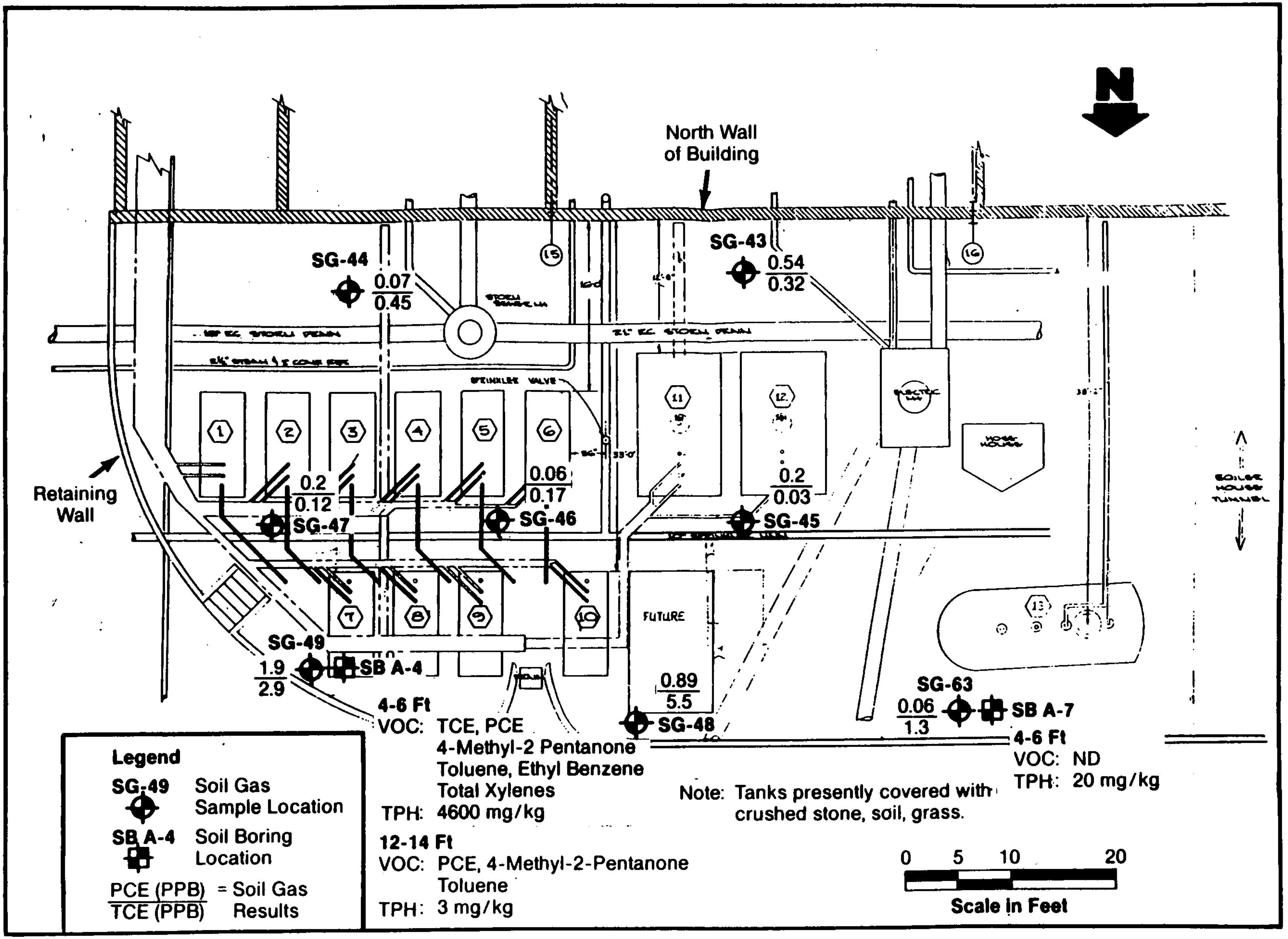
The summaries of the VOC and TPH analyses for the soils sampled in Zone A are presented in Table 3-3, and Figures 3-5, 3-6, and 3-7. The results of the VOC analysis show that significant levels of TCE and PCE were found in the soil at 6 to 8 feet in SB-A-1, 2.4 ppm and 380 ppm, respectively; lesser concentrations of other volatiles were also detected in this sample. Significant levels of PCE, ethyl benzene, and total xylenes were found in the soil at 4 to 6 feet in SB-A-4. In addition, 4-methyl-2-pentanone was detected at 110 ppb in the 12- to 14-foot interval of SB-A-4. Several volatile organics were noted

Table 3-2

Results of Soil Gas Analysis: Zone A

Sample ID	Bulb #	Run #, Inj. Port.	TCE (ng/mL)	PCE (ng/mL)
43	6	88B	0.32	0.54
44	5	91B	0.45	0.07J
45	1	92B	0.03J	0.20
46	4	65A	0.17	0.06J
47	6	66A	0.12	0.20
48	3	93B,94B	5.5	0.89
49	2	68A,69A	2.9	1.9
50	5	67A	0.27	0.03J
51	2	49A,50A	8.4	ND
52	4	48A	8.2	ND
53	5	28A,52B	150	0.12
54	3	20A,23A	5.5	0.02J
55	2	24A	240	1.4
56	5	51A	3.6	ND
57	2	30A,54B	12	0.01J
58	4	29A,57B	10	0.48
59	6	79B,80B	16	22
60	3	54A	120	42
61	1	77B,78B	1.0	9.5
62	1	100B	0.17	0.05J
63	1	96B	1.3	0.06J
60 Repl. (11-21)	2		125	45
60 Repl. (11-22)	5		89	44
Air Blank (11-20)		53A	0.03J	0.14
		76B	0.03J	ND
Inside Air Blank (11-21)		73A	ND	ND
		87B	0.50	0.58
Air Blank (11-22)		93A	0.05	0.01J
		127B	0.08	0.02J
Bulb Blank	6		ND	0.01J

J - Detected at concentration below detection limits
ND - Not detected



SB A-4

4-6 Ft
VOC: TCE, PCE
4-Methyl-2 Pentanone
Toluene, Ethyl Benzene
Total Xylenes
TPH: 4600 mg/kg

12-14 Ft
VOC: PCE, 4-Methyl-2-Pentanone
Toluene
TPH: 3 mg/kg

SB A-7

4-6 Ft
VOC: ND
TPH: 20 mg/kg

Note: Tanks presently covered with crushed stone, soil, grass.

Legend

SG-49	Soil Gas Sample Location
SB A-4	Soil Boring Location
PCE (PPB) / TCE (PPB)	= Soil Gas Results

FIGURE 3-5 RESULTS, TANK FARM 1 SOIL GAS AND SOIL SAMPLE ANALYSIS BLACK & DECKER, HAMPSTEAD, MD

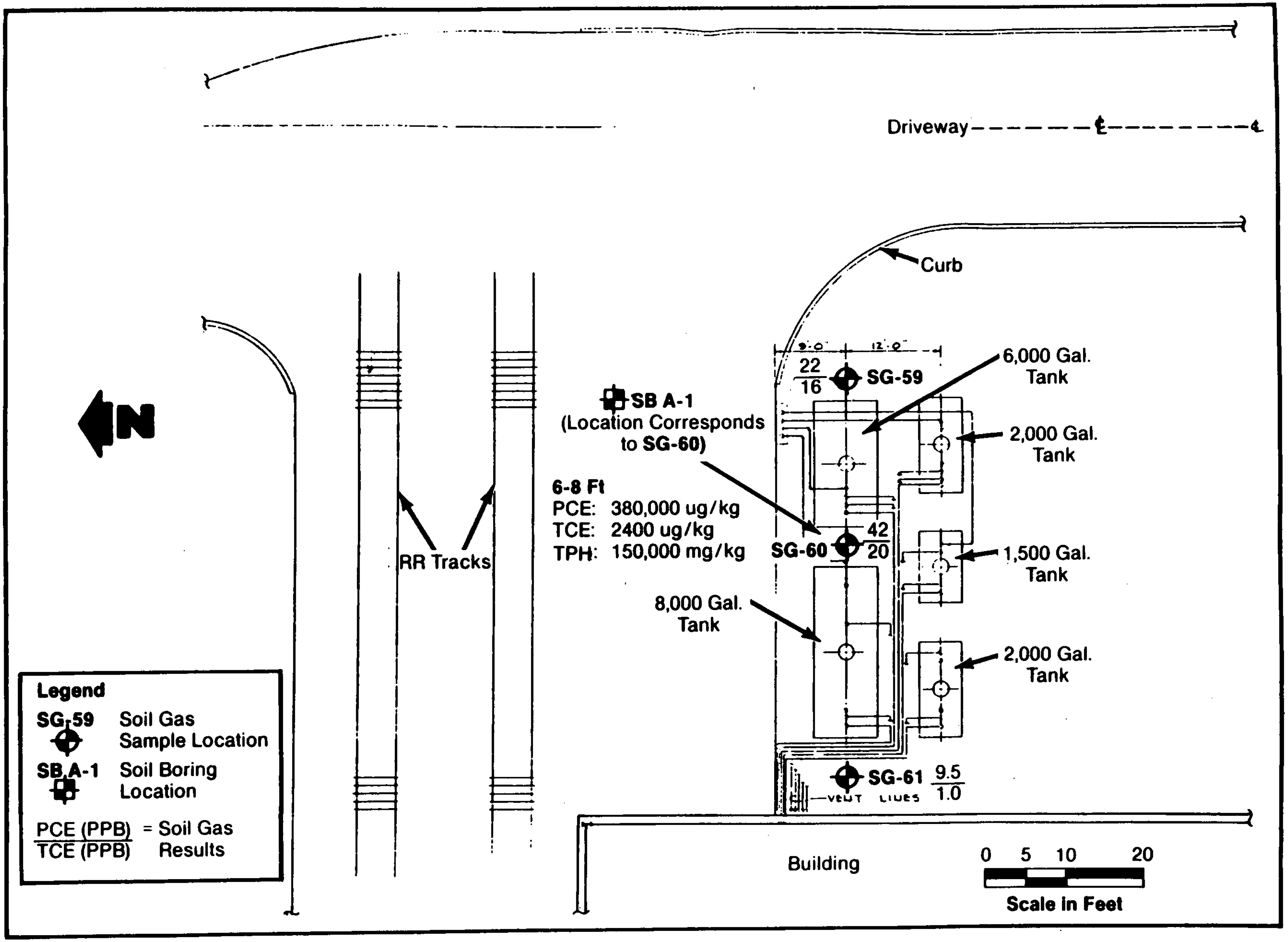


FIGURE 3-6 RESULTS, TANK FARM 2 SOIL GAS AND SOIL SAMPLE ANALYSIS
BLACK & DECKER, HAMPSTEAD, MD

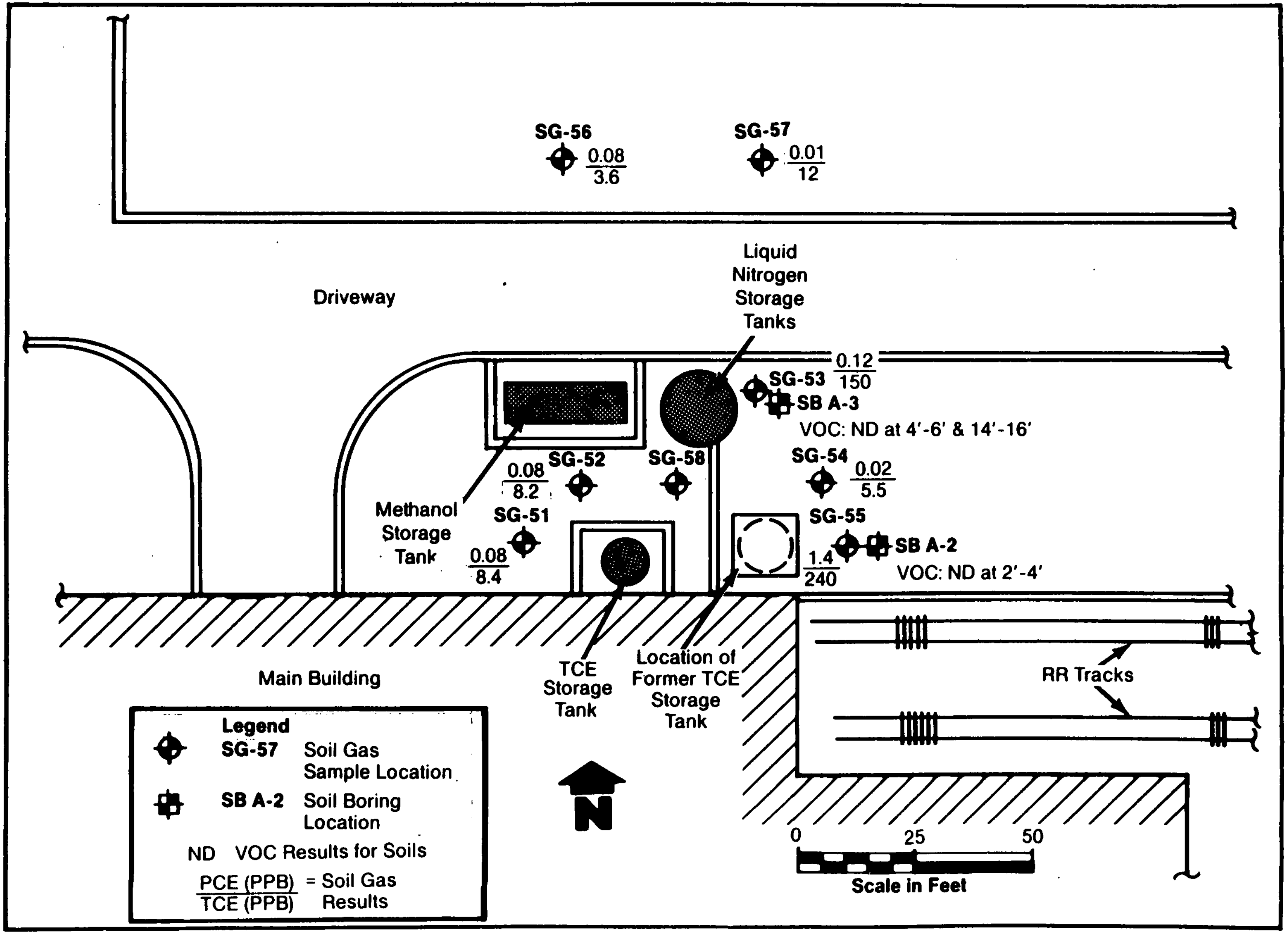


FIGURE 3-7 RESULTS, ABOVE GROUND TANK STORAGE AREA, SOIL GAS AND SOIL SAMPLE ANALYSIS, BLACK & DECKER, HAMPSTEAD, MD

Table 3-3

Zone A: Soil Analysis

Results of TPH Analysis

Sample Number	Sample Depth (ft)	TPH Concentration
SB-A1	6-8	150000 mg/kg
SB-A2	2-4	3 mg/kg
SB-A3	14-16	2 mg/kg
SB-A4	4-6	4600 mg/kg
SB-A4	12-14	3 mg/kg
SB-A7	4-6	20 mg/kg
Field Blank		0.2u mg/l

u - not detected

Results of VOC Analysis

Detected Compound	SB-A1 ug/kg	SB-A2 ug/kg	SB-A3 ug/kg	SB-A4 ug/kg	SB-A4 ug/kg	SB-A7 ug/kg	FIELD BLANK ug/l	TRIP BLANK ug/l
Methylene Chloride	130 B	26 B	21 B	120 B	39 B	20 B	6 B	6 B
Acetone	190 B	15 B	17 B	200 B	410 B	26 B	2 B	2 JB
1,1-Dichloroethene	8 J							
Trans-1,2-Dichloroethene	13 J							
Chloroform				2 J			6	5
2-Butanone	26 JB		6 JB	29 JB	12 JB	11 JB		
Carbon Tetrachloride	39 J							
Trichloroethene	2400			9 J				
1,1,2-Trichloroethane	220							
4-Methyl-2-pentanone				55 J	110			
Tetrachloroethene	380000			850	2 J	4 J		
Toluene	88 B	2 JB	2 JB	46 B	2 JB	2 JB		
Ethylbenzene				510				
Total Xylenes				1600				
Sample Depth (ft)	6-8	2-4	14-16	4-6	12-14	4-6		

B - Detected in labratory blanks
J - Detected at concentration below detection limits

as present in the soil but below laboratory quantification limits in SB-A-2, SB-A-3, and SB-A-7. Concentrations of methylene chloride, acetone, chloroform, toluene, and 2-butanone found in the samples were low and not considered significant since these compounds were also detected in laboratory blanks.

The results of the TPH analysis show that 150,000 ppm and 4,600 ppm of petroleum hydrocarbons were detected in soil samples from SB-A-1 and SB-A-4, respectively. Low concentrations were detected in SB-A-2, SB-A-3, and SB-A-7.

These results indicated that the aboveground tank area in Zone A is not currently a source of groundwater contaminants. However, underground Tank Farms 1 and 2 appeared to contain localized "hot spots" of both TPH and VOCs. VOCs were only present at significant levels in samples that contained very high petroleum hydrocarbon levels. This may be due to a partitioning phenomenon where the VOCs appeared to be preferentially residing in the oil phase rather than the aqueous or gas phase. The hydrocarbons were retained in the soil pores by surface tension forces and high viscosity. This scenario could have accounted for the historical migration of any VOCs not associated with high TPH and retention of VOCs in soils characterized by TPH/VOC hot spots.

In general, the Zone A results indicated that further characterization of the soils in Tank Farms 1 and 2 in Phase II was warranted.

3.2 ZONE B - FILL SITE NEAR SEEP AREA

3.2.1 Field Activity

This area in the western portion of the property was identified as a potential site of plant refuse disposal early in the plant's history. Zone B is located in a low-lying area adjacent to groundwater seeps. Groundwater data collected by others reportedly suggested that the area may be the source of PCE and TCE identified in nearby production well 7. However, previous testing did not indicate contamination in the groundwater seeps. Fill areas within Zone B had been previously identified by geophysical surveys, but had not been evaluated further for the presence of wastes or soils containing organic chemical constituents.

For the WESTON Phase I investigation, test pits were excavated in the previously identified fill areas to visually characterize the material and sample for VOC and EP toxicity metals analysis. At the request of the Maryland Department of the Environment (MDE), water samples were collected from six existing monitor wells and analyzed for VOCs in order to determine the effect pumping of well 7 had on PCE and TCE concentrations in the local groundwater.

Backhoe Test Excavations

Eight trenches were excavated with a backhoe around the fill areas in locations shown in Figure 3-8. Test pits TPB-1, TPB-1B, TPB-3, and TPB-5 were excavated within suspected boundaries of the fill material. TPB-4 and TPB-6 were located hydraulically upgradient of the boundaries, and TPB-2 and TPB-7 were located hydraulically downgradient of the boundaries. Excavations were made to the base of the fill, or to a depth where groundwater was encountered if no fill was present. Visual descriptions of the soils and any encountered fill were made at each excavation. Monitoring of the soils sampled by the backhoe bucket was conducted using a HNu Model 101 portable gas analyzer with a 10.2-eV probe.

Four samples of test pit soils were collected and analyzed for VOCs and EP toxicity metals. Elevated HNu readings recorded in TPB-2 and TPB-4 determined the sampling interval in those test pits. Samples were taken from the base of the fill in TPB-3 and TPB-5 because no elevated readings occurred. A duplicate sample from TPB-3 and a field blank were submitted for VOC analysis.

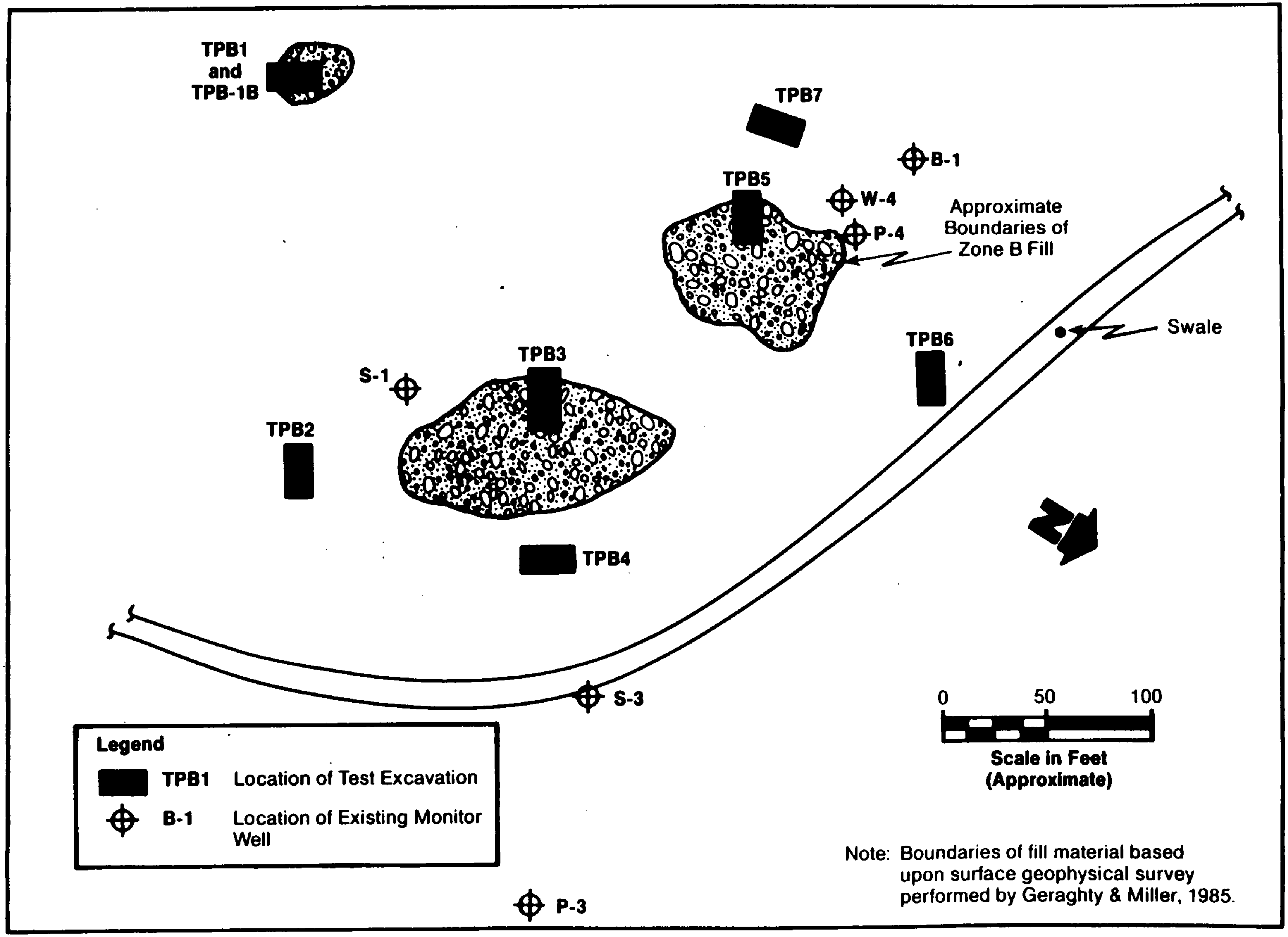
Samples were collected from the backhoe bucket with stainless steel trowels. The field blank consisted of HPLC water, which had been poured in the decontaminated backhoe bucket. The bucket and rear of the backhoe were steam-cleaned between excavations. Test pits were carefully backfilled at the completion of sampling.

Groundwater Sampling

Groundwater samples were collected from the six monitor wells selected by MDE in Zone B, as shown in Figure 3-8. Prior to sampling with a Teflon bailer, the wells were purged of three well volumes using a Johnson Keck pump Model SP-81. The conductivity, temperature, and pH of the purge water were monitored during sampling using a YSI conductivity meter and an analytical pH meter Model 107. All samples, including a duplicate sample from monitor well P-3, a field blank, and a trip blank, were analyzed for VOCs. The field blank consisted of HPLC water, which had been poured into a decontaminated bailer in the field.

The bailers and pump were scrubbed with an Alconox and water solution, rinsed with potable water, and then rinsed with deionized water before each well was sampled. A fresh pair of latex gloves was worn during sampling at each well.

The elevations of the top of the outer steel casing of the 26 existing on-site monitor wells and the finished floor elevations of the production well houses were surveyed with respect to the finished floor elevation of the main building by a Maryland licensed surveyor to within ± 1 foot of horizontal distance



Note: Boundaries of fill material based upon surface geophysical survey performed by Geraghty & Miller, 1985.

FIGURE 3-8 LOCATIONS OF ZONE B TEST PITS AND MONITOR WELLS, BLACK & DECKER, HAMPSTEAD, MD and ± 0.01 foot of elevation. The elevations of the innermost casings of all monitor wells were determined by subtracting the thickness of the locking cap and distance between the top of the inner and outer casings from the surveyed elevation (Table 3-4).

3.2.2 Analytical Results

Soil Samples from Test Pits

The soil uncovered in excavation of pits in Zone B were typically a yellowish brown to red brown to brown, silty loam, silt, or silty clay. Fill, consisting of burnt wood, bricks, and scrap metal was found from 5 to 8 feet in TPB-3. Similar fill was found from 1 to 5 feet in TPB-5. Field HNu readings several units above background were noted only at 10.5 feet in TPB-2 and at 2.5 feet in TPB-4. Complete descriptions of each test pit are included in Appendix C.

The results of the VOC analyses (Table 3-5) indicate that no concentrations of volatiles above quantification limits were found in any of the test pit soil samples, except for low levels of constituents, which were also found in the laboratory blanks.

The results of the EP toxicity metals scan showed that selenium was detected at 116 ppb in the leachate from sample TPB4-1. This concentration is well below the hazardous waste standard established by the Code of Maryland (COMAR) 10.51. The maximum concentration allowable for selenium under COMAR 10.51 is 1.0 ppm. No other metals were detected in extracts from this sample or other samples from the Zone B test pits.

The results for Zone B indicated that the fill areas are not a current source of groundwater contamination. It was determined that no further source characterization was warranted in Zone B.

Groundwater Samples

VOC analyses for the groundwater sampled from six of the monitor wells in Zone B are included in Table 3-5. These results were consistent with previous results. Samples from all six wells in this area showed PCE concentrations in excess of 100 ppb. PCE concentrations in monitor wells B-1 and W-4 exceeded 1 ppm. Lesser concentrations, the majority below detection limits, of TCE, 1,1,2-TCA, and trans-1,2-DCE were found in individual samples. Low levels of methylene chloride, acetone, toluene, and 1,1,1-TCA were also found in these samples, but these compounds were detected in field and laboratory blanks and the results are not considered significant.

Table 3-4

Zone B: Well Elevation Survey

Well No.	Elevation TOC (ft above MSL)	Distance between TOC and TIC (ft)	Elevation TIC (ft above MSL)
B1	815.57	0.02	815.55
B2	807.70	0.02	807.68
B3	803.04	0.02	803.02
T1	816.75	0.02	816.73
S1	813.90	0.19	813.71
S2	814.22	1.02	813.20
S3	822.42	0.30	822.12
S4	802.37	0.24	802.13
S5	804.02	1.05	802.97
S6	833.61	0.60	833.01
P1	813.72	0.19	813.53
P3	823.75	0.14	823.61
P4	816.56	0.11	816.45
P5	817.16	0.20	816.96
P6	812.90	0.18	812.72
P8	812.48	0.41	812.07
W1	813.90	0.18	813.72
W3	820.13	0.38	819.75
W4	815.24	0.18	815.06
W5	815.61	0.21	815.40
W6	820.55	0.15	820.40

TOC - top of outermost casing
TIC - top of innermost casing
MSL - mean sea level

Table 3-5

Zone B: Soil and Groundwater VOC Analysis

Results of VOC Analysis: Soil Samples

Compound Detected	TPB2-1 ug/kg	TPB3-1 ug/kg	TPB4-1 ug/kg	TPB5-1 ug/kg	Field Blank ug/l	Trip Blank ug/l
Methylene Chloride	16 B	22 B	27 B	28 B	4 JB	4 JB
Acetone	12 B	7 JB	4 JB	5 JB	4 JB	5 JB
2-Butanone	8 JB				3 JB	24 JB
Toluene	3 JB	6 JB	3 JB	15 B	2 JB	3 JB
Carbon Disulfide				2 J		
Chloroform					7	7

Results of VOC Analysis: Groundwater Samples

Compound Detected	S-1 ug/l	S-3 ug/l	P-3 ug/l	P-3 DUP ug/l	P-4 ug/l	W-4 ug/l	B-1 ug/l	TB ug/l	FB ug/l
Methylene Chloride	3 JB	6 B	7 JB	5 JB	83 B	3 JB	89 B	3 JB	6 B
Acetone			2 JB	2 JB	59 JB		70 JB	1 JB	2 JB
1,1,1-Trichloroethane		1 JB		1 JB					
Trans-1,2-Dichloroethene	4 J	27	13	12		7			6
Chloroform								5	
2-Butanone								18	
Trichloroethene	2 J	8	5 J	5		16	38 J		
Tetrachloroethene	140	280	130	140	650	1600	1700		
1,1,2-Trichloroethane						8			
Toluene	1 JB		1 JB	1 JB	12 JB	1 JB	10 JB	2 JB	

B - Detected in laboratory blanks
J - Detected at concentration below detection limits

3.3 ZONE C - POTENTIAL HEAT TREATING RESIDUES DISPOSAL AREA

3.3.1 Field Activity

Zone C consists of two areas where material may have been deposited from heat-treating furnaces that previously operated at the facility. The northern area, closest to the plant building, could have received residues from the furnaces. The southern area, near the ponds, could have received furnace fragments, brick, and other debris from the furnaces. The presence of residues or debris and chemical constituents that could be associated with them was not previously investigated. Test pit excavations and sediment sampling were used to investigate this zone for possible soil contamination. The parameters tested included VOCs, based on the constituents present in the groundwater, and EP toxicity metals and cyanide, based on constituents typically associated with heat treatment.

Backhoe Test Excavations

Four test excavations (two per area) were completed and sampled following the procedures defined for excavations in Zone B (Subsection 3.2.1). The locations of the excavations are shown in Figure 3-9. Visual descriptions were made of the soils and fill. Samples were collected from the base of the fill in TPC-1, TPC-2, and TPC-3. No fill was uncovered in TPC-4, and therefore, the sample and duplicate were taken at the base of the excavation. The five samples and field blanks were analyzed for cyanide and EP toxicity metals. A trip blank was submitted for VOC analysis.

Sediment Sampling

One stream sediment sample was collected with a stainless steel trowel from a location downgradient of TPC-1, as shown in Figure 3-9. The sample was analyzed for VOCs, EP toxicity metals, and cyanide.

3.3.2 Analytical Results

Soil Samples from Test Pits

Soils encountered in test pits were generally described as reddish-brown to yellowish-brown, and grading from clay to silt to sandy loam. Fill and debris, including concrete, metal pipe and scraps, fabric, sheet plastic, and a tree stump, were uncovered in TPC-1 and TPC-2 from 1 to 4.25 feet and 1 to 11 feet, respectively. A layer of white material was encountered at the surface in TPC-3. No fill was found in TPC-4. Complete test excavation logs are included in Appendix C.

The EP toxicity metals results indicated that only selenium at 121 ppb was detected in the extract from the TPC-1 sample.

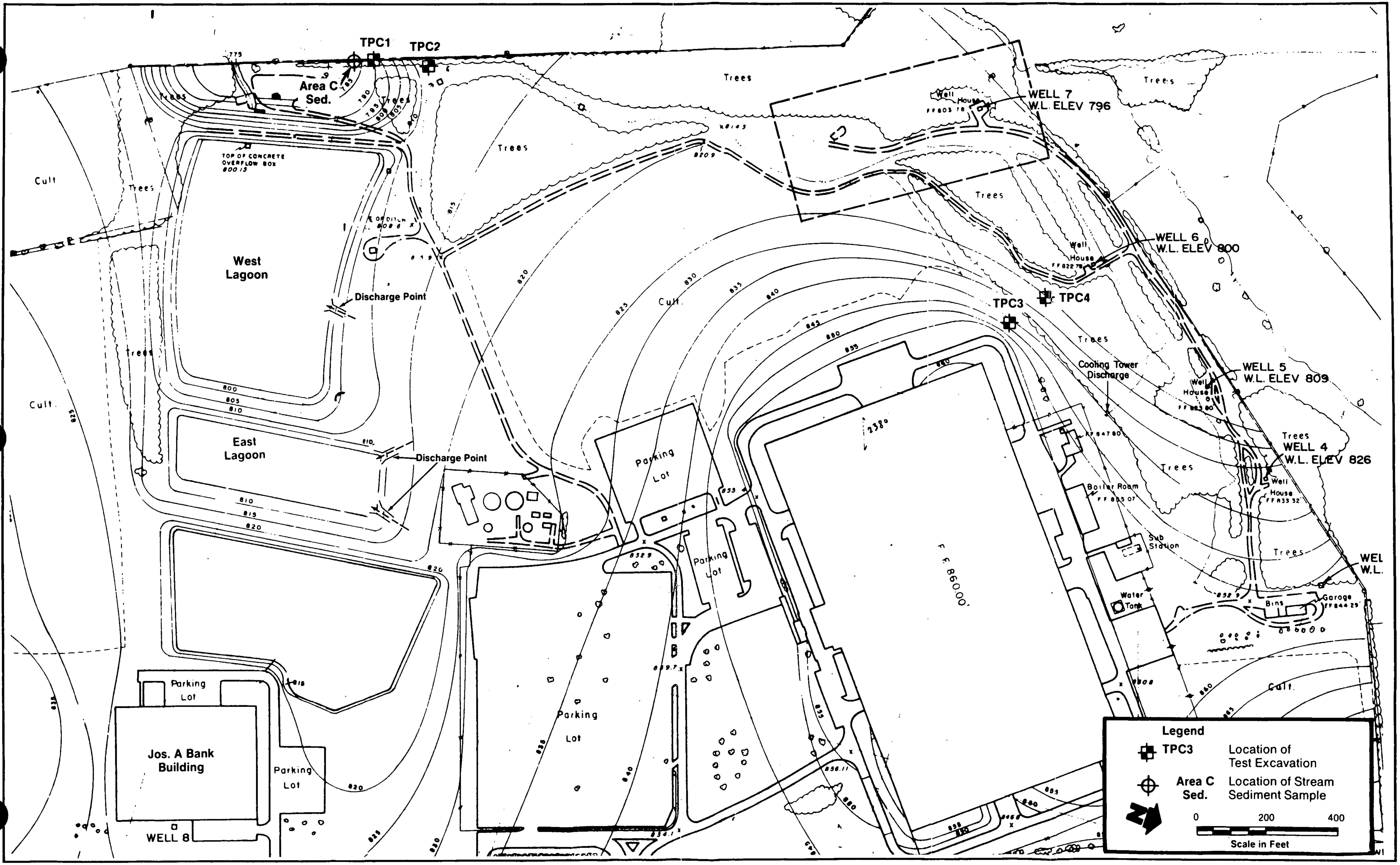


FIGURE 3-9 LOCATIONS OF ZONE C TEST PITS AND SEDIMENT SAMPLE, BLACK & DECKER, HAMPSTEAD, MD

This concentration is below the hazardous waste level established in COMAR 10.51. No EP toxicity metals were detected in the other samples. In addition, the cyanide results indicated that cyanide was not present in any of the test pit soil samples.

The results for Zone C indicated that the fill areas are not a current source of groundwater contamination. It was determined that no further source characterization was warranted in Zone C.

Sediment Sampling

The VOC analysis for the stream sediment sample is presented in Table 3-6. PCE was detected in the sample at 14 ppb; TCE was present at a concentration just below the quantification limit. Low levels of methylene chloride, acetone, and toluene were also detected in these samples, but as these compounds were also detected in laboratory blanks, the results are not considered significant.

The results of the cyanide and EP toxicity metals analyses for the sediment sample were negative.

These results indicated that the stream sediment does not represent a significant repository of groundwater contaminants.

3.4 ZONE D - POTENTIAL PRODUCT DISPOSAL AREA

3.4.1 Field Activity

This area was identified by Black & Decker as a potential site of buried off-specification products. The boundaries of the fill area, and the potential presence of chemical constituents were not previously investigated. A geophysical survey was conducted to define the boundaries of buried debris. Test excavations were completed in areas defined by the survey, and the soils were sampled for VOC and EP toxicity metals analysis.

Geophysical Survey

One of the objectives of the geophysical investigation was to locate the debris burial sites in Zone D. Site reconnaissance revealed that the trenches were probably oriented north-south, based on soil surface depressions. Visual estimates of the length of the trenches could not be made, but the width of the trenches was estimated to be approximately 5 feet (two backhoe bucket widths).

A detailed discussion of the field procedures and data reduction procedures of the geophysical investigation is included in Appendix D.

Table 3-6

Results of VOC Analysis: Zone C Sediment

Compound Detected	Area C sed ug/kg	Field Blank ug/l	Trip Blank ug/l
Methylene Chloride	21 B	4 JB	4 JB
Acetone	5 JB	4 JB	5 JB
Chloroform			7
Trichloroethene	7 J		
Tetrachloroethene	14		
Toluene	3 JB	7 B	3 JB
2-Butanone		3 J	24

B - Detected in laboratory blanks
J - Detected at concentration below detection limits

Magnetics

The proton precession magnetometer was used to identify areas containing relatively large concentrations of buried ferrous metal. Interpreted sources of the ferrous metals were the trench contents in Zone D. Figure 3-10 presents the area of magnetic coverage for the geophysical survey at the Black & Decker facility.

The magnetic survey was designed based on the suspected orientations and dimensions of the trenches in Zone D. The magnetic survey was divided into two parts.

The first part was designed to locate the east-west boundaries (the short axis) of the trenches located in the northern portion of the site. Magnetic measurements were taken at 10-foot intervals along four east-west-oriented lines spaced 20 feet apart. The second part of the survey was designed to locate the north-south boundaries (the long axis) of the trenches in Zone D. Magnetic measurements were taken at 20-foot intervals along north-south-oriented lines spaced 20 feet apart.

Electromagnetics

The EM-31D terrain conductivity meter was used to identify areas having anomalous electrical conductivities. Metal debris associated with burial activities could be possible sources of anomalous conductivities. Figure 3-11 shows the electromagnetic coverage for the geophysical survey conducted at the Black & Decker facility.

The electromagnetic survey was designed based on the results of the magnetic survey. The EM survey encompassed both Zone D and Zone F. It was found that areas of increasing magnetic intensities were clustered in the northwest and southwest portions of the surveyed area. Therefore, the electromagnetic survey focused on the central and western portions of the area defined by the 20-foot magnetic survey grid. Electromagnetic measurements were taken at 20-foot intervals along north-south-oriented lines spaced 20 feet apart.

Backhoe Test Excavations

After interpretation of the geophysical survey data, the locations of test excavations were selected in suspected fill areas. Four trenches were excavated at Zone D in the locations depicted in Figure 3-12. The procedures for completing and sampling the excavations were the same as defined for Zone B (Subsection 3.2.1). Visual descriptions were made of the soils and fill in all pits. Soil samples from TPD-1 and TPD-4 were collected from within the fill area, since it was not possible to trench below the fill. Soil samples from TPD-2 and

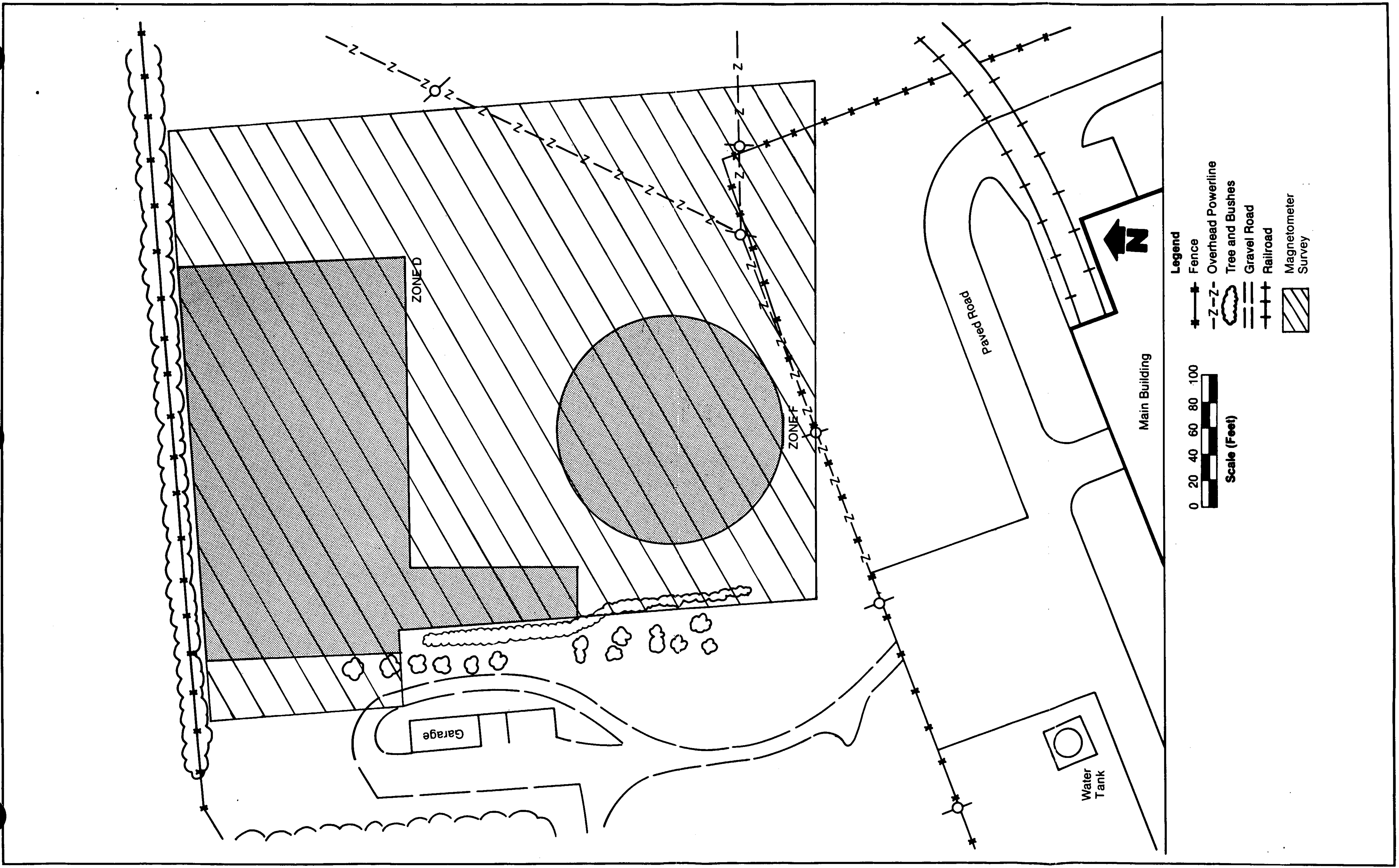


FIGURE 3-10 ZONE D & F, MAGNETOMETER SURVEY, BLACK & DECKER, HAMPSTEAD, MD

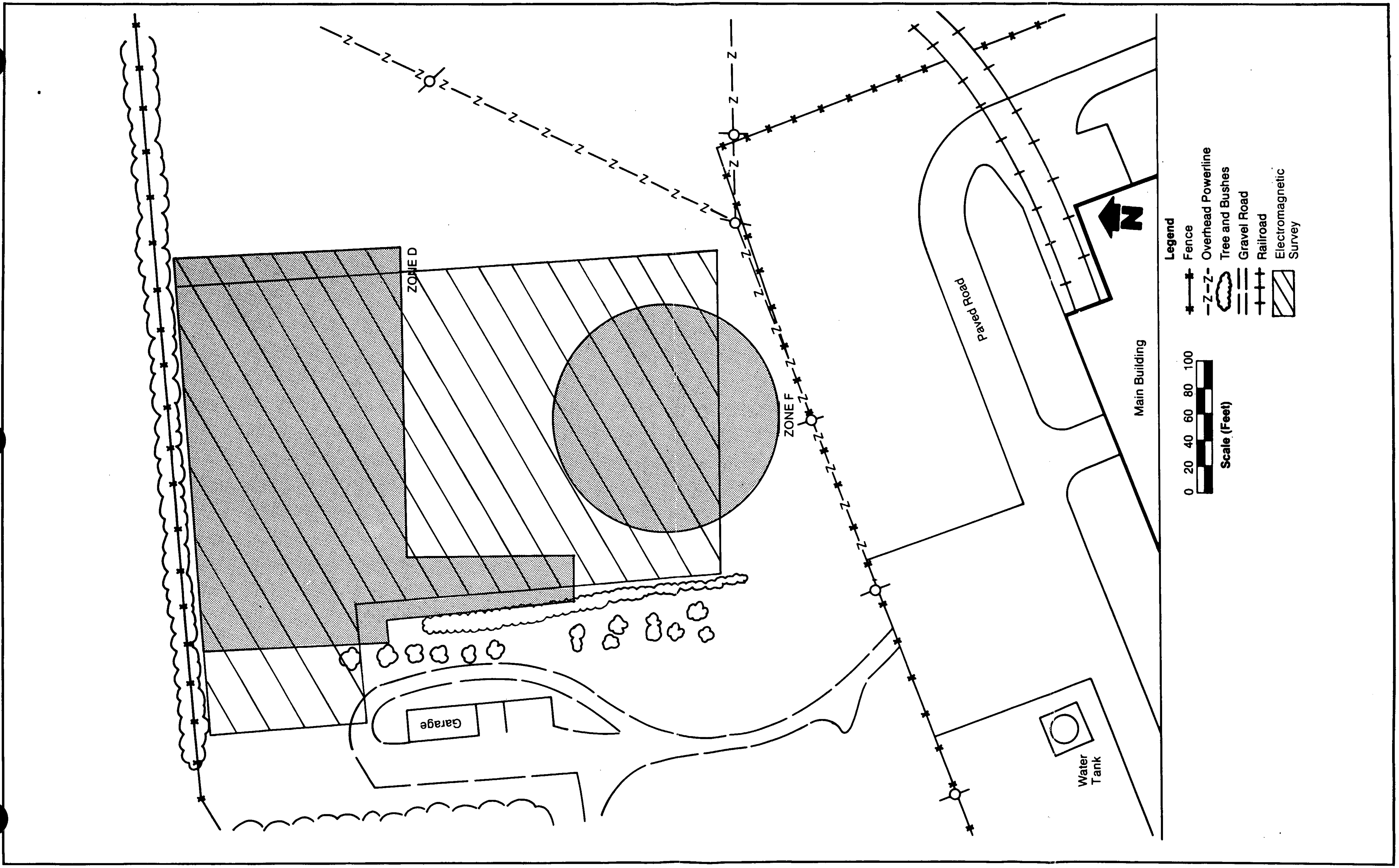


FIGURE 3-11 ZONE D & F, ELECTROMAGNETIC SURVEY, BLACK & DECKER, HAMPSTEAD, MD

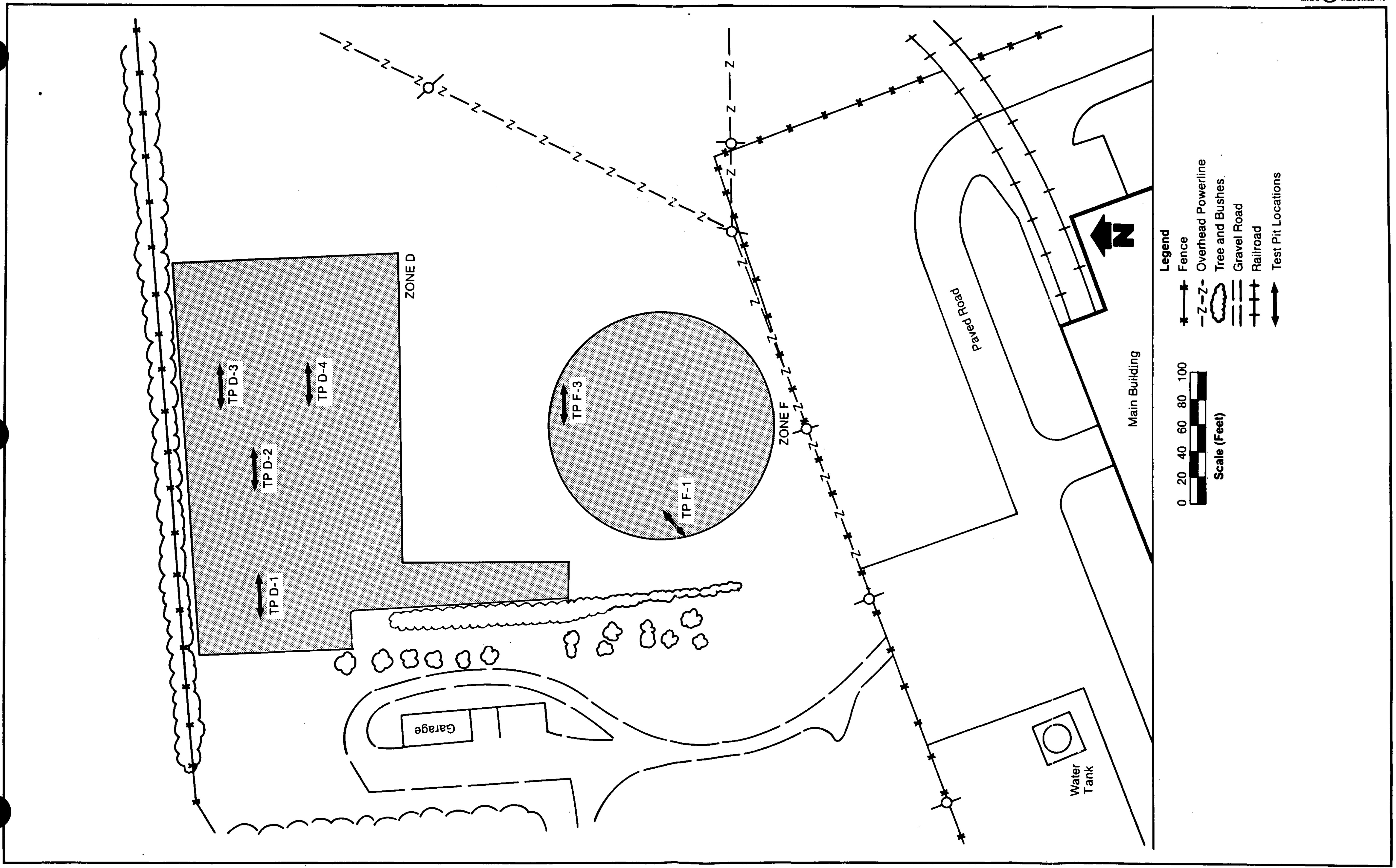


FIGURE 3-12 ZONE D & F, TEST PIT LOCATIONS,
BLACK & DECKER, HAMPSTEAD, MD

TPD-3 were collected at the base of the fill. A duplicate sample was collected at TPD-3. Based on the presence of buried off-specification tool products, all samples were analyzed for EP toxicity metals. Although HNu readings were low, samples from TPD-2 and TPD-3 and a trip blank were also analyzed for VOCs to check for the presence of the organic constituents found in the groundwater.

3.4.2 Analytical Results

Geophysical Survey

Magnetics

The full set of data recorded for the magnetic survey is presented in Appendix D. The results of the magnetic survey interpretation are presented in Figure 3-13.

Integration of the east-west magnetic survey and the north-south magnetic survey resulted in the definition of seven magnetic anomalies in Zone D, as identified in Figure 3-13. The criteria used to identify the anomalies are reviewed in Appendix D.

The location of these anomalies was used to select the five test pit locations in Zone D.

Electromagnetics

The electromagnetic (EM-31) survey data are presented in Appendix D. The results of the EM-31 survey interpretation are presented in Figure 3-14.

Three electromagnetic anomalies were identified using the in-phase component of the electromagnetic field (see Appendix D). Generally, the locations of the in-phase anomalies were in agreement with the magnetometer anomalies. Two of the magnetic anomalies were not confirmed by the electromagnetic survey. This is probably because the source of the magnetic anomaly was not a relatively strong conductor.

Soils Samples from Test Pits

Soils encountered in Zone D test pits were described as yellow-brown to red-brown silt to silt loam. Fill and debris were encountered in all four excavations. This included scrap metal, wood, plastic, construction debris, and power tool parts. The test excavation logs are included in Appendix C.

The VOC analysis for the soil samples from TPD-2 and TPD-3 showed only the presence of toluene in levels below the quantification limits, 1 ppb and 2 ppb, respectively (Table 3-7)

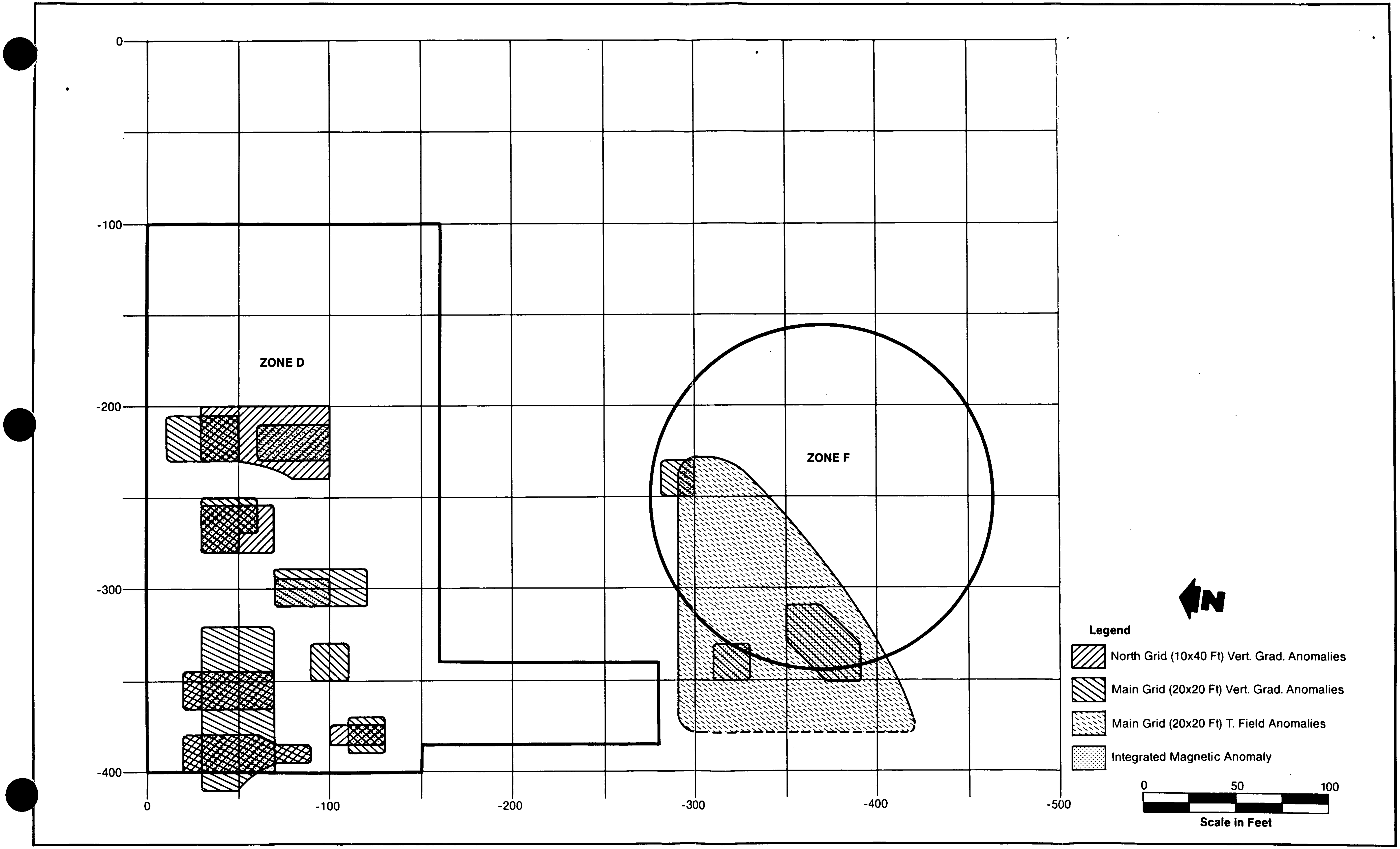


FIGURE 3-13 ZONE D & F, MAGNETIC ANOMALY MAP, BLACK & DECKER, HAMPSTEAD, MD

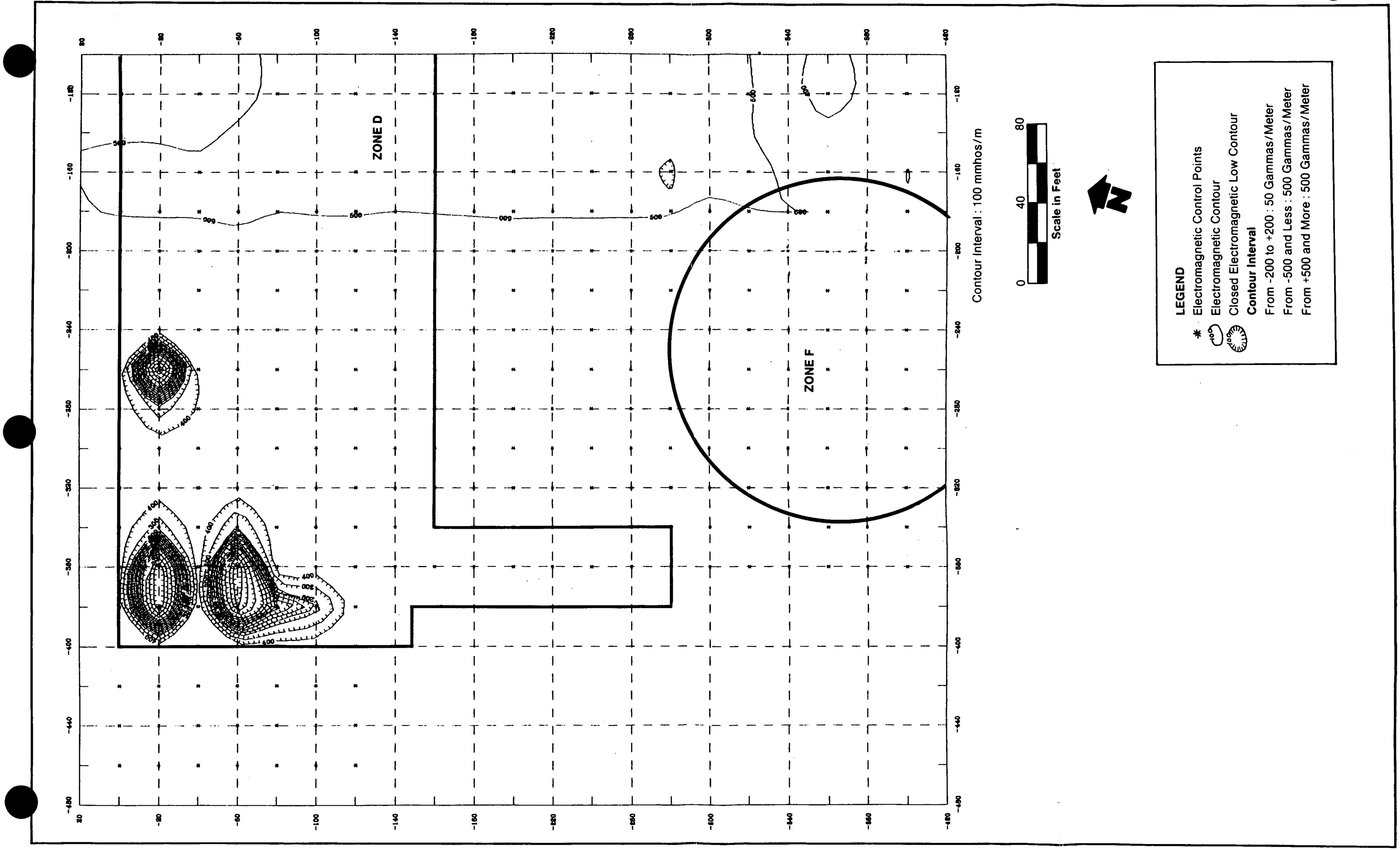


FIGURE 3-14 ZONE D & F, ELECTROMAGNETIC ANOMALY MAP, BLACK & DECKER, HAMPSTEAD, MD

Table 3-7

Results of VOC Analysis: Zone D Soil Samples

Compound Detected	TPD2-1 ug/kg	TPD3-1 ug/kg	Field Blank ug/l	Trip Blank ug/l
Methylene Chloride	13 B	22 B	4 JB	4 JB
Acetone	2 JB	7 JB	4 JB	5 JB
Toluene	1 JB	2 JB	2 JB	3 JB
Chloroform			7	7

B - Detected in laboratory blanks
J - Detected at concentration below detection limits

Methylene chloride and acetone were detected at low levels in the samples, but were also found in the laboratory blanks.

The EP toxicity metals results indicated that in the soil sample for TPD-3, selenium was detected at 264 ppb, a concentration below COMAR 10.51 standards. No other metals were detected in leachate from this or the three other Zone D soil samples.

These results generally indicated that the Zone D off-specification product burial area does not currently represent a repository of groundwater contaminants.

3.5 ZONE E - SITE NEAR CORNER OF BUILDINGS 5 AND 6

3.5.1 Field Activity

This area was filled and regraded prior to the Building 5 and 6 expansion of the main plant and again prior to construction of a small storage building to the southwest of Building 5/6. It was believed that this area could potentially have been used to deposit heat-treating residues. The zone was investigated to assess the potential for buried fill and constituents found in the groundwater. Soil-gas analysis and soil borings were the investigative techniques used to evaluate this zone.

Soil-Gas Analysis

In Zone E, 44 soil-gas samples were collected and analyzed for TCE and PCE using the procedure described in Appendix B. Figure 3-15 depicts the location of the sampling points; the sampling area was extended south and west of Zone E at the request of MDE, to allow for the evaluation of potential migration of VOCs toward well 7 and Zone B.

Soil Borings

Soil borings were performed in seven locations distributed throughout the Zone E area. Since the soil-gas analysis, in general, indicated that the concentration of volatiles in the soil was low, the locations were selected in an effort to evaluate the soils in Zone E for possible contamination with cyanide. The boring locations are shown in Figure 3-15. The procedures for drilling the borings and sampling were the same as those outlined for Zone A (Subsection 3.1.1). Borings were drilled and sampled to a depth of 16 feet, with the exception of SB-E-6, which was drilled to a depth of 10 feet. Visual descriptions were made of each sampled interval. One sample from each boring, selected by headspace screening with the OVA, was submitted for VOC and cyanide analyses. Field blanks were collected and analyzed for VOCs and cyanide. A trip blank was submitted for VOC analysis.

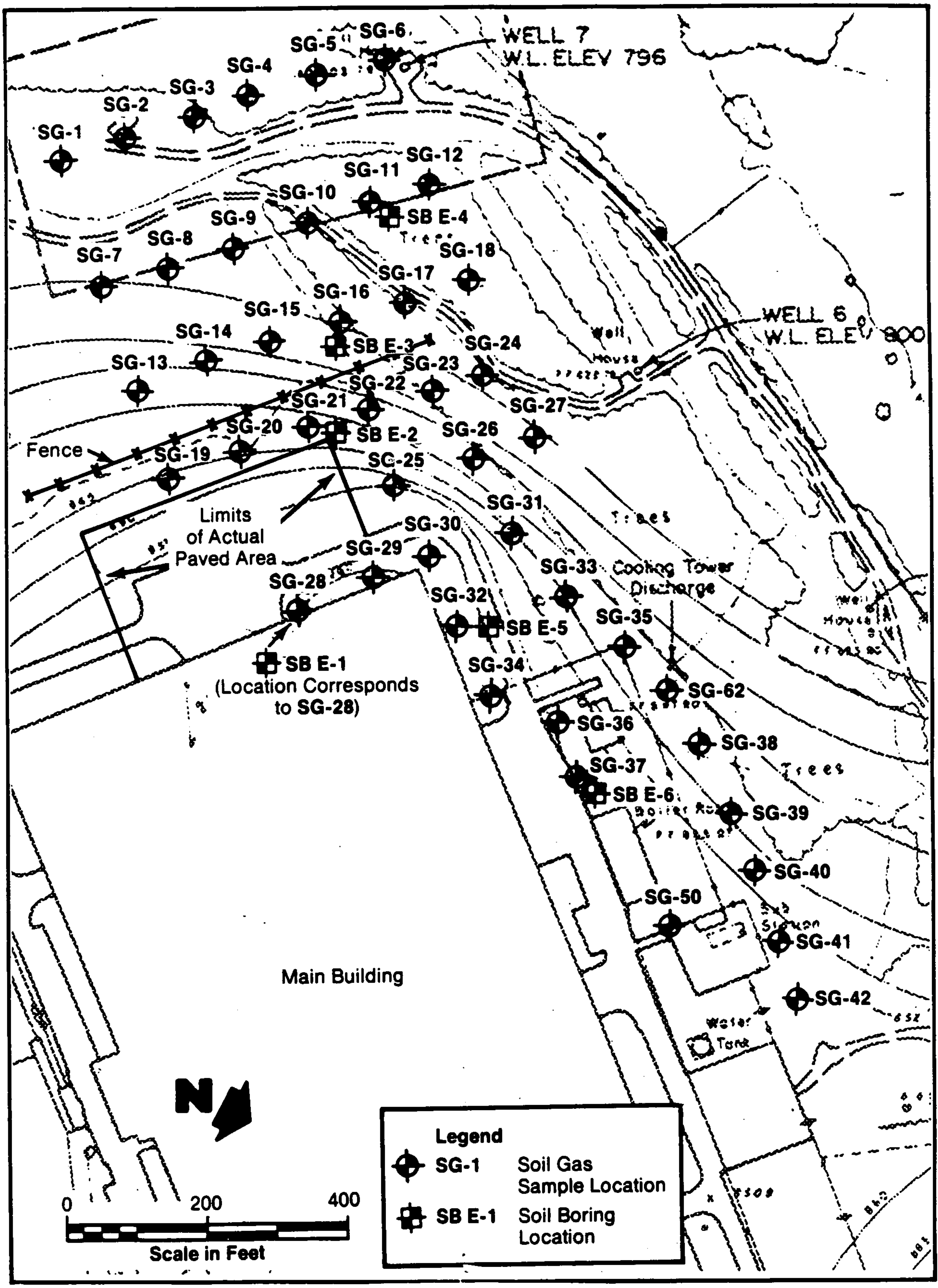


FIGURE 3-15 LOCATION OF PHASE I SAMPLING POINTS, ZONE E, BLACK & DECKER, HAMPSTEAD, MD

3.5.2 Analytical Results

Soil-Gas Analysis

The results of the broad soil-gas sampling and analysis program for TCE and PCE off the east corner of the main building are presented in Table 3-8. In general, both TCE and PCE were detected at low levels in the soil-gas, typically below 1 pptr. Two "relatively" high PCE concentrations of 13 pptr and 160 pptr were detected in SG-21 and SG-24, respectively. Soil boring SB-E-2 was placed at the SG-21 location, and a Phase II monitor well was proposed for the SG-24 location.

Soil Borings

Similar to Zone A soils, the soils in the six soil borings at Zone E were described as yellowish-brown to reddish-brown silt loam to silt. Occasional clayey layers and quartzose fragments were also encountered. Boring lithologic logs are included in Appendix C.

The soil sample analysis results for VOCs were largely negative (Table 3-9). PCE was detected in only one sample at an estimated concentration of 1 ppb (below quantification limits) in SB-E-1 at the 4- to 6-foot sample interval. Other than methylene chloride, acetone, toluene, and 2-butanone, which were detected in the blanks, no other VOCs were detected in any of the samples from soil borings in Zone E. The results of the cyanide analysis were also negative.

These results generally indicated that the Zone E, Building 5/6 presumed construction fill area does not contain waste materials and does not contain significant levels of groundwater contaminants.

3.6 ZONE F - PAST POTENTIAL BURN AREA

3.6.1 Field Activity

This area may have been used in part to disable off-specification products, plastic parts, and other materials prior to their disposal. The location of the potential burn area was not clearly defined, but was thought to coincide with a slight surface depression to the east of Zone D. A geophysical survey was conducted to define the boundaries of any potential buried fill. Test excavations were completed in areas defined by the geophysical anomalies.

Geophysical Survey

The objective of the geophysical investigation in Zone F was to delineate the burn area. A detailed discussion of the field procedures and data reduction procedures of the geophysical investigation is included in Appendix D.

Table 3-8

Results of Soil Gas Analysis: Zone E

Sample ID	Bulb #	Run #, Inj. Port.	TCE (ng/mL)	PCE (ng/mL)
1	4	142B	ND	0.04J
2	6	138B	0.04J	0.57
3	1	114A	ND	0.02J
4	5	134B	0.45	0.40
5	2	135B	0.32	0.35
6	3	136B	0.08	0.04J
7	2	129B	0.40	0.09
8	3	105A,130B	0.07	0.04J
9	5	131B	1.1	2.3
10	4	108A	0.03J	0.71
11	6	107A	0.03J	1.5
12	1	133B	0.06	0.02J
13	3	122B	0.04J	0.02J
14	2	123B	0.33	0.07J
15	5	98A,99A,100	1.3	1.1
16	4	104A	0.02J	1.8
17	1	124B,125B	ND	0.07J
18	6	126B	0.02J	1.0
19	4	84A	0.06	0.03J
20	2	85A,86A	0.42	0.16
21	6	87A	0.07	13
22	1	82A	ND	0.12
23	3	108B,104B	0.11	0.31
24	6	107B	0.15	160
25	1	97A,88A	0.02J	0.02J
26	5	110B	0.16	2.2
27	4	78A,80A	0.01J	1.8
28	6	96A	0.02J	0.72
29	4	121B	0.03J	0.01J
30	3	120B	0.08	0.07J
31	5	77A	0.08	0.09
32	2	94A	0.40	0.10
33	3	76A	0.10	0.07
34	1,6	89A	0.03J	0.14
35	2	102B	0.45	0.66
36	6	71A	0.34	0.19
37	4	70A	0.07	0.04J
38	2	72A	0.75	0.25
39	3	97B	0.15	0.09
40	5	98B	0.09	0.01J
41	6	75A	0.03J	0.07J
42	4	101B	0.03J	0.27

J - Detected at concentration below detection limits

Table 3-9

Results of VOC Analysis: Zone E Soil Samples

Detected Compound	SB-E1 ug/kg	SB-E2 ug/kg	SB-E3 ug/kg	SB-E4 ug/kg	SB-E5 ug/kg	SB-E5 ug/kg	SB-E6 ug/kg	FIELD BLANK ug/l	TRIP BLANK ug/l
Methylene Chloride	19 B	29 B	25 B	21 B	15 B	21 B	17 B	6 B	6 B
Acetone	34 B	29 B	36 B	9 JB	25 B	46 B	23 B	2 JB	2 JB
Chloroform								6	5
2-Butanone			5 JB		5 JB	6 JB	7 JB		
Tetrachloroethene	1 J								
Toluene	2 JB	5 JB	2 JB	2 JB	2 JB	2 JB	2 JB		
Sample Depth (ft)	4-6	4-6	6-7	10-11	4-6	8-10	14-16		

B - Detected in laboratory blanks
J - Detected at concentration below detection limits

Magnetometer

The magnetometer was used to identify areas that could have contained relatively large concentrations of buried ferrous metals, based on the possibility that ferrous metals could have been present in near-surface soils or in buried fill within the product burn area. Figure 3-10 presents the area of magnetic coverage for the geophysical survey at the Black & Decker facility.

The survey was designed to encompass a 5-acre area of investigation, which included Zone D to the north. Magnetic measurements in Zone F were taken at 20-foot intervals along north-south-oriented lines spaced 20 feet apart.

Electromagnetics

The EM-31D terrain conductivity meter was used to identify areas having anomalous electrical conductivities. Metal debris associated with burning activities could be possible sources of anomalous conductivities. Figure 3-11 presents the electromagnetic coverage for the geophysical survey conducted at the Black & Decker facility.

The design of the electromagnetic survey was based on the magnetic survey results. The EM survey encompassed both Zone D and Zone F. The details of the EM survey grid are discussed in Subsection 3.4.1.

Test Excavations

Two trenches were excavated in areas identified as weak anomalies by the geophysical survey, as shown in Figure 3-12. The test pits were completed and sampled in accordance with the procedures outlined for Zone B (Subsection 3.1.1). TPF-1 and TPF-3 were terminated at a depth of 8 feet and 4 feet, respectively, where a vein of quartzite was encountered. Visual descriptions of the soils were made for each pit. One sample from the base of each excavation and a field blank were collected and submitted for VOC and TPH analyses. A duplicate was collected from TPF-1 and analyzed for VOCs.

3.6.2 Analytical Results

Geophysical Survey

Magnetic and electromagnetic surveys were conducted to determine if near-surface or buried metallic residues were present in this potential past off-specification product burning area.

Magnetics

The magnetic survey identified three relatively weak anomalies in Zone F. The location of these anomalies is presented in Figure 3-13. These anomalies potentially resulted from relatively small concentrations of buried ferrous materials.

Electromagnetics

The electromagnetic survey did not identify any areas in Zone F that had relatively high concentrations of buried conductive materials.

Soil Samples from Test Pits

Soils encountered in the two Zone F test pits were a brown silt loam. Quartzite and other weathered rock fragments were abundant and caused refusal at 4 feet in TPF-3 and at 8 feet in TPF-1. The test excavation logs are included in Appendix C.

The results of the VOC and TPH analyses are summarized in Table 3-10. Total xylenes were detected at 6 ppb in the soil sample taken from TPF-1. Methylene chloride, acetone, and toluene were detected in laboratory blanks, as well as at low levels in both soil samples. TPH were detected at relatively low levels, less than 15 ppm, in the soils.

These results did not confirm the reported possible use of this area for burning off-specification tool products, and indicated that Zone F does not contain waste materials or significant levels of contaminants detected in on-site groundwater.

3.7 ZONE G - LAGOON AREAS

3.7.1 Field Activity

The East Lagoon has served as a surge-detention basin for wastewater, and the West Lagoon served as a receiving pond for treated wastewater and noncontact cooling water. Based on these uses, the potential presence of chemical constituents in the water and bottom sediment was investigated. The sediment and water samples were analyzed for VOCs, EP toxicity metals, priority pollutant metals, and nitrates.

Sediment Sampling

Eight sediment samples were collected from the bottom of the two ponds using a Ponar dredge. The locations of the sediment samples, as shown in Figure 3-16, were selected from areas in the lagoons that would most likely contain the highest levels of chemical constituents, such as near the treated sewage and wastewater discharge points. A duplicate sample was taken at location EL-1. Visual descriptions were made of each sample as

Table 3-10

Results of Petroleum Hydrocarbon and VOC Analysis
Zone F Soil Samples

Results of TPH Analysis

Sample Number	TPH Concentration
TPF1-1	9.0 mg/kg
TPF1-1DUP	12.0 mg/kg
TPF3-1	14.0 mg/kg

Results of VOC Analysis

Detected Compound	TPF1-1 ug/kg	TPF3-1 ug/kg	Field Blank ug/l	Trip Blank ug/l
Methylene Chloride	25 B	21 B	3 JB	3 JB
Acetone	19	9 J	2 J	
Chloroform				7
Toluene	2 J	2 J	1 J	2 J
Total Xylenes	6			
2-Butanone			7	25

B - Detected in laboratory blanks
J - Detected at concentration below detection limits

collected. The sediments were analyzed for VOCs, EP toxicity metals, and nitrates.

Surface-Water Sampling

Three water samples, two from the East Lagoon and one from the West Lagoon, were collected 1 foot beneath the water surface with a Kemmerer sampler. A duplicate sample was collected at EL-1. One sample each was collected from a pipe that extends out from the westernmost slope of the West Lagoon, and from the pipe that extends out from the eastern slope of the West Lagoon. Both samples were collected directly into laboratory-prepared bottles. These pipes are thought to collect water from drainage zones designed to prevent hydrostatic pressure buildup at the toe of the slopes between lagoons. These locations are shown in Figure 3-16.

The water samples and field blank were analyzed for VOCs and metals; pH, temperature, and conductivity were recorded for each sample at the time of collection. A trip blank was submitted for VOC analysis.

3.7.2 Analytical Results

The summary results of the VOC, EP toxicity metals, metals, and nitrate analyses are presented in Tables 3-11, 3-12, and 3-13. The distribution of TCE and PCE in the lagoon sediment and water samples is shown in Figure 3-17.

Sediment Samples

As shown in Table 3-11, trans-1,2-dichloroethene (trans-1,2-DCE), TCE, PCE, toluene, ethyl benzene, total xylenes, vinyl chloride, and carbon disulfide were detected in sediment samples from the East Lagoon. Trans-1,1-DCE, TCE, PCE, toluene, ethyl benzene, and total xylenes were detected at relatively higher concentrations near or above 1 ppm each in the EL-1 sample, which was collected near a wastewater discharge point in the northwest corner of the lagoon. The other three samples in the East Lagoon contained these constituents at estimated concentrations below the detection limits. Sediment sample WL-4 from the northwest corner of the West Lagoon was the only West Lagoon sample that contained detectable levels of TCE at 110 ppb. Low concentrations of trans-1,2-DCE and carbon disulfide were present in the other West Lagoon sediment samples. The significance of concentrations of methylene chloride, acetone, chloroform, and low concentrations of toluene and 2-butanone detected in all of the lagoon sediment samples is questionable as these compounds were also detected in blanks.

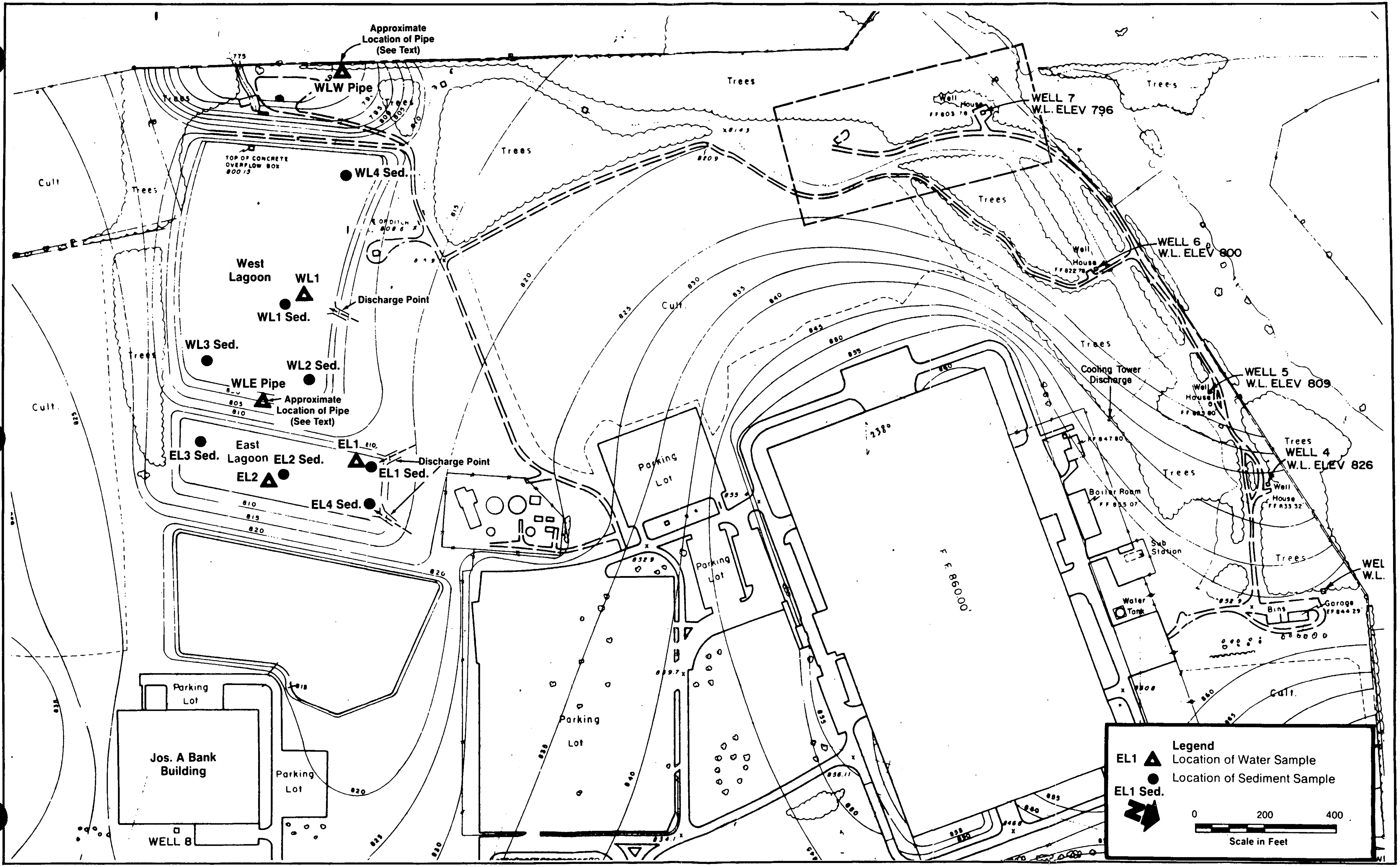


FIGURE 3-16 LOCATION OF PHASE I SAMPLING POINTS, ZONE G, BLACK & DECKER, HAMPSTEAD, MD

Table 3-11

Results of VOC Analysis: Zone G Surface Water and Sediment Samples

Results of VOC Analysis: Surface Water Samples

Compound Detected	EL-1 ug/l	EL-2 ug/l	WL-1 ug/l	WLE PIPE ug/l	WLW PIPE ug/l	BLANK ug/l	BLANK ug/l
Methylene Chloride	9 B	11 B	9 B	8 B	8 B	7	7
Acetone	20	12	2 J		9 J	6 J	3 J
Trans-1,2-Dichloroethene	16			5	2 J		
Chloroform	12	5	8	9		6	6
Trichloroethene			12	480	3 J		
Tetrachloroethene				9	16		
Toluene	1 J	1 J					
1,1,1-Trichloroethane				1 J			
Bromodichloromethane			1 J	1 J			

Results of VOC Analysis: Sediment Samples

Compound Detected	EL1-SED ug/kg	EL2-SED ug/kg	EL3-SED ug/kg	EL4-SED ug/kg	WL1-SED ug/kg	WL2-SED ug/kg	WL3-SED ug/kg	WL4-SED ug/kg
Chloromethane							5 J	
Methylene Chloride	290 B	14 B	130 B	170 B	25 B	28 B	16 B	130 B
Acetone	1100 B	35 B	360 B	590 B	71 B	200 B	47 B	300 B
Trans-1,2-Dichloroethene	2000	4 J	14 J	15 J		14 J	2 J	
Chloroform			11 J	16 J				
2-Butanone		12 J	85 J	170	26 J	74	20	
Trichloroethene	100 J							110
Tetrachloroethene	45 J							
Toluene	8300	6 J	32 J	61 J	6 J	6 J	7 J	23 J
Ethylbenzene	900		29 J	27 J				
Total Xylenes	3100							
Carbon Disulfide	150 J		39 J	74 J	5 J	8 J		

B - Detected in laboratory blanks
J - Detected at concentration below detection limits

Table 3-12

Results of Nitrate and EP-Toxicity Analysis Zone G: Sediment and Surface Water Samples

Results of Nitrate Analysis Surface Water Samples

Sample Number	Nitrate Concentration
EL-1	2.5 mg/l
EL-2	1.6 mg/l
WL-1	0.65 mg/l
WLE-PIPE	1.4 mg/l
WLW-PIPE	1.3 mg/l

Results of Nitrate and EP-Toxicity Analysis Sediment Samples

Sample Number	Nitrate Concentration	EP Leachate Barium*
EL1 SED		1490 ug/l
EL2 SED		
EL3 SED		
EL4 SED		
WL1 SED	0.41 mg/kg	2380 ug/l
WL2 SED		1180 ug/l
WL3 SED	0.19 mg/kg	1560 ug/l
WL4 SED		9190 ug/l
Field Blank		

* Other EP-Toxicity Results Negative

Table 3-13

Results of Metals Analysis: Zone G Surface Water Samples

Metal	EL-1 ug/l	EL-1DUP ug/l	EL-2 ug/l	WL-1 ug/l	PIPE ug/l	PIPE ug/l	FB ug/l
Antimony	73.1						
Arsenic	8.9	1.7	1.8	1.4	0.5	0.6	
Beryllium	3.6	1.3	1.1	1.5	0.5	0.5	0.5
Cadium	41.2						
Chromium	1600	16.2	31.5	17.1			
Copper	4320	113	117	208	45.1	30.0	29.6
Lead	6880	63.6	126	62	4.0	3.2	3.5
Mercury	4.7	2.1	1.8	0.59			
Nickel	1470	164	697	40.6		8.6	
Selenium			0.9				
Zinc	5500	262	260	342	219	75.8	83.3

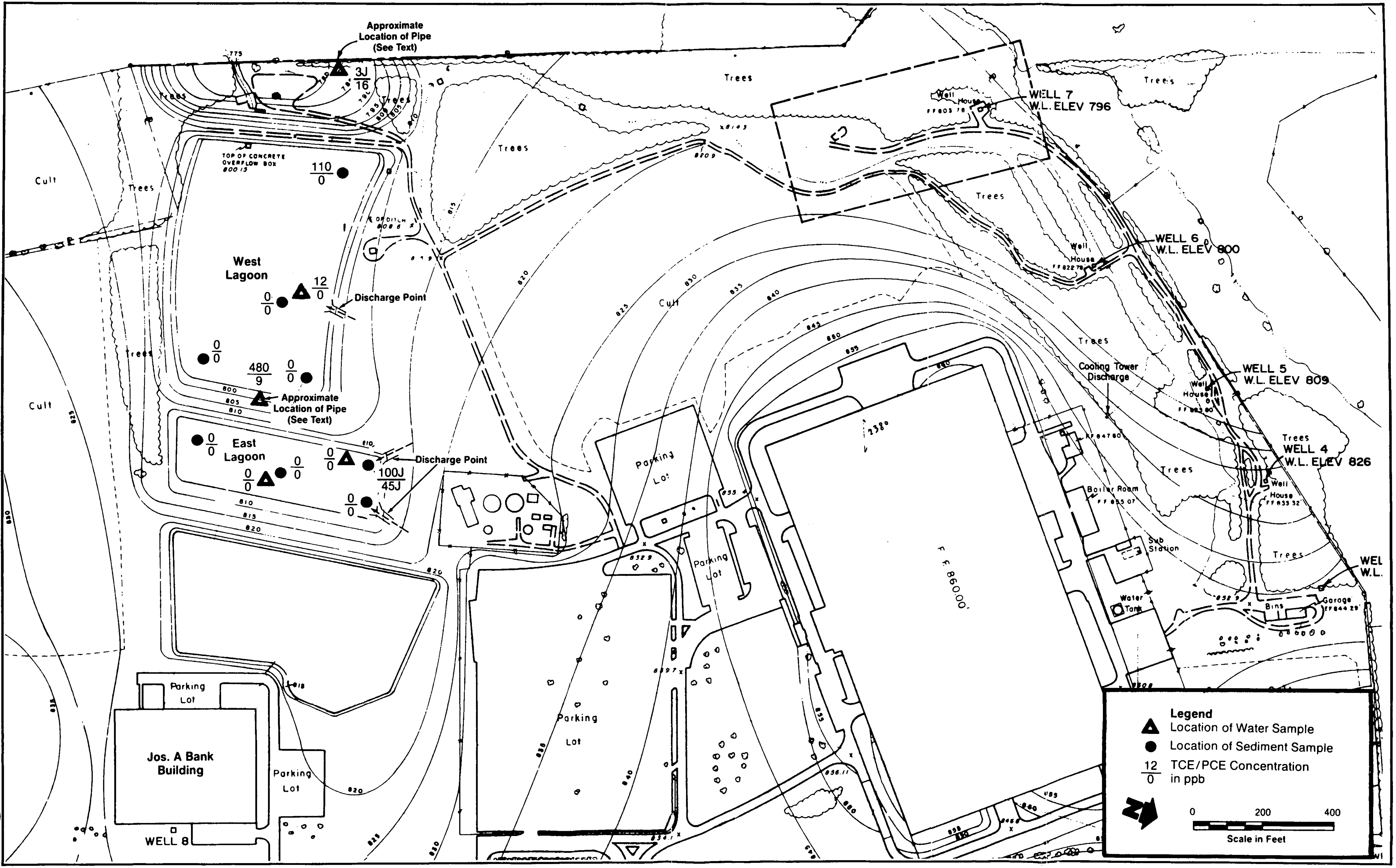


FIGURE 3-17 RESULTS, ZONE G, LAGOON SURFACE WATER AND SEDIMENT SAMPLE ANALYSIS

As shown in Table 3-12, the EP toxicity metals analysis results for the lagoons found only barium in detectable concentrations. Less than 2 ppm of barium was detected in the leachate from sediment sample EL-1 from the East Lagoon, and less than 10 ppm was detected in extracts of all West Lagoon sediment samples. These concentrations are well below the COMAR 10.51 maximum EP toxicity concentration of 100 ppm established for barium. No other metals were detected in leachates from the other lagoon sediment samples.

The results of the nitrate analysis, shown in Table 3-12, show a maximum concentration of nitrates of 0.41 ppm in WL-1 SED.

These results generally indicated that contaminants are present in the sediments of the wastewater lagoons at levels commensurate with their use. As expected, the highest levels of volatile organics were found near the inlet to the East Lagoon, which had been used to collect wastewater prior to treatment and discharge to the West Lagoon. The predominant constituents detected were not PCE and TCE, however. The moderate concentrations of other VOCs observed in a limited area do not suggest that the lagoons are a source of groundwater contaminants. Other site data, such as surface-water and groundwater results, should also be considered in evaluating this area.

Surface-Water Samples

As shown in Table 3-11 and Figure 3-17, water samples in the East Lagoon contained considerably less VOCs than the sediments. Only trans-1,2-DCE was detected in sample EL-1 at 16 ppb. A low concentration of TCE (12 ppb) was detected in the water sample from the West Lagoon. These results indicated that the VOCs currently observed in the sediments are not present at significant levels in the water that is in direct contact with the sediments, which is consistent with soil/water partition behavior for these organic compounds.

TCE was detected at 480 ppb in the water from the toe of slope drain on the east end of the West Lagoon. In addition, water was sampled from a pipe believed to drain the toe of the west slope of the West Lagoon, which is a discharge point into the small stream crossing Black & Decker property, west of the lagoons. In this sample, TCE was reported at an estimated concentration below the quantification limit, and PCE was detected at 16 ppb. Trace amounts of trans-1,2-DCE, bromodichloromethane, and 1,1,1-TCA were also detected in the various lagoon water samples. Low concentrations of methylene chloride, acetone, and toluene detected in the samples were not considered significant because they were also detected in the blanks.

The results of the nitrate analyses, shown in Table 3-12, show a maximum concentration of nitrates of 2.5 ppm in EL-1. These concentrations are typically not considered significant for wastewater discharge or water supply.

The metals analysis for lagoon water samples are presented in Table 3-13. The water sample at the inlet to the East Lagoon (EL-1) had significant concentrations of cadmium, chromium, copper, lead, mercury, and zinc. Metals concentrations in sample EL-2, taken some distance from the inlet, were an order of magnitude or more lower, possibly reflecting both quiescent conditions and equalization of wastewater influent variations. These concentrations of metals are typical of wastewater prior to treatment at the plant. Lower concentrations of metals were found in sample WL-1 from the West Lagoon, which receives the treated effluent. The results for samples from the WLE pipe and WLW pipe from the toe of slope drains were very low, indicating that the migration of metals from the lagoon waters has not occurred.

The lagoon sediment sample results indicated that the sediments do not represent a current source of groundwater contaminants. The toe of slope samples, however, indicated that the lagoons may have represented a source in past operation. The significance of this contribution was addressed in the Phase II groundwater program by locating monitor wells in the lagoon area.

3.8 CONCLUSIONS

Using a variety of nonintrusive and intrusive investigation techniques, the Phase I source area identification program efficiently achieved the objective of identifying which of the potential source areas actually represent current sources of groundwater contaminants. The conclusions reached regarding each potential source and any recommendations for the Phase II groundwater program are summarized in the paragraphs that follow.

Zone A - Storage Tank Areas

Of the three storage tank areas, the aboveground storage tank area does not appear to be a current source area. Soils in the other two areas, underground Tank Farms 1 and 2, appear to contain localized "hot spots" of both TPH and VOCs. The VOCs were present mainly in soils with elevated TPH concentrations.

Based on these results, additional soil borings and shallow monitor wells were proposed for these two tank farms in order to achieve the following objectives:

- Define the extent of VOC (especially PCE and TCE) and petroleum hydrocarbon contamination.
- Determine if VOCs and TPH had migrated from soils into the shallow groundwater in Zone A.

- Evaluate the possibility that the tank farms served as a source for chlorinated hydrocarbons detected in Zone B and in the Black & Decker production wells.

Zone B - Fill Site Near Seep Area

The test pit program confirmed that several areas in this zone contain fill. The fill observed included primarily burnt wood, bricks, and scrap metal. Soil test results confirmed the visual observation that no wastes or other repositories of groundwater contaminants are currently present in this area. Since groundwater analysis results in this area continued to show that it is adjacent to the area of highest PCE concentrations, the possibility that the fill area served as a past source, which migrated out of the unsaturated zone soils, cannot be precluded. However, based on current conditions, no further source identification/characterization was recommended.

Zone C - Potential Heat-Treating Residues Disposal Areas

The test pit program identified debris fill in the southern Zone C area, but it did not appear to include heat-treating residues. Observations made in the test pits in the area west of the main building indicated that residue was only present at the ground surface in a small area. Soils tested in these pits and the sediment sampled adjacent to the southern Zone C area did not exhibit significant concentrations of metals or cyanides. Collectively, the data indicated that Zone C is not a current source of groundwater contaminants, and no further study was recommended.

Zone D - Product Disposal Area

Geophysical surveys and test pit excavations confirmed that off-specification tool products were buried in Zone D. The fill contained scrap metal, wood, refuse, plastic, construction debris, and power tool parts. However, analysis of the underlying soils indicated that the fill was not a source of groundwater contaminants. No further study was recommended.

Zone E - Corner of Buildings 5 and 6

Soil-gas analysis and soil boring sampling/analysis was conducted in this area to investigate the possibility that heat-treating residues were buried in the area that was filled prior to construction of the Building 5 and 6 additions to the main facility building.

The soil-gas analysis generally detected very low concentrations of TCE and PCE in the vadose zone. The soil boring sample analysis indicated that no significant levels of VOCs or cyanides are present. There were no indications that buried wastes are present. For Phase II, a shallow and deep well pair was proposed for the area between Zone E and well 7 to monitor the possible migration of PCE and TCE in the groundwater. No further evaluation of soils was considered necessary.

Zone F - Past Potential Burn Area

The geophysical surveys indicated only minor anomalies in Zone F. The test pits uncovered no evidence of buried fill or past burning activities. The test pit sample analyses indicated that Zone F does not contain waste materials or significant levels of groundwater contaminants. No further study of this area was recommended.

Zone G - Lagoon Areas

The lagoon sediment sample results indicated that several VOCs are present in the East Lagoon inlet area in the 1 to 10 ppm range. PCE and TCE were generally present at much lower levels ranging from none detected to 0.1 ppm. PCE levels in the toe of slope drain samples indicated, however, that the lagoons could have represented a source in past operation. In order to assess the significance of this contribution, a shallow monitor well was proposed for the south side of the lagoons as part of the Phase II groundwater investigation.

Overall Facility Source Assessment

In general, the results suggested that no large source currently exists in the areas where the highest concentrations of contaminants have been observed in the groundwater. Scattered "hot spots" were identified in the Zone A Tank Farms 1 and 2, and there were indications that higher PCE residuals may have been associated with the Zone G lagoons in the past. These areas were explored further in Phase II, which also focused on the broader objectives of determining PCE and TCE distributions in the groundwater and evaluating site hydrogeology.

SECTION 4

PHASE II INVESTIGATION

The Phase II investigation was designed to address three objectives:

- Further characterization of the extent of VOCs and petroleum hydrocarbons (TPH) detected in Phase I soil samples from the Zone A underground storage tank areas.
- The evaluation of the local hydrogeology to identify probable pathways of migration.
- Assessment of the groundwater quality on the plant site.

Phase IIa incorporated the analysis of soil and groundwater samples from borings and shallow monitor wells to evaluate the two underground tank farm areas. Additional monitor wells were installed to the depth of the bedrock/saprolite interface and into the bedrock aquifer to characterize groundwater quality and flow conditions across Black & Decker's property. Phase IIb was proposed after reviewing the results of Phase IIa. Closely spaced borings were installed and sampled in both tank farm areas to evaluate the volume and distribution of soil contaminants. Toxicity Characteristic Leaching Procedure (TCLP) testing was proposed for selected soil samples to provide an indication of constituent mobility in the soils. Four monitor wells were added to evaluate groundwater quality in the northeast corner of the facility.

Details of the Phase II Tank Farm investigation are described in Subsection 4.1. The groundwater investigation is presented in Subsection 4.2 The conclusions are presented in Subsection 4.3.

4.1 TANK FARM SOILS

4.1.1 Phase IIa

Field Activity

Nine soil borings, five in Tank Farm 1 and four in Tank Farm 2, were performed using a truck-mounted hollow stem auger. Boring locations, shown in Figures 4-1 and 4-2, were chosen to evaluate soil quality throughout both tank farm areas. Samples from the borings were collected at approximately 5-foot intervals with a 2-foot split-spoon using Standard Penetration Test techniques (ASTM D-1586). Sampling was continued until saturated

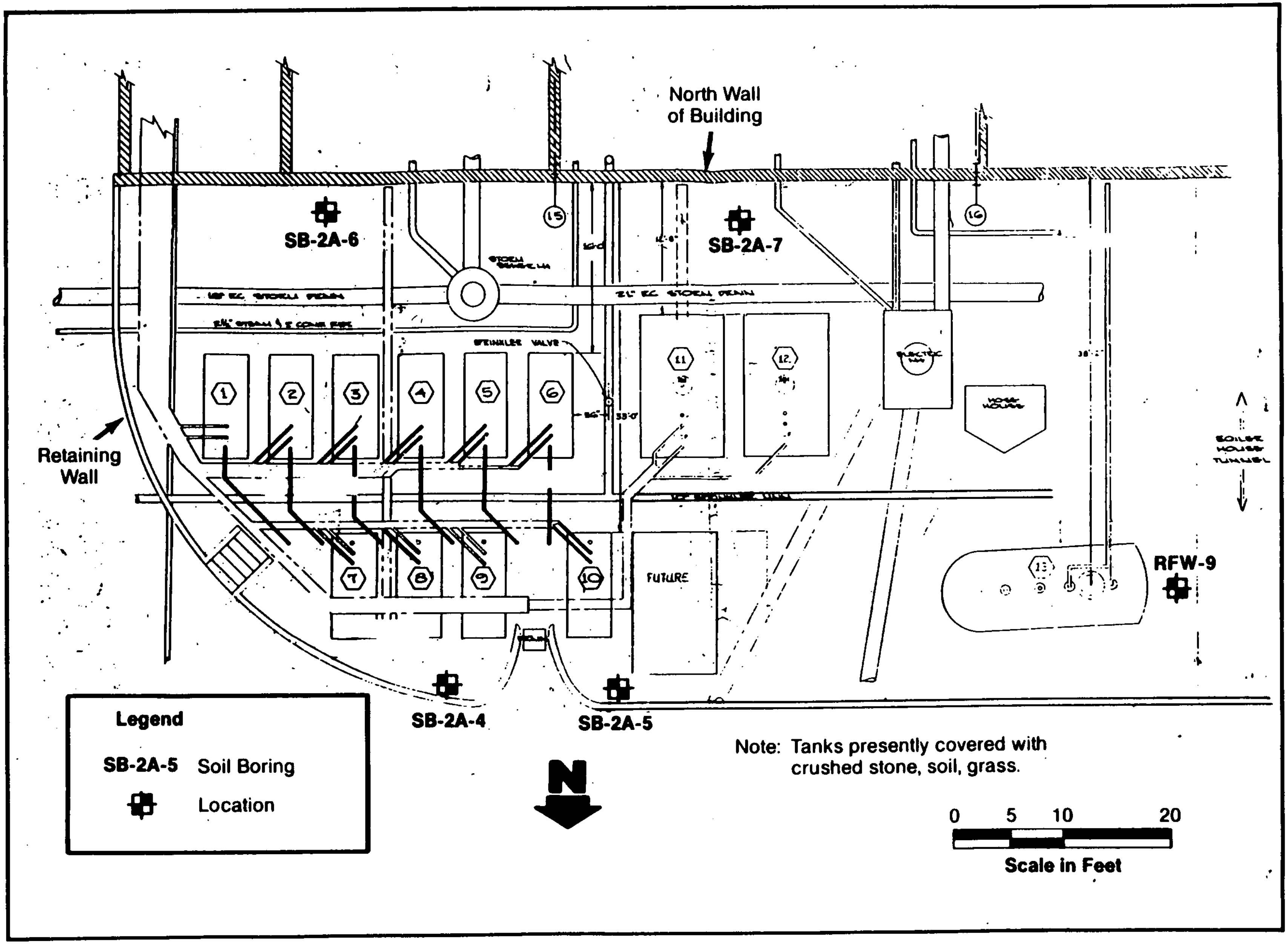


FIGURE 4-1 LOCATION OF PHASE IIa SOIL BORINGS, TANK FARM 1

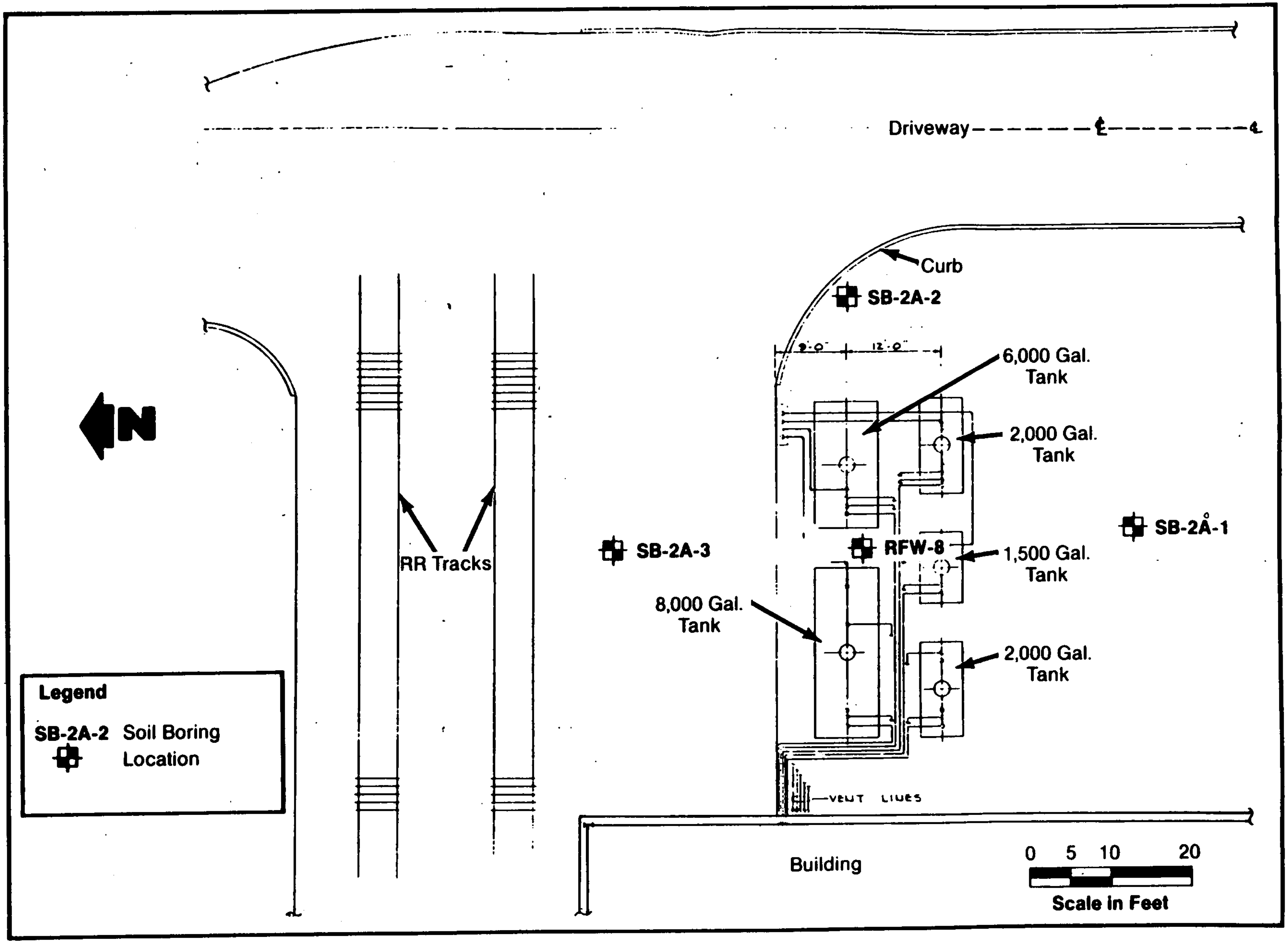


FIGURE 4-2 LOCATION OF PHASE IIa SOIL BORINGS, TANK FARM 2

conditions were encountered. Borings were generally completed to depths of 30 to 45 feet. As the borings were advanced, the boreholes and split spoons were screened with an HNu for detection of VOCs. Visual descriptions of soil color, texture, and moisture content were made during sampling.

Two samples at each 5-foot interval were collected and contained in 125-ml laboratory-cleaned jars. One sample was designated for VOC analysis; the other was designated for field headspace screening and TPH analysis. At the time of sampling, the TPH sample jar was sealed with aluminum foil and with a plastic cap. These jars were then left for a minimum of 3 hours at ambient temperatures ranging from 85° to 95°F. At the conclusion of the day, the headspace of the TPH sample jar from each interval was screened by puncturing the foil with the 10.2-eV probe of a HNu Model 101.

The VOC sample from the same interval as the TPH sample with the highest headspace reading was selected from each borehole and submitted for VOC analysis. An additional VOC sample from both RFW-9 and SB-2A-7 were also submitted for VOC analysis. Samples from all intervals were analyzed for TPH. For quality control, a duplicate sample was collected at SB-2A-4 for TPH analysis and at SB-2A-7 for VOC analysis. A field blank and a trip blank were also analyzed for VOCs and TPH.

Split spoons were scrubbed with Alconox and water with a potable water rinse followed by a deionized water rinse after each sample. The back of the rig, augers, and spoons were steam-cleaned before each boring. Latex gloves were worn and changed between each sampling interval. At the conclusion of drilling, boreholes were grouted to the surface with a Portland cement/ bentonite mixture, except for RFW-8 and RFW-9, which were completed as monitor wells. Cuttings from SB-2A-6 and SB-2A-4 were contained in 55-gallon drums because HNu readings from these boreholes exceeded 25 units. The soils from the other boreholes were disposed of on-site by Black & Decker employees.

Results

A complete tabulation of results, which lists all compounds tested for each analysis, and all blank, spike, and duplicate results is provided in Appendix E. The validity of all chemical analyses in this section was confirmed in accordance with the WESTON quality assurance and quality control programs, as described in Appendix C of the Work Plan.

Five soil borings were completed in Tank Farm 1 and four in Tank Farm 2 to the depth of groundwater saturation. The soils encountered in the borings were similar to those encountered in the Phase I investigation, and were generally described as a yellowish-brown to reddish-brown clayey silt. Quartzite and schistoze rock fragments were present throughout the borings. Complete lithologic descriptions of the samples are presented in Appendix F.

The results of the TPH analysis of the soils at Tank Farms 1 and 2 are presented in Figures 4-3 and 4-4 with the VOC analysis. Phase I analysis results are included with the Phase II results to provide a cumulative summary of the soil sample results. In the diagrams, each boring is schematically represented, showing the sample intervals and the corresponding detected concentrations of TPH. The relative locations of the borings are shown in an inset map.

The results for Tank Farm 1 shown in Figure 4-3 indicate that TPH are present in concentrations above 100 ppm in three of the seven borings completed in this area. These elevated levels were found in the soils at one or two intervals from 0 to 20 feet below ground surface (bgs) from borings SB-A-4, SB-2A-4, SB-2A-5, and SB-A-7.

In Tank Farm 2, Figure 4-4, concentrations of TPH in SB-2A-1, SB-2A-2, and SB-2A-3 were below 100 ppm throughout the borings. In SB-A-1 and RFW-8, which are located together, elevated concentrations in excess of 100 ppm were found between 0 and 15 feet bgs.

The general pattern of TPH concentrations in the soils at the two tank farms is predictable. The elevated concentrations of TPH, in excess of 100 ppm, are localized and appear to be limited to the upper 15 feet of a few boreholes closest to the tanks. Concentrations ranging from 10 ppm to 100 ppm are detected in several more boreholes, but are typically limited to the upper 30 feet of soil. Low TPH concentrations are detected in all boreholes below 30 feet. Typical background levels of TPH at industrial sites have been observed at 10 ppm to 100 ppm. Background concentrations of 10 ppm and less are commonly encountered on nonindustrial sites. The complete TPH analysis results are presented in Appendix E.

The results of the VOC analysis for Tank Farm 1 and 2 soils are presented with the TPH results in Figures 4-3 and 4-4. Again, Phase I analysis results are included with the Phase II results. In each diagram, the boreholes are schematically represented showing the interval sampled for VOC analysis. The principal analyte detected and the corresponding concentration are listed to the right of the interval. HNu or OVA field headspace readings for each interval are listed on the left.

VOCs were detected in all boreholes from Tank Farm 1, in concentrations ranging from below quantification limits to over 100 ppm. One or more of the compounds, toluene, ethyl benzene, and xylene were detected in concentrations above 1 ppm in soil samples from SB-2A-6, SB-A-4, SB-2A-4, and SB-2A-5, all of which were located right around the underground storage tanks. PCE was detected at 340 ppb in SB-A-4, and its presence below the quantification limit was noted in SB-A-7. Low concentrations of

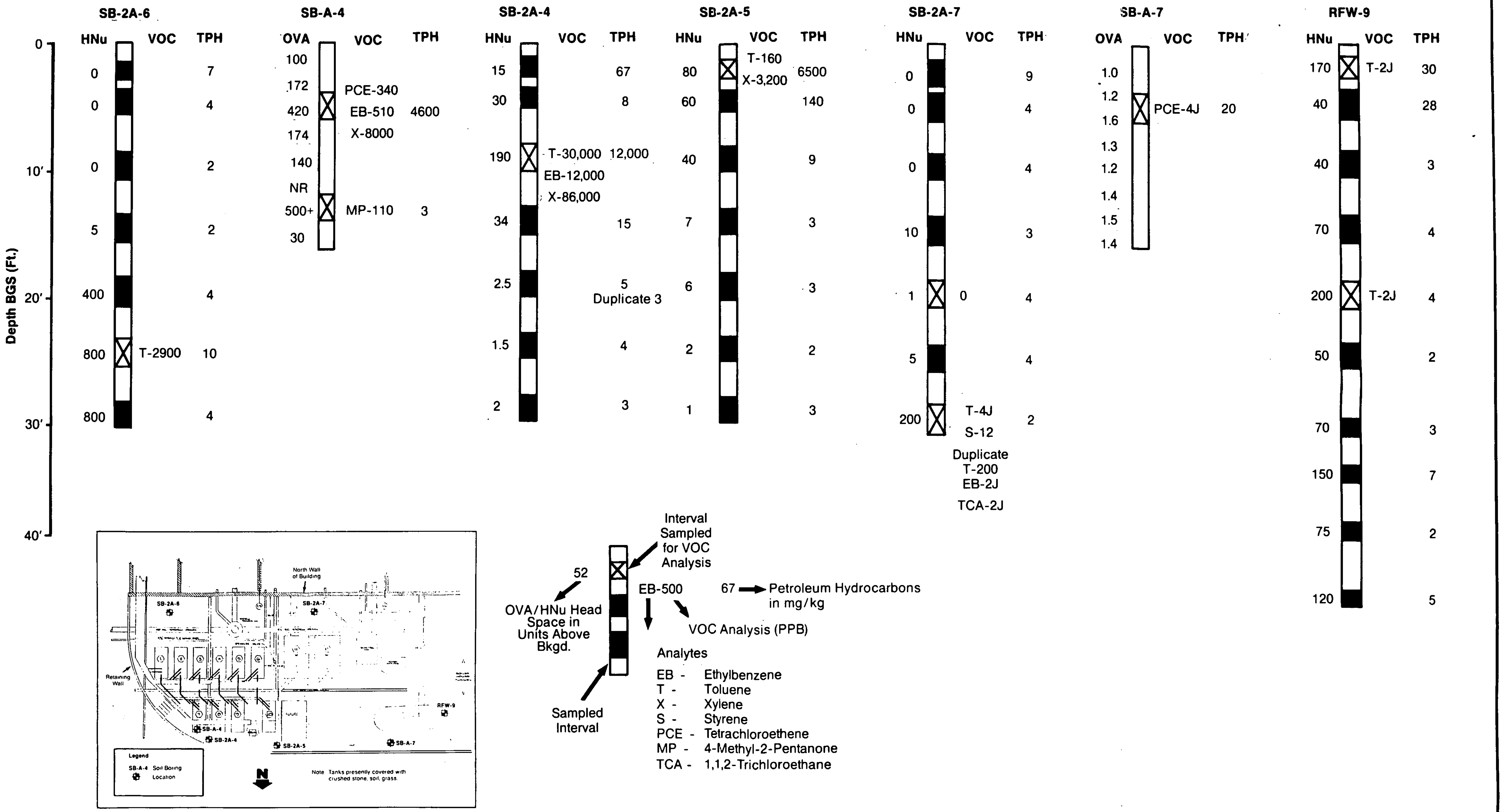


FIGURE 4-3 PHASE I AND IIa SOIL BORINGS,
RESULTS OF TPH AND
VOC ANALYSIS, TANK FARM 1

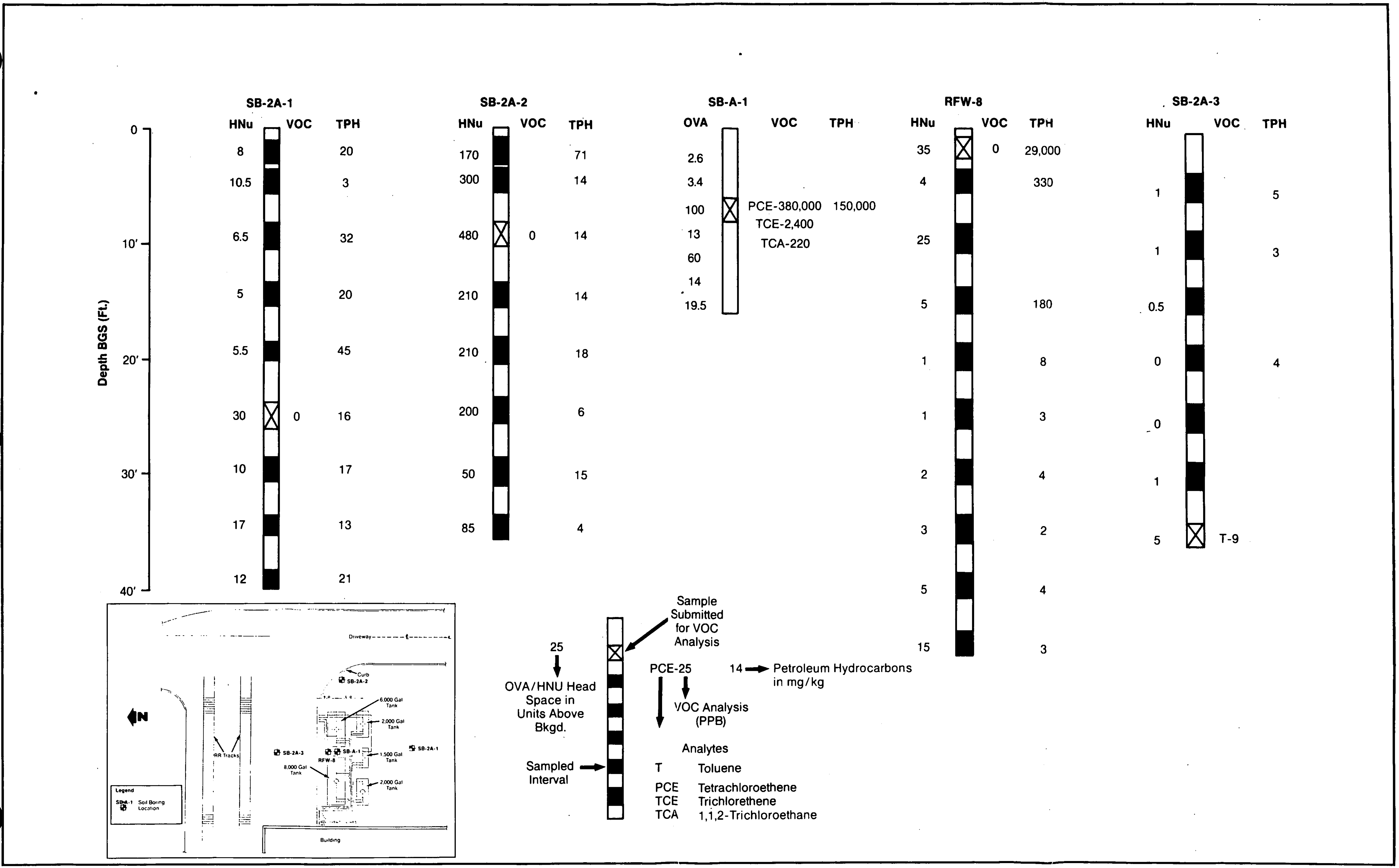


FIGURE 4-4 PHASE I AND IIa SOIL BORINGS, RESULTS OF TPH AND VOC ANALYSIS, TANK FARM 2

the volatiles, toluene, styrene, and ethyl benzene were detected in SB-2A-7 and RFW-9, which are located several feet south of the underground tanks. In SB-2A-6 and SB-2A-7, HNu headspace readings, and, in particular, HNu readings at the borehole, were higher with increasing moisture content in the sediments. The VOC concentrations above 1 ppm generally correlated to TPH concentrations of above 100 ppm. Exceptions to this correlation are samples taken near or into the water table in SB-2A-6 and SB-2A-7, which may have been influenced by groundwater contamination. The correlation of the VOC concentrations with HNu readings appears to be less reliable, possibly due to solvation effects.

In Tank Farm 2 borings, shown in Figure 4-4, the Phase II VOC analysis was generally negative. SB-2A-3 was the exception; toluene was detected at 9 ppb in the sample at 34 feet. HNu headspace readings were considerably lower than those for Tank Farm 1 borings, with the exception of SB-2A-2, although in this boring there was no corresponding detection of VOCs in the sample analyzed. During the Phase I investigation, concentrations of PCE, TCE, and 1,1,2-TCA totalling several ppm were detected in SB-A-1 in the same interval that 150,000 ppm TPH was detected. These VOC compounds were not detected in RFW-8, which was placed directly adjacent to SB-A-1 or in any soils from the other Tank Farm 2 borings. This unexpected result could be due to the RFW-8 sample being collected near the surface. With the exception of this result, it appears that the VOCs in the soils of Tank Farm 2 are also associated with TPH.

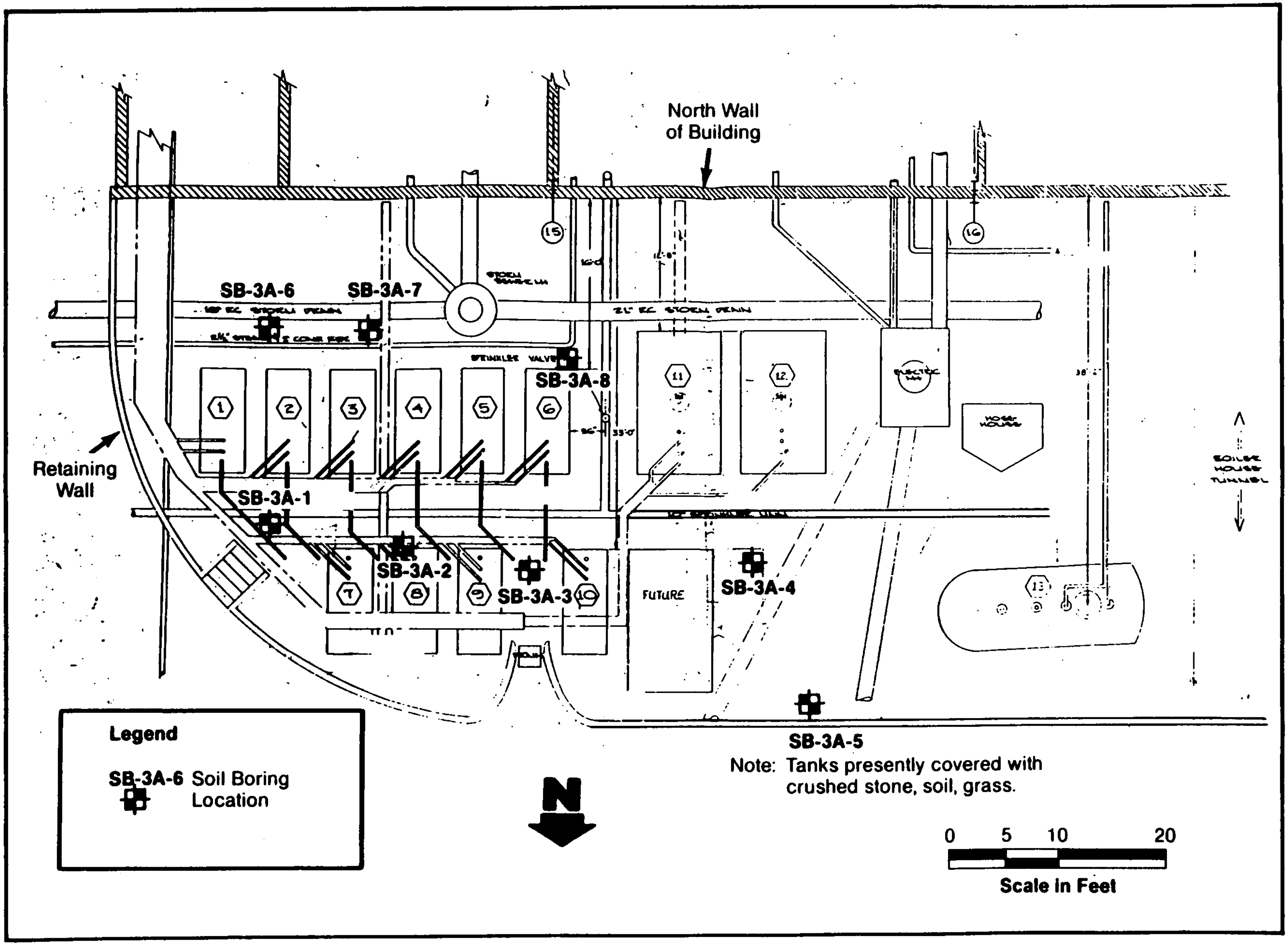
The complete VOC analysis results are presented in Appendix E.

4.1.2 Phase IIb

The results from the Phase IIa soil analyses suggested the need for supplemental data collection to accurately define the contaminated soil profile within the tank farms. Field screening with an HNu had been conducted in part to estimate VOC concentrations in the soils, instead of having to analyze each sample for VOCs, in the laboratory. Due to the poor correlation of the HNu readings to the concentration of volatiles in the soils, and the relatively small size of the areas of concern, closely spaced, continuously sampled borings were proposed for both tank farms as part of the Phase IIb investigation. To further determine the impact of the soil contaminants on the groundwater, representative samples from the borings were proposed to be analyzed for VOCs using TCLP procedures.

Field Activity

Eighteen soil borings, 8 in Tank Farm 1 and 10 in Tank Farm 2, were performed using an all-terrain-vehicle-mounted hollow stem auger. Boring locations, shown in Figures 4-5 and 4-6, roughly form a grid covering the tank farm areas. It was necessary to



Note: Tanks presently covered with crushed stone, soil, grass.

FIGURE 4-5 LOCATION OF PHASE IIb SOIL BORINGS, TANK FARM 1

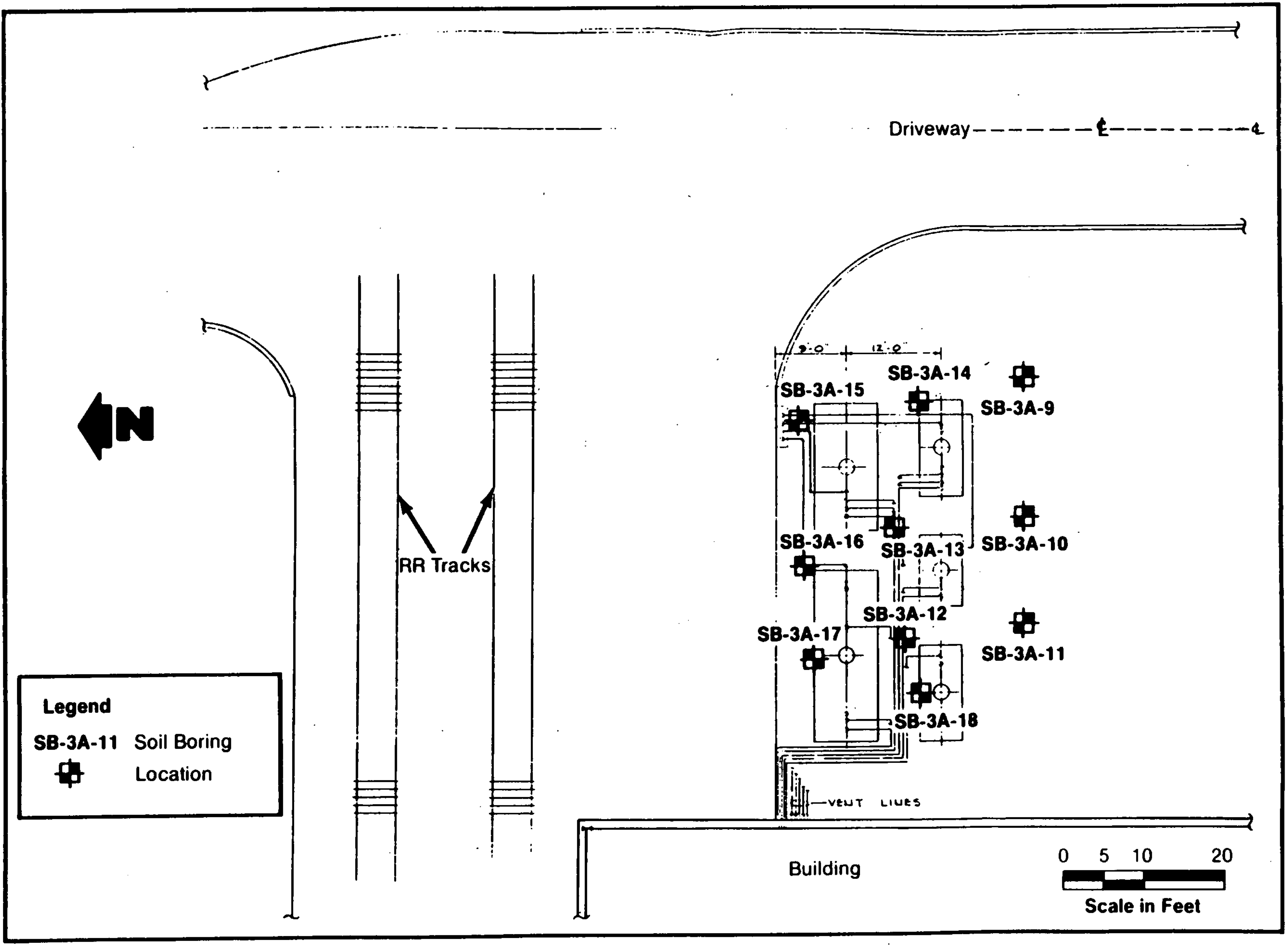


FIGURE 4-6 LOCATION OF PHASE IIb SOIL BORINGS, TANK FARM 2

adjust the proposed locations to avoid underground utility lines. The placement of the borings and depth of sampling in each boring were selected to define the horizontal and vertical limits of local soil contamination as indicated by the Phase IIa investigation. A field laboratory was set up on-site for rapid turnaround sample analysis, in order that field decisions could be made to extend the grids to the limits of soil contamination. The field laboratory consisted of an infrared spectrophotometer (IR) for total petroleum hydrocarbon analysis (TPH), a gas chromatograph electron capture detector (GCECD) for detecting chlorinated hydrocarbons (CH), and a gas chromatograph photoionization detector (GCPID) for benzene, xylene, ethyl benzene, and toluene (BXET) detection.

Soil samples were collected at 2-foot intervals with a split spoon using Standard Penetration Test techniques (ASTM D-1586). As the boreholes were advanced, the boreholes and split spoons were screened with a Model 101 HNu with a 10.2-eV probe. In each borehole, continuous sampling was concluded at 16 feet bgs, with a final sample taken from 18 to 20 feet bgs; a depth suggested by the Phase IIa results to represent the limit of contamination. In borehole SB-3A-6, an additional sample was taken at the 25- to 27-foot bgs interval because of relatively high HNu readings at the 18- to 20-foot interval. In borehole SB-3A-7, additional samples were taken at 20- to 22-foot and 25- to 27-foot intervals because of high HNu readings at the 18- to 20-foot interval. Visual descriptions of soil color, texture, and moisture content were made during sampling.

Two samples at each 2-foot interval were collected and contained in 125-ml laboratory clean jars. One sample was designated for VOC analysis, the other was designated for TPH analysis. All TPH samples were submitted immediately for analysis in the field laboratory set up in the wastewater treatment facility. The VOC samples were stored at temperatures below 30°F (-1°C). When the TPH analysis was completed, the results were used to determine which samples would be analyzed for CH (PCE, TCE, and 1,1,1-TCA) and BXET. Samples were selectively analyzed to define the upper and lower limits of the volatile contaminants in a particular borehole. Samples identified as high or moderately high in TPH were considered most likely to contain volatiles, as indicated by the Phase IIa results. In most cases, one or two samples were initially selected for analysis, and additional samples from the same borehole were selected after reviewing the analytical results. For quality control, duplicate samples were submitted for TPH and VOC analysis of every twentieth sample.

At the completion of the VOC analysis, four samples (two from each tank farm area) were selected for analysis using TCLP procedures to provide an indication of constituent mobility in soils. Samples from borings SB-3A-2 and SB-3A-12 at 10 to 12 feet bgs were selected as representative of samples having the highest level of contamination for each tank farm. Samples from SB-3A-3 at 8 to 10 feet bgs and SB-3A-18 at 4 to 6 feet bgs were selected as representative of samples exhibiting average levels of contamination.

For drilling and sampling, standard decontamination procedures were followed. After each sampling event, split spoons were scrubbed with Alconox and water, followed by a potable water rinse and a deionized water rinse. The back of the rig, augers, and spoons were steam-cleaned before each boring. Latex gloves were worn and changed between each sampling interval. At the conclusion of drilling, the boreholes were backfilled with cuttings, except for SB-3A-6 and SB-3A-7, which were grouted to the surface with a Portland cement/bentonite mixture because they had been sampled to the top of the water table. The remaining cuttings were contained in 55-gallon drums.

Results

A complete tabulation of results, which lists all compounds tested for each analysis and all blank, spike, and duplicate results, is provided in Appendix G. The validity of all chemical analyses in this section was confirmed in accordance with the WESTON quality assurance and quality control programs as described in Appendix C of the Work Plan.

Eight soil borings were completed in Tank Farm 1 and 10 in Tank Farm 2. Soils encountered in the borings were similar to those encountered in previous borings in these areas. Soils were described generally as yellowish-brown to reddish-brown clayey silt above 845 feet (MSL) in Tank Farm 1 and above 847 feet (MSL) in Tank Farm 2. Highly weathered schist was described below these elevations. The clayey silt probably represents fill collected from another part of the property placed in and around the Tank Farms during their installation and subsequent excavation. Complete lithologic descriptions of samples are presented in Appendix H.

The results of the TPH and VOC analyses of the soils at Tank Farm 1 are summarized in cross-sections (Figures 4-7 through 4-10). Several Phase IIa borings are included to provide a complete overview of the available analytical data. In each diagram the borings are schematically represented, showing the sample intervals and the corresponding concentrations of TPH and CH. The locations of the borings are shown in the inset maps. The complete analysis for each compound is listed in Table 4-1.

The results for Tank Farm 1 indicate that the levels and types of contamination are as indicated in the Phase IIa borings. Most soil samples had TPH concentrations of less than 100 ppm.

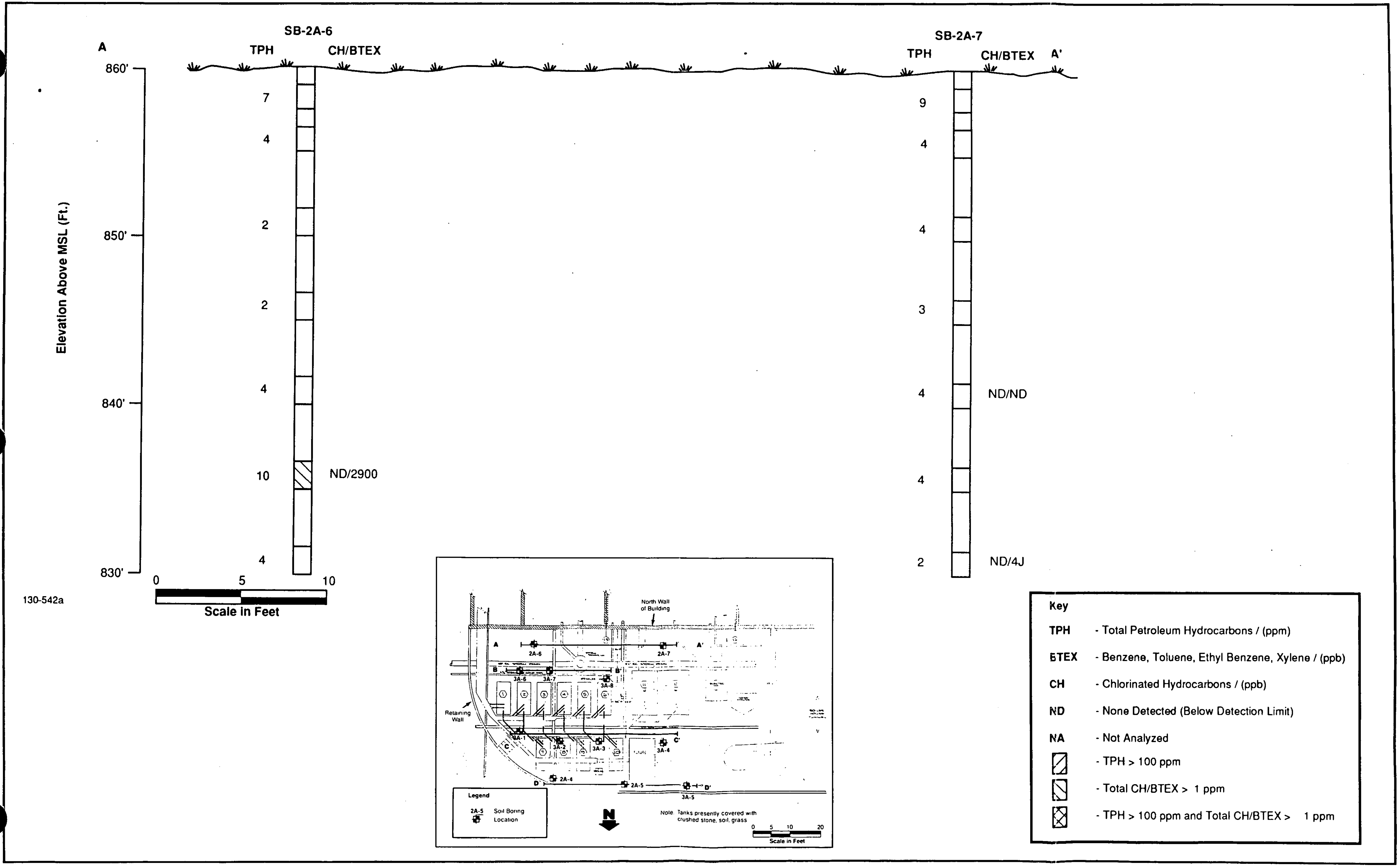
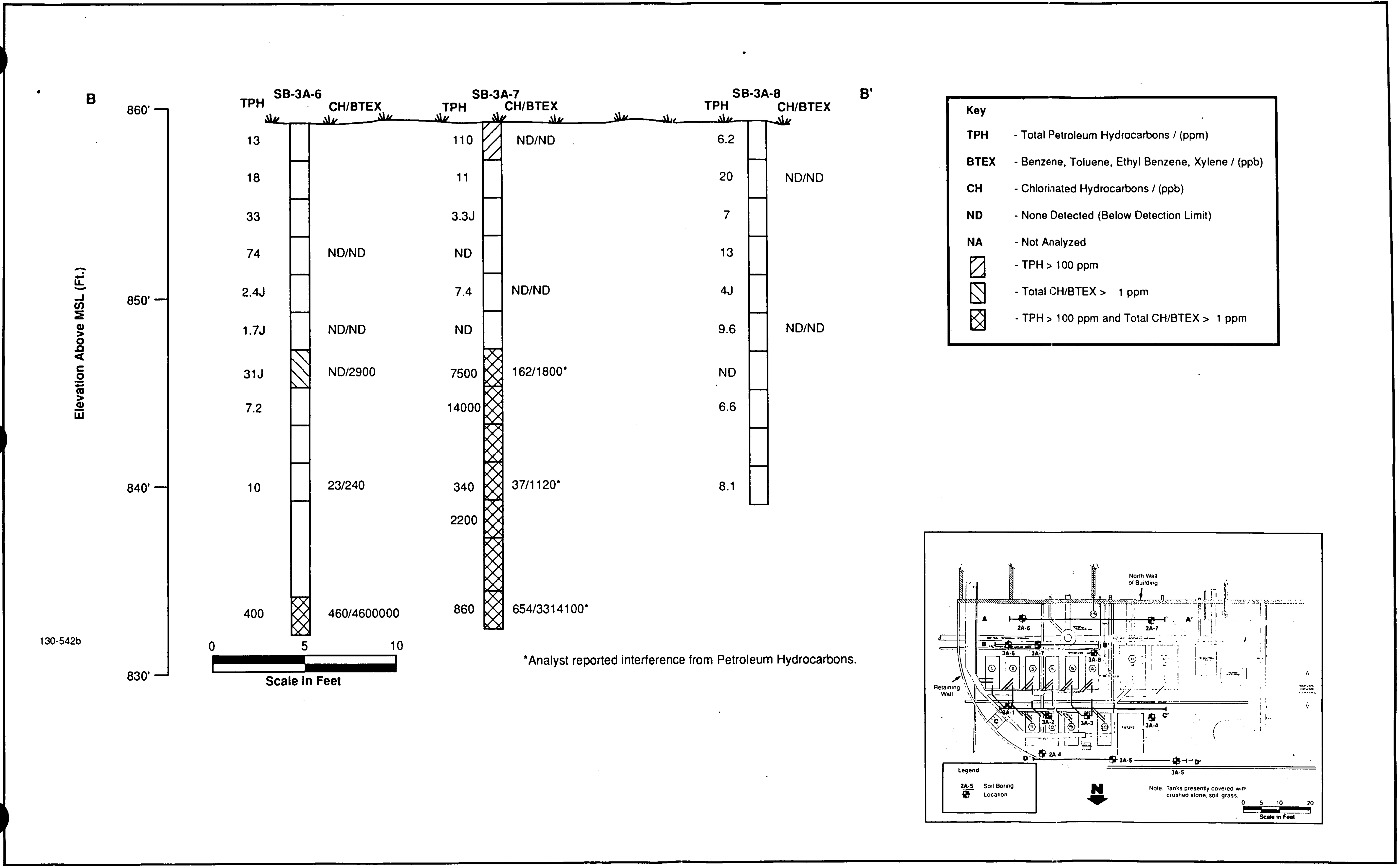


FIGURE 4-7 PHASE II SOIL BORINGS, RESULTS OF TPH AND VOC ANALYSIS CROSS SECTION A-A', TANK FARM 1



*Analyst reported interference from Petroleum Hydrocarbons.

FIGURE 4-8 PHASE II SOIL BORINGS, RESULTS OF TPH AND VOC ANALYSIS CROSS SECTION B-B', TANK FARM 1

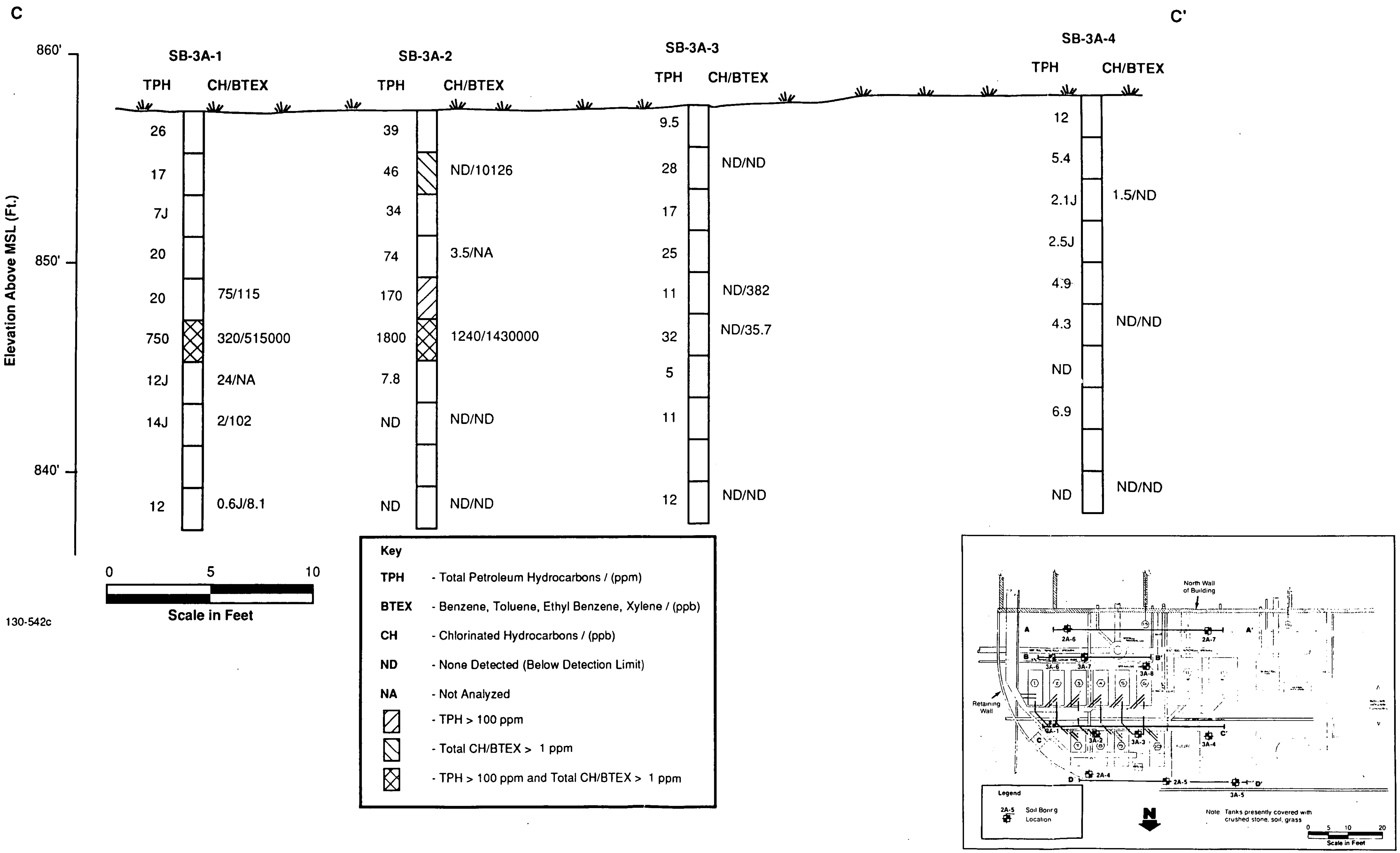


FIGURE 4-9 PHASE II SOIL BORINGS, RESULTS OF TPH AND VOC ANALYSIS CROSS SECTION C-C', TANK FARM 1

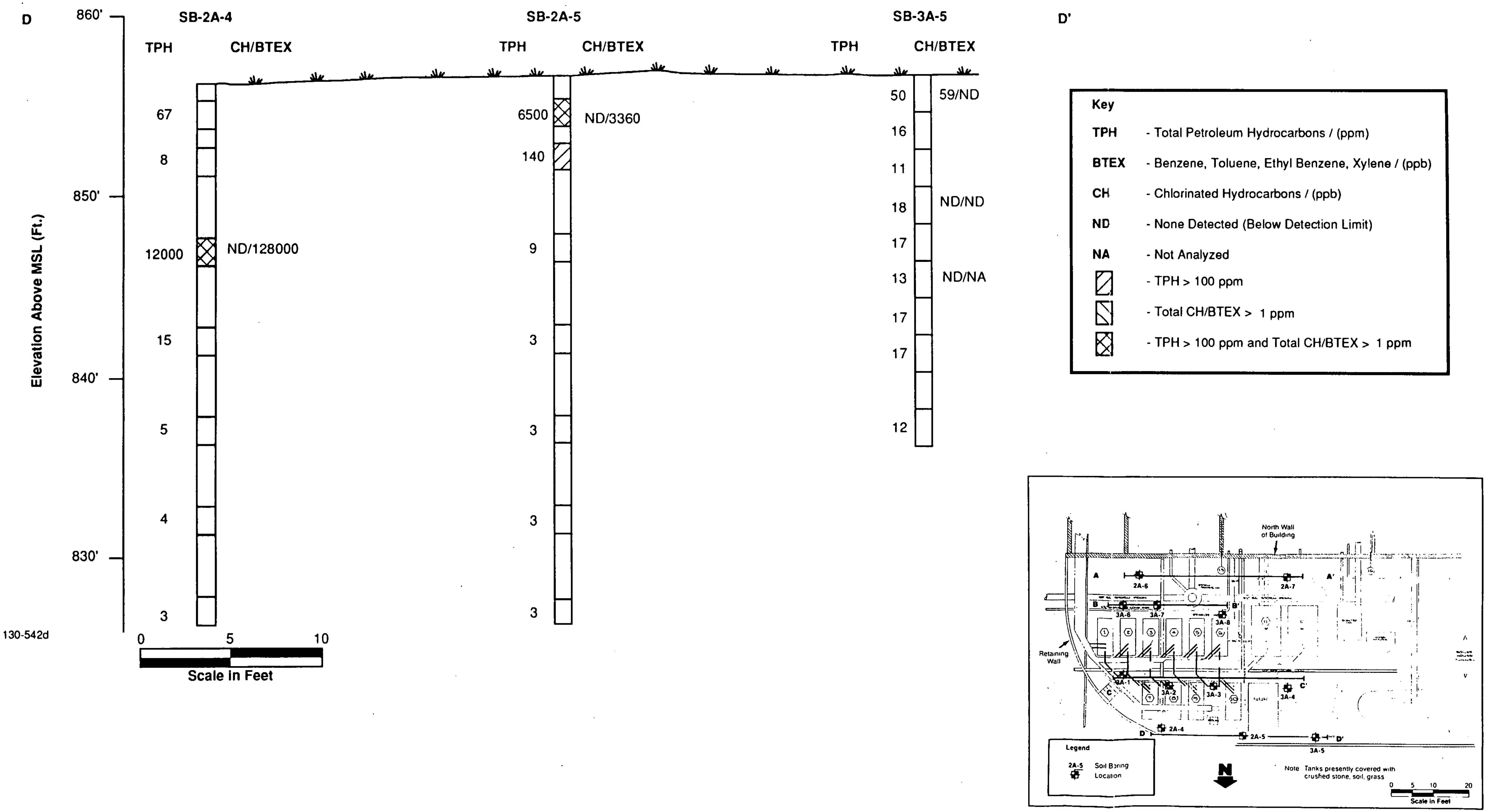


FIGURE 4-10 PHASE II SOIL BORINGS, RESULTS OF TPH AND VOC ANALYSIS CROSS SECTION D-D', TANK FARM 1

Table 4-1

Results of VOC Analysis: Phase IIb Soil Samples, Tank Farm 1

Sample ID	Depth ft bgs	TPH mg/kg	TCA ug/kg	TCE ug/kg	PCE ug/kg	Benzene ug/kg	Toluene ug/kg	E.Benzene ug/kg	Xylene ug/kg
SB-3A-101	0-2	26							
-101D	0-2	44							
-102	2-4	17							
-103	4-6	7 J							
-104	6-8	20							
-104D	6-8	12 J							
-105	8-10	20	31	ND	44	ND	22	ND	93
-106	10-12	750	150	0.8 J	170	ND	480000 E	35000	
-107	12-14	12 J	24	ND	ND				
-108	14-16	14 J	2	ND	ND	ND	100 E	2 J	
-109	18-20	12 J	0.6 J	ND	ND	ND	5.9	2.2 J	
Blank		3.9 J							
SB-3A-201	0-2	39							
-202	2-4	46	ND	ND	ND	ND	26	1500	8600
-203	4-6	34							
-204	6-8	74	ND	ND	3.5				
-204D	6-8	68							
-205	8-10	170							
-206	10-12	1800	210	30	1000	ND	1000000	120000	310000
-206D	10-12		80	7.2	1000				
-207	12-14	7.8							
-208	14-16	ND	ND	ND	ND	ND	ND	ND	ND
-209	18-20	ND	ND	ND	ND	ND	ND	ND	ND
Blank		5.1							
SB-3A-301	0-2	9.5							
-302	2-4	28	ND	ND	ND	ND	ND	ND	ND
-302D	2-4		ND	ND	ND	ND	ND	ND	ND
-303	4-6	17							
-304	6-8	25							
-305	8-10	11	ND	ND	ND	ND	48	34	300
-305D	8-10		ND	ND	ND	ND	5.3	6	65
-306	10-12	32	ND	ND	ND	ND	3.7 J	3 J	29
-307	12-14	5							
-308	14-16	11							
-309	18-20	12	ND	ND	ND	ND	ND	ND	ND
-309D	18-20	11							
Blank		ND							
SB-3A-401	0-2	12							
-402	2-4	5.4							
-403	4-6	2.1 J	1.5	ND	ND	ND	ND	ND	ND
-404	6-8	2.5 J							
-405	8-10	4.9							
-405D	8-10	3.3 J							
-406	10-12	4.3	ND	ND	ND	ND	ND	ND	ND
-407	12-14	ND							
-408	14-16	6.9							
-409	18-20	ND	ND	ND	ND	ND	ND	ND	ND
-409D	18-20		ND	ND	ND				
Blank		ND							

J - Detected at less than the lower quantification limit   ND - Not detected

E - Estimated, out of calibration range

Table 4-1
(continued)

Results of VOC Analysis: Phase IIb Soil Samples, Tank Farm 1

Sample ID	Depth ft bgs	TPH mg/kg	TCA ug/kg	TCE ug/kg	PCE ug/kg	Benzene ug/kg	Toluene ug/kg	E.Benzene ug/kg	Xylene ug/kg
SB-3A-501	0-2	50	59	ND	ND	ND	ND	ND	ND
-502	2-4	16							
-503	4-6	11							
-504	6-8	18	ND	ND	ND	ND	ND	ND	ND
-504D	6-8	11							
-505	8-10	17							
-506	10-12	13							
-507	12-14	17	ND	ND	ND				
-508	14-16	17							
-509	18-20	12							
Blank		9.9							
SB-3A-601	0-2	13							
-602	2-4	18							
-603	4-6	33							
-604	6-8	74	ND	ND	ND	ND	ND	ND	ND
-605	8-10	2.4 J							
-606	10-12	1.7 J	ND	ND	ND	ND	ND	ND	ND
-607	12-14	3.1 J	ND	ND	ND	ND	2900	ND	ND
-607D	12-14		ND	ND	ND				
-608	14-16	7.2							
-609	18-20	10	20	ND	2.7	ND	240	ND	ND
-609D	18-20		32	ND	2.7	ND	100	ND	ND
-611	20-22	400	130	ND	300	ND	4600000 E	ND	ND
SB-3A-701	0-2	110	ND	ND	ND	ND	ND	ND	ND
-701D	0-2	71							
-702	2-4	11							
-703	4-6	3.3 J							
-704	6-8	ND							
-705	8-10	7.4	ND	ND	ND	ND	ND	ND	ND
-706	10-12	ND							
-706D	10-12	21							
-707	12-14	7500	12	ND	150	I	I	I	1800
-708	14-16	14000							
-709	18-20	340	4.6	ND	32	ND	750 I	100 I	270 I
-711	20-22	2200							
-712	25-27	860	64	0.6 J	590	ND	3300000 E	4100	10000 I
Blank		4.7							
SB-3A-801	0-2	6.2							
-802	2-4	20	ND	ND	ND	ND	ND	ND	ND
-803	4-6	7							
-803D	4-6	4.8							
-804	6-8	13							
-805	8-10	4 J							
-806	10-12	9.6	ND	ND	ND	ND	ND	ND	ND
-807	12-14	ND							
-808	14-16	6.6							
-809	18-20	8.1							
Blank		1.4							

J - Detected at less than the lower quantification limit

ND - Not detected

E - Estimated, out of calibration range

I - Interference from petroleum hydrocarbons

Limited horizons in borings SB-3A-1, SB-3A-2, SB-3A-6, and SB-3A-7 had TPH concentrations above 100 ppm. Of volatile compounds, xylene, ethyl benzene, and toluene (XET) were detected in concentrations greater than 1 ppm in borings SB-3A-1, SB-3A-2, SB-3A-6, and SB-3A-7. Chlorinated hydrocarbons were a small percentage of the total VOCs. Only SB-3A-2 had a single sample with PCE in concentrations exceeding 1 ppm. As in the Phase IIa borings, the highest VOC concentrations were associated with the higher TPH concentrations.

The three-dimensional distribution of the highest levels of TPH (>100 ppm) and total VOCs (>1 ppm and predominantly XET) in Tank Farm 1 is schematically presented as a fence diagram in Figure 4-11. In the fence diagram, the soil borings and soil intervals within those borings are used as nodes. The actual soil analyses are extrapolated between nodes to depict a probable contaminated soil profile of the tank farm. Figure 4-11 indicates that the highest levels of TPH and VOCs were found in the southeast part of Tank Farm 1 centered at SB-3A-7. In SB-3A-7, TPH >100 ppm was found from 0 to 2 feet bgs. Similar TPH concentrations and VOCs >1 ppm are found from 12- to 27-feet bgs (847 feet MSL to 832 feet MSL). The 12- to 27-foot interval roughly corresponds to the zone from 2 feet above the base of the tank farm fill to 2 feet below the top of the water table.

In SB-3A-2, adjacent to SB-3A-7, the highest levels of TPH and VOCs were detected in the 2- to 12-foot bgs interval (855 feet MSL to 845 feet MSL). The 845-foot depth corresponds to the base of the fill.

TPH concentrations >100 ppm and VOCs >1 ppm at the 847- to 845 -foot MSL depth were also found in SB-3A-6, SB-3A-1, and SB-2A-4, downgradient of or lateral to SB-3A-7. In SB-3A-6 and SB-2A-6, higher contaminant levels were found in samples from the top of the water table, at 834 feet MSL. In SB-2A-5, TPH >100 ppm and VOCs >1 ppm were found in the top 5 feet of soil only.

Borings SB-3A-5, SB-3A-3, and SB-3A-8 define the southern and western boundaries of the contaminated soil profile. The northern and eastern limits of the soil contaminants were assumed to be the roadway. The roadway represents the boundary of the tank farm and is a barrier to the infiltration of rainwater.

The pattern of TPH and XET distribution in Tank Farm 1 soil borings suggests that below 845 feet MSL in the vadose zone, concentrations of TPH >100 ppm and XET >1 ppm, are found in a limited area (approximate 10-foot radius) close to SB-3A-7. Similar concentrations in soils at the top of the water table have a slightly greater areal extent. Above 845 feet (MSL) the highest levels of contaminants are found in soils throughout and downgradient of the immediate area of Tanks 1 through 9, an approximately 1,600-square foot area.

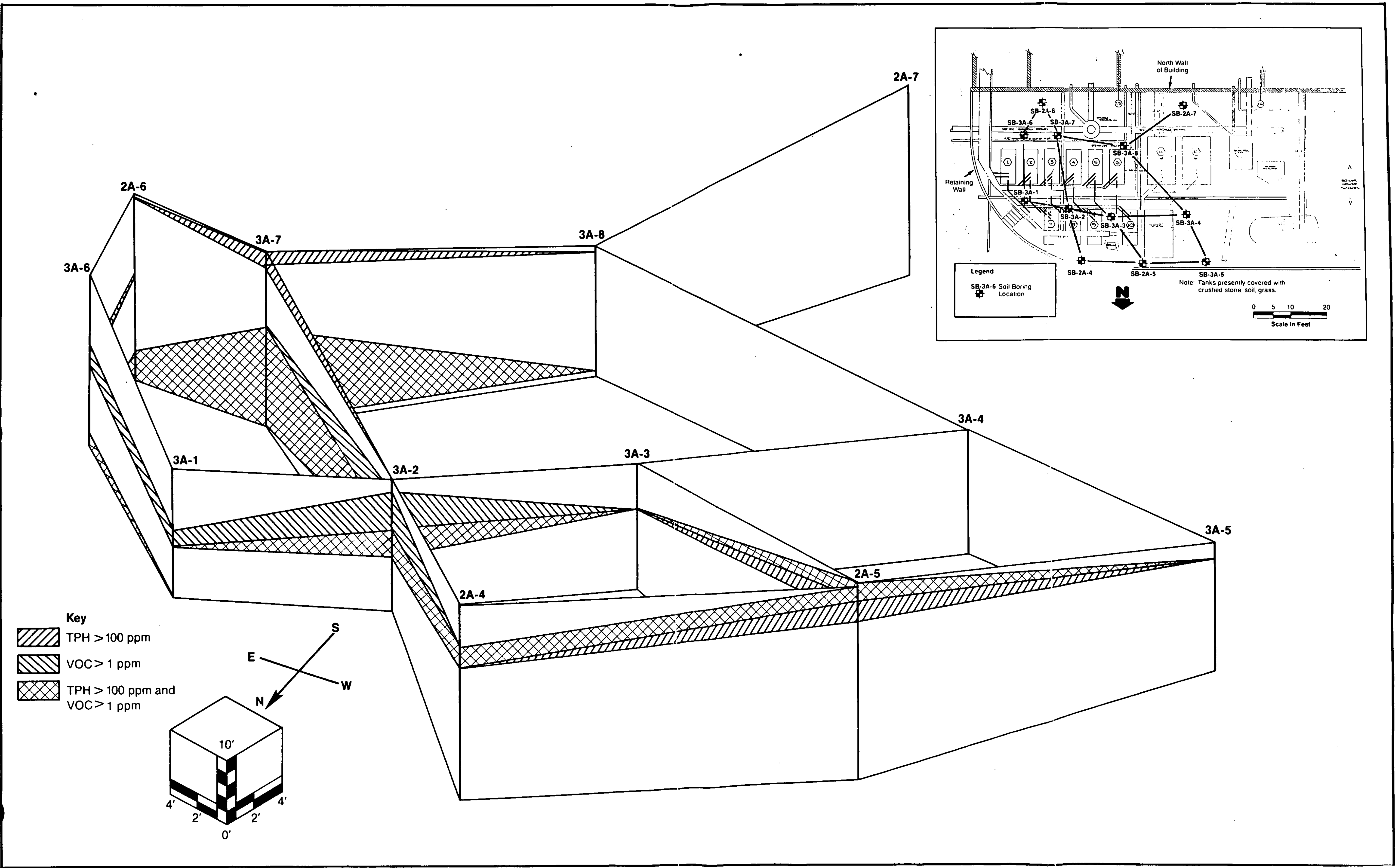


FIGURE 4-11 TANK FARM 1 SOIL PROFILE DEPICTING ZONES OF TPH CONCENTRATION > 100 PPM AND

TCLP tests were conducted on the 10- to 12-foot sample from SB-3A-2. The leachate was analyzed to determine the typical VOC concentration that could leach into groundwater from soils exhibiting the highest levels of VOCs in Tank Farm 1. The 8- to 10-foot sample from SB-3A-3 was analyzed to represent VOC concentrations leaching from soils with average levels of contaminants. The results are shown in Table 4-2.

In the SB-3A-2 sample, toluene, ethyl benzene, and xylene were detected at 1,600 ppb, 350 ppb, and 2,200 ppb, respectively. PCE was detected at less than the lower quantification limit. In the SB-3A-3 sample, toluene and xylene were detected at 11 ppb and 42 ppb, respectively. None of the chlorinated hydrocarbons were detected in this sample. The concentration of toluene, ethyl benzene, and xylene from both samples are below EPA's draft proposed Maximum Contaminant Levels (MCLs) for drinking water of 2,000 ppb, 700 ppb, and 10,000 ppb. The proposed MCL values are taken from Inside EPA, Vol. 9, No. 23, 10 June 1988.

The TCLP samples, which show BXET concentrations below proposed MCLs and no chlorinated hydrocarbons above quantification limits, suggest that contaminants in Tank Farm 1 soils are currently not impacting the local groundwater.

This conclusion in regard to BXET is corroborated by analysis results of groundwater samples from monitor well RFW-9, as discussed in Subsection 4.2.3. RFW-9 is located on the southwest perimeter of the tank farm hydraulically downgradient of the affected soils and screened from 49 to 39 feet bgs (809 to 819 feet MSL). Of the BTEX compounds, only toluene was detected in the groundwater sample at 8 ppb. Therefore, it is apparent that shallow groundwater immediately downgradient of Tank Farm 1 is not being impacted significantly by the concentrations of TPH and BXET found in the tank farm soils.

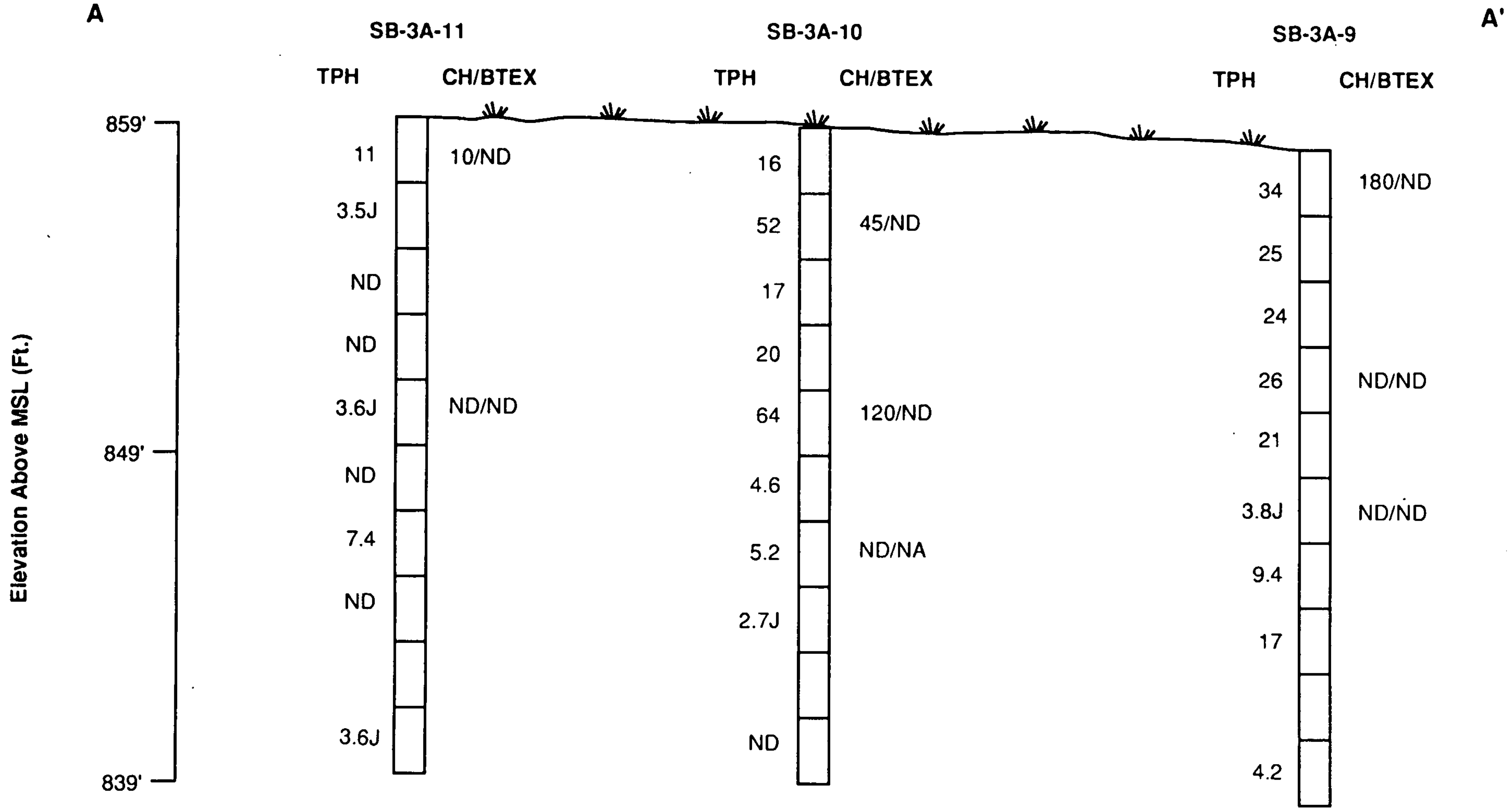
The results for Tank Farm 2 (Figures 4-12 to 4-14) again corroborate the levels and types of contamination observed in the Phase I and Phase IIa borings. As in Tank Farm 1, the majority of soil samples had TPH concentrations of less than 100 ppm. Limited intervals in borings SB-3A-12, SB-3A-13, SB-3A-14, SB-3A-15, SB-3A-16, SB-3A-17, and SB-3A-18 had TPH concentrations above 100 ppm. Of the BXET compounds, benzene and toluene were only detected in concentrations in excess of 1 ppm in borings SB-3A-12 and SB-3A-18. The CHs, in contrast to the Tank Farm 1 results, were found to be the predominant VOCs in Tank Farm 2. In Tank Farm 2, PCE was typically detected in concentrations 10 times greater than TCE, and 100 times greater than 1,1,1-TCA. Again, the highest concentrations of VOCs occurred in samples also exhibiting the highest TPH concentrations. The complete analysis for each boring is listed in Table 4-3.

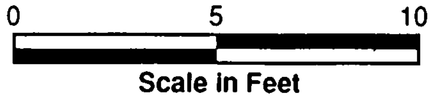
Table 4-2

Results of VOC Analysis: TCLP Soil Samples, Tank Farm 1

Sample ID	Depth ft bgs	TPH mg/kg	TCA ug/kg	TCE ug/kg	PCE ug/kg	Benzene ug/kg	Toluene ug/kg	E.Benzene ug/kg	Xylene ug/kg
SB-3A-206	10-12		ND	ND	4 J	ND	1600	350	2200
-305	8-10		ND	ND	ND	ND	11	ND	42

J - Detected at less than the lower quantification limit
ND - Not detected





130-542g

Key

TPH	- Total Petroleum Hydrocarbons / (ppm)
BTEX	- Benzene, Toluene, Ethyl Benzene, Xylene / (ppb)
CH	- Chlorinated Hydrocarbons / (ppb)
ND	- None Detected (Below Detection Limit)
NA	- Not Analyzed
▨	- TPH > 100 ppm
▧	- Total CH/BTEX > 1 ppm
☒	- TPH > 100 ppm and Total CH/BTEX > 1 ppm

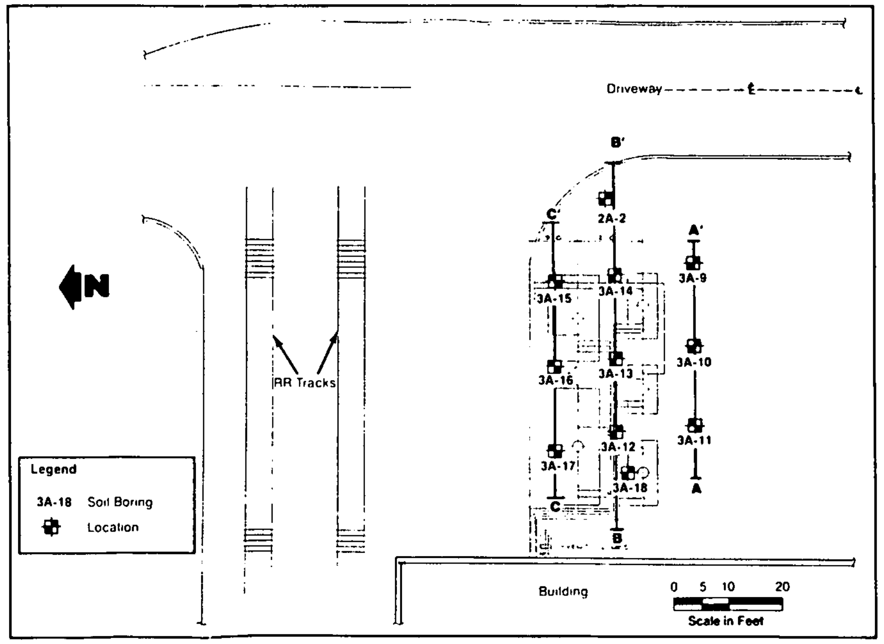


FIGURE 4-12 PHASE II SOIL BORINGS, RESULTS OF TPH AND VOC ANALYSIS CROSS SECTION A-A', TANK FARM 2

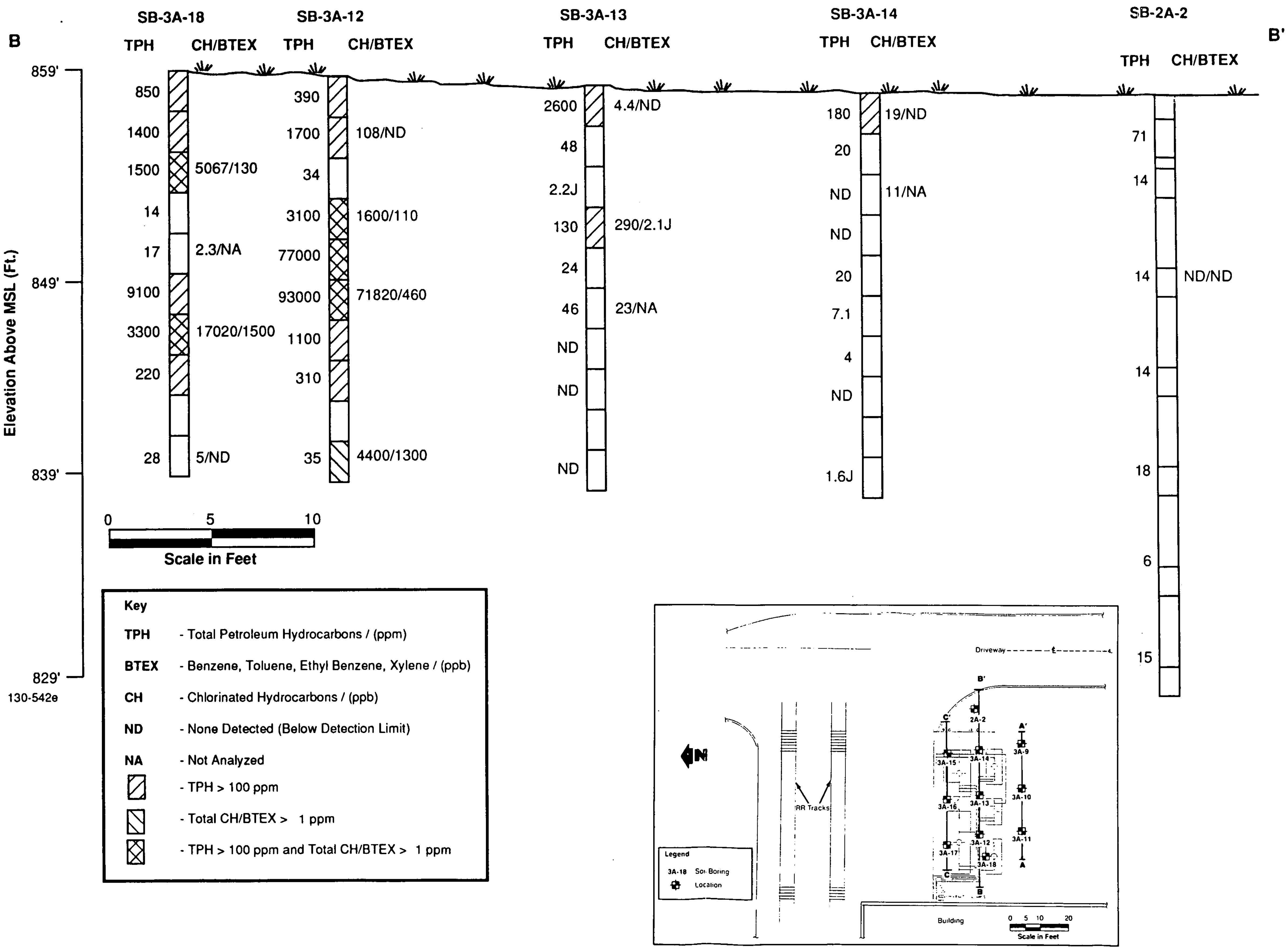


FIGURE 4-13 PHASE II SOIL BORINGS, RESULTS OF TPH AND VOC ANALYSIS CROSS SECTION B-B' TANK FARM 2

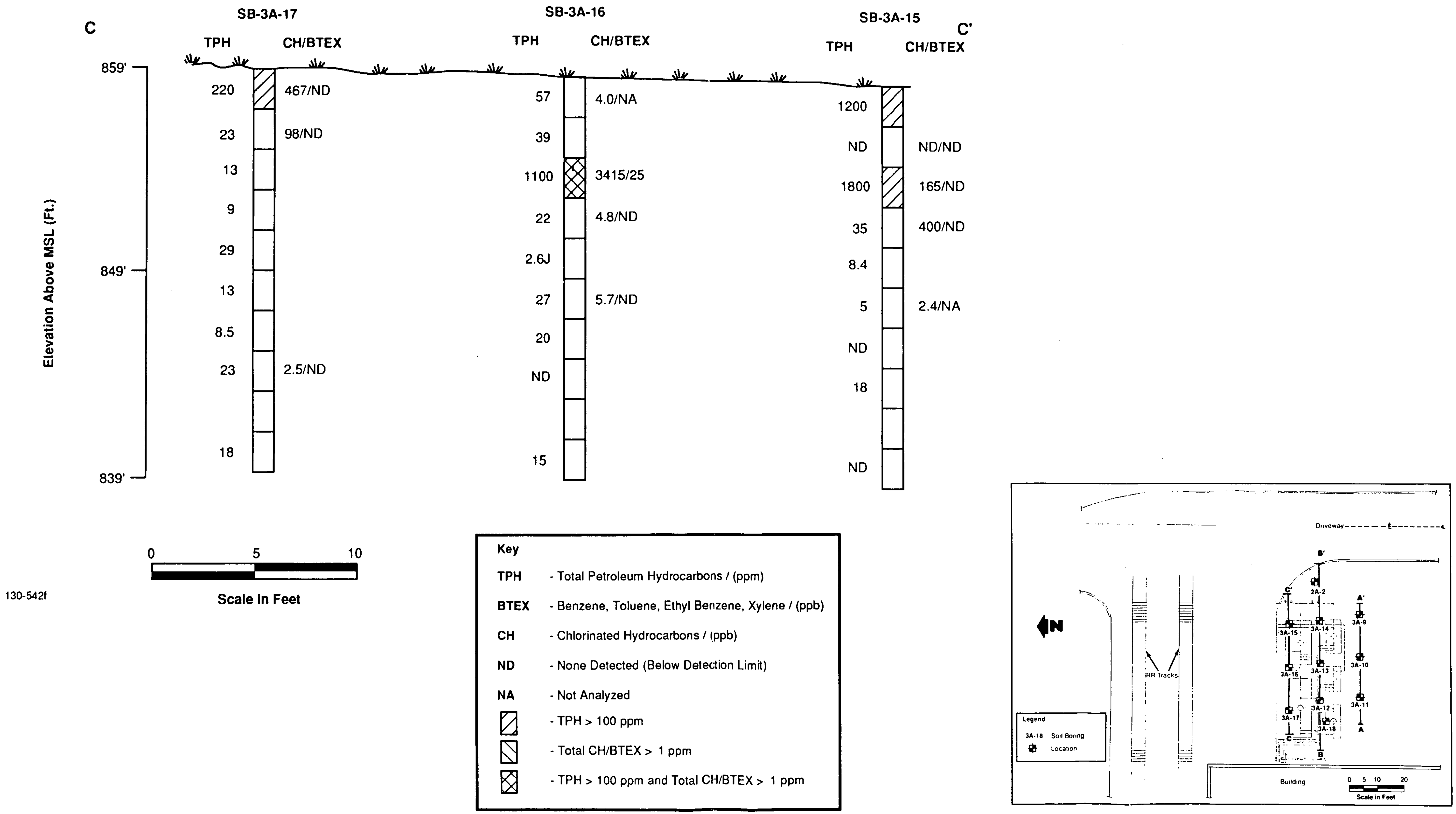


FIGURE 4-14 PHASE II SOIL BORINGS, RESULTS OF TPH AND VOC ANALYSIS CROSS SECTION C-C', TANK FARM 2

Table 4-3

Results of VOC Analysis: Phase IIb Soil Samples, Tank Farm 2

Sample ID	Depth ft bgs	TPH mg/kg	TCA ug/kg	TCE ug/kg	PCE ug/kg	Benzene ug/kg	Toluene ug/kg	E.Benzene ug/kg	Xylene ug/kg
SB-3A-901	0-2	34	ND	ND	180	ND	ND	ND	ND
-902	2-4	25							
-903	4-6	24							
-904	6-8	26	ND	ND	ND	ND	ND	ND	ND
-905	8-10	21							
-906	10-12	3.8 J	ND	ND	ND	ND	ND	ND	ND
-907	12-14	9.4							
-908	14-16	17							
-908D	14-16	12							
-909	18-20	4.2							
Blank		1.3							
SB-3A-1001	0-2	16							
-1002	2-4	52	0.6 J	ND	45	ND	ND	ND	ND
-1003	4-6	17							
-1004	6-8	20							
-1005	8-10	64	120	ND	ND	ND	ND	ND	ND
-1005D	8-10		140	ND	ND				
-1006	10-12	4.6							
-1007	12-14	5.2	ND	ND	ND				
-1008	14-16	2.7 J							
-1009	18-20	ND							
Blank		2.4							
SB-3A-1101	0-2	11	ND	ND	10	ND	ND	ND	ND
-1102	2-4	3.5 J							
-1103	4-6	ND							
-1104	6-8	ND							
-1105	8-10	3.6 J	ND	ND	ND	ND	ND	ND	ND
-1105D	8-10		1.8	ND	ND	ND	ND	ND	ND
-1106	10-12	ND							
-1107	12-14	7.4							
-1108	14-16	ND							
-1108D	14-16	ND							
-1109	18-20	3.6 J							
Blank		ND							
SB-3A-1201	0-2	390							
-1202	2-4	1700	2.7 J	5.5	100	ND	ND	ND	ND
-1203	4-6	34							
-1203D	4-6	27							
-1204	6-8	3100	140	360	1100	110	ND	ND	ND
-1205	8-10	77000							
-1206	10-12	93000	520	1300	70000	460	ND	ND	ND
-1206D	10-12					280	ND	ND	ND
-1207	12-14	1100							
-1208	14-16	310							
-1209	18-20	35	63	30	4300	190	1100 E	ND	ND
Blank		ND							

J - Detected at less than the lower quantification limit

ND - Not detected

E - Estimated, out of calibration range

Table 4-3
(continued)

Results of VOC Analysis: Phase IIb Soil Samples, Tank Farm 2

Sample ID	Depth ft bgs	TPH mg/kg	TCA ug/kg	TCE ug/kg	PCE ug/kg	Benzene ug/kg	Toluene ug/kg	E.Benzene ug/kg	Xylene ug/kg
SB-3A-1301	0-2	2600	ND	ND	4.4	ND	ND	ND	ND
-1302	2-4	48							
-1303	4-6	2.2 J							
-1303D	4-6	4.2							
-1304	6-8	130	ND	ND	290 E	2.1 J	ND	ND	ND
-1305	8-10	24							
-1306	10-12	46	ND	ND	23				
-1307	12-14	ND							
-1308	14-16	ND							
-1309	18-20	ND							
SB-3A-1401	0-2	180	ND	ND	19	ND	ND	ND	ND
-1402	2-4	20							
-1403	4-6	ND	ND	ND	11				
-1404	6-8	ND							
-1405	8-10	20							
-1406	10-12	7.1							
-1406D	10-12	6.8							
-1407	12-14	4							
-1408	14-16	ND							
-1409	18-20	1.6 J							
Blank		ND							
SB-3A-1501	0-2	1200							
-1502	2-4	ND	ND	ND	ND	ND	ND	ND	ND
-1502D	2-4		ND	ND	6.5				
-1503	4-6	1800	ND	ND	165	ND	ND	ND	ND
-1504	6-8	35	ND	ND	400	ND	ND	ND	ND
-1505	8-10	8.4							
-1506	10-12	5	ND	ND	2.4				
-1507	12-14	ND							
-1508	14-16	18							
-1509	18-20	ND							
Blank		ND							
SB-3A-1601	0-2	57	ND	ND	4				
-1602	2-4	39							
-1603	4-6	1100	2.3	12	3400	25	ND	ND	ND
-1603D	4-6					ND	ND	ND	ND
-1604	6-8	22	ND	ND	4.8	ND	ND	ND	ND
-1605	8-10	2.6 J							
-1606	10-12	27	ND	ND	5.7	ND	ND	ND	ND
-1607	12-14	20							
-1608	14-16	ND							
-1609	18-20	15							
-1609D	18-20	19.5							
Blank		8.4							

J - Detected at less than the lower quantification limit

ND - Not detected

E - Estimated, out of calibration range

Table 4-3
(continued)

Results of VOC Analysis: Phase IIb Soil Samples, Tank Farm 2

Sample ID	Depth ft bgs	TPH mg/kg	TCA ug/kg	TCE ug/kg	PCE ug/kg	Benzene ug/kg	Toluene ug/kg	E.Benzene ug/kg	Xylene ug/kg
SB-3A-1701	0-2	220	1.8	5.5	460	ND	ND	ND	ND
-1702	2-4	23							
-1703	4-6	13	1.1	6.2	91	ND	ND	ND	ND
-1704	6-8	9							
-1705	8-10	29							
-1706	10-12	13							
-1707	12-14	8.5							
-1708	14-16	23	ND	ND	2.5	ND	ND	ND	ND
-1709	18-20	18							
SB-3A-1801	0-2	850							
-1802	2-4	1400							
-1803	4-6	1500	4.6	62	5000	130	ND	ND	ND
-1804	6-8	14							
-1805	8-10	17	ND	ND	2.3				
-1806	10-12	9100							
-1807	12-14	3300	420	1600	15000 E	1500 E	ND	ND	ND
-1808	14-16	220							
-1809	18-20	28	0.9 J	ND	4.1	ND	ND	ND	ND
Blank		ND							

J - Detected at less than the lower quantification limit

ND - Not detected

E - Estimated, out of calibration range

The three-dimensional distribution of the higher levels of TPH (>100 ppm) and total VOCs (>1 ppm and predominantly CH) in Tank Farm 2 is schematically presented in Figure 4-15. The higher levels of TPH and VOCs are found in the central area of the tank farm, centered at SB-3A-12 and SB-3A-18. In SB-3A-12, TPH >100 ppm and/or VOCs >1 ppm were detected in all but the 4- to 6-foot bgs (854 to 856 feet MSL) sample. In SB-3A-18, intervals from the surface to 6 feet bgs (869 to 859 feet MSL) and from 10 to 16 feet bgs (849 to 843 feet MSL) contained contaminants at these levels. In the remaining borings, SB-3A-17, SB-3A-16, SB-3A-15, SB-3A-14, and SB-3A-13, TPH >100 ppm and VOCs >1 ppm are limited to soils from the surface to 6 feet bgs (859 to 853 feet MSL). The base of fill in Tank Farm 2 corresponds to the 847 feet MSL.

The pattern of TPH and VOC distribution in Tank Farm 2 soil borings suggests that high levels of TPH and VOCs (particularly PCE) are present within an approximately 1,800-square foot area including the tanks. Soil contaminants over much of this area are limited to the top 6 feet of soil (853 feet MSL). In the central part of the tank farm the zone of TPH >100 ppm and/or VOCs >1 ppm extends to 20 feet bgs (839 feet MSL), an area inclusive of SB-3A-12 and SB-3A-18. The size of the drilling rig prevented determination of the SW horizontal limit of contaminants.

TCLP procedures were used in the analysis of the 10- to 12-foot sample from SB-3A-12 to represent leachate from soils exhibiting the highest contaminant levels in Tank Farm 2. The 4- to 6-foot sample from SB-3A-18 was analyzed to represent VOC concentration leaching from soils with average levels of contaminants. The results are presented in Table 4-4. PCE, TCE, and TCA were detected at 170 ppb, 60 ppb, and 21 ppb in the SB-3A-12 sample. Xylene was detected at 3 ppb, and ethyl benzene, benzene, and toluene were not detected above the lower quantification limit. In the leachate from the SB-3A-18 sample, PCE was detected at 52 ppb. Xylene was detected at 3 ppb. The other VOCs were not detected above the lower quantification limit. An MCL of 5 ppb has been established for TCE in drinking water (Federal Register, Vol. 52, No. 130, 8 July 1987, p. 25689). The SB-3A-12 leachate sample exceeds the TCE guideline. Federal drinking water standards for PCE have not been implemented yet.

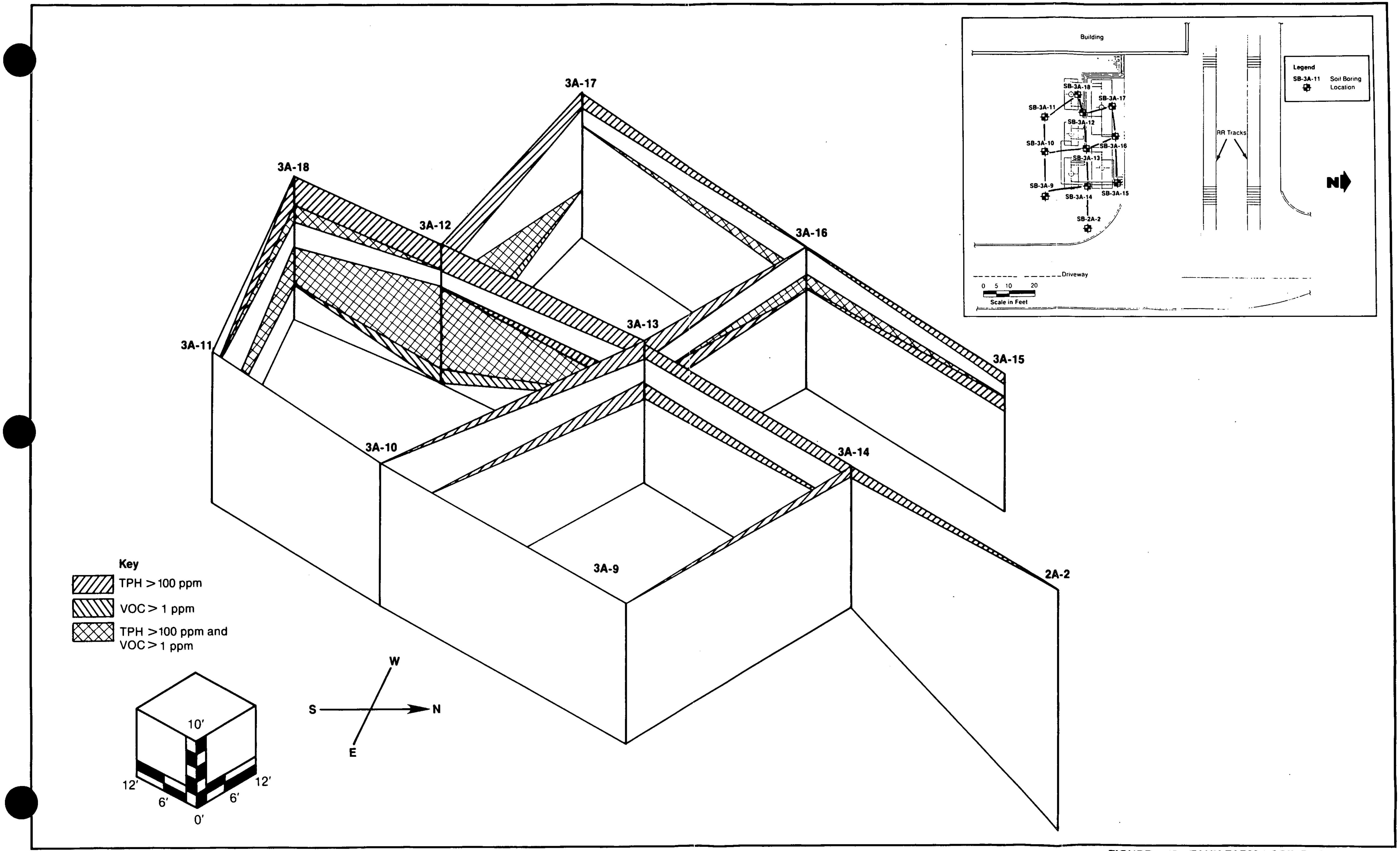


FIGURE 4-15 TANK FARM 2 SOIL PROFILE DEPICTING ZONES OF TPH CONCENTRATION 100 PPM AND VOC CONCENTRATION > 1 PPM

Table 4-4

Results of VOC Analysis: TCLP Soil Samples, Tank Farm 2

Sample ID	Depth ft bgs	TPH mg/kg	TCA ug/kg	TCE ug/kg	PCE ug/kg	Benzene ug/kg	Toluene ug/kg	E.Benzene ug/kg	Xylene ug/kg
SB-3A-1206	10-12		21	60	170	ND	1 J	ND	3
-1803	4-6		ND	2 J	52	ND	ND	ND	3

J - Detected at less than the lower quantification limit
ND - Not detected

The comparison of TCLP leachate VOC concentrations against Federal drinking water standards is a conservative approach. The low rate of leachate generation (due to the characteristic low permeability of these soils) compared to the rate of lateral groundwater flow suggests that leachate from the soils in situ would be diluted significantly. However, the TCLP leachate concentration of one to two orders of magnitude above the Federal drinking water guidelines indicates that the CHs in the leachate may have an impact on groundwater in at least the immediate area of Tank Farm 2.

The apparent impact, particularly of PCE, to the groundwater is exemplified by the analysis results of the groundwater sample analysis from monitor well RFW-8 (discussed in Subsection 4.2.3). RFW-8 is located between SB-3A-12 and SB-3A-13 in the center of the Tank Farm, and screened from 53 to 43 feet bgs.

In the Tank Farm 2 groundwater, PCE was detected at a concentration of 150 ppb. TCE was detected at a concentration of 1,700 ppb.

Based on analysis of the groundwater and TCLP samples, it is apparent that the Tank Farm 2 soils represent a current source of CHs that are presently leaching into the shallow groundwater in the Tank Farm 2 area.

4.2 GROUNDWATER

As in the Tank Farm soils investigation, the groundwater investigation in Phase II involved two stages. Phase IIa was designed to evaluate the hydrogeology and groundwater quality upgradient and downgradient of possible source areas at the Black & Decker facility. Results from Phase IIa indicated that a northeast component of groundwater flow was directed from Tank Farm 2 toward State Route 30. Significant concentrations of TCE and PCE in groundwater samples from Tank Farm 2 suggested that groundwater between the plant and the northeast boundary of the site warranted evaluation. As a result, Phase IIb monitor wells were proposed to evaluate the hydrogeology and groundwater quality of the eastern boundary of the plant property.

Subsection 4.2.1 describes the Phase IIa and Phase IIb field programs. Subsection 4.2.2 describes the hydrogeology at the Black & Decker property, inclusive of both the Phase IIa and IIb results. Subsection 4.2.3 describes the groundwater quality again, including both Phase IIa and Phase IIb results.

4.2.1 Monitor Well Installation and Groundwater Sampling

Monitor Well Installation - Phase IIa

In Phase IIa, 13 monitor wells, RFW-1A through RFW-9, were installed across the western half of the plant site, as shown in Figure 4-16. Seven shallow wells were installed near the saprolite/bedrock interface. Six deep wells were installed into competent bedrock to a depth where a yield of approximately 1 gpm was sustained or to a maximum depth of 200 feet.

Three of the shallow wells, RFW-7, RFW-8, and RFW-9, were installed with a hollow-stem auger drilling rig, which allowed concurrent soil sampling in the boreholes of RFW-8 and RFW-9. Four shallow wells, RFW-1A, RFW-2A, RFW-4A, and RFW-5A, were installed with an air rotary rig within 10 feet of a deep monitor well. A continuous lithologic log from drill cuttings was kept as each borehole was advanced.

The shallow wells were constructed of 4-inch (ID), Schedule 40, threaded, flush-joint, PVC casing with a 10-foot, continuous 0.01-inch slot PVC screen. The annular space around the well screen was filled with No. 2 sand to approximately 3 feet above the top of the screen. A 4-foot bentonite pellet seal was placed above the gravel pack. The remaining annular space was pressure-grouted with a Portland cement/bentonite slurry. Then 6-inch (ID) low carbon steel protective casings with locking caps were placed over the PVC casing and grouted in place.

Upon completion, each shallow well was developed using a surge block and pump. The wells were first surged by hand drawing a circular rubber block attached to a PVC pipe several times across the well screen. Following surging, a truck-mounted Grundfos pump was lowered into each well. Starting at the base of the well, the pump was set at 2-foot intervals along the screen; water was purged at a rate of 10 gpm from each interval until the purge water was visibly free of particulates. If the water did not clear with the initial pumping, the well was surged and pumped a second time. Development water was contained in drums and discharged to the site wastewater treatment facility. During drilling, cuttings were collected and placed on plastic sheets. At the conclusion of well installation, the cuttings were screened with the HNu. No elevated HNu readings were detected, and, therefore, the cuttings remained on-site.

Prior to the installation of each well, the drilling rig and drilling and development equipment were steam-cleaned. The pump was purged with Alconox and water and rinsed with potable water before each use. Well construction materials were removed from their original shipping containers just prior to use.

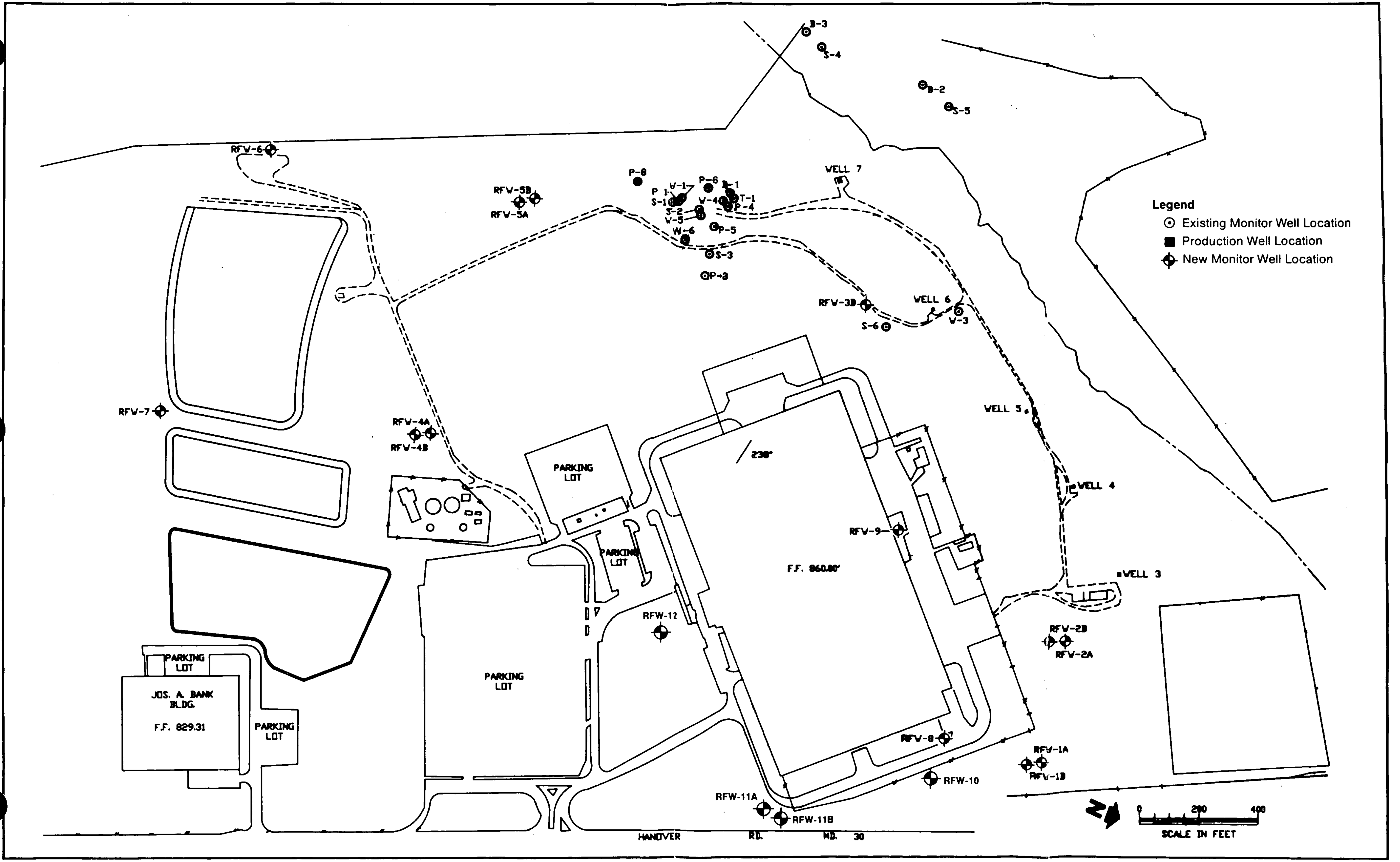


FIGURE 4-16 MONITOR WELL AND PRODUCTION WELL LOCATIONS, BLACK & DECKER, HAMPSTEAD, MD

The six deep monitor wells (RFW-1B, -2B, -3, -5B, -6) were installed with an air rotary rig. Boreholes were initially drilled to approximately 5 feet into competent bedrock. A 6-inch (ID) low carbon steel surface casing was then set and grouted in place with a Portland cement/bentonite slurry, which was allowed to harden for a minimum of 12 hours. A 5 5/8-inch borehole was advanced through the casing to depths where water-bearing fractures were encountered in the bedrock. A continuous lithologic log was kept of the cuttings during drilling. The deep wells were developed over a period of 20 to 30 minutes by alternatively surging with air and allowing for recovery.

Before installation of each well the back of the drill rig, pipe, and bits were steam-cleaned. Cuttings were collected and placed on plastic sheets during drilling. After well completion, the cuttings were monitored for VOCs with the HNu and since no elevated readings were detected the cuttings were disposed of on-site by Black & Decker employees.

Well construction details for the monitor wells are presented in Appendix F. A schematic diagram showing the depths and screened or open hole interval of all on-site monitor wells is presented in Figure 4-17.

Monitor Well Installation - Phase IIb

Four Phase IIb monitor wells, RFW-10, RFW-11A, RFW-11B, and RFW-12, were installed on the eastern half of the plant site in locations shown in Figure 4-16. RFW-12 was proposed for a location south of RFW-11A along the eastern boundary of Black & Decker property, but was relocated at the request of MDE.

RFW-10, RFW-11A, and RFW-12 were installed as shallow wells to the saprolite/bedrock interface with an air rotary drilling rig. Well construction details are identical to the construction details described for shallow wells installed in Phase IIa.

RFW-11B was installed as a deep well into bedrock with an air rotary rig. RFW-11B was constructed of 4-inch (ID), Schedule 40 threaded flush-joint PVC casing with a 20-foot continuous 0.01-inch slot PVC screen. The screen was set 10 feet into bedrock. A temporary steel casing, which could not be retrieved, was set at 84 feet to separate the PVC casing from the borehole wall. The steel casing was grouted in place with a Portland cement/bentonite slurry. Although originally proposed as a 6-inch cased well to be used as a recovery well, RFW-11B was completed with 4-inch casing because the yield of the well was less than 10 gpm. Well construction details are otherwise identical to the details described for the shallow wells in Phase IIa.

Upon completion, each well was developed using an air compressor and pump. The wells were surged with for one-half hour. After surging the wells were purged at a rate of not greater

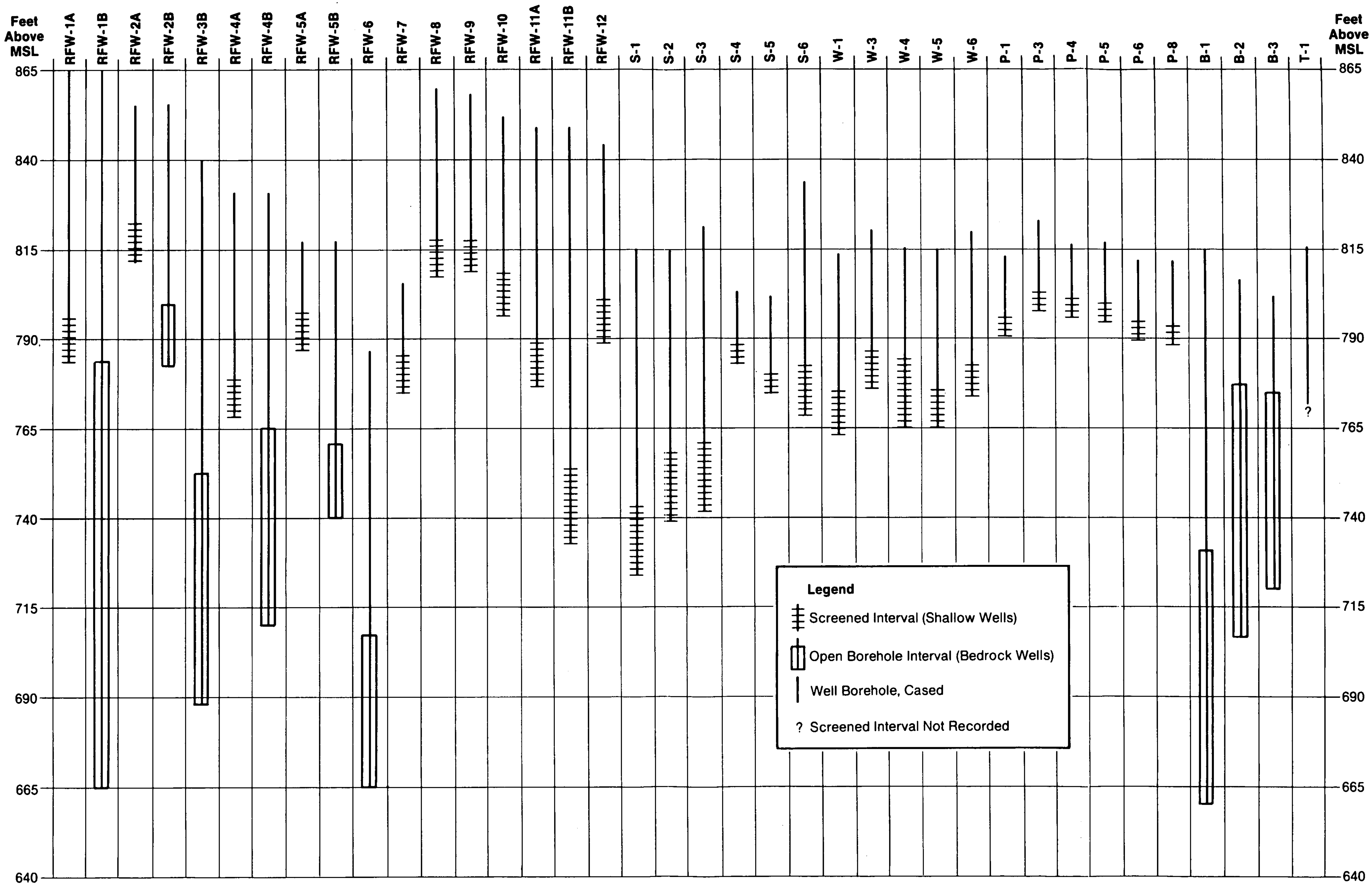


FIGURE 4-17 MONITOR WELL CONSTRUCTION, BLACK & DECKER, HAMPSTEAD, MD

than 20 gpm until the purge water was free of particulates. Development water drained into the storm sewer system.

Prior to installation of each well, the back of the drilling rig, pipe, and bits were steam-cleaned. Prior to development of each well the compressor hose and pump were steam-cleaned. Cuttings were monitored for VOCs with an HNu and, since no elevated readings were detected, the cuttings were disposed of on-site by Black & Decker employees. Well construction details for the Phase IIb monitor wells are presented in Appendix H. A schematic diagram showing the depths and screened or open hole intervals of all on-site monitor wells is presented in Figure 4-17.

Groundwater Sampling - Phase IIa and Phase IIb

In Phase IIa, groundwater samples were collected from the 13 newly installed monitor wells, from seven of the wells installed by Geraghty and Miller in Zone B, and from Black & Decker production wells 5, 6, and 7. In Phase IIb, groundwater samples were collected from RFW-10, -11A, -11B, and -12. The samples were submitted for VOC analysis.

Prior to sampling with a Teflon bailer, each monitor well was purged of at least three well volumes using a Grundfos pump in the 4-inch wells and a Johnson Keck pump in the 2-inch wells. Three deep wells, RFW-1B, RFW-3, and RFW-6, were purged dry before three volumes could be evacuated. These wells were allowed to recover and were then sampled. The conductivity, temperature, and pH were recorded at the time of sampling. The depth to water measurements of all sampled wells were collected prior to sampling. Purged water was contained in 55-gallon drums and discharged at the on-site wastewater treatment facility.

Both pumps and bailers were scrubbed with Alconox and water and rinsed with potable water followed by deionized water before being used in each well. Latex gloves were worn and changed between each sample.

Production wells were sampled from a tap in the well houses after allowing the tap to flow for 10 minutes. For the purposes of quality control, a duplicate sample was collected from RFW-4B and RFW-11A. Field and trip blanks were also collected.

Groundwater Elevation Survey and Measurements - Phase IIa and Phase IIb

Licensed surveyors located Phase IIa and Phase IIb wells with respect to the previous well survey grid and the southwest corner of the main warehouse. Elevations of the top of the inner casing for each monitor well were taken in reference to the overflow lip of the dam on the west end of the West Lagoon, elevation 800.15 feet above MSL. The elevations of the top of the innermost casing for all Phase II wells are listed in Table 4-5.

Table 4-5

Well Construction Details -- Phase II Monitor Wells

Well	Permit No.	Depth (ft bgs)[1]	Screened Interval (ft bgs)	Cased Interval (ft bgs)	Well Yield (gpm)	Elevation TIC[2] (ft above MSL)[3]
RFW-1A	CL-81-5755	78	68-78	0-68	40	864.37
RFW-1B	CL-81-5764	200	---	0-80	<0.5	864.23
RFW-2A	CL-81-5756	35	25-35	0-25	>10	857.41
RFW-2B	CL-81-5765	75	---	0-56	20	857.73
RFW-3B	CL-81-5766	153	---	0-86.5	<1	839.21
RFW-4A	CL-81-5758	62	52-62	0-52	8	830.37
RFW-4B	CL-81-5767	120	---	0-65	1.5	830.37
RFW-5A	CL-81-5759	30	20-30	0-20	15	817.50
RFW-5B	CL-81-5768	78	---	0-58	60	818.14
RFW-6	CL-81-5760	120	---	0-78	0.3	785.04
RFW-7	CL-81-5761	29	19-29	0-19	>10	805.14
RFW-8	CL-81-5762	53	43-53	0-43	8	860.07
RFW-9	CL-81-5763	49	39-49	0-39	>10	858.21
RFW-10	CL-81-6225	58	48-58	0-48	15	852.06
RFW-11A	CL-81-6226	72	62-72	0-62	<5	849.32
RFW-11B	CL-81-6227	116	96-116	0-96	2	849.62
RFW-12	CL-81-6228	55	45-55	0-45	20	844.58

[1] bgs - Below ground surface.

[2] TIC - Top of innermost casing.

[3] MSL - Mean sea level.

Following the Phase IIa well installation and groundwater sampling, two sets of groundwater level measurements were taken from all monitor and production wells on Black & Decker's property. One set of measurements was taken after plant production wells had been shut off for 24 hours. A second set of measurements was taken 5 hours after the pumps had been turned on and allowed to operate normally. Both sets of measurements were taken from the top of the monitor well inner casing to within one hundredth of a foot.

4.2.2 Hydrogeology

Information on site hydrogeology was gathered from groundwater monitor wells installed in the Phase II investigation. Lithologic logs for both the shallow and deep wells installed by WESTON are included in Appendices F and H. The depths of water-bearing zones and fractures are noted in the logs. A summary of well construction details for Phase II wells is presented in Table 4-5.

The shallow wells, RFW-2A, RFW-4A, RFW-5A, RFW-7, RFW-8, RFW-9, RFW-10, RFW-11A, and RFW-12, were screened in weathered bedrock in a transition zone between the highly decomposed saprolite and competent bedrock. The depths to this zone varied across the site from approximately 30 to 96 feet. RFW-1A was screened in a fractured quartz vein, which was located at the saprolite bedrock interface. The yields of all shallow wells were typically in excess of 10 gpm.

The deep wells, RFW-1B, RFW-2B, RFW-3B, RFW-5B, and RFW-6, intersect fractures within competent bedrock of the albite-chlorite schist facies of the Wissahickon Formation. The RFW-11B screen intersects 10 feet of weathered bedrock and 10 feet of competent bedrock. One to two fractures, typically within 50 feet of the saprolite-bedrock interface, were encountered in each well. The most highly producing fractures were associated with quartz veins. For example, a quartz vein encountered at 65 to 67 feet in RFW-5B yielded approximately 60 gpm. Wells that intersected fractures within the schist-phylite or possibly in weathered zones along planes of schistosity, of which RFW-3B, RFW-6, RFW-1B and RFW-11B are examples, yielded less than a few gpm.

Groundwater elevations were collected from previously existing and the new monitor wells and Black & Decker production wells on 14 July 1988, 8 August 1988, and 29 December 1988. On 8 August 1988, measurements were taken after the plant pumping wells were idle for 24 hours and again 5 hours after normal pumping rates were resumed. Normal pumping rates for supply wells 3, 4, 5, and 6 are typically 42 gpm, 42 gpm, 18 gpm, and 15 gpm, respectively, for 0 to 5 hours per day, depending on the plant's demand. The main supply well, 7, is pumped periodically throughout the day for a total of 3 to 10 hours at 42 gpm.

On 14 July 1988 and 29 December 1988 measurements were collected during a period when the pumps were operating under typical conditions.

As illustrated in Table 4-6, there are no significant differences were noted among groundwater elevations collected after the Black & Decker production wells had been idle for 24 hours, groundwater elevations collected 5 hours after the wells had resumed normal operations, and groundwater elevations collected during routine operations of the wells. This is probably due to the 300- to 400-foot distance between plant well 7 and the nearest monitor wells, as well as the relatively low pumping rate and duration of pumping of the Black & Decker supply wells.

No significant differences are seen between July groundwater elevations and December elevations. In December, groundwater elevations in monitor wells on the topographic high near the plant were 1 to 2 feet lower than elevations in the late summer months. In the monitor wells near Zone B and in most of the production wells, the December groundwater elevations were typically 1 foot higher. However, these minor variations do not significantly alter flow patterns across the property.

Elevation differences between the groundwater in the shallow and deep well pairs are small, on the average less than 0.5 foot. Vertical gradients between the shallow and deep zones are downward, varying approximately from 1.0×10^{-2} to 1.0×10^{-3}, as measured between the base of the shallow well screened interval and the water-bearing fractures in the deep well. These gradients are relatively low, probably indicating that considerable interconnection exists between the shallow and deeper groundwater.

Water elevations of both the shallow and deep groundwater are contoured in Figures 4-18 and 4-19, respectively. The contour patterns are similar for both shallow and deep zones, again reflecting the interconnection between the shallow and deeper groundwater.

In the shallow groundwater, flow is perpendicular to the elevation contour lines, and directed downgradient. The highest groundwater elevation is in the vicinity of RFW-2A, which also corresponds to a topographic high on-site. Examination of the contour maps reveals the presence of a groundwater divide trending northeast-southwest from the northern corner of the plant site. Groundwater moving through the saprolite away from the northwest to southwest perimeter of the main building is directed west to southwest toward the stream crossing the Black & Decker site along a lateral hydraulic gradient of approximately 0.025 (2.5 feet of head loss per 100 feet). Shallow groundwater just east of the divide is directed toward the east and southeast toward the lagoon and State Route 30.

Table 4-6

Groundwater Elevations in Black & Decker Wells

Well	Groundwater Elevation 14 July 88 (3)	Groundwater Elevation 8 August 88 (1)	Groundwater Elevation 8 August 88 (2)	Groundwater Elevation 29 December 89 (3)
RFW-1A	830.60	830.60	830.27	827.68
RFW-1B	830.45	830.12	830.14	827.54
RFW-2A	842.80	842.79	842.73	841.16
RFW-2B	842.49	842.42	842.42	840.79
RFW-3B	814.46	813.53	813.50	812.15
RFW-4A	795.87	795.95	795.93	794.33
RFW-4B	795.71	795.87	795.83	794.15
RFW-5A	799.06	799.00	798.63	797.54
RFW-5B	798.80	798.39	798.39	797.17
RFW-6	783.76	784.11	784.09	783.91
RFW-7	797.44	797.91	797.92	798.01
RFW-8	827.11	826.87	826.89	824.75
RFW-9	834.56	834.55	834.51	833.48
RFW-10				822.83
RFW-11A				817.93
RFW-11B				817.67
RFW-12				818.55
B1	800.77	800.80	800.83	802.18
B2		801.78	801.79	802.75
B3		795.16	795.18	793.97
T1		800.92	800.86	802.37
S1	803.19	803.31	803.30	803.70
S2		803.82	803.82	807.19
S3		808.69	808.67	807.90
S4		795.23	795.18	794.49
S5		797.60	797.62	799.15
S6		805.22	804.79	805.49
P1		803.62	803.65	804.02
P3		808.19	808.18	807.10
P4		804.48	804.43	804.87
P5		805.01	805.01	805.17
P6		801.84	801.84	806.00
P8	802.93	802.99	803.08	803.62

---

[1] Pumping wells idle for 24 hours.
[2] Pumping wells resumed normal operation for 5 hours.
[3] Pumping wells operating under normal conditions.

Table 4-6
(continued)

Well	Groundwater Elevation 14 July 88 (3)	Groundwater Elevation 8 August 88 (1)	Groundwater Elevation 8 August 88 (2)	Groundwater Elevation 29 December 89 (3)
W1	803.41	803.54	803.53	803.97
W3		807.83	807.72	809.44
W4	804.25	804.39	804.32	804.75
W5		804.07	804.04	804.4
W6		806.99	806.99	806.50
3		840	806	839
4		830	815	830
5		812	790	814
6		803	792	804
7		796	750	798

[1] Pumping wells idle for 24 hours.

[2] Pumping wells resumed normal operation for 5 hours.

[3] Pumping wells operating under normal conditions.

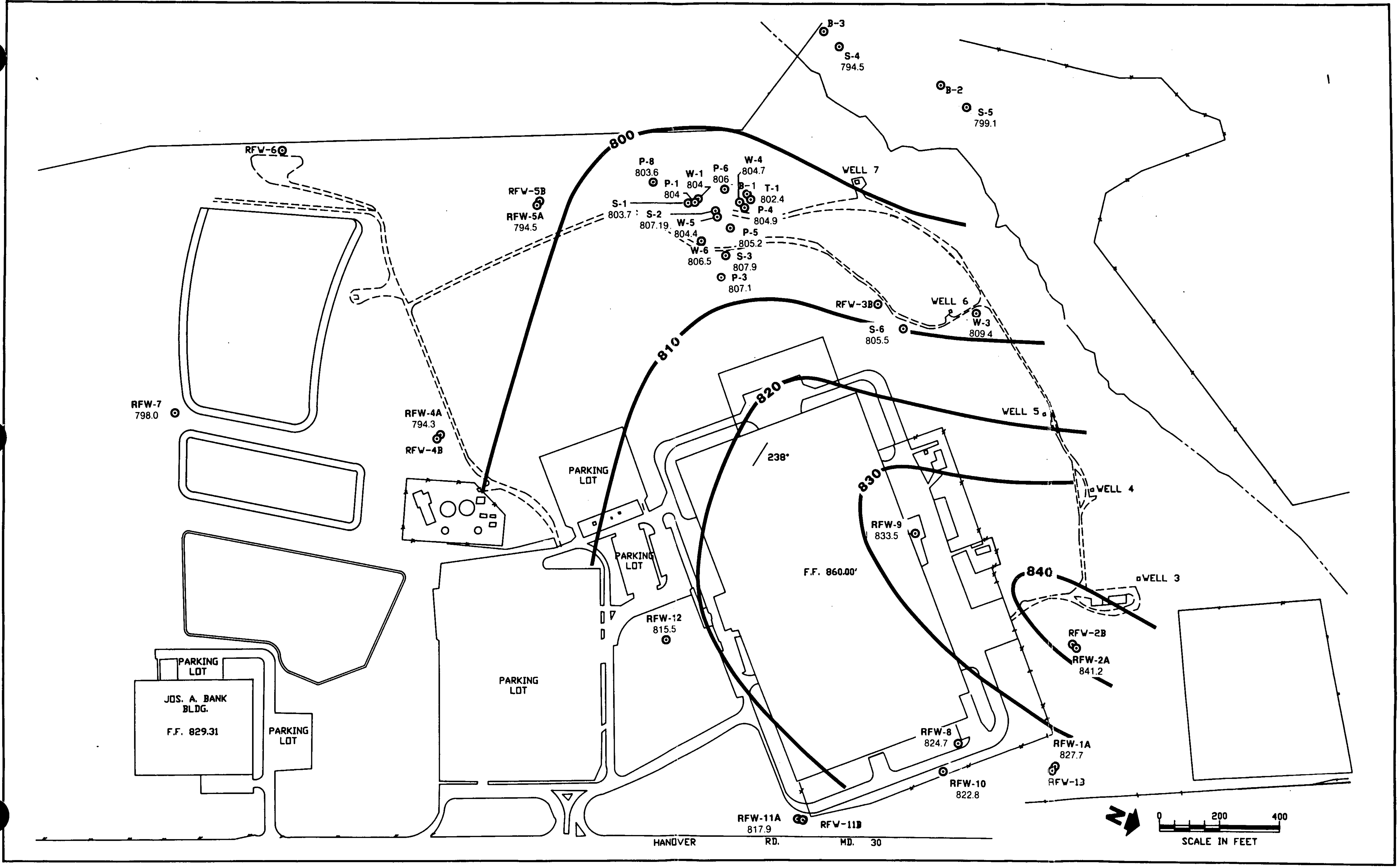


FIGURE 4-18 SHALLOW GROUNDWATER ELEVATION CONTOUR MAP 12/88, BLACK & DECKER, HAMPSTEAD, MD

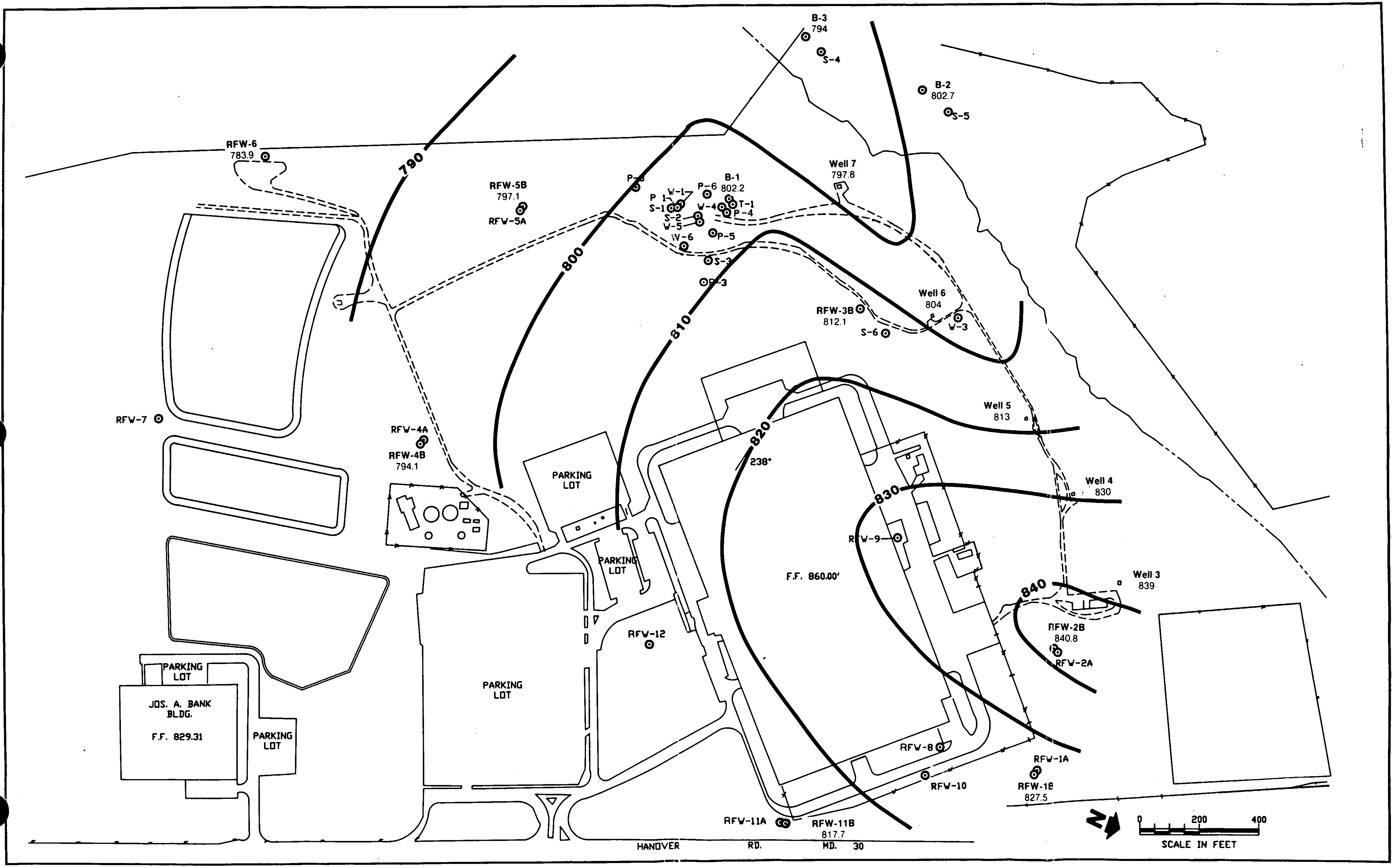


FIGURE 4-19 DEEP GROUNDWATER ELEVATION CONTOUR MAP 12/88, BLACK & DECKER, HAMPSTEAD, MD

When the groundwater flow pattern is viewed together with the local topography (Figure 2-1), it is apparent that the shallow groundwater contours roughly conform to topographic contours. Therefore, on the southern border of the site, the direction of shallow groundwater flow can be inferred from the local topography to be north toward the lagoons. This is confirmed by the higher groundwater elevation at RFW-7 relative to RFW-4A. The surface topography also indicates that the groundwater flow from a small area of the facility northeast of the main building may be directed toward the east, which is confirmed by the higher groundwater elevation at RFW-8 relative to RFW-10. The topography further indicates that the shallow groundwater flowing from monitor wells S-4 and S-5 on the west side of the stream is most likely directed east toward the stream.

4.2.3 Groundwater Quality

The 17 monitor wells installed by WESTON, three Black & Decker supply wells, and seven of the previously installed monitor wells, were sampled and analyzed for VOCs. A summary table of the sample analysis is presented in Table 4-7. A complete tabulation of results is presented in Appendix E.

The VOCs detected in the highest concentrations were TCE and PCE. The majority of the other compounds listed in Table 4-7 are chlorinated hydrocarbons, which were found just above or below quantification limits. Of the VOCs found at lower concentrations, trans-1,2-dichloroethane was the most commonly detected ranging in concentration from 2 to 22 ppb. Toluene, just above or below quantification limits, was found in RFW-2B and RFW-9. Benzene below quantification limits was found in RFW-1A, RFW-1B, RFW-2B, and RFW-4A. Carbon disulfide was detected in RFW-1B, RFW-2A, RFW-2B, RFW-4A, W-1, and W-4 in concentrations ranging from 170 ppb to just below the quantification limits. Methylene chloride and acetone were detected at relatively low levels in all water samples, including the laboratory blanks. Chloroform was detected below quantification limits in RFW-6, RFW-8, RFW-11A, RFW-11B, and RFW-12. Chloroform was also detected in all field and trip blanks.

TCE Distribution

The distribution of TCE concentrations detected in the groundwater is presented in Figure 4-20 using interpretive contours. In general, the TCE concentrations in the groundwater samples are highest on the eastern half of Black & Decker's property, and decrease toward the west-southwest. The highest concentrations of TCE, in excess of 1 ppm, were detected in monitor wells RFW-8 and RFW-12, which are included in the 1,000-ppb contour. Both wells are hydraulically downgradient of the former TCE aboveground storage tank (shown in Figure 3-4). RFW- 10, east of and downgradient of RFW-8, is the only well included in the 100 ppb contour, with TCE detected at 340 ppb.

Table 4-7

Results of VOC Analysis: Phase II Groundwater Samples

Compound Detected	RFW 1A ug/l	RFW 1B ug/l	RFW 2A ug/l	RFW 2B ug/l	RFW 3B ug/l	RFW 4A ug/l	RFW 4B ug/l	RFW 5A ug/l	RFW 5B ug/l	RFW 6 ug/l	RFW 7 ug/l	RFW 8 ug/l	RFW 9 ug/l
Methylene Chloride	25 B	16 B	4 JB	3 JB	2 JB	14 B	9 B	6 B	2 JB	5 B	2 JB	4 JB	18 B
Acetone	200 B	40 B	4 JB	6 JB	5 JB	14 B	30 B	72 B	4 JB	8 B	4 JB	3 JB	
Carbon Disulfide		110	130	4 J		170							
1,1-Dichloroethene					5							3 J	
1,1-Dichloroethane					1 J							9	
Trans-1,2-Dichloroethene					33	22		2 J	10	7	2 J	20	14
Chloroform										2 J		1 J	
1,2-Dichloroethane													
1,1,1-Trichloroethane		10			6				3 J			23	
Trichloroethene	2 J	5			19	24	24	1 J	12		2 J	1700	4 J
Benzene	3 J	2 J		1 J		2 J							
Tetrachloroethene	4 J	2 J			250	330	500	14	110	59	4 J	150	46
Toluene				4 J									8

B - Detected in laboratory blanks
J - Below detection limits

Table 4-7
(continued)

Compound Detected	B&D 5 ug/l	B&D 6 ug/l	B&D 7 ug/l	B-1 ug/l	B-3 ug/l	S-1 ug/l	S-4 ug/l	P-8 ug/l	W-1 ug/l	W-4 ug/l	Field Blank ug/l	Trip Blank 1 ug/l	Trip Blank 2 ug/l
Methylene Chloride	4 JB	4 JB	2 JB	3 JB	6 B	3 JB	3 JB	2 JB			2 JB	3 JB	4 B
Acetone		5 JB		13 B	7 JB	3 JB	4 JB	3 JB	2 JB	2 JB		4 JB	5 B
Carbon Disulfide									14	34			
1,1-Dichloroethene													
1,1-Dichloroethane													
Trans-1,2-Dichloroethene	19	3 J		23		7			5	8			
Chloroform											5	8	8
1,2-Dichloroethane													
1,1,1-Trichloroethane													
Trichloroethene	27	5	15	34		2 J		5	5	26			
Benzene													
Tetrachloroethene	26	12	3100	2500		240		110	180	1500	2 J	2 J	
Toluene													1 J

B - Detected in laboratory blanks
J - Below detection limits

Table 4-7
(continued)

Compound Detected	RFW 10 ug/l	RFW 11A ug/l	RFW 11B ug/l	RFW 12 ug/l	Field Blank ug/l	Trip Blank ug/l
Methylene Chloride	3 JB	15 B	6 B	6 B	5 B	16 B
Acetone	2 J	52 B	120 B	79 B	8 JB	5 JB
Carbon Disulfide						
1,1-Dichloroethene						
1,1-Dichloroethane						
Trans-1,2-Dichloroethene						
Chloroform		2 J	1 J	1 J	1 J	2 J
1,2-Dichloroethane						
2-Butanone	6 J			8 J		
1,1,1-Trichloroethane						
Trichloroethene	340	51	20	1100		
Benzene						
Tetrachloroethene	1 J			12		
Toluene						
Styrene		2 J			1 J	

B - Detected in laboratory blanks
J - Below detection limits

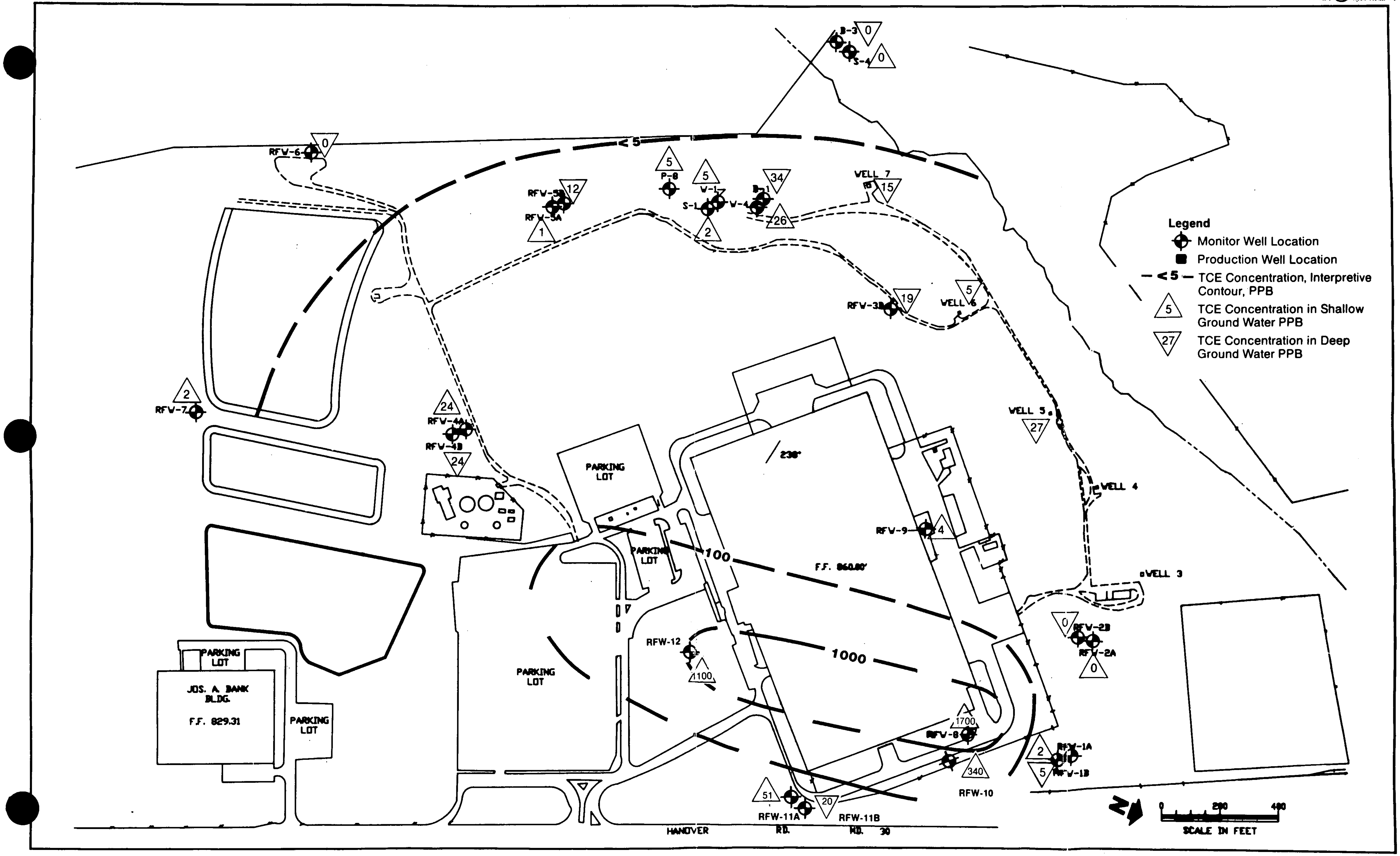


FIGURE 4-20 TCE CONCENTRATION IN GROUNDWATER 7/88 AND 12/88, BLACK & DECKER, HAMPSTEAD, MD

TCE concentrations in the remaining monitor wells ranged from 51 ppb to none detected. An interpretive contour line in Figure 4-19, representing a TCE concentration of less than 5 ppb (the EPA proposed MCL for TCE in drinking water), is drawn to the north-northeast of a line connecting monitor wells RFW-7, RFW-6, and B-3. South-southwest of this contour, TCE concentrations in the groundwater were found to be lower than the MCL.

The apparent distribution of TCE on the eastern half of Black & Decker property suggests that there is a significant component of groundwater flow from the RFW-1A/2A area south toward RFW-12 and the lagoons. The relatively higher concentration of TCE in the eastern half of the property relative to PCE and the other volatile compounds, and hydraulically downgradient position of RFW-7 and RFW-12, suggests that activities at the former aboveground TCE storage tank may have been the historical source of TCE presently found in the groundwater.

No significant difference in the pattern of TCE concentration in groundwater from the shallow versus the bedrock wells was noted.

PCE Distribution

The distribution of PCE in the on-site groundwater is illustrated in Figure 4-21 using interpretive contours. The highest concentrations of PCE, in excess of 1 ppm, were detected in W-4, B-1, and production well 7. These three wells are located together on the plant site, downslope and west of the main building and are the only wells included in the 1,000-ppb interpretive contour. A larger area southwest of the main building, and a localized area centered at RFW-8 (Tank Farm 2) are included in the 100 ppb interpretive contour. RFW-6, RFW-9, RFW-12, and production wells 6 and 5, fell within the 10-ppb interpretive contour, with PCE concentrations ranging from 12 ppb to 59 ppb. PCE was found at concentrations below quantification limits in RFW-10, RFW-7, RFW-1A, and RFW-1B. These levels may not be significant since similar concentrations were found in the trip and field blanks. No PCE was detected in the shallow or deep upgradient wells (RFW-2A and RFW-2B), the shallow and deep well pair on the east plant boundary (RFW-11A and RFW-11B), or in wells on the west side of the stream (B-3 and S-4).

The interpretation of historic source areas of PCE based on the hydraulic gradient and the distribution of PCE is difficult. The highest concentrations of PCE are found hydraulically downgradient and west of the Black & Decker plant. Lower concentrations are found south and downgradient of the plant but are also found upgradient of the higher concentrations. This pattern of PCE on the western half of the site does not suggest that a specific source area of PCE existed.

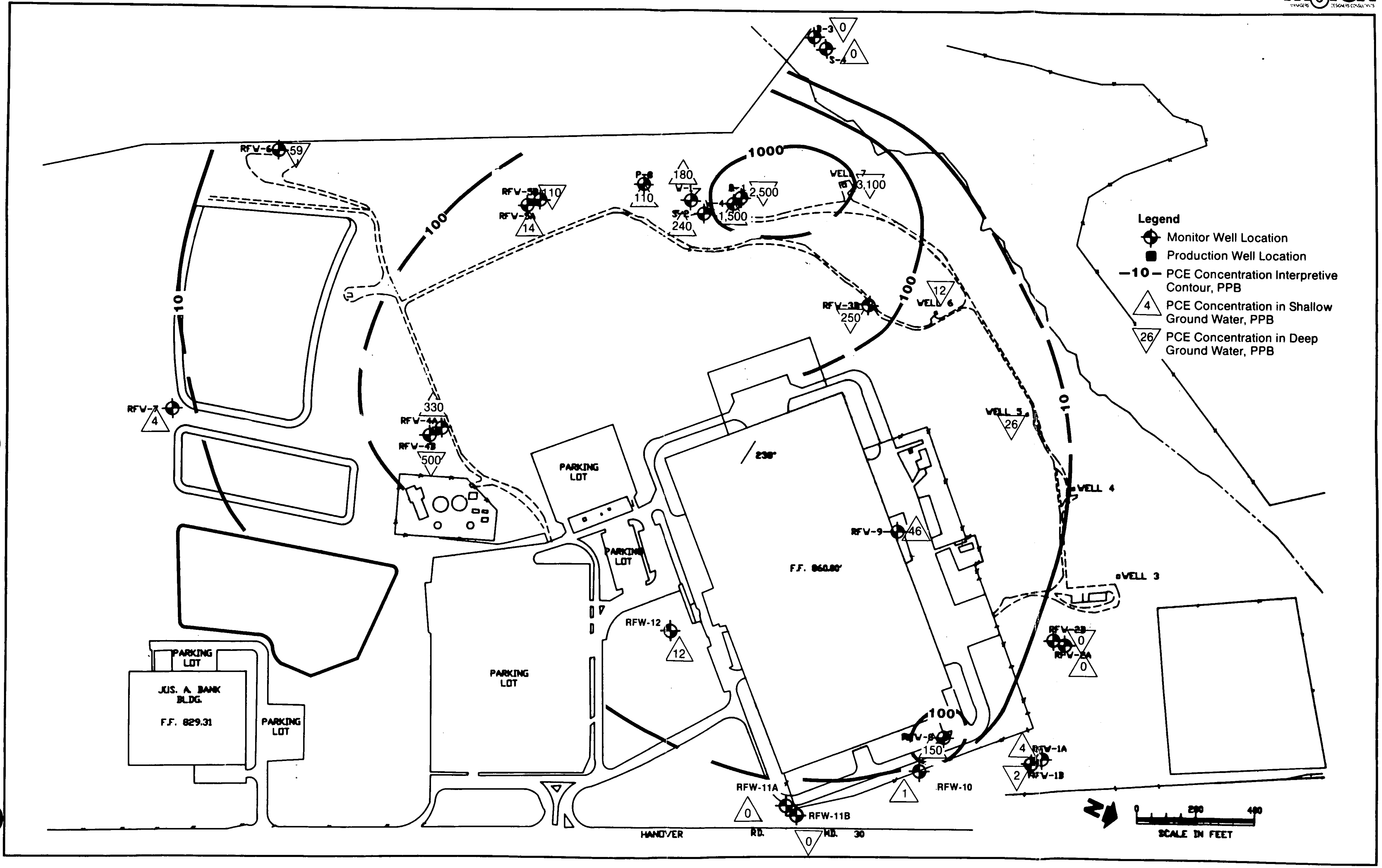


FIGURE 4-21 PCE CONCENTRATION IN GROUNDWATER 7/88 AND 12/88, BLACK & DECKER, HAMPSTEAD, MD

On the eastern half of the site, higher concentrations of PCE in RFW-8 relative to the surrounding monitor wells, suggest that PCE in the groundwater at this location is a function of PCE found locally in the Tank Farm 2 soils.

As for TCE, no significant difference was noted in the pattern of PCE concentrations in the groundwater between the shallow and the bedrock wells.

Distribution of Other VOCs

Of the constituents found at generally lower concentrations in the groundwater, toluene is of importance due to its occurrence in soil samples at Tank Farm 1. As noted, toluene was detected in RFW-2B and RFW-9 at 4(J) ppb and 8 ppb, respectively. These values are considerably below the MCL of 2,000 ppb proposed for drinking water.

Carbon disulfide was detected in several upgradient and downgradient wells on the property. The presence of carbon disulfide in upgradient wells RFW-2B, RFW-1B, RFW-2A, and benzene in RFW-1A, RFW-1B, and RFW-2B, and the presence of these compounds in downgradient wells RFW-4A and 4B, indicates that a significant component of groundwater flow may be directed south from north of the main building in the RFW-2A/1A area toward RFW-4/4B and the lagoons. A potential exists that carbon disulfide and benzene found in the Black & Decker groundwater may have originated off-site, upgradient.

4.3 CONCLUSIONS

4.3.1 Tank Farm Soils - Source Characterization

The characterization of contaminant concentrations and distribution in Tank Farm 1 and 2 soils was accomplished in the Phase II investigation. Closely spaced borings covering each Tank Farm area, were sampled at depth and analyzed for VOCs and TPH. The impact of the existing soil contaminants on local groundwater was also assessed. Analysis of TCLP leachate from select soil samples provided an indication of the mobility of contaminants in the soil. The analysis of samples from monitor wells placed at the Tank Farms assessed the local groundwater quality.

Tank Farm 1

Tank Farm 1 characteristics can be summarized as follows:

- Elevated concentrations of petroleum hydrocarbons, toluene, ethyl benzene, and xylene are present in the soils.

- TPH concentrations >100 ppm and VOC concentrations >1 ppm are distributed in the soils:

  - Above 845 feet MSL (12 to 14 feet bgs) throughout the areas of tanks 1 through 9 - an approximately 1,600-square foot area.
  - Below 845 feet MSL in the vadose zone limited to an approximately 100-square foot area centered at SB-3A-7.
  - At the top of the water table in an area greater than 100-square feet, proximal to SB-3A-7.

- The distribution of TPH and VOCs in the soils appears to be controlled vertically by the depth of the fill/ saprolite boundary at 845 feet MSL.
- Soils that exhibit high VOC concentrations also exhibit high TPH concentrations.
- Concentrations of toluene, ethyl benzene, and xylene in leachates extracted by TCLP testing from representative soils are below proposed Federal guidelines for drinking water.
- Concentrations of toluene, ethyl benzene, and xylene in the Tank Farm 1 groundwater samples are below the TCLP leachate concentrations and proposed Federal guidelines for drinking water.
- The mobility of TPH and VOCs from the soil to local groundwater, as indicated by TCLP soil samples and groundwater samples, appears to be low due to soil-water partition and hydrologic characteristics.

An overall assessment of Tank Farm 1 suggests that the TPH and VOCs in the soils are present below concentrations or quantities necessary to significantly impact groundwater on-site.

<u>Tank Farm 2</u>

Tank Farm 2 characteristics can be summarized as follows:

- Elevated concentrations of petroleum hydrocarbons and PCE, TCE, 1,1,1- TCA, benzene, and toluene are present in the soils.
- TPH concentrations >100 ppm and VOC concentrations >1 ppm are distributed in the soils.
  - Throughout the tank area above 853 feet MSL (top 6 feet of soil), an approximately 1,800-square foot area.
  - In the central part of the Tank Farm, closest to the building wall, from surface to 839 feet MSL (20 feet bgs).

- Soils that exhibit high VOC concentrations also exhibit high TPH concentrations.

- Concentrations of TCE in leachate extracted by TCLP testing from representative soils are above Federal standards for drinking water.

- Concentrations of TCE in Tank Farm 2 groundwater samples are above Federal standards for drinking water.

- The mobility of VOCs from the soil to local groundwater, as indicated by TCLP soil samples and groundwater samples, appears to be significant.

An overall assessment of Tank Farm 2 suggests that the volatile organic compounds, particularly PCE and TCE, in the soil are present at significant concentrations and quantities to potentially migrate into the groundwater on-site.

4.3.2 Groundwater

Hydrogeology

The site hydrogeology was assessed in the Phase II investigation based on information gathered from 17 new monitor wells, 26 existing monitor wells, and the 5 Black & Decker supply wells.

Two principal water-bearing zones occur on-site. A shallow water-bearing zone exists at the bedrock/saprolite interface, 30 to 96 feet bgs. Water in this zone is contained under unconfined conditions in pore spaces of the saprolite and infrequently in fractured residual quartz veins. A deep water-bearing zone exists within fractures and along planes of schistosity in the phillite/schist bedrock and in fractured quartz veins. The deep water-bearing zone appears to be limited to a depth less than 150 feet bgs.

A groundwater divide trends northeast-southwest across the Black & Decker property, roughly aligned with the topographic high on which the main building lies. Shallow groundwater flow east of the divide is directed southeast toward the lagoons and east toward State Route 30. Shallow groundwater west of the divide is directed west-southwest across most of the plant. The local topography suggests that shallow groundwater along the south-southeast boundary of the site is directed west-northwest toward the topographically lower lagoons. The topography also suggests that shallow groundwater west of the stream is directed east toward the stream. Although flow directions of the shallow groundwater are generally perpendicular to the hydraulic gradient, pathways of flow may be partially controlled by the residual texture within the saprolite.

Groundwater flow directions and the lateral hydraulic gradient within the deep aquifer are similar to those of the shallow aquifer. These similarities and a low vertical downward gradient, varying from 1.0×10^{-2} to 1.0×10^{-3}, between the shallow and deeper zones, suggest that considerable interconnection exists between these zones to the extent that the two zones function as a single unconfined aquifer. Groundwater in the bedrock is generally directed across the site in accordance with the local hydraulic gradient. The specific local pathway or route of groundwater transport is dictated by joints, fractures, and planes of schistosity within the bedrock. As a result, the distribution of groundwater contaminants can be strongly influenced by the distribution and interconnection of fractures and other zones of weakness within the bedrock.

Groundwater Quality

Groundwater quality was assessed in the Phase II investigation based on information gathered from 17 new monitor wells, 7 existing monitor wells, and Black & Decker production wells.

The Phase II investigation confirmed that the major contaminants of concern in the groundwater at the Black & Decker property are PCE and TCE. Several other volatiles were present in lower concentrations, the most prevalent being trans-1,2,-dichloroethene. Carbon disulfide was detected in several wells, including the upgradient well pair, with no discernible pattern. Separate plumes of PCE and TCE appear to be migrating in both the shallow water-bearing zone and in the deeper, bedrock zone to a depth of 150 feet along the local hydraulic gradient.

TCE is of concern on the eastern half of the plant. Concentrations of TCE in excess of 1 ppm in two monitor wells define a plume possibly originating at the former aboveground TCE storage tank and extending south toward the lagoons. While the mapping of the TCE concentrations indicates that most of the plume has moved south toward the lagoons, an eastern component of groundwater flow from the northeast corner of the plant toward State Route 30 does exist and should be addressed in the remedial strategy. The concentration of TCE in the groundwater near the western and southern site boundaries is apparently less than 5 ppb, the MCL for drinking water.

PCE is the predominant groundwater contaminant of concern on the western half of the plant site. The highest concentrations, in excess of 1 ppm, appear to be limited to a small area that includes Black & Decker supply well 7. Lower concentrations of PCE were found in wells across most of the site. PCE was not detected in the upgradient wells, RFW-2A and -2B, in RFW-11A and -11B on the eastern site boundary, or in wells B-3 and S-4 on the western side of the stream. However, PCE concentrations between 50 and 100 ppb were detected in wells adjacent to the western site boundary.

SECTION 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

The environmental investigation for the Black & Decker Hampstead, Maryland facility generally achieved the objectives of the study. Of the potential source area "zones" identified by Black & Decker, the investigation results clearly indicate that six are not current sources of groundwater contaminants. One zone, Zone A, Storage Tank Areas, was found to contain petroleum hydrocarbons (TPH) and volatile organic compunds (VOCs) in soils located in Tank Farms 1 and 2. Of these two areas, only soils in Tank Farm 2 appear to present a potential continuing source of groundwater contaminants.

The overall groundwater flow and VOC distribution characterization indicates that Tank Farm 2 was not the only, or was it the principal source of, PCE and TCE in the groundwater. More likely, historical use of solvents at the Hampstead facility have contributed to the current quality of groundwater on-site. The current distribution of TCE and PCE probably reflects the migration of a plume or plumes of these contaminants from a source or sources, no longer existing, along pathways of preferred shallow and deep groundwater flow.

The investigation has confirmed that the principal direction of groundwater movement is to the south-southwest. An additional component of flow to the east has been identified at the northeastern edge of the facility. Groundwater migration pathways in the bedrock are expected to be preferentially oriented along fracture zones and schistosity planes. Shallow groundwater flow appears to be perpendicular to the hydraulic gradient, which corresponds generally with the surface topography. Preferred flow pathways within the saprolite may partially reflect trends in the underlying bedrock.

Characterization of the VOC distribution in the groundwater indicates that essentially separate plumes of TCE and PCE exist on the eastern half and western half of the facility, respectively. The TCE plume appears to extend south from an origin near the aboveground storage tank area. Eastern components of flow in this area suggest that groundwater containing TCE may be migrating toward Route 30. A PCE plume with the highest concentrations at production well 7, encompasses the western half of the facility. Evidence suggests that groundwater with significant concentrations of PCE extends southwest of the plant building.

5.2 RECOMMENDATIONS

Tank Farm Soils

Based on field and soil water partition data and the concentration of groundwater contaminants in RFW-8, the impact of soil contaminants in Tank Farm 2 on local groundwater may be significant, and, therefore, remediation of the Tank Farm 2 soils is warranted. Considerations in selecting a strategy are:

- The relatively small volume of contaminated soil.
- Physical boundaries of the facility road and building, which limit the unsaturated zone soil contamination.
- The association of the VOCs, which are the groundwater contaminants with TPH in the soils.

The proposed plan for soil remediation includes evaluation of various alternatives, selection of an appropriate method and its implementation. Relevant options for the relatively small soil quantities involved include:

- Excavation/off-site disposal
- Excavation/on-site treatment
- In-situ treatment

Methods of treatment generally considered for these materials include:

- Biological
- Stripping
- Flushing/leaching
- Thermal

Relevent treatment alternatives are more limited for soils containing both the relatively nonvolatile petroleum hydrocarbons from the cutting oils and the relatively volatile compounds PCE and TCE. The selection will be based on the probability of successful treatment. For this application, the most effective methods appear to be thermal (i.e., low temperature thermal) treatment and in situ bioreclamation.

Groundwater

Based on the distribution of PCE and TCE in the groundwater on-site and groundwater flow directions, a remediation plan is recommended to recover contaminated groundwater on-site and prevent its migration off-site. The proposed plan incorporates pumping several recovery wells to create a hydraulic barrier to contaminated groundwater flow along the northeast and southwest property boundaries.

Due to the complexity of the hydrogeology at the Black & Decker site, the remedial plan is designed to be implemented in three stages. Evaluation of information collected during each stage will enable the successive stages to be designed as a complement to preceding stages. Although this approach will require more time to activate than a single-stage implementation, over-design or under-design of the system will be avoided. As a result, maximum efficiency of the recovery system will be achieved.

The stages are designed as follows:

Stage 1

- Evaluate the potential use of monitor well RFW-12 as a TCE recovery well for the eastern boundary of the facility by conducting a pumping test on the well. The critical factor in the evaluation will be identifying the area of hydraulic influence obtained by pumping RFW-12.
- Construct an "ideal" recovery well on the southwestern boundary of the property in an expected high yield fracture zone, south of production well 7. Perform a pumping test to evaluate the extent of pumping influence achieved.

Stage 2

- If hydraulic influence in the area of Tank Farm 2 cannot be achieved by pumping RFW-12, construct and test an additional bedrock recovery well in the vicinity of Tank Farm 2.
- If hydraulic influence on the west side cannot be achieved by pumping at the western "ideal" recovery well, evaluate the use of an additional pumping well by pump testing existing deep monitor well RFW-5B.

Stage 3

- If necessary, based on the results of Stage 3, complete the evaluation of the hydraulic influence by development of an analytical flow model and placement of additional wells as indicated by the results of the model.

Installation of piping to route recovered groundwater and of additional treatment equipment would follow each successive stage as needed. During operation of the recovery system, the effectiveness of the hydraulic control would be monitored, with adjustment to the system as warranted.

SECTION 6

REFERENCES

Duigon, M.T. 1981. Hampstead Quadrangle: Hydrogeology. Maryland Geological Society, Quadrangle Atlas No. 12.

Meyer, G., and R.M. Beal. 1958. "The Water Resources of Carroll and Frederick Counties," Maryland Board of Natural Resources, Department of Geology, Mines, and Water Resources, Bulletin 22.

APPENDIX A

PHASE I ANALYTICAL DATA

WESTON

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

X = Additional qualifiers used as required are explained in the case narrative.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

SOIL GAS ANALYSIS RESULTS

WES ANALYTICS
GC DATA SUMMARY
VOLATILE COMPOUNDS

RFW Batch Number: Client: Page: 1

	Cust ID:	SG 1		SG 2		SG 3		SG 4		SG 5		SG 6	
Sample Information	RFW#:												
	Matrix:	Air		Air		Air		Air		Air		Air	
	D.F.:	1		1		1		1		1		1	
	Units:	ng/ml		ng/ml		ng/ml		ng/ml		ng/ml		ng/ml	
			fl		fl		fl		fl		fl		f
Tetrachloroethene..................		0.04	J	0.57		0.02	J	0.40		0.35		0.04	J
Trichloroethene..........		0.06	U	0.04	J	0.06	U	0.45		0.32		0.08	

	Cust ID:	SG 7		SG 8		SG 9		SG 10		SG 11		SG 12	
Sample Information	RFW#:												
	Matrix:	Air		Air		Air		Air		Air		Air	
	D.F.:	1		1		1		1		1		1	
	Units:	ng/ml		ng/ml		ng/ml		ng/ml		ng/ml		ng/ml	
			fl		fl		fl		fl		fl		f
Tetrachloroethene..................		0.09		0.04	J	2.3		0.71		1.5		0.02	J
Trichloroethene..........		0.40		0.07		1.1		0.03	J	0.03	J	0.06	

	Cust ID:	SG 13		SG 14		SG 15		SG 16		SG 17		SG 18	
Sample Information	RFW#:												
	Matrix:	Air		Air		Air		Air		Air		Air	
	D.F.:	1		1		1		1		1		1	
	Units:	ng/ml		ng/ml		ng/ml		ng/ml		ng/ml		ng/ml	
			fl		fl		fl		fl		fl		f
Tetrachloroethene..................		0.02	J	0.07	J	1.1		1.8		0.07	J	1.0	
Trichloroethene..........		0.04	J	0.33		1.3		0.02	J	0.06	U	0.02	J

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC DATA SUMMARY
VOLATILE COMPOUNDS

RFW Batch Number: Client:

Sample Information						
Cust ID:	SG 19	SG 20	SG 21	SG 22	SG 23	SG 24
RFW#:						
Matrix:	Air	Air	Air	Air	Air	Air
D.F.:	1	1	1	1	1	1
Units:	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml
Tetrachloroethene..................	0.03 J	0.16	13	0.12	0.31	160
Trichloroethene...........	0.06	0.42	0.07	0.06 U	0.11	0.15

Sample Information						
Cust ID:	SG 25	SG 26	SG 27	SG 28	SG 29	SG 30
RFW#:						
Matrix:	Air	Air	Air	Air	Air	Air
D.F.:	1	1	1	1	1	1
Units:	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml
Tetrachloroethene..................	0.02 J	2.2	1.8	0.72	0.01 J	0.07 J
Trichloroethene...........	0.02 J	0.16	0.01 J	0.02 J	0.03 J	0.08

Sample Information						
Cust ID:	SG 31	SG 32	SG 33	SG 34	SG 35	SG 36
RFW#:						
Matrix:	Air	Air	Air	Air	Air	Air
D.F.:	1	1	1	1	1	1
Units:	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml
Tetrachloroethene..................	0.09	0.10	0.07	0.14	0.66	0.19
Trichloroethene...........	0.08	0.40	0.10	0.03 J	0.45	0.34

U=Analyzed, not detected. B=Present in [illegible]ank. NRP=Not Reported
J=Present at less than detection limit [illegible] NR=Not requested.

WEST ANALYTICS
GC DATA SUMMARY
VOLATILE COMPOUNDS

RFW Batch Number: Client: Page: 3

	Cust ID:	SG 37	SG 38	SG 39	SG 40	SG 41	SG 42
Sample Information	RFW#:						
	Matrix:	Air	Air	Air	Air	Air	Air
	D.F.:	1	1	1	1	1	1
	Units:	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml
Tetrachloroethene		0.04 J	0.25	0.09	0.01 J	0.07 J	0.27
Trichloroethene		0.07	0.75	0.15	0.09	0.03 J	0.03 J

	Cust ID:	SG 43	SG 44	SG 45	SG 46	SG 47	SG 48
Sample Information	RFW#:						
	Matrix:	Air	Air	Air	Air	Air	Air
	D.F.:	1	1	1	1	1	1
	Units:	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml
Tetrachloroethene		0.54	0.07 J	0.20	0.06 J	0.20	0.89
Trichloroethene		0.32	0.45	0.03 J	0.17	0.12	5.5

	Cust ID:	SG 49	SG 50	SG 51	SG 52	SG 53	SG 54
Sample Information	RFW#:						
	Matrix:	Air	Air	Air	Air	Air	Air
	D.F.:	1	1	1	1	1	1
	Units:	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml	ng/ml
Tetrachloroethene		1.9	0.03 J	0.08 U	0.08 U	0.12	0.02 J
Trichloroethene		2.9	0.27	8.4	8.2	150	5.5

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC DATA SUMMARY
VOLATILE COMPOUNDS

RFW Batch Number: Client: Page: 4

	Cust ID:	SG 55	fl	SG 56	fl	SG 57	fl	SG 58	fl	SG 59	fl	SG 60	fl
Sample	RFW#:												
Information	Matrix:	Air		Air		Air		Air		Air		Air	
	D.F.:	1		1		1		1		1		1	
	Units:	ng/ml		ng/ml		ng/ml		ng/ml		ng/ml		ng/ml	
Tetrachloroethene.................		1.4		0.08	U	0.01	J	0.48		22		42	
Trichloroethene..........		240		3.6		12		10		16		120	

	Cust ID:	SG 61	fl	SG 62	fl	SG 63	fl	SG 60 RP	fl	SG 60 RP	fl	BLANK A	fl
Sample	RFW#:												
Information	Matrix:	Air		Air		Air		Air		Air		Air	
	D.F.:	1		1		1		1		1		1	
	Units:	ng/ml		ng/ml		ng/ml		ng/ml		ng/ml		ng/ml	
Tetrachloroethene.................		9.5		0.05	J	0.06	J	45		44		0.14	
Trichloroethene..........		1.0		0.17		1.3		125		89		0.03	J

	Cust ID:	BLANK B	fl	BLANK A	fl	BLANK B	fl	BLANK A	fl	BLANK B	fl	BLANK	fl
Sample	RFW#:												
Information	Matrix:	Air		Air		Air		Air		Air		Air	
	D.F.:	1		1		1		1		1		1	
	Units:	ng/ml		ng/ml		ng/ml		ng/ml		ng/ml		ng/ml	
Tetrachloroethene.................		0.08	U	0.08	U	0.58		0.01	J	0.02	J	0.01	J
Trichloroethene..........		0.03	J	0.06	U	0.50		0.05		0.08		0.06	U

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

VOC ANALYSIS RESULTS:
SOIL AND SEDIMENT SAMPLES

WESTO NALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-007 Client: BLACK AND DECKER

Sample Information	Cust ID:	BLANK		TRIP BLK		TP VOA BLK							
	RFW#:	BLANK		003		009							
	Matrix:	Water		Water		Water							
	D.F.:	1		1		1							
	Units:	ug/l		ug/l		ug/l							
Surrogate Recovery (%)	Toluene-d8:	96	%	96	%	94	%		%		%		%
	Bromofluorobenzene:	100	%	102	%	92	%		%		%		%
	1,2-Dichloroethane-d4:	92	%	90	%	88	%		%		%		%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U						
Bromomethane		10	U	10	U	10	U						
Vinyl Chloride		10	U	10	U	10	U						
Chloroethane		10	U	10	U	10	U						
Methylene Chloride		13		3	JB	3	JB						
Acetone		10	J	10	U	2	JB						
Carbon Disulfide		5	U	5	U	5	U						
1,1-Dichloroethene		5	U	5	U	5	U						
1,1-Dichloroethane		5	U	5	U	5	U						
Trans-1,2-Dichloroethene		5	U	5	U	5	U						
Chloroform		5	U	7		7							
1,2-Dichloroethane		5	U	5	U	5	U						
2-Butanone		10	U	25	✓	10	U						
1,1,1-Trichloroethane		5	U	5	U	5	U						
Carbon Tetrachloride		5	U	5	U	5	U						
Vinyl Acetate		10	U	10	U	10	U						
Bromodichloromethane		5	U	5	U	5	U						
1,2-Dichloropropane		5	U	5	U	5	U						
Trans-1,3-Dichloropropene		5	U	5	U	5	U						
Trichloroethene		5	U	5	U	5	U						
Dibromochloromethane		5	U	5	U	5	U						
1,1,2-Trichloroethane		5	U	5	U	5	U						
Benzene		5	U	5	U	5	U						
cis-1,3-Dichloropropene		5	U	5	U	5	U						
2-Chloroethylvinylether		10	U	10	U	10	U						
Bromoform		5	U	5	U	5	U						
4-Methyl-2-pentanone		10	U	10	U	10	U						
2-Hexanone		10	U	10	U	10	U						

RFW Batch Number: 8712-007 **Client:** BLACK AND DECKER **Page:** 1

Cust ID:	BLANK		TRIP BLK		TP VOA BLK	
RFW#:	BLANK		003		009	
		fl		fl		fl
Tetrachloroethene..................	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane...........	5	U	5	U	5	U
Toluene............................	1	J	2	JB	1	JB
Chlorobenzene......................	5	U	5	U	5	U
Ethylbenzene.......................	5	U	5	U	5	U
Styrene............................	5	U	5	U	5	U
Total Xylenes......................	5	U	5	U	5	U

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. [illegible]R=Not requested.

WESTO[illegible]ALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-007 Client: BLACK AND DECKER Page: 2

	Cust ID:	BLANK	TPD3-1	TPF3-1	TPF3-1	TPF3-1	TPF1-1
Sample Information	RFW#:	BLANK	001	008	008 MS	008 MSD	006
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1.3	1.2	1.2	1.2	1.2
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Surrogate	Toluene-d8:	82 %	96 %	94 %	100 %	104 %	102 %
Recovery	Bromofluorobenzene:	84 %	96 %	96 %	110 %	102 %	104 %
(%)	1,2-Dichloroethane-d4:	70 %	74 %	73 %	76 %	76 %	73 %
		fl	fl	fl	fl	fl	fl
Chloromethane		10 U	13 U	12 U	12 U	12 U	12 U
Bromomethane		10 U	13 U	12 U	12 U	12 U	12 U
Vinyl Chloride		10 U	13 U	12 U	12 U	12 U	12 U
Chloroethane		10 U	13 U	12 U	12 U	12 U	12 U
Methylene Chloride		3 J	18 B	21 B	42 B	47 B	25 B
Acetone		10 U	5 J	9 J	18	23	19
Carbon Disulfide		5 U	7 U	6 U	6 U	6 U	6 U
1,1-Dichloroethene		5 U	7 U	6 U	80 %	85 %	6 U
1,1-Dichloroethane		5 U	7 U	6 U	6 U	6 U	6 U
Trans-1,2-Dichloroethene		5 U	7 U	6 U	6 U	6 U	6 U
Chloroform		5 U	7 U	6 U	6 U	6 U	6 U
1,2-Dichloroethane		5 U	7 U	6 U	6 U	6 U	6 U
2-Butanone		10 U	13 U	12 U	12 U	12 U	12 U
1,1,1-Trichloroethane		5 U	7 U	6 U	6 U	6 U	6 U
Carbon Tetrachloride		5 U	7 U	6 U	6 U	6 U	6 U
Vinyl Acetate		10 U	13 U	12 U	12 U	12 U	12 U
Bromodichloromethane		5 U	7 U	6 U	6 U	6 U	6 U
1,2-Dichloropropane		5 U	7 U	6 U	6 U	6 U	6 U
Trans-1,3-Dichloropropene		5 U	7 U	6 U	6 U	6 U	6 U
Trichloroethene		5 U	7 U	6 U	81 %	84 %	6 U
Dibromochloromethane		5 U	7 U	6 U	6 U	6 U	6 U
1,1,2-Trichloroethane		5 U	7 U	6 U	6 U	6 U	6 U
Benzene		5 U	7 U	6 U	86 %	91 %	6 U
cis-1,3-Dichloropropene		5 U	7 U	6 U	6 U	6 U	6 U
2-Chloroethylvinylether		10 U	13 U	12 U	12 U	12 U	12 U
Bromoform		5 U	7 U	6 U	6 U	6 U	6 U
4-Methyl-2-pentanone		10 U	13 U	12 U	12 U	12 U	12 U
2-Hexanone		10 U	13 U	12 U	12 U	12 U	12 U

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RFW Batch Number: 8712-007 Client: BLACK AND DECKER Page: 2

Cust ID:	BLANK	fl	TPD3-1	fl	TPF3-1	fl	TPF3-1	fl	TPF3-1	fl	TPF1-1	fl
RFW#:	BLANK		001		008		008 MS		008 MSD		006	
Tetrachloroethene..................	5	U	7	U	6	U	6	U	6	U	6	U
1,1,2,2-Tetrachloroethane...........	5	U	7	U	6	U	6	U	6	U	6	U
Toluene............................	5	U	2	J	2	J	85	%	92	%	2	J
Chlorobenzene......................	5	U	7	U	6	U	96	%	101	%	6	U
Ethylbenzene.......................	5	U	7	U	6	U	6	U	6	U	6	U
Styrene............................	5	U	7	U	6	U	6	U	6	U	6	U
Total Xylenes......................	5	U	7	U	6	U	6	U	6	U	6	

U=Analyzed, not detected. B=Present in b[illegible]nk. NRP=Not Reported
J=Present at less than detection limit. [illegible]R=Not requested.

WEST NALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-096 Client: BLACK & DECKER

	Cust ID:	BLK 12/25		BLK 12/27		BLK 12/28		METHOD BLK		SBA7 4-6'		SBA1-6-8'	
Sample Information	RFW#:	VSBLK		VSBLK		VSBLK		VMBLK		010		011	
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		1		1		130		1.3		6	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate Recovery (%)	Toluene-d8:	110 %		90 %		100 %		106 %		98 %		113 %	
	Bromofluorobenzene:	118 %		98 %		102 %		108 %		100 %		76 %	
	1,2-Dichloroethane-d4:	96 %		88 %		102 %		108 %		80 %		79 %	
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	1300	U	13	U	60	U
Bromomethane		10	U	10	U	10	U	1300	U	13	U	60	U
Vinyl Chloride		10	U	10	U	10	U	1300	U	13	U	60	U
Chloroethane		10	U	10	U	10	U	1300	U	13	U	60	U
Methylene Chloride		3	J	3	J	9		1300		20	B	130	B
Acetone		5	J	24		22		2400		26	B	190	B
Carbon Disulfide		5	U	5	U	5	U	650	U	7	U	30	U
1,1-Dichloroethene		5	U	5	U	5	U	650	U	7	U	8	J
1,1-Dichloroethane		5	U	5	U	5	U	650	U	7	U	30	U
Trans-1,2-Dichloroethene		5	U	5	U	5	U	650	U	7	U	13	J
Chloroform		5	U	5	U	5	U	650	U	7	U	30	U
1,2-Dichloroethane		5	U	5	U	5	U	650	U	7	U	30	U
2-Butanone		10	U	10	U	4	J	480	J	11	J	26	J
1,1,1-Trichloroethane		5	U	5	U	5	U	650	U	7	U	220	
Carbon Tetrachloride		5	U	5	U	5	U	650	U	7	U	39	J
Vinyl Acetate		10	U	10	U	10	U	1300	U	13	U	60	U
Bromodichloromethane		5	U	5	U	5	U	650	U	7	U	30	U
1,2-Dichloropropane		5	U	5	U	5	U	650	U	7	U	30	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	650	U	7	U	30	U
Trichloroethene		5	U	5	U	5	U	650	U	7	U	2400	*
Dibromochloromethane		5	U	5	U	5	U	650	U	7	U	30	U
1,1,2-Trichloroethane		5	U	5	U	5	U	650	U	7	U	30	U
Benzene		5	U	5	U	5	U	650	U	7	U	30	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	650	U	7	U	30	U
2-Chloroethylvinylether		10	U	10	U	10	U	1300	U	13	U	60	U
Bromoform		5	U	5	U	5	U	650	U	7	U	30	U
4-Methyl-2-pentanone		10	U	10	U	10	U	1300	U	13	U	60	U
2-Hexanone		10	U	10	U	10	U	1300	U	13	U	60	U

Cust ID:	BLK 12/25	fl	BLK 12/27	fl	BLK 12/28	fl	METHOD BLK	fl	SBA7 4-6'	fl	SBA1-6-8'	fl
RFW#:	VSBLK		VSBLK		VSBLK		VMBLK		010		011	
Tetrachloroethene	5	U	5	U	5	U	650	U	4	J	20000	*
1,1,2,2-Tetrachloroethane	5	U	5	U	5	U	650	U	7	U	30	U
Toluene	2	J	5	U	5	U	650	U	2	JB	88	
Chlorobenzene	5	U	5	U	5	U	650	U	7	U	30	U
Ethylbenzene	5	U	5	U	5	U	650	U	7	U	30	U
Styrene	5	U	5	U	5	U	650	U	7	U	30	U
Total Xylenes	5	U	5	U	5	U	650	U	7	U	30	U

Other: * See dilution

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J=Present at less than detection limit[illegible]R=Not requested.

WESTO NALYTICS
GC/MS A SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-096 Client: BLACK & DECKER

Sample Information	Cust ID:	SBA1 6-8'		SBA2 2-4'		SBA3 14-16'		SBA4 4-6'		SBA4 4-6'		SBA4 12-14'	
	RFW#:	011 DIL		012		013		014		014 DIL		015	
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	5300		1.3		1.3		5.8		150		1.3	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate	Toluene-d8:	DL	%	98	%	94	%	102	%	97	%	100	%
Recovery	Bromofluorobenzene:	DL	%	98	%	92	%	106	%	104	%	102	%
(%)	1,2-Dichloroethane-d4:	DL	%	78	%	77	%	81	%	99	%	96	%
			fl		fl		fl		fl		fl		fl
Chloromethane		53000	U	13	U	13	U	58	U	1500	U	13	U
Bromomethane		53000	U	13	U	13	U	58	U	1500	U	13	U
Vinyl Chloride		53000	U	13	U	13	U	58	U	1500	U	13	U
Chloroethane		53000	U	13	U	13	U	58	U	1500	U	13	U
Methylene Chloride		51000	B	26	B	21	B	120	B	1800	B	39	B
Acetone		130000	B	15	B	17	B	200	B	3900	B	410	B*
Carbon Disulfide		27000	U	7	U	7	U	29	U	750	U	7	U
1,1-Dichloroethene		27000	U	7	U	7	U	29	U	750	U	7	U
1,1-Dichloroethane		27000	U	7	U	7	U	29	U	750	U	7	U
Trans-1,2-Dichloroethene		27000	U	7	U	7	U	29	U	750	U	7	U
Chloroform		27000	U	7	U	7	U	29	U	150	J	2	J
1,2-Dichloroethane		27000	U	7	U	7	U	29	U	750	U	7	U
2-Butanone		23000	JB	13	U	6	J	29	J	3300	B	12	JB
1,1,1-Trichloroethane		27000	U	7	U	7	U	29	U	750	U	7	U
Carbon Tetrachloride		27000	U	7	U	7	U	29	U	750	U	7	U
Vinyl Acetate		53000	U	13	U	13	U	58	U	1500	U	13	U
Bromodichloromethane		27000	U	7	U	7	U	29	U	750	U	7	U
1,2-Dichloropropane		27000	U	7	U	7	U	29	U	750	U	7	U
Trans-1,3-Dichloropropene		27000	U	7	U	7	U	29	U	750	U	7	U
Trichloroethene		27000	U	7	U	7	U	9	J	750	U	7	U
Dibromochloromethane		27000	U	7	U	7	U	29	U	750	U	7	U
1,1,2-Trichloroethane		27000	U	7	U	7	U	29	U	750	U	7	U
Benzene		27000	U	7	U	7	U	29	U	750	U	7	U
cis-1,3-Dichloropropene		27000	U	7	U	7	U	29	U	750	U	7	U
2-Chloroethylvinylether		53000	U	13	U	13	U	58	U	1500	U	13	U
Bromoform		27000	U	7	U	7	U	29	U	750	U	7	U
4-Methyl-2-pentanone		53000	U	13	U	13	U	55	J	1500	U	110	
2-Hexanone		53000	U	13	U	13	U	58	U	1500	U	13	U

Cust ID: RFW#:	SBA1 6-8' 011 DIL	fl	SBA2 2-4' 012	fl	SBA3 14-16' 013	fl	SBA4 4-6' 014	fl	SBA4 4-6' 014 DIL	fl	SBA4 12-14' 015	fl
Tetrachloroethene..................	380000		7	U	7	U	340		850		2	J
1,1,2,2-Tetrachloroethane...........	27000	U	7	U	7	U	29	U	750	U	7	U
Toluene............................	27000	U	2	JB	2	JB	46		190	J	2	J
Chlorobenzene......................	27000	U	7	U	7	U	29	U	750	U	7	U
Ethylbenzene.......................	27000	U	7	U	7	U	510		750	U	7	U
Styrene............................	27000	U	7	U	7	U	29	U	750	U	7	U
Total Xylenes......................	27000	U	7	U	7	U	8000	*	1600		7	U

Other: *See dilution

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WEST NALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-096 Client: BLACK & DECKER

	Cust ID:	SBA4 12-14'		SBA3 4-6'		SBA3 4-6'		SBA3 4-6'		SBA4 4-6DUP		SBE4-10-11	
Sample	RFW#:	015 DIL		017		017 MS		017 MSD		019		020	
Information	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	6		1.3		1.3		1.3		4.6		1.3	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate	Toluene-d8:	102	%	102	%	106	%	96	%	100	%	102	%
Recovery	Bromofluorobenzene:	95	%	106	%	106	%	96	%	103	%	92	%
(%)	1,2-Dichloroethane-d4:	91	%	81	%	87	%	83	%	80	%	79	%
			fl		fl		fl		fl		fl		fl
Chloromethane		60	U	13	U	13	U	13	U	46	U	13	U
Bromomethane		60	U	13	U	13	U	13	U	46	U	13	U
Vinyl Chloride		60	U	13	U	13	U	13	U	46	U	13	U
Chloroethane		60	U	13	U	13	U	13	U	46	U	13	U
Methylene Chloride		210	B	19	B	46	B	42	B	100	B	21	B
Acetone		510	B	15	B	12	JB	14	B	310	B	9	JB
Carbon Disulfide		30	U	7	U	7	U	7	U	6	J	7	U
1,1-Dichloroethene		30	U	7	U	71	%	67	%	23	U	7	U
1,1-Dichloroethane		30	U	7	U	7	U	7	U	23	U	7	U
Trans-1,2-Dichloroethene		30	U	7	U	7	U	7	U	23	U	7	U
Chloroform		30	U	7	U	7	U	7	U	23	U	7	U
1,2-Dichloroethane		30	U	7	U	7	U	7	U	23	U	7	U
2-Butanone		23	JB	13	U	13	U	13	U	20	J	13	U
1,1,1-Trichloroethane		30	U	7	U	7	U	7	U	23	U	7	U
Carbon Tetrachloride		30	U	7	U	7	U	7	U	23	U	7	U
Vinyl Acetate		60	U	13	U	13	U	13	U	46	U	13	U
Bromodichloromethane		30	U	7	U	7	U	7	U	23	U	7	U
1,2-Dichloropropane		30	U	7	U	7	U	7	U	23	U	7	U
Trans-1,3-Dichloropropene		30	U	7	U	7	U	7	U	23	U	7	U
Trichloroethene		30	U	7	U	79	%	81	%	23	U	7	U
Dibromochloromethane		30	U	7	U	7	U	7	U	23	U	7	U
1,1,2-Trichloroethane		30	U	7	U	7	U	7	U	23	U	7	U
Benzene		30	U	7	U	84	%	88	%	23	U	7	U
cis-1,3-Dichloropropene		30	U	7	U	7	U	7	U	23	U	7	U
2-Chloroethylvinylether		60	U	13	U	13	U	13	U	46	U	13	U
Bromoform		30	U	7	U	7	U	7	U	23	U	7	U
4-Methyl-2-pentanone		92		13	U	13	U	13	U	140		13	U
2-Hexanone		60	U	13	U	13	U	13	U	46	U	13	U

Cust ID:	SBA4 12-14'		SBA3 4-6'		SBA3 4-6'		SBA3 4-6'		SBA4 4-6DUP		SBE4-10-11	
RFW#:	015 DIL	fl	017	fl	017 MS	fl	017 MSD	fl	019	fl	020	fl
Tetrachloroethene	30	U	2	J	2	J	7	U	13	J	7	U
1,1,2,2-Tetrachloroethane	30	U	7	U	7	U	7	U	23	U	7	U
Toluene	8	J	2	JB	86	%	86	%	43		5	JB
Chlorobenzene	30	U	7	U	96	%	98	%	23	U	7	U
Ethylbenzene	30	U	7	U	7	U	7	U	18	J	7	U
Styrene	30	U	7	U	7	U	7	U	23	U	7	U
Total Xylenes	30	U	7	U	7	U	7	U	400		7	U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WEST ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-096 Client: BLACK & DECKER Page: 7

Sample Information	Cust ID:	SBE1 4-6'		SBE2 4-6'		SBE3 6-7'		SBE5 4-6'		SBE5 4-6'		SBE5 4-6'	
	RFW#:	021		023		024		025		025 MS		025 MSD	
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1.2		1.9		1.1		1.1		1.1		1.1	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate Recovery (%)	Toluene-d8:	96	%	88	%	96	%	94	%	100	%	96	%
	Bromofluorobenzene:	98	%	91	%	94	%	92	%	96	%	94	%
	1,2-Dichloroethane-d4:	80	%	83	%	87	%	82	%	82	%	84	%
			fl		fl		fl		fl		fl		fl
Chloromethane		12	U	19	U	11	U	11	U	11	U	11	U
Bromomethane		12	U	19	U	11	U	11	U	11	U	11	U
Vinyl Chloride		12	U	19	U	11	U	11	U	11	U	11	U
Chloroethane		12	U	19	U	11	U	11	U	11	U	11	U
Methylene Chloride		19	B	29	B	25	B	15	B	38	B	36	B
Acetone		34	B	29	B	36	B	25	B	19	B	23	B
Carbon Disulfide		6	U	10	U	6	U	6	U	6	U	6	U
1,1-Dichloroethene		6	U	10	U	6	U	6	U	74	%	67	%
1,1-Dichloroethane		6	U	10	U	6	U	6	U	6	U	6	U
Trans-1,2-Dichloroethene		6	U	10	U	6	U	6	U	6	U	6	U
Chloroform		6	U	10	U	6	U	6	U	6	U	6	U
1,2-Dichloroethane		6	U	10	U	6	U	6	U	6	U	6	U
2-Butanone		12	U	19	U	5	JB	5	J	3	J	6	J
1,1,1-Trichloroethane		6	U	10	U	6	U	6	U	6	U	6	U
Carbon Tetrachloride		6	U	10	U	6	U	6	U	6	U	6	U
Vinyl Acetate		12	U	19	U	11	U	11	U	11	U	11	U
Bromodichloromethane		6	U	10	U	6	U	6	U	6	U	6	U
1,2-Dichloropropane		6	U	10	U	6	U	6	U	6	U	6	U
Trans-1,3-Dichloropropene		6	U	10	U	6	U	6	U	6	U	6	U
Trichloroethene		6	U	10	U	6	U	6	U	81	%	79	%
Dibromochloromethane		6	U	10	U	6	U	6	U	6	U	6	U
1,1,2-Trichloroethane		6	U	10	U	6	U	6	U	6	U	6	U
Benzene		6	U	10	U	6	U	6	U	83	%	83	%
cis-1,3-Dichloropropene		6	U	10	U	6	U	6	U	6	U	6	U
2-Chloroethylvinylether		12	U	19	U	11	U	11	U	11	U	11	U
Bromoform		6	U	10	U	6	U	6	U	6	U	6	U
4-Methyl-2-pentanone		12	U	19	U	11	U	11	U	11	U	11	U
2-Hexanone		12	U	19	U	11	U	11	U	11	U	11	U

Cust ID:	SBE1 4-6'	SBE2 4-6'	SBE3 6-7'	SBE5 4-6'	SBE5 4-6'	SBE5 4-6'
RFW#:	021	023	024	025	025 MS	025 MSD
	fl	fl	fl	fl	fl	fl
Tetrachloroethene	1 J	10 U	6 U	6 U	6 U	6 U
1,1,2,2-Tetrachloroethane	6 U	10 U	6 U	6 U	6 U	6 U
Toluene	2 JB	5 J	2 J	2 J	90 %	87 %
Chlorobenzene	6 U	10 U	6 U	6 U	94 %	91 %
Ethylbenzene	6 U	10 U	6 U	6 U	6 U	6 U
Styrene	6 U	10 U	6 U	6 U	6 U	6 U
Total Xylenes	6 U	10 U	6 U	6 U	6 U	6 U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTO[illegible]NALYTICS
GC/MS [illegible]A SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-096 Client: BLACK & DECKER

	Cust ID:	SBE5 8-10'		SBE6 14-16'									
Sample Information	RFW#:	026		027									
	Matrix:	Soil		Soil									
	D.F.:	1.3		1.2									
	Units:	ug/kg		ug/kg									
Surrogate Recovery (%)	Toluene-d8:	98	%	100	%		%		%		%		%
	Bromofluorobenzene:	100	%	92	%		%		%		%		%
	1,2-Dichloroethane-d4:	78	%	84	%		%		%		%		%
			fl		fl		fl		fl		fl		fl
Chloromethane		13	U	12	U								
Bromomethane		13	U	12	U								
Vinyl Chloride		13	U	12	U								
Chloroethane		13	U	12	U								
Methylene Chloride		21	B	17	B								
Acetone		46	B	23	B								
Carbon Disulfide		7	U	6	U								
1,1-Dichloroethene		7	U	6	U								
1,1-Dichloroethane		7	U	6	U								
Trans-1,2-Dichloroethene		7	U	6	U								
Chloroform		7	U	6	U								
1,2-Dichloroethane		7	U	6	U								
2-Butanone		6	J	7	J								
1,1,1-Trichloroethane		7	U	6	U								
Carbon Tetrachloride		7	U	6	U								
Vinyl Acetate		13	U	12	U								
Bromodichloromethane		7	U	6	U								
1,2-Dichloropropane		7	U	6	U								
Trans-1,3-Dichloropropene		7	U	6	U								
Trichloroethene		7	U	6	U								
Dibromochloromethane		7	U	6	U								
1,1,2-Trichloroethane		7	U	6	U								
Benzene		7	U	6	U								
cis-1,3-Dichloropropene		7	U	6	U								
2-Chloroethylvinylether		13	U	12	U								
Bromoform		7	U	6	U								
4-Methyl-2-pentanone		13	U	12	U								
2-Hexanone		13	U	12	U								

```
                              Cust ID: SBE5 8-10' SBE6 14-16'
                                 RFW#:      026        027
=============================================fl=========fl=========fl=========fl=========fl=========fl
Tetrachloroethene....................         7 U        6 U
1,1,2,2-Tetrachloroethane...........          7 U        6 U
Toluene.............................          2 JB       2 J
Chlorobenzene.......................          7 U        6 U
Ethylbenzene........................          7 U        6 U
Styrene.............................          7 U        6 U
Total Xylenes.......................          7 U        6 U


  Other:
```

U=Analyzed, not detected. B=Present in blank.   NRP=Not Reported
J=Present at less than detection limit[illegible]R=Not requested.

WEST NALYTICS
GC/MS A SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-997 Client: BLACK & DECKER Page: 2

Sample Information	Cust ID:	TPB5-1		TPD2-1		TPB2-1		BLK 12/20		TRIP BLANK		BLANK TP	
	RFW#:	010		012		013		WBLK		006		007	
	Matrix:	Soil		Soil		Soil		Water		Water		Water	
	D.F.:	1.2		1.2		1.2		1		1		1	
	Units:	ug/kg		ug/kg		ug/kg		ug/L		ug/L		ug/L	
Surrogate Recovery (%)	Toluene-d8:	114	%	100	%	113	%	99	%	102	%	103	%
	Bromofluorobenzene:	87	%	120	%	108	%	103	%	108	%	105	%
	1,2-Dichloroethane-d4:	70	%	77	%	72	%	88	%	105	%	100	%
			fl		fl		fl		fl		fl		fl
Chloromethane		12	U	12	U	12	U	10	U	10	U	10	U
Bromomethane		12	U	12	U	12	U	10	U	10	U	10	U
Vinyl Chloride		12	U	12	U	12	U	10	U	10	U	10	U
Chloroethane		12	U	12	U	12	U	10	U	10	U	10	U
Methylene Chloride		28	B	13	B	16	B	17		4	JB	4	JB
Acetone		5	J	2	J	12		14		5	JB	4	JB
Carbon Disulfide		2	J	6	U	6	U	5	U	5	U	5	U
1,1-Dichloroethene		6	U	6	U	6	U	5	U	5	U	5	U
1,1-Dichloroethane		6	U	6	U	6	U	5	U	5	U	5	U
Trans-1,2-Dichloroethene		6	U	6	U	6	U	5	U	5	U	5	U
Chloroform		6	U	6	U	6	U	5	U	7		7	
1,2-Dichloroethane		6	U	6	U	6	U	5	U	5	U	5	U
2-Butanone		12	U	12	U	8	J	10	U	24		3	J
1,1,1-Trichloroethane		6	U	6	U	6	U	5	U	5	U	5	U
Carbon Tetrachloride		6	U	6	U	6	U	5	U	5	U	5	U
Vinyl Acetate		12	U	12	U	12	U	10	U	10	U	10	U
Bromodichloromethane		6	U	6	U	6	U	5	U	5	U	5	U
1,2-Dichloropropane		6	U	6	U	6	U	5	U	5	U	5	U
Trans-1,3-Dichloropropene		6	U	6	U	6	U	5	U	5	U	5	U
Trichloroethene		6	U	6	U	6	U	5	U	5	U	5	U
Dibromochloromethane		6	U	6	U	6	U	5	U	5	U	5	U
1,1,2-Trichloroethane		6	U	6	U	6	U	5	U	5	U	5	U
Benzene		6	U	6	U	6	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		6	U	6	U	6	U	5	U	5	U	5	U
2-Chloroethylvinylether		12	U	12	U	12	U	10	U	10	U	10	U
Bromoform		6	U	6	U	6	U	5	U	5	U	5	U
4-Methyl-2-pentanone		12	U	12	U	12	U	10	U	10	U	10	U
2-Hexanone		12	U	12	U	12	U	10	U	10	U	10	U

RFW Batch Number: 8712-997 Client: BLACK & DECKER

Cust ID:	TPB5-1	TPD2-1	TPB2-1	BLK 12/20	TRIP BLANK	BLANK TP
RFW#:	010	012	013	WBLK	006	007
Tetrachloroethene	6 U	6 U	6 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	6 U	6 U	6 U	5 U	5 U	5 U
Toluene	15 B	1 JB	3 JB	2 J	3 JB	2 JB
Chlorobenzene	6 U	6 U	6 U	5 U	5 U	5 U
Ethylbenzene	6 U	6 U	6 U	5 U	5 U	5 U
Styrene	6 U	6 U	6 U	5 U	5 U	5 U
Total Xylenes	6 U	6 U	6 U	5 U	5 U	5 U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTO[illegible]NALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-997 **Client:** BLACK & DECKER **Page:** 1

Sample Information						
Cust ID:	BLK 12/20	AREA C-SED	TPB4-1	TPB3-1	TPB3-1	TPB3-1
RFW#:	SBLK	002	008	009	009 MS	009 MSD
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1.7	1.2	1.3	1.3	1.3
Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Surrogate Recovery (%)						
Toluene-d8:	82 %	101 %	88 %	98 %	113 %	108 %
Bromofluorobenzene:	83 %	90 %	76 %	87 %	100 %	96 %
1,2-Dichloroethane-d4:	70 %	72 %	70 %	72 %	75 %	73 %
	fl	fl	fl	fl	fl	fl
Chloromethane	10 U	17 U	12 U	13 U	13 U	13 U
Bromomethane	10 U	17 U	12 U	13 U	13 U	13 U
Vinyl Chloride	10 U	17 U	12 U	13 U	13 U	13 U
Chloroethane	10 U	17 U	12 U	13 U	13 U	13 U
Methylene Chloride	2 J	21 B	27 B	22 B	48 B	39 B
Acetone	10 U	5 J	4 J	7 J	6 J	6 J
Carbon Disulfide	5 U	9 U	6 U	7 U	7 U	7 U
1,1-Dichloroethene	5 U	9 U	6 U	7 U	80 %	65 %
1,1-Dichloroethane	5 U	9 U	6 U	7 U	7 U	7 U
Trans-1,2-Dichloroethene	5 U	9 U	6 U	7 U	7 U	7 U
Chloroform	5 U	9 U	6 U	7 U	7 U	7 U
1,2-Dichloroethane	5 U	9 U	6 U	7 U	7 U	7 U
2-Butanone	10 U	17 U	12 U	13 U	13 U	13 U
1,1,1-Trichloroethane	5 U	9 U	6 U	7 U	7 U	7 U
Carbon Tetrachloride	5 U	9 U	6 U	7 U	7 U	7 U
Vinyl Acetate	10 U	17 U	12 U	13 U	13 U	13 U
Bromodichloromethane	5 U	9 U	6 U	7 U	7 U	7 U
1,2-Dichloropropane	5 U	9 U	6 U	7 U	7 U	7 U
Trans-1,3-Dichloropropene	5 U	9 U	6 U	7 U	7 U	7 U
Trichloroethene	5 U	7 J	6 U	7 U	82 %	68 %
Dibromochloromethane	5 U	9 U	6 U	7 U	7 U	7 U
1,1,2-Trichloroethane	5 U	9 U	6 U	7 U	7 U	7 U
Benzene	5 U	9 U	6 U	7 U	92 %	77 %
cis-1,3-Dichloropropene	5 U	9 U	6 U	7 U	7 U	7 U
2-Chloroethylvinylether	10 U	17 U	12 U	13 U	13 U	13 U
Bromoform	5 U	9 U	6 U	7 U	7 U	7 U
4-Methyl-2-pentanone	10 U	17 U	12 U	13 U	13 U	13 U
2-Hexanone	10 U	17 U	12 U	13 U	13 U	13 U

RFW Batch Number: 8712-997 Client: BLACK & DECKER Page: 1

Cust ID: RFW#:	BLK 12/20 SBLK	fl	AREA C-SED 002	fl	TPB4-1 008	fl	TPB3-1 009	fl	TPB3-1 009 MS	fl	TPB3-1 009 MSD	fl
Tetrachloroethene..................	5	U	14		6	U	7	U	7	U	7	U
1,1,2,2-Tetrachloroethane...........	5	U	9	U	6	U	7	U	7	U	7	U
Toluene............................	1	J	3	JB	3	JB	6	JB	86	%	73	%
Chlorobenzene......................	5	U	9	U	6	U	7	U	98	%	83	%
Ethylbenzene.......................	5	U	9	U	6	U	7	U	7	U	7	U
Styrene............................	5	U	9	U	6	U	7	U	7	U	7	U
Total Xylenes......................	5	U	9	U	6	U	7	U	7	U	7	U

Other:

U=Analyzed, not detected. B=Present in [illegible]nk. NRP=Not Reported
J=Present at less than detection limit [illegible]R=Not requested.

VOC ANALYSIS RESULTS:
GROUNDWATER AND SURFACE WATER SAMPLES

WEST ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-102 Client: BLACK AND DECKER Page: 3

	Cust ID:	BLANK		EL1 SED		EL2 SED		EL1SED DUP		EL1SED DUP		EL1SED DUP	
Sample Information	RFW#:	BLANK		003		006		004		004 MS		004 MSD	
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		45		2.4		45		45		45	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate Recovery (%)	Toluene-d8:	104	%	112	%	116	%	116	%	104	%	114	%
	Bromofluorobenzene:	104	%	88	%	76	%	100	%	100	%	102	%
	1,2-Dichloroethane-d4:	100	%	84	%	92	%	94	%	88	%	88	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	450	U	24	U	450	U	450	U	450	U
Bromomethane		10	U	450	U	24	U	450	U	450	U	450	U
Vinyl Chloride		10	U	51	J	24	U	72	J	57	J	450	U
Chloroethane		10	U	450	U	24	U	450	U	450	U	450	U
Methylene Chloride		6		290	B	14	B	450	B	530	B	650	B
Acetone		3	J	1100	B	35	B	1100	B	770	B	860	B
Carbon Disulfide		5	U	150	J	12	U	230		200	J	260	
1,1-Dichloroethene		5	U	230	U	12	U	230	U	128	%	122	%
1,1-Dichloroethane		5	U	230	U	12	U	230	U	230	U	230	U
Trans-1,2-Dichloroethene		5	U	2000		4	J	3000		2600		2600	
Chloroform		5	U	230	U	12	U	230	U	230	U	230	U
1,2-Dichloroethane		5	U	230	U	12	U	230	U	230	U	230	U
2-Butanone		10	U	450	U	12	J	310	J	280	J	360	J
1,1,1-Trichloroethane		5	U	230	U	12	U	230	U	230	U	230	U
Carbon Tetrachloride		5	U	230	U	12	U	230	U	230	U	230	U
Vinyl Acetate		10	U	450	U	24	U	450	U	450	U	450	U
Bromodichloromethane		5	U	230	U	12	U	230	U	230	U	230	U
1,2-Dichloropropane		5	U	230	U	12	U	230	U	230	U	230	U
Trans-1,3-Dichloropropene		5	U	230	U	12	U	230	U	230	U	230	U
Trichloroethene		5	U	100	J	12	U	110	J	90	%	90	%
Dibromochloromethane		5	U	230	U	12	U	230	U	230	U	230	U
1,1,2-Trichloroethane		5	U	230	U	12	U	230	U	230	U	230	U
Benzene		5	U	230	U	12	U	230	U	95	%	93	%
cis-1,3-Dichloropropene		5	U	230	U	12	U	230	U	230	U	230	U
2-Chloroethylvinylether		10	U	450	U	24	U	450	U	450	U	450	U
Bromoform		5	U	230	U	12	U	230	U	230	U	230	U
4-Methyl-2-pentanone		10	U	450	U	24	U	450	U	450	U	450	U
2-Hexanone		10	U	450	U	24	U	450	U	450	U	450	U

RFW Batch Number: 8712-102 Client: BLACK AND DECKER

Cust ID:	BLANK	fl	EL1 SED	fl	EL2 SED	fl	EL1SED DUP	fl	EL1SED DUP	fl	EL1SED DUP	fl
RFW#:	BLANK		003		006		004		004 MS		004 MSD	
Tetrachloroethene..................	5	U	45	J	12	U	230	U	230	U	230	U
1,1,2,2-Tetrachloroethane...........	5	U	230	U	12	U	230	U	230	U	230	U
Toluene............................	5	U	8300		6	J	8000		72	%	77	%
Chlorobenzene......................	5	U	230	U	12	U	230	U	112	%	112	%
Ethylbenzene.......................	5	U	900		12	U	1100		1000		1100	
Styrene............................	5	U	230	U	12	U	230	U	230	U	230	U
Total Xylenes......................	5	U	3100		12	U	3400		3300		3500	

U=Analyzed, not detected. B=Present in [illegible]ank. NRP=Not Reported
J=Present at less than detection limit[illegible]NR=Not requested.

WEST[illegible]ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-102 Client: BLACK AND DECKER Page: 4

	Cust ID:	EL3 SED		EL4 SED		WL1 SED		WL2 SED		WL3 SED		WL4 SED	
Sample	RFW#:	007		008		010		011		012		013	
Information	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	9.9		15		3.6		3.9		1.8		13	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate	Toluene-d8:	112	%	112	%	110	%	116	%	112	%	114	%
Recovery	Bromofluorobenzene:	86	%	94	%	82	%	76	%	86	%	74	%
(%)	1,2-Dichloroethane-d4:	90	%	88	%	86	%	92	%	90	%	88	%

		fl		fl		fl		fl		fl		fl
Chloromethane	99	U	150	U	36	U	5	J	18	U	130	U
Bromomethane	99	U	150	U	36	U	39	U	18	U	130	U
Vinyl Chloride	99	U	150	U	36	U	39	U	18	U	130	U
Chloroethane	99	U	150	U	36	U	39	U	18	U	130	U
Methylene Chloride	130	B	170	B	25	B	28	B	16	B	130	B
Acetone	360	B	590	B	71	B	200	B	47	B	300	B
Carbon Disulfide	39	J	74	J	5	J	8	J	9	U	65	U
1,1-Dichloroethene	50	U	75	U	18	U	20	U	9	U	65	U
1,1-Dichloroethane	50	U	75	U	18	U	20	U	9	U	65	U
Trans-1,2-Dichloroethene	14	J	15	J	18	U	14	J	2	J	65	U
Chloroform	11	J	16	J	18	U	20	U	9	U	65	U
1,2-Dichloroethane	50	U	75	U	18	U	20	U	9	U	65	U
2-Butanone	85	J	170		26	J	74		20		130	U
1,1,1-Trichloroethane	50	U	75	U	18	U	20	U	9	U	65	U
Carbon Tetrachloride	50	U	75	U	18	U	20	U	9	U	65	U
Vinyl Acetate	99	U	150	U	36	U	39	U	18	U	130	U
Bromodichloromethane	50	U	75	U	18	U	20	U	9	U	65	U
1,2-Dichloropropane	50	U	75	U	18	U	20	U	9	U	65	U
Trans-1,3-Dichloropropene	50	U	75	U	18	U	20	U	9	U	65	U
Trichloroethene	50	U	75	U	18	U	20	U	9	U	110	
Dibromochloromethane	50	U	75	U	18	U	20	U	9	U	65	U
1,1,2-Trichloroethane	50	U	75	U	18	U	20	U	9	U	65	U
Benzene	50	U	75	U	18	U	20	U	9	U	65	U
cis-1,3-Dichloropropene	50	U	75	U	18	U	20	U	9	U	65	U
2-Chloroethylvinylether	99	U	150	U	36	U	39	U	18	U	130	U
Bromoform	50	U	75	U	18	U	20	U	9	U	65	U
4-Methyl-2-pentanone	99	U	150	U	36	U	39	U	18	U	130	U
2-Hexanone	99	U	150	U	36	U	39	U	18	U	130	U

RFW Batch Number: 8712-102 Client: BLACK AND DECKER Page: 4

Cust ID:	EL3 SED		EL4 SED		WL1 SED		WL2 SED		WL3 SED		WL4 SED	
RFW#:	007	fl	008	fl	010	fl	011	fl	012	fl	013	fl
Tetrachloroethene..................	50	U	75	U	18	U	20	U	9	U	65	U
1,1,2,2-Tetrachloroethane...........	50	U	75	U	18	U	20	U	9	U	65	U
Toluene............................	32	J	61	J	6	J	6	J	7	J	23	J
Chlorobenzene......................	50	U	75	U	18	U	20	U	9	U	65	U
Ethylbenzene.......................	29	J	27	J	18	U	20	U	9	U	65	U
Styrene............................	50	U	75	U	18	U	20	U	9	U	65	U
Total Xylenes......................	50	U	75	U	18	U	20	U	9	U	65	U

U=Analyzed, not detected. B=Present in [illegible]nk. NRP=Not Reported
J=Present at less than detection limit [illegible]R=Not requested.

WEST NALYTICS
GC/MS TA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-096 Client: BLACK & DECKER Page: 1

Sample Information	Cust ID:	BLK 12/23	BLK 12/25	MW S-1	MW S-3	MW S-3	MW S-3
	RFW#:	VWBLK	VWBLK	001	002	002 MS	002 MSD
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	5	5
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery (%)	Toluene-d8:	90 %	96 %	94 %	98 %	98 %	97 %
	Bromofluorobenzene:	94 %	108 %	92 %	92 %	100 %	100 %
	1,2-Dichloroethane-d4:	90 %	88 %	80 %	78 %	90 %	89 %
		fl	fl	fl	fl	fl	fl
Chloromethane		10 U	10 U	10 U	10 U	50 U	50 U
Bromomethane		10 U	10 U	10 U	10 U	50 U	50 U
Vinyl Chloride		10 U	10 U	10 U	10 U	50 U	50 U
Chloroethane		10 U	10 U	10 U	10 U	50 U	50 U
Methylene Chloride		11	3 J	3 JB	6 B	130 B	130 B
Acetone		17	6 J	10 U	10 U	27 JB	29 JB
Carbon Disulfide		5 U	5 U	5 U	5 U	25 U	25 U
1,1-Dichloroethene		5 U	5 U	5 U	5 U	64 %	60 %
1,1-Dichloroethane		5 U	5 U	5 U	5 U	25 U	25 U
Trans-1,2-Dichloroethene		5 U	5 U	4 J	27	26	25 J
Chloroform		5 U	5 U	5 U	5 U	25 U	25 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U	25 U	25 U
2-Butanone		10 U	10 U	10 U	10 U	50 U	50 U
1,1,1-Trichloroethane		1 J	5 U	5 U	1 JB	25 U	25 U
Carbon Tetrachloride		5 U	5 U	5 U	5 U	25 U	25 U
Vinyl Acetate		10 U	10 U	10 U	10 U	50 U	50 U
Bromodichloromethane		5 U	5 U	5 U	5 U	25 U	25 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	25 U	25 U
Trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	25 U	25 U
Trichloroethene		5 U	5 U	2 J	8	77 %	77 %
Dibromochloromethane		5 U	5 U	5 U	5 U	25 U	25 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	25 U	25 U
Benzene		5 U	5 U	5 U	5 U	80 %	80 %
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	25 U	25 U
2-Chloroethylvinylether		10 U	10 U	10 U	10 U	50 U	50 U
Bromoform		5 U	5 U	5 U	5 U	25 U	25 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U	50 U	50 U
2-Hexanone		10 U	10 U	10 U	10 U	50 U	50 U

RFW Batch Number: 8712-096 Client: BLACK & DECKER

Cust ID:	BLK 12/23		BLK 12/25		MW S-1		MW S-3		MW S-3		MW S-3	
RFW#:	VWBLK	fl	VWBLK	fl	001	fl	002	fl	002 MS	fl	002 MSD	fl
Tetrachloroethene....................	5	U	5	U	140		280	*	260		260	
1,1,2,2-Tetrachloroethane...........	5	U	5	U	5	U	5	U	25	U	25	U
Toluene.............................	1	J	5	U	1	JB	5	U	84	%	84	%
Chlorobenzene.......................	5	U	5	U	5	U	5	U	92	%	92	%
Ethylbenzene........................	5	U	5	U	5	U	5	U	25	U	25	U
Styrene.............................	5	U	5	U	5	U	5	U	25	U	25	U
Total Xylenes.......................	5	U	5	U	5	U	5	U	25	U	25	U

Other: * See the MS/MSD for dilution

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit [illegible]R=Not requested.

WEST ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-096 **Client:** BLACK & DECKER

Sample Information	Cust ID:	MW P-3	MW P-4	MW W-4	MW W-4	MW B-1	MW TB
	RFW#:	003	004	005	005 DIL	006	007
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	10	1	100	10	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate	Toluene-d8:	94 %	103 %	96 %	99 %	99 %	90 %
Recovery	Bromofluorobenzene:	92 %	105 %	94 %	94 %	100 %	96 %
(%)	1,2-Dichloroethane-d4:	80 %	87 %	80 %	78 %	86 %	80 %
Chloromethane		10 U	100 U	10 U	1000 U	100 U	10 U
Bromomethane		10 U	100 U	10 U	1000 U	100 U	10 U
Vinyl Chloride		10 U	100 U	10 U	1000 U	100 U	10 U
Chloroethane		10 U	100 U	10 U	1000 U	100 U	10 U
Methylene Chloride		7 JB	83 B	3 JB	1300 B	89 B	3 JB
Acetone		2 JB	59 JB	10 U	1300 B	70 JB	1 JB
Carbon Disulfide		5 U	50 U	5 U	500 U	50 U	5 U
1,1-Dichloroethene		5 U	50 U	5 U	500 U	50 U	5 U
1,1-Dichloroethane		5 U	50 U	5 U	500 U	50 U	5 U
Trans-1,2-Dichloroethene		13	50 U	7	500 U	50 U	5 U
Chloroform		5 U	50 U	5 U	500 U	50 U	5
1,2-Dichloroethane		5 U	50 U	5 U	500 U	50 U	5 U
2-Butanone		10 U	100 U	10 U	1000 U	100 U	18
1,1,1-Trichloroethane		5 U	50 U	5 U	500 U	50 U	5 U
Carbon Tetrachloride		5 U	50 U	5 U	500 U	50 U	5 U
Vinyl Acetate		10 U	100 U	10 U	1000 U	100 U	10 U
Bromodichloromethane		5 U	50 U	5 U	500 U	50 U	5 U
1,2-Dichloropropane		5 U	50 U	5 U	500 U	50 U	5 U
Trans-1,3-Dichloropropene		5 U	50 U	5 U	500 U	50 U	5 U
Trichloroethene		5 J	50 U	16	500 U	38 J	5 U
Dibromochloromethane		5 U	50 U	5 U	500 U	50 U	5 U
1,1,2-Trichloroethane		5 U	50 U	8	500 U	50 U	5 U
Benzene		5 U	50 U	5 U	500 U	50 U	5 U
cis-1,3-Dichloropropene		5 U	50 U	5 U	500 U	50 U	5 U
2-Chloroethylvinylether		10 U	100 U	10 U	1000 U	100 U	10 U
Bromoform		5 U	50 U	5 U	500 U	50 U	5 U
4-Methyl-2-pentanone		10 U	100 U	10 U	1000 U	100 U	10 U
2-Hexanone		10 U	100 U	10 U	1000 U	100 U	10 U

RFW Batch Number: 8712-096 Client: BLACK & DECKER Page: 2

Cust ID:	MW P-3		MW P-4		MW W-4		MW W-4		MW B-1		MW TB	
RFW#:	003	fl	004	fl	005	fl	005 DIL	fl	006	fl	007	fl
Tetrachloroethene	130		650		1200	*	1600		1700		5	U
1,1,2,2-Tetrachloroethane	5	U	50	U	5	U	500	U	50	U	5	U
Toluene	1	JB	12	J	1	JB	120	JB	10	J	2	JB
Chlorobenzene	5	U	50	U	5	U	500	U	50	U	5	U
Ethylbenzene	5	U	50	U	5	U	500	U	50	U	5	U
Styrene	5	U	50	U	5	U	500	U	50	U	5	U
Total Xylenes	5	U	50	U	5	U	500	U	50	U	5	U

Other: * See dilution

U=Analyzed, not detected. B=Present in ank. NRP=Not Reported
J=Present at less than detection limit NR=Not requested.

WESTO NALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-096 Client: BLACK & DECKER Page: 3

	Cust ID:	MW FB		MW P-3 DUP		SB FB		SB TB					
Sample	RFW#:	008		009		016		028					
Information	Matrix:	Water		Water		Water		Water					
	D.F.:	1		1		1		1					
	Units:	ug/L		ug/L		ug/L		ug/L					
Surrogate	Toluene-d8:	100	%	102	%	96	%	96	%		%		%
Recovery	Bromofluorobenzene:	98	%	102	%	94	%	92	%		%		%
(%)	1,2-Dichloroethane-d4:	82	%	92	%	76	%	78	%		%		%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	10	U				
Bromomethane		10	U	10	U	10	U	10	U				
Vinyl Chloride		10	U	10	U	10	U	10	U				
Chloroethane		10	U	10	U	10	U	10	U				
Methylene Chloride		6	B	5	JB	6	B	6	B				
Acetone		2	JB	2	JB	2	JB	2	JB				
Carbon Disulfide		5	U	5	U	5	U	5	U				
1,1-Dichloroethene		5	U	5	U	5	U	5	U				
1,1-Dichloroethane		5	U	5	U	5	U	5	U				
Trans-1,2-Dichloroethene		6		12		5	U	5	U				
Chloroform		5	U	5	U	6		5					
1,2-Dichloroethane		5	U	5	U	5	U	5	U				
2-Butanone		10	U	10	U	10	U	10	U				
1,1,1-Trichloroethane		5	U	1	J	5	U	5	U				
Carbon Tetrachloride		5	U	5	U	5	U	5	U				
Vinyl Acetate		10	U	10	U	10	U	10	U				
Bromodichloromethane		5	U	5	U	5	U	5	U				
1,2-Dichloropropane		5	U	5	U	5	U	5	U				
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U				
Trichloroethene		5	U	5		5	U	5	U				
Dibromochloromethane		5	U	5	U	5	U	5	U				
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U				
Benzene		5	U	5	U	5	U	5	U				
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U				
2-Chloroethylvinylether		10	U	10	U	10	U	10	U				
Bromoform		5	U	5	U	5	U	5	U				
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U				
2-Hexanone		10	U	10	U	10	U	10	U				

Cust ID:	MW FB	MW P-3 DUP	SB FB	SB TB
RFW#:	008	009	016	028
Tetrachloroethene	5 U	140	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U
Toluene	5 U	1 J	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U
Total Xylenes	5 U	5 U	5 U	5 U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit[illegible]R=Not requested.

WESTO NALYTICS

GC/MS DATA SUMMARY

VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-102 Client: BLACK AND DECKER Page: 1

	Cust ID:	BLANK		EL1		EL1 DUP		EL1 DUP		EL1 DUP		EL2	
Sample Information	RFW#:	BLANK		001		002		002 MS		002 MSD		005	
	Matrix:	Water		Water		Water		Water		Water			
	D.F.:	1		1		1		1		1		1	
	Units:	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Surrogate Recovery (%)	Toluene-d8:	100	%	102	%	100	%	96	%	98	%	100	%
	Bromofluorobenzene:	102	%	102	%	102	%	94	%	100	%	104	%
	1,2-Dichloroethane-d4:	96	%	92	%	92	%	92	%	92	%	90	%
			fl		fl		fl		fl		fl		fl
	Chloromethane	10	U	10	U	10	U	10	U	10	U	10	U
	Bromomethane	10	U	10	U	10	U	10	U	10	U	10	U
	Vinyl Chloride	10	U	10	U	10	U	10	U	10	U	10	U
	Chloroethane	10	U	10	U	10	U	10	U	10	U	10	U
	Methylene Chloride	11		9	B	10	B	12	B	13	B	11	B
	Acetone	10	U	20		18		14		13		12	
	Carbon Disulfide	5	U	5	U	5	U	5	U	5	U	5	U
	1,1-Dichloroethene	5	U	5	U	5	U	108	%	108	%	5	U
	1,1-Dichloroethane	5	U	5	U	5	U	5	U	5	U	5	U
	Trans-1,2-Dichloroethene	5	U	16		27		26		28		5	U
	Chloroform	5	U	12		11		11		11		5	
	1,2-Dichloroethane	5	U	5	U	5	U	5	U	5	U	5	U
	2-Butanone	10	U	10	U	10	U	10	U	10	U	10	U
	1,1,1-Trichloroethane	5	U	5	U	5	U	5	U	5	U	5	U
	Carbon Tetrachloride	5	U	5	U	5	U	5	U	5	U	5	U
	Vinyl Acetate	10	U	10	U	10	U	10	U	10	U	10	U
	Bromodichloromethane	5	U	1	J	1	J	1	J	1	J	5	U
	1,2-Dichloropropane	5	U	5	U	5	U	5	U	5	U	5	U
	Trans-1,3-Dichloropropene	5	U	5	U	5	U	5	U	5	U	5	U
	Trichloroethene	5	U	5	U	5	U	100	%	104	%	5	U
	Dibromochloromethane	5	U	5	U	5	U	5	U	5	U	5	U
	1,1,2-Trichloroethane	5	U	5	U	5	U	5	U	5	U	5	U
	Benzene	5	U	5	U	5	U	100	%	102	%	5	U
	cis-1,3-Dichloropropene	5	U	5	U	5	U	5	U	5	U	5	U
	2-Chloroethylvinylether	10	U	10	U	10	U	10	U	10	U	10	U
	Bromoform	5	U	5	U	5	U	5	U	5	U	5	U
	4-Methyl-2-pentanone	10	U	10	U	10	U	10	U	10	U	10	U
	2-Hexanone	10	U	10	U	10	U	10	U	10	U	10	U

RFW Batch Number: 8712-102 Client: BLACK AND DECKER Page: 1

Cust ID:	BLANK	fl	EL1	fl	EL1 DUP	fl	EL1 DUP	fl	EL1 DUP	fl	EL2	fl
RFW#:	BLANK		001		002		002 MS		002 MSD		005	
Tetrachloroethene	5	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane	5	U	5	U	5	U	5	U	5	U	5	U
Toluene	5	U	1	J	2	J	104	%	102	%	1	J
Chlorobenzene	5	U	5	U	5	U	106	%	106	%	5	U
Ethylbenzene	5	U	5	U	5	U	5	U	5	U	5	U
Styrene	5	U	5	U	5	U	5	U	5	U	5	U
Total Xylenes	5	U	5	U	5	U	5	U	5	U	5	U

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit [illegible]R=Not requested.

WEST[illegible]ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8712-102 Client: BLACK AND DECKER

	Cust ID:	WL1	WLE PIPE	WLE PIPE	WLW PIPE	LFB	LTB
Sample Information	RFW#:	009	014	014 DIL	015	016	017
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	10	1	1	1
	Units:	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Surrogate Recovery (%)	Toluene-d8:	100 %	100 %	98 %	102 %	98 %	100 %
	Bromofluorobenzene:	102 %	102 %	100 %	108 %	102 %	106 %
	1,2-Dichloroethane-d4:	96 %	92 %	90 %	96 %	88 %	102 %
		fl	fl	fl	fl	fl	fl
	Chloromethane	10 U	10 U	100 U	10 U	10 U	10 U
	Bromomethane	10 U	10 U	100 U	10 U	10 U	10 U
	Vinyl Chloride	10 U	10 U	100 U	10 U	10 U	10 U
	Chloroethane	10 U	10 U	100 U	10 U	10 U	10 U
	Methylene Chloride	9 B	8 B	73 B	8 B	7 B	7 B
	Acetone	2 J	10 U	66 J	9 J	10 U	6 J
	Carbon Disulfide	5 U	5 U	50 U	5 U	5 U	5 U
	1,1-Dichloroethene	5 U	5 U	50 U	5 U	5 U	5 U
	1,1-Dichloroethane	5 U	5 U	50 U	5 U	5 U	5 U
	Trans-1,2-Dichloroethene	5 U	5	50 U	2 J	5 U	5 U
	Chloroform	8	9	50 U	5 U	6	6
	1,2-Dichloroethane	5 U	5 U	50 U	5 U	5 U	5 U
	2-Butanone	10 U	10 U	100 U	10 U	10 U	10 U
	1,1,1-Trichloroethane	5 U	1 J	50 U	5 U	5 U	5 U
	Carbon Tetrachloride	5 U	5 U	50 U	5 U	5 U	5 U
	Vinyl Acetate	10 U	10 U	100 U	10 U	10 U	10 U
	Bromodichloromethane	1 J	1 J	50 U	5 U	5 U	5 U
	1,2-Dichloropropane	5 U	5 U	50 U	5 U	5 U	5 U
	Trans-1,3-Dichloropropene	5 U	5 U	50 U	5 U	5 U	5 U
	Trichloroethene	12	480 *	500	3 J	5 U	5 U
	Dibromochloromethane	5 U	5 U	50 U	5 U	5 U	5 U
	1,1,2-Trichloroethane	5 U	5 U	50 U	5 U	5 U	5 U
	Benzene	5 U	5 U	50 U	5 U	5 U	5 U
	cis-1,3-Dichloropropene	5 U	5 U	50 U	5 U	5 U	5 U
	2-Chloroethylvinylether	10 U	10 U	100 U	10 U	10 U	10 U
	Bromoform	5 U	5 U	50 U	5 U	5 U	5 U
	4-Methyl-2-pentanone	10 U	10 U	100 U	10 U	10 U	10 U
	2-Hexanone	10 U	10 U	100 U	10 U	10 U	10 U

Cust ID:	WL1	WLE PIPE	WLE PIPE	WLW PIPE	LFB	LTB
RFW#:	009	014	014 DIL	015	016	017
Tetrachloroethene..................	5 U	9	50 U	15	5 U	5 U
1,1,2,2-Tetrachloroethane...........	5 U	5 U	50 U	5 U	5 U	5 U
Toluene.............................	5 U	5 U	50 U	5 U	5 U	5 U
Chlorobenzene.......................	5 U	5 U	50 U	5 U	5 U	5 U
Ethylbenzene........................	5 U	5 U	50 U	5 U	5 U	5 U
Styrene.............................	5 U	5 U	50 U	5 U	5 U	5 U
Total Xylenes.......................	5 U	5 U	50 U	5 U	5 U	5 U

* SEE DILUTION

U=Analyzed, not detected. B=Present i ank. NRP=Not Reported
J=Present at less than detection limi NR=Not requested.

PETROLEUM HYDROCARBON ANALYSIS RESULTS: SOIL SAMPLES

WESTON ANALYTICS

ORGANICS ACCURACY REPORT 02/04/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01

WESTON BATCH #: 8712-096

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-013	SB A3 14-16	PETROLEUM HYDROCARBONS	230	2	180	120
		PETROLEUM HYDROCARBONS	200	2	190	110
BLANK1	88IR012-MB1	PETROLEUM HYDROCARBONS	40	0.2 u	40	100
		PETROLEUM HYDROCARBONS	38	0.2 u	40	95.8

WESTON ANALYTICS

ORGANICS DUPLICATE SPIKE REPORT 02/04/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01

WESTON BATCH #: 8712-09

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-013	SB A3 14-16	PETROLEUM HYDROCARBONS	120	110	13
BLANK1	88IR012-MB1	PETROLEUM HYDROCARBONS	100	95.8	4.2

WESTON ANALYTICS

ORGANICS METHOD BLANK DATA SUMMARY PAGE 02/04/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01

WESTON BATCH #: 8712-096

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
BLANK10	88IR016A-MB1	PETROLEUM HYDROCARBONS	1	u	MG/KG	1
BLANK1	88IR012-MB1	PETROLEUM HYDROCARBONS	0.2	u	MG/L	0.2

WESTON ANALYTICS

ORGANICS DATA SUMMARY REPORT 02/04/88

WESTON BATCH #: 8712-096

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTIN LIMIT
-010	SB A7 4-6	PETROLEUM HYDROCARBONS	20	MG/KG	1
-011	SB A1 6-8	PETROLEUM HYDROCARBONS	150000	MG/KG	1
-012	SB A1 2-4	PETROLEUM HYDROCARBONS	3	MG/KG	1
-013	SB A3 14-16	PETROLEUM HYDROCARBONS	2	MG/KG	1
-014	SB A4 4-6	PETROLEUM HYDROCARBONS	4600	MG/KG	1
-015	SB A4 12-14	PETROLEUM HYDROCARBONS	3	MG/KG	1
-016	FB	PETROLEUM HYDROCARBONS	0.2 u	MG/L	0

WESTON

Client: Black & Decker

RFW Batch: 8712-007

Parameter: Petroleum Hydrocarbons

SAMPLE	CLIENT ID	DILUTION	RESULT
-006	TPF1-1		9.0 mg/kg
-007	TPF1-1 DUP		12.0 mg/kg
-008	TPF3-1		14.0 mg/kg
			% RECOVERY
-008 MS	TPF3-1	1:10	112%
-008 MSD	TPF3-1	1:10	167%
BLANK	TP HCIR BLANK		<1

CYANIDE ANALYSIS RESULTS:
SOIL SAMPLES

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 01/15/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-096

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-016	FB	CYANIDE, TOTAL	10.0	u	UG/L	10.0
-018	SB A7 2-4	CYANIDE, TOTAL	1.2	u	MG/KG	1.2
-020	SB E4 10-11	CYANIDE, TOTAL	1.2	u	MG/KG	1.2
-021	SB E1 4-6	CYANIDE, TOTAL	1.2	u	MG/KG	1.2
-022	SB E1 14-16	CYANIDE, TOTAL	1.2	u	MG/KG	1.2

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 01/15/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-09

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTI LIMIT
-023	SB E2 4-6	CYANIDE, TOTAL	1.1 u	MG/KG	1
-024	SB E3 6-7	CYANIDE, TOTAL	1.2 u	MG/KG	1.2
-026	SB E5 8-10	CYANIDE, TOTAL	1.2 u	MG/KG	1
-027	SB E6 14-16	CYANIDE, TOTAL	1.2 u	MG/KG	1.

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/15/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-096

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK	88CN01E-MB	CYANIDE, TOTAL	10.0 u	UG/L	10.0
BLANK	88CN01D-MB	CYANIDE, TOTAL	10.0 u	UG/L	10.0
BLANK	88CN01A-MB	CYANIDE, TOTAL	10.0 u	UG/L	10.0
BLANK	88CN01B-MB	CYANIDE, TOTAL	10.0 u	UG/L	10.0

WESTON ANALYTICS

INORGANICS ACCURACY REPORT 01/15/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-09

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%REC
-022	SB E1 14-16	CYANIDE, TOTAL	0.14	1.2 u	11.9	1

WESTON ANALYTICS

INORGANICS PRECISION REPORT 01/15/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-096

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-022REP	SB E1 14-16	CYANIDE, TOTAL	1.2 u	1.2 u	NC

WESTON ANALYTICS

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/15/88

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%REC
BLANK	88CN01E-MB	CYANIDE, TOTAL LCS	25.9	25.0	UG/L	104
BLANK1	88CN01E-MB1	CYANIDE, TOTAL LCS	55.7	50.0	UG/L	111
BLANK2	88CN01E-MB2	CYANIDE, TOTAL LCS	106	100	UG/L	106
BLANK	88CN01D-MB	CYANIDE, TOTAL LCS	24.2	25.0	UG/L	96
BLANK1	88CN01D-MB1	CYANIDE, TOTAL LCS	49.7	50.0	UG/L	99
BLANK2	88CN01D-MB2	CYANIDE, TOTAL LCS	96.1	100	UG/L	96.
BLANK	88CN01A-MB	CYANIDE, TOTAL LCS	22.8	25.0	UG/L	91
BLANK1	88CN01A-MB1	CYANIDE, TOTAL LCS	48.7	50.0	UG/L	97.
BLANK2	88CN01A-MB2	CYANIDE, TOTAL LCS	74.7	100	UG/L	74
BLANK	88CN01B-MB	CYANIDE, TOTAL LCS	22.8	25.0	UG/L	91

EP-TOXICITY METALS ANALYSIS RESULTS:
SOIL AND SEDIMENT SAMPLES

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-007

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
BLANK1	88I014-MB1	SILVER, TOTAL	2.0	u	MG/KG	2.0
		BARIUM, TOTAL	40.0	u	MG/KG	40.0
		CADMIUM, TOTAL	1.0	u	MG/KG	1.0
		CHROMIUM, TOTAL	2.0	u	MG/KG	2.0
BLANK1	88I119-MB1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
BLANK2	88I119-MB2	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-007

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
BLANK2	88I119-MB2	LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
BLANK1	88C21A-MB1	MERCURY, TOTAL	0.2	u	UG/L	0.

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-997

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
BLANK1	88I119-MB1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
BLANK2	88I119-MB2	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 87[illegible]97

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTIN[illegible] LIMIT
BLANK1	88C21A-MB1	MERCURY, TOTAL	0.2 u	UG/L	0.[illegible]
BLANK2	88C21A-MB2	MERCURY, TOTAL	0.2 u	UG/L	0.2

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-997

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK2	88I119-MB2	CADMIUM, EP LEACHATE	100 u	UG/L	100
		CHROMIUM, EP LEACHATE	500 u	UG/L	500
		LEAD, EP LEACHATE	500 u	UG/L	500
		SELENIUM, EP LEACHATE	100 u	UG/L	100

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-007

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK2	88C21A-MB2	MERCURY, TOTAL	0.2 u	UG/L	0.2

WESTON ANALYTICS

INORGANICS ACCURACY REPORT 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-997

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT		SPIKED AMOUNT	%RECOV
-021	EPTI OF TPB 5-1	SILVER, EP LEACHATE	37.6	500	u	50.0	75.2
		ARSENIC, EP LEACHATE	1760	500	u	2000	88.0
		BARIUM, EP LEACHATE	1910	1000	u	2000	95.4
		CADMIUM, EP LEACHATE	51.8	100	u	50.0	104
		CHROMIUM, EP LEACHATE	192	500	u	200	95.8
		MERCURY, EP LEACHATE	4.3	0.2	u	5.0	86.9
		LEAD, EP LEACHATE	463	500	u	500	92.5
		SELENIUM, EP LEACHATE	1840	100	u	2000	92.2
-024	EPTI OF TPB 2-1	MERCURY, EP LEACHATE	4.5	0.2	u	5.0	90.2

WESTON ANALYTICS

INORGANICS ACCURACY REPORT 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT		SPIKED AMOUNT	%REC
-011	EPTI OF TPD 3-1	SILVER, EP LEACHATE	42.7	500	u	50.0	85."
		ARSENIC, EP LEACHATE	1810	500	u	2000	90
		BARIUM, EP LEACHATE	1870	1000	u	2000	93
		CADMIUM, EP LEACHATE	50.1	100	u	50.0	100
		CHROMIUM, EP LEACHATE	193	500	u	200	96.
		MERCURY, EP LEACHATE	4.4	0.2	u	5.0	88
		LEAD, EP LEACHATE	466	500	u	500	93
		SELENIUM, EP LEACHATE	1860	264		2000	80.

WESTON ANALYTICS

INORGANICS PRECISION REPORT 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-007

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT		REPLICATE		% DIFF
-011REP	EPTI OF TPD 3-1	SILVER, EP LEACHATE	500	u	500	u	NC
		ARSENIC, EP LEACHATE	500	u	500	u	NC
		BARIUM, EP LEACHATE	1000	u	1000	u	NC
		CADMIUM, EP LEACHATE	100	u	100	u	NC
		CHROMIUM, EP LEACHATE	500	u	500	u	NC
		MERCURY, EP LEACHATE	0.2	u	0.2	u	NC
		LEAD, EP LEACHATE	500	u	500	u	NC
		SELENIUM, EP LEACHATE	264		155		52.2

WESTON ANALYTICS

INORGANICS PRECISION REPORT 02/25/88

WESTON BATCH #: 87 97

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-021REP	EPTI OF TPB 5-1	SILVER, EP LEACHATE	500 u	500 u	NC
		ARSENIC, EP LEACHATE	500 u	500 u	NC
		BARIUM, EP LEACHATE	1000 u	1000 u	NC
		CADMIUM, EP LEACHATE	100 u	100 u	NC
		CHROMIUM, EP LEACHATE	500 u	500 u	NC
		MERCURY, EP LEACHATE	0.2 u	0.2 u	NC
		LEAD, EP LEACHATE	500 u	500 u	NC
		SELENIUM, EP LEACHATE	100 u	100 u	NC
-024REP	EPTI OF TPB 2-1	MERCURY, EP LEACHATE	0.2 u	0.2 u	NC

WESTON ANALYTICS

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/25/88

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	88I014-LC1	SILVER, LCS	34.9	40.0	MG/KG	87.3
		BARIUM, LCS	1950	2000	MG/KG	97.6
		CADMIUM, LCS	46.6	50.0	MG/KG	93.2
		CHROMIUM, LCS	182	200	MG/KG	91.0
LCS2	88I014-LC2	SILVER, LCS	36.1	40.0	MG/KG	90.3
		BARIUM, LCS	2040	2000	MG/KG	102
		CADMIUM, LCS	49.7	50.0	MG/KG	99.5
		CHROMIUM, LCS	195	200	MG/KG	97.3
LCS1	88A013-LC1	ARSENIC, LCS	5.7	6.0	MG/KG	94.7
		LEAD, LCS	5.8	6.0	MG/KG	96.3
		SELENIUM, LCS	6.0	6.0	MG/KG	101
LCS2	88A013-LC2	ARSENIC, LCS	5.7	6.0	MG/KG	95.3
		LEAD, LCS	5.6	6.0	MG/KG	93.3
		SELENIUM, LCS	5.7	6.0	MG/KG	94.3
LCS1	88C05B-LC1	MERCURY, LCS	2.0	2.0	UG/L	101
LCS2	88C05B-LC2	MERCURY, LCS	2.0	2.0	UG/L	97.8
LCS1	88I012-LC1	SILVER, LCS	166	200	UG/L	83.1
		BARIUM, LCS	9830	10000	UG/L	98.3
		CADMIUM, LCS	246	250	UG/L	98.2
		CHROMIUM, LCS	1030	1000	UG/L	103
LCS2	88I012-LC2	SILVER, LCS	167	200	UG/L	83.7
		BARIUM, LCS	9890	10000	UG/L	98.9
		CADMIUM, LCS	245	250	UG/L	98.2
		CHROMIUM, LCS	1030	1000	UG/L	103
LCS1	88A011-LC1	ARSENIC, LCS	24.5	30.0	UG/L	81.7
		LEAD, LCS	29.9	30.0	UG/L	99.7
		SELENIUM, LCS	27.0	30.0	UG/L	90.0
LCS2	88A011-LC2	ARSENIC, LCS	27.3	30.0	UG/L	91.0
		LEAD, LCS	27.9	30.0	UG/L	93.0
		SELENIUM, LCS	26.6	30.0	UG/L	88.7

WESTON ANALYTICS

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/25/88

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECO
LCS1	88C07C-LC1	MERCURY, LCS	2.0	2.0	UG/L	99
LCS2	88C07C-LC2	MERCURY, LCS	1.9	2.0	UG/L	94.
LCS1	88I119-LC1	SILVER, LCS	185	200	UG/L	92
		ARSENIC, LCS	9560	10000	UG/L	95.
		BARIUM, LCS	9200	10000	UG/L	92
		CADMIUM, LCS	229	250	UG/L	91
		CHROMIUM, LCS	941	1000	UG/L	94.
		LEAD, LCS	2350	2500	UG/L	93
		SELENIUM, LCS	9490	10000	UG/L	94
LCS2	88I119-LC2	SILVER, LCS	166	200	UG/L	83.
		ARSENIC, LCS	9460	10000	UG/L	94
		BARIUM, LCS	9220	10000	UG/L	92
		CADMIUM, LCS	223	250	UG/L	89.
		CHROMIUM, LCS	934	1000	UG/L	93
		LEAD, LCS	2320	2500	UG/L	93
		SELENIUM, LCS	9420	10000	UG/L	94.2
LCS1	88C21A-LC1	MERCURY, LCS	2.2	2.0	UG/L	08
LCS2	88C21A-LC2	MERCURY, LCS	2.2	2.0	UG/L	108
LCS3	88C21A-LC3	MERCURY, LCS	2.1	2.0	UG/L	105

WESTON ANALYTICS

INORGANICS DUPLICATE SPIKE REPORT 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-997

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
LCS2	88I014-LC2	SILVER, LCS	87.3	90.3	3.4
		BARIUM, LCS	97.6	102	4.6
		CADMIUM, LCS	93.2	99.5	6.5
		CHROMIUM, LCS	91.0	97.3	6.6
LCS2	88A013-LC2	ARSENIC, LCS	94.7	95.3	0.69
		LEAD, LCS	96.3	93.3	3.2
		SELENIUM, LCS	101	94.3	6.5
LCS2	88C05B-LC2	MERCURY, LCS	101	97.8	2.9
LCS2	88I012-LC2	SILVER, LCS	83.1	83.7	0.66
		BARIUM, LCS	98.3	98.9	0.67
		CADMIUM, LCS	98.2	98.2	0.081
		CHROMIUM, LCS	103	103	0.17
LCS2	88A011-LC2	ARSENIC, LCS	81.7	91.0	10.8
		LEAD, LCS	99.7	93.0	6.9
		SELENIUM, LCS	90.0	88.7	1.5
LCS2	88C07C-LC2	MERCURY, LCS	99.7	94.4	5.5
LCS2	88I119-LC2	SILVER, LCS	92.3	83.0	10.7
		ARSENIC, LCS	95.6	94.6	1.1
		BARIUM, LCS	92.0	92.2	0.21
		CADMIUM, LCS	91.5	89.3	2.4
		CHROMIUM, LCS	94.1	93.4	0.74
		LEAD, LCS	93.9	93.0	1.0
		SELENIUM, LCS	94.9	94.2	0.77
LCS2	88C21A-LC2	MERCURY, LCS	108	108	0.0

WESTON ANALYTICS

INORGANICS DUPLICATE SPIKE REPORT 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-0

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
LCS2	88I014-LC2	SILVER, LCS	87.3	90.3	3.4
		BARIUM, LCS	97.6	102	4.6
		CADMIUM, LCS	93.2	99.5	6.5
		CHROMIUM, LCS	91.0	97.3	6.6
LCS2	88A013-LC2	ARSENIC, LCS	94.7	95.3	0.69
		LEAD, LCS	96.3	93.3	3.2
		SELENIUM, LCS	101	94.3	6.5
LCS2	88C05B-LC2	MERCURY, LCS	101	97.8	2.9
LCS2	88I012-LC2	SILVER, LCS	83.1	83.7	0.66
		BARIUM, LCS	98.3	98.9	0.67
		CADMIUM, LCS	98.2	98.2	0.081
		CHROMIUM, LCS	103	103	0.17
LCS2	88A011-LC2	ARSENIC, LCS	81.7	91.0	10.8
		LEAD, LCS	99.7	93.0	6.9
		SELENIUM, LCS	90.0	88.7	1.5
LCS2	88I119-LC2	SILVER, LCS	92.3	83.0	10.7
		ARSENIC, LCS	95.6	94.6	1.1
		BARIUM, LCS	92.0	92.2	0.21
		CADMIUM, LCS	91.5	89.3	2.4
		CHROMIUM, LCS	94.1	93.4	0.74
		LEAD, LCS	93.9	93.0	1.0
		SELENIUM, LCS	94.9	94.2	0.77
LCS2	88C21A-LC2	MERCURY, LCS	108	108	0.0

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-007

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-011	EPTI OF TPD 3-1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	264		UG/L	100
-012	EPTI OF TPD 3-1 DUP	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-013	EPTI OF TPD4-1 MSMSD	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 02/25/88

WESTON BATCH #: 87[illegible]997

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTI LIMIT
-014	EPTI OF TPC1-1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	121		UG/L	100
-015	EPTI OF AREA C-SED	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-016	EPTI OF TPC 2-1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	[illegible]
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-017	EPTI OF TPC3-1 MSMSD	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 02/25/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-997

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-018	EPTI OF TPC 4-1 DUP	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-019	EPTI OF TPB 4-1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	116		UG/L	100
-020	EPTI OF TPB3-1 DUP	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-021	EPTI OF TPB 5-1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 02/25/88

WESTON BATCH #: 87[illegible]97

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTI LIMIT
-022	EPTI OF TPD 1-1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-023	EPTI OF TPD 2-1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-024	EPTI OF TPB 2-1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	[illegible]0
		CADMIUM, EP LEACHATE	100	u	UG/L	[illegible]0
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/23/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
BLANK1	88I119-MB1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
BLANK2	88I119-MB2	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/23/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK1	88C22A-MB1	MERCURY, TOTAL	0.2 u	UG/L	0.2

WESTON ANALYTICS

INORGANICS ACCURACY REPORT 02/23/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-019	EPTI OF EL 1 DUP	SILVER, EP LEACHATE	32.2	500 u	50.0	64.4
		ARSENIC, EP LEACHATE	1850	500 u	2000	92.5
		BARIUM, EP LEACHATE	3960	2000	2000	98.2
		CADMIUM, EP LEACHATE	55.4	100 u	50.0	111
		CHROMIUM, EP LEACHATE	199	500 u	200	99.7
		MERCURY, EP LEACHATE	4.2	0.2 u	5.0	84.1
		LEAD, EP LEACHATE	513	500 u	500	103
		SELENIUM, EP LEACHATE	1780	100 u	2000	88.9
-021	EPTI OF EL 1 SED DUP	MERCURY, EP LEACHATE	3.8	0.2 u	5.0	75.5

WESTON ANALYTICS

INORGANICS PRECISION REPORT 02/23/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-019REP	EPTI OF EL 1 DUP	SILVER, EP LEACHATE	500 u	500 u	NC
		ARSENIC, EP LEACHATE	500 u	500 u	NC
		BARIUM, EP LEACHATE	2000	2070	3.3
		CADMIUM, EP LEACHATE	100 u	100 u	NC
		CHROMIUM, EP LEACHATE	500 u	500 u	NC
		MERCURY, EP LEACHATE	0.2 u	0.2 u	NC
		LEAD, EP LEACHATE	500 u	500 u	NC
		SELENIUM, EP LEACHATE	100 u	100 u	NC
-021REP	EPTI OF EL 1 SED DUP	MERCURY, EP LEACHATE	0.2 u	0.2 u	NC

WESTON ANALYTICS

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/23/88

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	88C08A-LC1	MERCURY, LCS	2.0	2.0	UG/L	101
LCS2	88C08A-LC2	MERCURY, LCS	2.0	2.0	UG/L	101
LCS1	88I119-LC1	SILVER, LCS	185	200	UG/L	92.3
		ARSENIC, LCS	9560	10000	UG/L	95.6
		BARIUM, LCS	9200	10000	UG/L	92.0
		CADMIUM, LCS	229	250	UG/L	91.5
		CHROMIUM, LCS	941	1000	UG/L	94.1
		LEAD, LCS	2350	2500	UG/L	93.9
		SELENIUM, LCS	9490	10000	UG/L	94.9
LCS2	88I119-LC2	SILVER, LCS	166	200	UG/L	83.0
		ARSENIC, LCS	9460	10000	UG/L	94.6
		BARIUM, LCS	9220	10000	UG/L	92.2
		CADMIUM, LCS	223	250	UG/L	89.3
		CHROMIUM, LCS	934	1000	UG/L	93.4
		LEAD, LCS	2320	2500	UG/L	93.0
		SELENIUM, LCS	9420	10000	UG/L	94.2
LCS1	88C22A-LC1	MERCURY, LCS	2.0	2.0	UG/L	100
LCS2	88C22A-LC2	MERCURY, LCS	2.0	2.0	UG/L	100

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 02/23/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTIN LIMIT
-018	EPTI OF EL1	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1720		UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-019	EPTI OF EL 1 DUP	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	2000		UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-020	EL 1 SED	SILVER, EP LEACHATE	500	u	UG/L	[illegible]
		ARSENIC, EP LEACHATE	500	u	UG/L	[illegible]00
		BARIUM, EP LEACHATE	1490		UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-021	EPTI OF EL 1 SED DUP	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1760		UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 02/23/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-022	EPTI OF EL 2 SED	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-023	EPTI EL 3 SED	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-024	EL 4 SED	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1000	u	UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-025	EPTI WL 1 SED	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	2380		UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 02/23/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-30

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-026	EPTI WL 2 SED	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1180		UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-027	EPTI OF WL 3 SED	SILVER, EP LEACHATE	500	u	UG/L	500
		ARSENIC, EP LEACHATE	500	u	UG/L	500
		BARIUM, EP LEACHATE	1560		UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100
-028	EPTI OF WL 4 SED	SILVER, EP LEACHATE	500	u	UG/L	[illegible]
		ARSENIC, EP LEACHATE	500	u	UG/L	00
		BARIUM, EP LEACHATE	9190		UG/L	1000
		CADMIUM, EP LEACHATE	100	u	UG/L	100
		CHROMIUM, EP LEACHATE	500	u	UG/L	500
		MERCURY, EP LEACHATE	0.2	u	UG/L	0.2
		LEAD, EP LEACHATE	500	u	UG/L	500
		SELENIUM, EP LEACHATE	100	u	UG/L	100

METALS ANALYSIS RESULTS:
SURFACE-WATER AND SEDIMENT SAMPLES

Date Jan 29, 1988

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Roy F. Weston, Inc.

SOW No. 785

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
EL1	8712-102-001	WL1	8712-102-009
EL1 dup MS/MSD	8712-102-002	WL1 sed	8712-102-010
EL1 Sed	8712-102-003	WL2 sed	8712-102-011
EL1 sed dup ms/msd	8712-102-004	WL3 sed	8712-102-012
EL2	8712-102-005	WL4 Sed	8712-102-013
EL2 sed	8712-102-006	WLE Pipe	8712-102-014
EL3 sed	8712-102-007	WLW Pipe	8712-102-015
EL4 sed	8712-102-008	LFB	8712-102-016

Comments:

Samples Received 12-22-87

ICP interelement and background corrections applied? Yes X No ___.

If yes, corrections applied before X or after ___ generation of raw data.

Footnotes:

NR - Not required by contract at this time

Form I:

Value - If the result is a value greater than or equal to the instrument detecion limit but less than the contract-required detection limit, report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP), A (for Flame AA) or F (for Furnace AA).

U - Indicates element was analyzed for but not detected. Report with the instrument detection limit value (e.g., 10U).

E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.

S - Indicates value determined by Method of Standard Addition.

N - Indicates spike sample recovery is not within control limits.

* - Indicates duplicate analysis is not within control limits.

\+ - Indicates the correlation coefficient for method of standard addition is less than 0.995

M - Indicates duplicate injection results exceeded control limits.

Indicate method used: P for ICP; A for Flame AA and F for Furnace.

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
EL1 EAST LAGOON

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-001
Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low Medium

Matrix: WATER

Units: UG/L

1. Aluminum
2. Antimony 73.1 P
3. Arsenic [8.9] F W
4. Barium
5. Beryllium [3.6] P
6. Cadmium 41.2 P
7. Calcium
8. Chromium 1600 P
9. Cobalt
10. Copper 4320 P
11. Iron
12. Lead 6880 F N

Cyanide

13. Magnesium
14. Manganese
15. Mercury 4.7 CV N
16. Nickel 1470 P
17. Potassium
18. Selenium 0.8 u F W
19. Silver 3.4 u P
20. Sodium
21. Thallium 1.8 u F NW
22. Vanadium
23. Zinc 5500 P

Percent Solids (%) —

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample description: green, opaque

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
EL1 DUP MS/MSD

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-002

Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: WATER

Units: UG/L

1.	Aluminum				13.	Magnesium			
2.	Antimony	24.4	u	P	14.	Manganese			
3.	Arsenic	[1.7]		F	15.	Mercury	2.1		CV N
4.	Barium				16.	Nickel	164		P
5.	Beryllium	[1.3]		P	17.	Potassium			
6.	Cadmium	1.8	u	P	18.	Selenium	0.8	u	F
7.	Calcium				19.	Silver	3.4	u	P
8.	Chromium	16.2		P	20.	Sodium			
9.	Cobalt				21.	Thallium	1.8	u	F NW
10.	Copper	113		P	22.	Vanadium			
11.	Iron				23.	Zinc	264		P
12.	Lead	63.6		F N		Percent Solids (%)	—		
	Cyanide								

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample Description: green, opaque

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
EL1 SED EAST LAGOON

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-003
Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low Medium

Matrix: SOIL

Units: MG/KG

1. Aluminum
2. Antimony
3. Arsenic [4.6] F
4. Barium 1450 P
5. Beryllium
6. Cadmium 19.7 P
7. Calcium
8. Chromium 512 P
9. Cobalt
10. Copper
11. Iron
12. Lead 3770 F

Cyanide

13. Magnesium
14. Manganese
15. Mercury 1.8 CV
16. Nickel
17. Potassium
18. Selenium 1.5 u F
19. Silver 5.9 u P N
20. Sodium
21. Thallium
22. Vanadium
23. Zinc

Percent Solids (%) 9.9

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample weight ICP 1.165 grams
AA 1.055 grams
Sample description: brown, fine

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
EL2 SED DUP MS/MSD

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
Case No.
SOW No.
Lab Receipt Date 12/22/87
Lab Sample ID. No. 8712-102-004
QC Report No.

Elements Identified and Measured

Concentration: Low Medium

Matrix: SOIL

Units: MG/KG

1.	Aluminum			13.	Magnesium		
2.	Antimony			14.	Manganese		
3.	Arsenic	[3.7]	F	15.	Mercury	0.92	CV
4.	Barium	1470	P	16.	Nickel		
5.	Beryllium			17.	Potassium		
6.	Cadmium	13.3	P	18.	Selenium	10.1	F
7.	Calcium			19.	Silver	4.4 u	P N
8.	Chromium	420	P	20.	Sodium		
9.	Cobalt			21.	Thallium		
10.	Copper			22.	Vanadium		
11.	Iron			23.	Zinc		
12.	Lead	2920	F		Percent Solids (%)	13.9	
	Cyanide						

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample weight: ICP 1.115 grams
AA 1.179 grams
Sample description: brown, fine

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
EL2

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.

Case No.

SOW No.

Lab Receipt Date 12/22/87

Lab Sample ID. No. 8712-102-005

QC Report No.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: WATER

Units: UG/L

1. Aluminum
2. Antimony 24.4 u P
3. Arsenic [1.8] F
4. Barium
5. Beryllium [1.1] P
6. Cadmium 1.8 u P
7. Calcium
8. Chromium 31.5 P
9. Cobalt
10. Copper 117 P
11. Iron
12. Lead 126 F N

Cyanide

13. Magnesium
14. Manganese
15. Mercury 1.8 CV N
16. Nickel 697 P
17. Potassium
18. Selenium [0.9] F
19. Silver 3.4 u P
20. Sodium
21. Thallium 1.8 u F NW
22. Vanadium
23. Zinc 260 P

Percent Solids (%) —

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample description: green, opaque

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
EL2 SED EAST LAGOON

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-006
Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low ______ Medium ______

Matrix: SOIL

Units: MG/KG

1. Aluminum			13. Magnesium		
2. Antimony			14. Manganese		
3. Arsenic	[15]	F	15. Mercury	2.7	u CV
4. Barium	2950	P	16. Nickel		
5. Beryllium			17. Potassium		
6. Cadmium	[26.8]	P	18. Selenium	6.2	u F
7. Calcium			19. Silver	25.3	u P N
8. Chromium	1180	P	20. Sodium		
9. Cobalt			21. Thallium		
10. Copper			22. Vanadium		
11. Iron			23. Zinc		
12. Lead	4540	F	Percent Solids (%)	2.4	
Cyanide					

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample weight: ICP 1.103 grams
AA 1.059 grams
Sample description: brown, fine

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
EL3 SED

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-007

Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low Medium

Matrix: SOIL

Units: MG/KG

1. Aluminum		13. Magnesium	
2. Antimony		14. Manganese	
3. Arsenic	[3.3] F	15. Mercury	0.93 u CV
4. Barium	[494] P	16. Nickel	
5. Beryllium		17. Potassium	
6. Cadmium	[4.6] P	18. Selenium	1.9 u F
7. Calcium		19. Silver	8.7 u P N
8. Chromium	472 P	20. Sodium	
9. Cobalt		21. Thallium	
10. Copper		22. Vanadium	
11. Iron		23. Zinc	
12. Lead	1830 F	Percent Solids (%)	7.0
Cyanide			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample weight: ICP 1.123 grams
AA 1.234 grams
Sample description: brown, fine

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
EL4 SED EAST LAGOON

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-008

Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low ______ Medium ______

Matrix: SOIL

Units: MG/KG

1. Aluminum		13. Magnesium	
2. Antimony		14. Manganese	
3. Arsenic	[3.2] F	15. Mercury	0.92 u CV
4. Barium	725 P	16. Nickel	
5. Beryllium		17. Potassium	
6. Cadmium	[9.7] P	18. Selenium	2.0 u F
7. Calcium		19. Silver	8.9 u P N
8. Chromium	465 P	20. Sodium	
9. Cobalt		21. Thallium	
10. Copper		22. Vanadium	
11. Iron		23. Zinc	
12. Lead	1570 F	Percent Solids (%)	7.1
Cyanide			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: sample weight: ICP 1.083 grams
AA 1.153 grams
sample description: brown, fine

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
WL1 WEST LAGOON

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-009

Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low ______ Medium ______

Matrix: WATER

Units: UG/L

1.	Aluminum		
2.	Antimony	24.4 u	P
3.	Arsenic	[1.4]	F
4.	Barium		
5.	Beryllium	[1.5]	P
6.	Cadmium	1.8 u	P
7.	Calcium		
8.	Chromium	17.1	P
9.	Cobalt		
10.	Copper	208	P
11.	Iron		
12.	Lead	62.0	F N
	Cyanide		
13.	Magnesium		
14.	Manganese		
15.	Mercury	0.59	CV N
16.	Nickel	40.6	P
17.	Potassium		
18.	Selenium	0.8 u	F
19.	Silver	3.4 u	P
20.	Sodium		
21.	Thallium	1.8 u	F N
22.	Vanadium		
23.	Zinc	342	P
	Percent Solids (%)	-	

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample description: colorless, clear

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
WL1 SED

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-010

Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: SOIL

Units: MG/KG

1. Aluminum
2. Antimony
3. Arsenic [0.9] F
4. Barium 588 P
5. Beryllium
6. Cadmium [1.3] P
7. Calcium
8. Chromium 60.7 P
9. Cobalt
10. Copper
11. Iron
12. Lead 277 F

Cyanide

13. Magnesium
14. Manganese
15. Mercury 0.23 u CV
16. Nickel
17. Potassium
18. Selenium 0.49 u F
19. Silver 2.0 u PN
20. Sodium
21. Thallium
22. Vanadium
23. Zinc

Percent Solids (%) 28.1

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample weight: ICP 1.233 grams
AA 1.173 grams
Sample description: brown, fine

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
WL2 SED

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-011

Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: SOIL

Units: MG/KG

1. Aluminum
2. Antimony
3. Arsenic [0.5] F
4. Barium 646 P
5. Beryllium
6. Cadmium 1.6 u P
7. Calcium
8. Chromium 76.6 P
9. Cobalt
10. Copper
11. Iron
12. Lead 275 F

Cyanide

13. Magnesium
14. Manganese
15. Mercury 0.33 u CV
16. Nickel
17. Potassium
18. Selenium 0.71 u F
19. Silver 3.0 u PN
20. Sodium
21. Thallium
22. Vanadium
23. Zinc

Percent Solids (%) 19.9

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: sample weight: ICP 1.129 grams
AA 1.124 grams
Sample description: brown, fine

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
WL3 SED

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
Case No.
SOW No.
Lab Receipt Date 12/22/87
Lab Sample ID. No. 8712-102-012
QC Report No.

Elements Identified and Measured

Concentration: Low ______ Medium ______

Matrix: SOIL

Units: MG/KG

1.	Aluminum			13.	Magnesium		
2.	Antimony			14.	Manganese		
3.	Arsenic	[2.3]	F	15.	Mercury	0.11 u	CV
4.	Barium	372	P	16.	Nickel		
5.	Beryllium			17.	Potassium		
6.	Cadmium	0.48 u	P	18.	Selenium	0.2 u	F
7.	Calcium			19.	Silver	0.9 u	P N
8.	Chromium	17.7	P	20.	Sodium		
9.	Cobalt			21.	Thallium		
10.	Copper			22.	Vanadium		
11.	Iron			23.	Zinc		
12.	Lead	86.0	F		Percent Solids (%)	60.2	
	Cyanide						

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: sample weight: ICP 1.252 grams
AA 1.315 grams
sample description: brown, fine

Lab Manager

01

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
WL4 SED

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-013
Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low ______ Medium ______

Matrix: SOIL

Units: MG/KG

1. Aluminum
2. Antimony
3. Arsenic [3.2] F
4. Barium 2010 P
5. Beryllium
6. Cadmium [2.6] P
7. Calcium
8. Chromium 75.7 P
9. Cobalt
10. Copper
11. Iron
12. Lead 308 F

Cyanide

13. Magnesium
14. Manganese
15. Mercury 0.22 u CV
16. Nickel
17. Potassium
18. Selenium 0.41 u F
19. Silver 1.9 u P N
20. Sodium
21. Thallium
22. Vanadium
23. Zinc

Percent Solids (%) 29.8

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample Weight: ICP 1.202 grams
AA 1.322 grams
Sample description: brown, fine

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
WLE PIPE

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-014
Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low ______ Medium ______

Matrix: WATER

Units: UG/L

1.	Aluminum			13.	Magnesium		
2.	Antimony	24.4 u	P	14.	Manganese		
3.	Arsenic	[0.5]	F	15.	Mercury	0.13 u	CV N
4.	Barium			16.	Nickel	7.1 u	P
5.	Beryllium	[0.5]	P	17.	Potassium		
6.	Cadmium	1.8 u	P	18.	Selenium	0.8 u	F W
7.	Calcium			19.	Silver	3.4 u	P
8.	Chromium	2.5 u	P	20.	Sodium		
9.	Cobalt			21.	Thallium	1.8 u	F NW
10.	Copper	45.1	P	22.	Vanadium		
11.	Iron			23.	Zinc	219	P
12.	Lead	[4.0]	F N		Percent Solids (%)	-	
	Cyanide						

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample description: clear, colorless

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
WLW PIPE

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-015
Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low ________ Medium ________

Matrix: WATER

Units: UG/L

1. Aluminum
2. Antimony 24.4 u P
3. Arsenic [0.6] F
4. Barium
5. Beryllium [0.5] P
6. Cadmium 1.8 u P
7. Calcium
8. Chromium 2.5 u P
9. Cobalt
10. Copper 30.0 P
11. Iron
12. Lead [3.2] F NW

Cyanide

13. Magnesium
14. Manganese
15. Mercury 0.13 u CV N
16. Nickel [8.6] P
17. Potassium
18. Selenium 0.8 u F W
19. Silver 3.4 u P
20. Sodium
21. Thallium 1.8 u F NW
22. Vanadium
23. Zinc 75.8 P

Percent Solids (%) -

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample description: clear, colorless

Lab Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
WLE PIPE

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-014
Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low ____ Medium ____

Matrix: WATER

Units: UG/L

1.	Aluminum		13.	Magnesium	
2.	Antimony	24.4 u P	14.	Manganese	
3.	Arsenic	[0.5] F	15.	Mercury	0.13 u CV N
4.	Barium		16.	Nickel	7.1 u P
5.	Beryllium	[0.5] P	17.	Potassium	
6.	Cadmium	1.8 u P	18.	Selenium	0.8 u F W
7.	Calcium		19.	Silver	3.4 u P
8.	Chromium	2.5 u P	20.	Sodium	
9.	Cobalt		21.	Thallium	1.8 u F NW
10.	Copper	45.1 P	22.	Vanadium	
11.	Iron		23.	Zinc	219 P
12.	Lead	[4.0] F N		Percent Solids (%)	-
	Cyanide				

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample description: clear, colorless

Lab Manager

BORING LOG

Page 1 of 2

oring No. SB-I-1 Drill Company Hardin-Huber Log By R. Callahan

ent Black & Decker, Inc. Driller C. Burton Field Book No.

b No. Date Began 12/16/87 End 12/16/87 Log Date 2/17/88

ill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	0.9	3,3 5,5	1.6	Medium to dark brown silty loam to reddish brown silty loam, stoney, layers noted	Background OVA = 1.2
	1							
	2		2-4	1.33	1,2 3,5	1.3	Mixed reddish yellow brown silty loam, few stones, quartzite fragments	
	3							
	4	SBI1 46	4-6	0.83	3,3 4,4	2.9	Yellow silt to silty loam few stones - areas of compaction (sed. layers)	Low moisture
	5							
	6		6-8	1.2	4,4 7,8	1.4	Quartzite fragments, layers more noticeable, yellow silt with gray, reddish light brown layers	
	7							

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
LFB

Date 01/29/88

INORGANIC ANALYSIS DATA SHEET

Lab Name Roy F. Weston Inc.
SOW No.
Lab Sample ID. No. 8712-102-016

Case No.
Lab Receipt Date 12/22/87
QC Report No.

Elements Identified and Measured

Concentration: Low______ Medium______

Matrix: WATER

Units: UG/L

1.	Aluminum		13.	Magnesium	
2.	Antimony	24.4 u P	14.	Manganese	
3.	Arsenic	0.5 u F	15.	Mercury	0.13 u CV N
4.	Barium		16.	Nickel	7.1 u P
5.	Beryllium	[0.5] P	17.	Potassium	
6.	Cadmium	1.8 u P	18.	Selenium	0.8 u F
7.	Calcium		19.	Silver	3.4 u P
8.	Chromium	2.5 u P	20.	Sodium	
9.	Cobalt		21.	Thallium	1.8 u F N
10.	Copper	29.6 P	22.	Vanadium	
11.	Iron		23.	Zinc	83.3 P
12.	Lead	[3.5] F N		Percent Solids (%)	—
	Cyanide				

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Sample description: Clear, colorless

Lab Manager

NITRATES ANALYSIS RESULTS:
SURFACE-WATER AND SEDIMENT SAMPLES

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 01/22/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	EL1 EAST LAGOON	NITRATE, AS N	2.5	MG/L	0.1
-002	EL1 DUP MS/MSD	NITRATE, AS N	2.5	MG/L	0.1
-003	EL1 SED EAST LAGOON	NITRATE, AS N	1.0 u	MG/KG	1.0
-004	EL2 SED DUP MS/MSD	NITRATE, AS N	0.72 u	MG/KG	0.72

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 01/22/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTIN LIMIT
-005	EL2	NITRATE, AS N	1.6	MG/L	0.
-006	EL2 SED EAST LAGOON	NITRATE, AS N	1.0 u	MG/KG	1.
-007	EL3 SED	NITRATE, AS N	1.4 u	MG/KG	1
-008	EL4 SED EAST LAGOON	NITRATE, AS N	1.4 u	MG/KG	1

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 01/22/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-009	WL1 WEST LAGOON	NITRATE, AS N	0.65	MG/L	0.1
-010	WL1 SED	NITRATE, AS N	0.41	MG/KG	0.36
-011	WL2 SED	NITRATE, AS N	0.5 u	MG/KG	0.5
-012	WL3 SED	NITRATE, AS N	0.19	MG/KG	0.17

WESTON ANALYTICS

INORGANICS DATA SUMMARY REPORT 01/22/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTI LIMIT
-013	WL4 SED	NITRATE, AS N	0.34 u	MG/KG	0
-014	WLE PIPE	NITRATE, AS N	1.4	MG/L	0.
-015	WLW PIPE	NITRATE, AS N	1.3	MG/L	0
-016	LFB	NITRATE, AS N	0.1 u	MG/L	0

WESTON ANALYTICS

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/22/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
BLANK1	87N065-MB1	NITRATE, AS N	0.1	u	MG/L	0.1
BLANK2	87N065-MB2	NITRATE, AS N	0.1	u	MG/L	0.1
BLANK3	87N065-MB3	NITRATE, AS N	0.1	u	MG/L	0.1
BLANK4	87N065-MB4	NITRATE, AS N	0.1	u	MG/L	0.1
BLANK5	87N065-MB5	NITRATE, AS N	0.1	u	MG/L	0.1
BLANK6	87N065-MB6	NITRATE, AS N	0.1	u	MG/L	0.1
BLANK7	87N065-MB7	NITRATE, AS N	0.1	u	MG/L	0.1
BLANK8	87N065-MB8	NITRATE, AS N	0.1	u	MG/L	0.1
BLANK9	87N065-MB9	NITRATE, AS N	0.1	u	MG/L	0.1

WESTON ANALYTICS

INORGANICS ACCURACY REPORT 01/22/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-10

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%REC
-002	EL1 DUP MS/MSD	NITRATE, AS N	3.0	2.5	0.5	10
		NITRATE, AS N MSD	3.0	2.5	0.5	109
-003	EL1 SED EAST LAGOON	NITRATE, AS N	11.2	1.0 u	10.1	111
		NITRATE, AS N MSD	11.4	1.0 u	10.1	11
-004	EL2 SED DUP MS/MSD	NITRATE, AS N	7.3	0.72u	7.2	10
		NITRATE, AS N MSD	7.4	0.72u	7.2	103
BLANK2	87N065-MB2	NITRATE, AS N	1.1	0.1 u	1.0	11
BLANK3	87N065-MB3	NITRATE, AS N	1.1	0.1 u	1.0	11
BLANK5	87N065-MB5	NITRATE, AS N	2.0	0.1 u	2.0	101
BLANK6	87N065-MB6	NITRATE, AS N	2.1	0.1 u	2.0	10
BLANK8	87N065-MB8	NITRATE, AS N	0.49	0.1 u	0.5	9
BLANK9	87N065-MB9	NITRATE, AS N	0.49	0.1 u	0.5	97.8

WESTON ANALYTICS

INORGANICS DUPLICATE SPIKE REPORT 01/22/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-002	EL1 DUP MS/MSD	NITRATE, AS N	109	109	NC
-003	EL1 SED EAST LAGOON	NITRATE, AS N	111	113	1.5
-004	EL2 SED DUP MS/MSD	NITRATE, AS N	102	103	1.6

WESTON ANALYTICS

INORGANICS PRECISION REPORT 01/22/88

CLIENT: BLACK & DECKER

WESTON BATCH #: 8712-102

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-002REP	EL1 DUP MS/MSD	NITRATE, AS N	2.5	2.5	0.0
-003REP	EL1 SED EAST LAGOON	NITRATE, AS N	1.0 u	1.0 u	NC
-004REP	EL2 SED DUP MS/MSD	NITRATE, AS N	0.72u	0.72u	NC

APPENDIX B

SOIL-GAS PROCEDURE

APPENDIX B

SOIL GAS PROCEDURE

SAMPLING

Soil-gas samples were collected in Zones A and E at locations identified in Figures 3-2 through 3-4 and 3-15. Samples were obtained from Teflon-tube-lined, 1/4-inch diameter, cylindrical copper probes, which were placed into hand-driven 3-foot pilot holes. At the top of the probe the Teflon tubing was sealed to the copper probes with Teflon tape; a rubber stopper was used around the top of the probe as a seal between the probe and the sides of the pilot hole. Gas was aspirated through probes with a battery-operated pump at 100 ml/minute for 5 minutes at each sampled location. Samples were collected through an in-line 250-ml glass sampling bulb. Each bulb was purged between sampling locations with ambient air at a rate of 5 liters per minute for 15 minutes. Post-purge bulb blanks were collected periodically to evaluate the purging process. Duplicate samples were taken as noted in Table 3-2.

ANALYSIS

The soil-gas samples were analyzed in the field using a mobile gas chromatograph (GC) unit with an appropriate detector specific to the target compounds. Because tetrachloroethylene and trichloroethylene were identified at the highest levels in groundwater samples from the site, these two compounds were the target compounds, and an electron capture detector and appropriate standards were utilized.

The detection limits depended on the interferences from other compounds present in the soil gas. Quantification of the target compounds was accomplished by the external standard method, with calibration check standards run at least four times daily. All samples were run in duplicate, with different sample volumes. Air, nitrogen, and hexane blanks were run to check for and to minimize the effects of carryover or cross-contamination between separate runs.

The GC was transported to the site and set up inside the wastewater treatment building. Each sample probe was used only once and decontaminated at the end of the program with an Alconox and water scrub, a tap water, rinse, and followed by a deionized water rinse.

APPENDIX C

PHASE I SOIL BORING LOGS AND TEST EXCAVATION LOGS

SOIL BORING LITHOLOGY LOGS

ORING LOG

Page 1 **of** 2

Boring No. SB-A-1 **Drill Company** Hardin-Huber **Log By** R. Callahan

lient Black & Decker, Inc **Driller** C. Burton **Field Book No.**

J **Date Began** 12/17/87 **End** 12/17/87 **Log Date** 2/17/88

rill Method Hollow Stem Auger **Rig**

Sampling Method Split Spoon **No. Samples** 1 **Total Depth** 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	0.66	4,2 2,3	NS	Light brown sandy loam at surface followed by gravel and rock (fill dirt)	
	1							
	2		2-4	0.92	4,2 2,2	2.6	Medium brown silty loam, some stones and rock fragments (fill dirt)	
	3							
	4		4-6	0.73	2,2 2,2	3.4	Medium brown silty loam, grades to more yellow brown (fill dirt), some small quartzite fragments	
	5							
	6	SBA1 68	6-8	0.75	2,2 2,3	100	Yellow brown silt, grades to red brown (slight) few small quartzite fragments (fill dirt)	
	7							

BORING LOG

Page 2 of 3

Boring No. SB-A-1 Drill Company Hardin-Huber Log By R. Callahan

Client Black & Decker, Inc. Driller C. Burton Field Book No.

Job No. Date Began 12/17/87 End 12/17/87 Log Date 2/17/88

Drill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	0.75	2,2 2,3	13	Fill dirt, yellow/brown silt with small fragments and stones	
	9							
	10		10-12	0.08	2,3 2,3	60	Fill dirt, yellow/brown silt with small fragments and stones	
	11							
	12		12-14	0.16	2,5 11,7	14	0.29' fill dirt, yellow/brown silt with small fragments and stones, 0.2' sand (possibly used to fill buried tanks), remainder is natural undisturbed yellow/yellow brown silt mottled with brown, grey and red	
	13							
	14		14-16	1.58	8,14 19,2	19.5	0.29' fill dirt, yellow/brown silt with small fragments and stones, 0.2' sand (possibly used to fill buried tanks), remainder is natural undisturbed yellow/yellow brown silt mottled with brown, grey and red	
	15							
	16						Total depth = 16'	

* Calibrated to methane

ORING LOG

Page 1 of 2

Boring No. SB-1-2 **Drill Company** Hardin-Huber **Log By** R. Callahan

ent Black & Decker, Inc. **Driller** C. Burton **Field Book No.**

Jo **Date Began** 12/17/87 **End** 12/17/87 **Log Date** 2/17/88

ll Method Hollow Stem Auger **Rig**

ampling Method Split Spoon **No. Samples** [illegible] **Total Depth** 10'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	1.0	3,4 3,2	1.2	Medium to dark brown silty loam, grades to light brown clayey silt, 0.08' sandstone type material, possibly part of concrete apron grades to yellow/yellow brown silt, mottled with gray, brown and red	
	1							
	2		2-4	1.25	5,7 10,15	5.6	Yellow/yellow brown silt with brown red, gray, mottling	
	3							
	4		4-6	1.58	9,11 14,12	3.8	Same as 2-4'	
	5							
	6		6-8	1.13	8,23 14,15	2.5	Same as 2-4'	
	7							

BORING LOG

Page 2 **of** 2

Boring No. SB-A-2 **Drill Company** Hardin-Huber **Log By** R. Callahan

Client Black & Decker, Inc **Driller** C. Burton **Field Book No.**

Job No. **Date Began** 12/17/87 **End** 12/17/87 **Log Date** 2/17/88

Drill Method Hollow Stem Auger **Rig**

Sampling Method Split Spoon **No. Samples** 1 **Total Depth** 10'

Lithology	Depth ft.	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	1.25	7,8 12,20	1.6	Auger refusal at 8', same as 2-4', more consolidated, quartzite fragements noted	
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16						Total depth = 10'	

* Calibrated to methane

ORING LOG

Page 1 of 2

oring No. SB-A-3 **Drill Company** Hardin-Huber **Log By** R. Callahan

ent Black & Decker, Inc. **Driller** C. Burton **Field Book No.**

Jo **Date Began** 12/17/87 **End** 12/17/87 **Log Date** 2/17/88

ill Method Hollow Stem Auger **Rig**

Sampling Method Split Spoon **No. Samples** 1 **Total Depth** 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	0.75	1,3 4,8	7.8	Medium to dark brown, silty loam (top soil) grades to yellow silt with quartzite fragments, black seams noted ≅ at 2'	
	1							
	2		2-4	-	2,2 2,2	NS		
	3							
	4		4-6	1.08	3,3 4,5	2.4	Grades from light brown silt to yellow/ yellowish brown layers noted in lower 0.33' mottled with red grey and brown.	
	5							
	6		6-3	1.5	2,5 12,24	6.0	Yellow/yellow brown - mottled silt layers	
	7							

BORING LOG

Page 2 of 2

Boring No. SB-A-3 Drill Company Hardin-Huber Log By R. Callahan

Client Black & Decker, Inc Driller C. Burton Field Book No.

Job No. Date Began 12/17/87 End 12/17/87 Log Date 2/17/88

Drill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	1.5	10,12 12,17	5.4	Continuation of 6-8', layers much more significant (platy layers)	
	9							
	10		10-12	1.5	15,12 22,23	5.4	Same as 8-10'	
	11							
	12		12-14	1.17	8,14 25,26	7.0	Same material as 8-10' except 1" quartzite at end of sample	
	13							
	14		14-16	1.42	5,5 12,17	15.6	Same as 8-10'	
	15							
	16						Total depth = 16'	

* Calibration to methane

BORING LOG

Page 1 of 2

oring No. SB-A-4 Drill Company Hardin-Huber Log By R. Callahan

[illegible] Black & Decker, Inc Driller C. Burton Field Book No.

[illegible] Date Began 12/17/87 End 12/17/87 Log Date 2/17/88

ill Method Hollow Stem Auger Rig

Sampling Method Split Stem No. Samples [illegible] Total Depth 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	0.91	7,3 3,2	100	Yellow brown silty clay, well mixed, small stones and fragments (fill dirt)	
	1							
	2		2-4	1.42	2,3 3,4	172	Yellowish brown at hole grades to medium to dark well mixed at 2.7' (fill dirt)	
	3							
	4		4-6	0.83	2,1 2,6	420	Medium to dark brown, well mixed at 5' red clay (black marbeling stiff)	
	5							
	6		6-8	1.25	3,3 6,4	174	0.71' continuation of stiff red clay and yellow clay, brown, silty nature not as stiff, somewhat ribboned.	
	7							

BORING LOG

Page 2 **of** 2

Boring No. SB-A-4 **Drill Company** Hardin-Huber **Log By** R. Callahan

Client Black & Decker, Inc **Driller** C. Burton **Field Book No.**

Job No. **Date Began** 12/17/87 **End** 12/17/87 **Log Date** 2/17/88

Drill Method Hollow Stem Auger **Rig**

Sampling Method Split Spoon **No. Samples** 1 **Total Depth** 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	0.83	6,7 6,6	140	Yellow, silty clay, grades to yellow, clayey silt, dark red stone (?), at 9', diameter size of spoon	
	9							
	10		10-12	0.08	5,5 6,7	NS	Piece of quartzite wedged in tip of split spoon, no sample	
	11							
	12		12-14	1.0	10,5 6,5	500+	Red/brown silt, some clay, grades to light brown clayey silty, through a quartzite. Layer 0.2', and back to light brown clayey silt	
	13							
	14		14-16	1.67	5,5 6,5	30	Continuation of light brown clayey silt, some small stones, at 10" material becomes mottled with yellowish grey red and dark brown very silty - little clay	
	15							
	16						Total Depth = 16'	
							* Calibrated to methane	

ORING LOG

Page 1 of 2

oring No. SB-A-7 Drill Company Hardin-Huber Log By R. Callahan

ent Black & Decker, Inc Driller C. Burton Field Book No.

Date Began 12/17/87 End 12/17/87 Log Date 2/17/88

ethod Hollow Stem Auger Rig

mpling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	0.75	2,3 3,4	1.0	Medium brown to red brown silty loam with numerous rocks	
	1							
	2		2-4	1.5	5,6 5,6	1.2	Yellow brown clayey silt (fill dirt) some red intermixed throughout	
	3							
	4	SBA7 46	4-6	1.75'	3,5 5,4	1.6	Same as 2-4'	
	5							
	6		6-8	1.67	3,5 7,8	1.3	First 8" with an increase in stones and quartz Fragments, grades to yellow brown stiff silty clay, very uniform	
	7							

BORING LOG

Page 2 **of** 2

Boring No. SB-4-7 **Drill Company** Hardin-Huber **Log By** R. Callahan

Client Black & Decker, Inc **Driller** C. Burton **Field Book No.**

Job No. **Date Began** 12/17/87 **End** 12/17/87 **Log Date** 2/17/88

Drill Method Hollow Stem Auger **Rig**

Sampling Method Split Spoon **No. Samples** 1 **Total Depth** 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	1.54	5,10 10,7	1.2	Same as 6-8', continuation of quartzite fragments throughout (appears to be fill dirt), very uniform	
	9							
	10		10-12	1.92	5,5 6,9	1.4	Yellow brown silt, graded to red brown silt, large fragments of quartzite, some dark brown seams at 12'	
	11							
	12		12-14	1.92	5,5 6,5	1.5	Continuation of 10-12' interval until vast 4" layering appears In this zone, red/brown silt with grayish yellow, dark brown layer	
	13							
	14		14-16	1.25	5,7 12,16	1.4	Red/brown silt, layered with gray, dark brown grades to pale red (pink) with some mottling, 0.2' seam of yellow brown, large rock fragments, last 0.2' mostly rock fragments, little soil	
	15							
	16						Total depth = 16'	

* Calibrated to methane

BORING LOG

Page 1 of 2

oring No. SB-I-1 **Drill Company** Hardin-Huber **Log By** R. Callahan

[illegible]lack & Decker, Inc. **Driller** C. Burton **Field Book No.**

Date Began 12/16/87 **End** 12/16/87 **Log Date** 2/17/88

ill Method Hollow Stem Auger **Rig**

Sampling Method Split Spoon **No. Samples** 1 **Total Depth** 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	0.9	3,3 5,5	1.6	Medium to dark brown silty loam to reddish brown silty loam, stoney, layers noted	Background OVA = 1.2
	1							
	2		2-4	1.33	1,2 3,5	1.3	Mixed reddish yellow brown silty loam, few stones, quartzite fragments	
	3							
	4	SBI1 46	4-6	0.83	3,3 4,4	2.9	Yellow silt to silty loam few stones - areas of compaction (sed. layers)	Low moisture
	5							
	6		6-8	1.2	4,4 7,8	1.4	Quartzite fragments, layers more noticeable, yellow silt with gray, reddish light brown layers	
	7							

BORING LOG

Page 2 **of** 2

Boring No. SB-E-1 **Drill Company** Hardin-Huber **Log By** R. Callahan

Client Black & Decker, Inc. **Driller** C. Burton **Field Book No.**

Job No. **Date Began** 12/16/87 **End** 12/16/87 **Log Date** 2/17/88

Drill Method Hollow Stem Auger **Rig**

Sampling Method Split Spoon **No. Samples** 1 **Total Depth** 16'

Lithology	Depth (ft.)	Sample No	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	0.91	4,5 5,6	2.8	Fewer quartzite fragments, yellow silt predominates, layers of reddish gray and light brown, easily friable	
	9							
	10		10-12	1.25	6,7 9,10	2.0	Red grades out, yellow silt with gray and black seams, periodic quartzite fragments noted	
	11							
	12		12-14	1.03	10,10 8,7	2.0	Quartzite fragments, yellow silt, layers of grey and black increase in black seams	
	13							
	14		14-16	1.42	8,3 7,12	2.0	Same as 12-14'	
	15							
	16						Total depth = 16'	

* Calibrated to methane

BORING LOG

Page 1 of 2

Boring No. SB-B-2 Drill Company Hardin-Huber Log By R. Callahan

lient Black & Decker, Inc Driller C. Burton Field Book No.

Jo Date Began 12/16/87 End 12/16/87 Log Date 2/17/88

rill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	1.16	2,3 3,4	BKGD	Medium brown silty loam, followed by mixed, somewhat mottled yellow brown, red, dark brown, gray silt to silty loam	Background OVA = 1.0ppm (BKGD)
	1							
	2		2-4	1.33	9,43 18,29	BKGD	Yellow brown silty loam, increasing clay content followed by stone and approximately 0-25' of asphalt	
	3							
	4	SBB2 46	4-6	0.5	8,4 6,6	BKGD	Medium brown silty loam followed by stones and brown/black powdery material (approximately 0-3' of coarse stones at 6')	
	5							
	6		6-8	1.58	3,3 3,5	BKGD	Upper 0.42' of medium brown silty loam 0 66' of yellow silty clay Lower 0.5' of yellow to yellow brown silt - few stones	
	7							

BORING LOG

Page 2 of 2

Boring No. SB-I-2 Drill Company Hardin-Huber Log By R. Callahan
Client Black & Decker, Inc Driller C. Burton Field Book No.
Job No. Date Began 12/16/87 End 12/16/87 Log Date 2/17/88
Drill Method Hollow Stem Auger Rig
Sampling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	1.58	4,4 5,7	BKGD	Upper 0.25' of yellow brown silt mottled with red gray and small amounts of brown silt/silty loam Lower 0.25' increased gray component	Background OVA = 1.0ppm
	9							
	10		10-12	1.41	4,8 6,9	BKGD	Yellow silt/silty loam mottled with reddish gray and periodic dark brown	Low moisture
	11							
	12		12-14	1.25	7,7 8,7	BKGD	Continuation of yellow silt (as in 10-12') mottled with red clay, dark brown	
	13							
	14		14-16	1.25	4,4 6,7	BKGD	Continuation of 10-12' Small quartz fragments at 14-63' progressively increasing towards lower end	Low moisture throughout soil boring
	15							
	16						Total depth = 16'	

* Calibrated to methane

ORING LOG

Page 1 of 2

oring No. SB-E-3 Drill Company Hardin-Huber Log By R. Callahan

Black & Decker, Inc Driller C. Burton Field Book No.

Jo Date Began 12/16/87 End 12/16/87 Log Date 2/17/88

ill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	0.4	1,2 3,3	BKGD	Medium brown silty loam - low clay, moist	Background OVA = 1.0 (BKGD)
	1							
	2		2-4	1.4	3,4 5,5	BKGD	Medium brown silty loam, grades to a mottled yellow with gray silt to silty loam - low moisture.	
	3						Mottled yellow with gray silt to silty loam	
	4		4-6	1.4	4,4 6,7	BKGD	Mottled yellow with grayish silt to silty loam with streaks of dark brown	
	5						Grayish silty loam (as in 4-5'), grading from yellow to red silt to silty loam, low moisture	
	6	SBE3 67	6-8	1.16	4,5 6,6	BKGD	Red silt to silty loam (as in 5-6')	
	7						Grades to yellowish red mottled with grey and dark brown silt to silty loam - low moisture	

BORING LOG

Page 2 of 2

Boring No. SB-E-3 Drill Company Hardin-Huber Log By R. Callahan

Client Black & Decker, Inc. Driller C. Burton Field Book No.

Job No. Date Began 12/16/87 End 12/16/87 Log Date 2/17/88

Drill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	1.0	4,4 6,7	BKGD	Increase in dark brown color grades to more distinguishable silty layer	Background OVA = 1.0 (BKGD)
	9						Dark brown silty loam (as in 8-9') mottled with grey, dark brown layers noticeable, silt to silty loam, low moisture	
	10		10-12	-	4,4 5,6	BKGD	Dark brown silt to silty loam layers (as in 9-10')	
	11							
	12		12-14	1.4	4,5 7,7	BKGD	Dark brown silt to silty loam (as in 9-10') continuing to yellowish red, mottled with grayish, dark brown, grading to light red (little yellow) with some mottling	
	13							
	14		14-16	1.0	8,5 8,10	BKGD	Continuation of brick red silt to silty loam	
	15						Grades to yellow with some mottling, introduction of a tan/yellowish brown silt/ silty loam - low moisture and few if any stones noted in entire boring.	
	16						Total depth = 16'	

* Calibrated to methane

ORING LOG

Page 1 of 2

oring No. SB-E-4 Drill Company Hardin-Huber Log By R. Callahan

ent Black & Decker, Inc Driller C. Burton Field Book No.

Date Began 12/14/87 End 12/14/87 Log Date 2/17/88

ll Method Hollow Stem Auger Rig

mpling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	1.1	1,2 3,4	BKGD	Reddish brown silt loam (topsoil)	Background OVA = 1ppm (BKGD)
							Yellowish brown silt loam	
	1							
	2		2-4	1.1	2,3 3,3	BKGD	Yellowish brown silt loam	
	3						Grades to reddish brown silt loam - silt content increasing - no stones	
	4		4-6	1.2	2,4 5,4	BKGD	Reddish brown silt loam	
	5						Red, tan, grey mottled silty loam, minor clay, does not ribbon	
	6		6-8	1.3	2,6 7,10	BKGD	Mottled silt to silty loam, reddish brown, greyish yellow	
	7						Mottled silt to silty loam, reddish brown, greyish yellow, fewer stones	

BORING LOG

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Boring No. SB-E-4 Drill Company Hardin-Huber Log By R. Callahan

Client Black & Decker, Inc Driller C. Burton Field Book No.

Job No. Date Began 12/14/87 End 12/14/87 Log Date 2/17/88

Drill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	1.3	4,6 7,10	BKGD	Mottled silty soil (loam), red, greyish brown	Background OVA = 1ppm
	9						Introduction of yellow in mottled appearance	
	10	SBE4 1011	10-12	1.3	5,6 10,12	BKGD	Same as 9-10'	
	11						Same as 9-10'	
	12		12-14	1.5	6,12 13,15	BKGD	Same as 9-10'	
	13						Black mottling begins, layers more apparent, still silty soil, very low clay or sand, fewer stones, amount of red or yellow varies	
	14		14-15	1.5	8,12 14,17	BKGD	Reddish brown mottled silty loam - grades to yellowish brown, mottled silty loam	
	15							
	16						Total depth = 16'	

* Calibrated to methane

BORING LOG

Page 2 of 2

oring No. SB-E-5 Drill Company Hardin-Huber Log By R. Callahan

Black & Decker, Inc Driller C. Burton Field Book No.

Date Began 12/16/87 End 12/16/87 Log Date 2/17/88

.ill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 10'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	0.79	1,1 3,3	1.4	Reddish, dark brown silty loam, some clay (top soil followed by five soil quartzite fragments), yellowish brown, silty soil, some stones, grades to reddish brown sitly soil	Bakcground OVA = 0.8ppm (BKGD)
	1							
	2		2-4	1.16	3,3 44,*	BKGD	Red, brown silt to silty loam, quartzite fragments, some layering v. ble, zones of red and yellow	
	3							
	4		4-6	1.25	2,3 3,4	1.2	Continuation of red/brown silt (as in 2-4' interval)	
	5							
	6		6-8	1.33	13,17 *,*	1.6	Red/brown silt grades to yellow brown, increase in clay content, dark brown, clayey silt at 8', minor quartzite, fragments noted (small in size, small pockets of red, black and grey)	
	7							

BORING LOG

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Boring No. SB-E-5 Drill Company Hardin-Huber Log By R. Callahan

Client Black & Decker, Inc Driller C. Burton Field Book No.

Job No. Date Began 12/16/87 End 12/16/87 Log Date 2/17/88

Drill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 10'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8	SBE5 810	8-10	0.5	6,60 *,*	2.5	White powder on spoon, presumed concrete/ possibly quartzite, yellow brown silty clay until refusal, few stones or fragments	
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16						Total depth = 10'	

* Calibrated to methane

BORING LOG

Page 1 **of** 2

Boring No. SB-E-6 **Drill Company** Hardin-Huber **Log By** E. Callahan

lient Black & Decker, Inc **Driller** C. Burton **Field Book No.**

J **Date Began** 12/16/87 **End** 12/16/87 **Log Date** 2/17/88

rill Method Hollow Stem Auger **Rig**

Sampling Method Split Spoon **No. Samples** 1 **Total Depth** 16'

Lithology	Depth (ft.	Sample No	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	0		0-2	1.2	1,1 3,9	0.8	Medium, dark brown silty loam (top soil to 0.5'), yellow brown silty clay few stones or fragments	Background OVA = 0.8
	1							
	2		2-4	0.91	3,3 4,5	2.4	Upper 0.25' as above, yellow clayey silt to yellow brown, mottled with white/grey	
	3							
	4		4-6	1.0	2,3 4,4	1.0	Yellow clayey silt with noticeable layers of brown and red, few stones or fragments	
	5							
	6		6-8	0.91	2,3 3,5	1.4	Yellow brown silty clay to medium brown silty clay, quartzite fragments intermixed	
	7							

BORING LOG

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Boring No. SB-E-6 Drill Company Hardin-Huber Log By R. Callahan

Client Black & Decker, Inc. Driller C. Burton Field Book No.

Job No. Date Began 12/16/87 End 12/16/87 Log Date 2/17/88

Drill Method Hollow Stem Auger Rig

Sampling Method Split Spoon No. Samples 1 Total Depth 16'

Lithology	Depth (ft.)	Sample No.	Interval	Recovery	Blow Count	OVA PPM*	Description	Remarks
	8		8-10	0.75	6,7 9,12	2.3	Same as 6-8', quartzite "lens" at 8-38'	
	9							
	10		10-12	1.5	6,8 12,8	2.2	Red/brown clayey silt, few fragments, reasonably even color, some yellow and brown intermixed	
	11							
	12		12-14	1.5	4,5 7,7	2.-	Yellow to yellowish brown silty clay grades to red, brown clayey silt (with mottling of grey brown, black and yellow) - some quartz fragments	
	13							
	14	SBE6 1416	14-16	1.5	4,4 4,5	3.3	Red brown silty clay, consistent to 16'	
	15							
	16						Total depth = 16'	

* Calibrated to methane

TEST EXCAVATION LOGS

TEST EXCAVATION LOG

TEST PIT ID: TPD-1

DATE: 10-DEC-87 BACKGROUND HNU: 0.1 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	LIGHT YELLOW BROWN SILT LOAM
1 - 2	YELLOW BROWN SILT LOAM GRADES TO REDDISH BROWN SILT LOAM, FRAGMENTS OF QUARTZITE NOTED
2 - 3	RED BROWN SILT LOAM, INCREASING SILT CONTENT
3 - 8.5	METAL SCRAP, WIRE MESH TO 8.5 FEET, PARTIAL COLLAPSE OF TEST PIT DUE TO DISTURBANCE OF FILL MATERIAL, SAMPLED AT 8.5 FEET

TOTAL DEPTH: 8.5 FEET
PHOTOGRAPH TAKEN AT 5.0 FEET
NO GROUNDWATER ENCOUNTERED

TEST EXCAVATION LOG

TEST PIT ID: TPD-2

DATE: 10-DEC-87 BACKGROUND HNU: 0.6 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 6	REDDISH BROWN SILT, CONSISTENT, SLICKENED SIDES
6 - 8	FILL AT 6.0 FEET, INTERMIXED WITH REDDISH BROWN SILT, CARDBOARD, WIRE, AND METAL STRAPS, WOOD AND MUNICIPAL REFUSE CONTINUED TO 8.0 FEET

TOTAL DEPTH: 8.0 FEET
NO PHOTOGRAPHS TAKEN
NO GROUNDWATER ENCOUNTERED
NOTICEABLE ODOR, METHANE SUSPECTED

TEST EXCAVATION LOG

TEST PIT ID: TPD-3

DATE: 11-DEC-87 BACKGROUND HNU: 0.6 PPM

CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1.5	MEDIUM BROWN SILT LOAM, STONEY
1.5 - 9	FILL MATERIAL ENCOUNTERED, B & D CIRCULAR SAWS AND CORDS, PLASTIC CASINGS, MOTORS, ELECTRIC HAND TRIMMERS, WEEDEATER, SHOPVAC HOSES, INTERMIXED WITH MEDIUM BROWN SILT LOAM, SAMPLE COLLECTED AT 9.0 FEET AT THE BOTTOM OF FILL MATERIAL

TOTAL DEPTH: 9.0 FEET
NO PHOTOGRAPH TAKEN
NO GROUNDWATER ENCOUNTERED

TEST EXCAVATION LOG

TEST PIT ID: TPD-4

DATE: 11-DEC-87 BACKGROUND HNU: 0.6 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	MEDIUM BROWN SILTY LOAM, STONEY
1 - 9	FILL ENCOUNTERED, BLACK TOP, DEBRIS, PAPER, PLASTIC, STEEL REINFORCING BARS, DEMOLITION DEBRIS, METAL STRAPPING INTERMIXED WITH MEDIUM BROWN SILT LOAM

TOTAL DEPTH: 9.0 FEET
NO PHOTOGRAPHS TAKEN
NO GROUNDWATER ENCOUNTERED

TEST EXCAVATION LOG

TEST PIT ID: TPB-1

DATE: 09-DEC-87   BACKGROUND HNU: 0.6 PPM
CONTRACTOR: HARDIN-HUBER   FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	REDDISH BROWN SILTY CLAY, STIFF
1 - 2.5	REDDISH BROWN SILTY CLAY, GRADES TO YELLOWISH BROWN SILT LOAM, WATER SEEPING IN AT 2.5 FEET, HNU AT BACKGROUND

TOTAL DEPTH: 2.5 FEET
PHOTOGRAPH OF LOCATION TAKEN
WATER ENCOUNTERED AT 2.5 FEET

TEST EXCAVATION LOG

TEST PIT ID: TPB-1B

DATE: 09-DEC-87 BACKGROUND HNU: 1.0 PPM

CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 2	YELLOW BROWN SILTY CLAY
2 - 4	BLACK SOIL, BOG LIKE ODOR, NO HNU READINGS, WATER ENCOUNTERED AT 3.0 FEET
4 - 4.5	BLUE GREY CLAY WITH BLACK BAND, BLACK BAND NOT AS OBVIOUS AT 4.5 FEET

TOTAL DEPTH: 4.5 FEET
NO PHOTOGRAPHS TAKEN
WATER ENCOUNTERED AT 3.0 FEET

TEST EXCAVATION LOG

TEST PIT ID: TPB-2

DATE: 09-DEC-87 BACKGROUND HNU: 0.6 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1.5	DARK BROWN SILT LOAM (TOPSOIL)
1.5 - 3	DARK BROWN SILT LOAM GRADES TO YELLOW BROWN SILT LOAM WITH SLICKENED SIDES
3 - 6	YELLOW BROWN SILT LOAM WITH INCREASING CLAY CONTENT, LITTLE STONE OR GRAVEL, RELATIVELY DRY
6 - 7	YELLOW BROWN SILT, BEGIN PICKING UP SOME GRAVEL/STONE, SHALEY IN APPEARANCE, BLACK, MOTTLED WITH BROWN, COLOR DARKENING, GRADING TO RED/BROWN SILT AT 7.0 FEET
8 - 10.5	RED/BROWN SILT, SOIL PICKING UP MOISTURE, RISE IN HNU READINGS (4 - 5 PPM), SAMPLED AT 8.0 FEET, SAMPLE ID: TPB2-1, WATER ENCOUNTERED AT 10.5 FEET

TOTAL DEPTH: 10.5 FEET
NO PHOTOGRAPH TAKEN
GROUNDWATER ENCOUNTERED AT 10.5 FEET, RECHARGED TO 6.0 FEET OVER 12 HOUR INTERVAL

TEST EXCAVATION LOG

TEST PIT ID: TPB-3

DATE: 10-DEC-87 BACKGROUND HNU: 0.6 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 0.5	DARK BROWN SILT LOAM (TOPSOIL)
0.5 - 1.5	YELLOW BROWN SILT LOAM, HIGHER SILT CONTENT
1.5 - 3	YELLOW/BROWN SILTY CLAY, SMALL AMOUNTS OF STONE (SILTY LOAM)
3 - 5	ZONE OF DARK GREY SOIL, INCREASE IN RED COLOR OF THE YELLOW/BROWN SILT LOAM
5 - 6	BURNT WOOD, BRICK REMNANTS, PIECES OF METAL
6 - 8	WOOD SCRAPS, ASH/SOOT, INTERMIXED WITH YELLOW/BROWN SILTY CLAY, CONSISTENT TO 8.0 FEET AROUND FILL/DEBRIS, WATER RUSHED INTO TEST PIT AT 8.0 FEET, SAMPLED AT 7.0 FEET

TOTAL DEPTH: 8.0 FEET
TWO PHOTOGRAPHS TAKEN AT 8.0 FEET
GROUNDWATER ENCOUNTERED AT 8.0 FEET

TEST EXCAVATION LOG

TEST PIT ID: TPB-4

DATE: 10-DEC-87 BACKGROUND HNU: 1.2 PPM

CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	BROWN SILT WITH SOME LARGE QUARTZ COBBLES; HNU = 4 IN TEST PIT
1 - 2.5	YELLOW BROWN SILTY CLAY; HNU = 3-5 PPM
2.5 - 6.0	YELLOW BROWN SILTY CLAY WITH QUARTZ FRAGMENTS GRADING TO A RED/BROWN SILT LOAM WITH 2"-6" FRAGMENTS IN TEST PIT
6.0 - 7.0	YELLOW SILT AT 7.0 FEET, MOTTLED WITH BLACK AND GREY SIDES ON TEST PIT, INCREASED MOISTURE
7.0 - 11.0	MOTTLED SILT-RED, BLACK, GREY AND YELLOW

TOTAL DEPTH: 11.0 FEET
NO PHOTOGRAPH TAKEN

TEST EXCAVATION LOG

TEST PIT ID: TPB-5

DATE: 10-DEC-87 BACKGROUND HNU: 0.6 PPM

CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	YELLOW SILTY LOAM
1 - 5	FILL MATERIAL (BLACK), BURNT WOOD, 1 INCH WIDE METAL STRAPPING BANDS, WATER FLOWING INTO TPB-5 AT 5.0 FEET, YELLOW CLAY SEEN BELOW FILL MATERIAL, SAMPLED AT CLAY/FILL INTERFACE

TOTAL DEPTH: 5.0 FEET
GROUNDWATER ENCOUNTERED AT 5.0 FEET

TEST EXCAVATION LOG

TEST PIT ID: TPB-6

DATE: 10-DEC-87 BACKGROUND HNU: 0.6 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 0.5	DARK BROWN SILT LOAM (ORGANIC TOP SOIL)
0.5 - 2	YELLOW BROWN SILTY CLAY, STIFF, SOME MOISTURE, SOME ROCK FRAGMENTS (SPARSE)
2 - 4	YELLOW BROWN SILTY CLAY GRADES TO RED/BROWN CLAYEY SILT, DOES NOT RIBBON VERY WELL, INCREASE IN STONES
4 - 6.5	RED/BROWN CLAYEY SILT GRADES TO LIGHT RED SILT (BRICK RED) SILT, SIDES OF TEST PIT SLICKENED, INCREASE IN MOISTURE CONTENT
6.5 - 7.5	BRICK RED SILT ENDS, YELLOW MOTTLED SILTY CLAY
7.5 - 9	BRICK RED SILT COLORATION ALTERNATES BETWEEN YELLOW, GRAY AND RED
9 - 11	RED AND YELLOW MOTTLED SILT

TOTAL DEPTH: 11.0 FEET
PHOTOGRAPHS TAKEN AT 9.0 FEET
MOIST BOTTOM AT 11.0 FEET, GROUNDWATER RECHARGED TO 10.5 FEET OVER A 4.5 HOUR INTERVAL

TEST EXCAVATION LOG

TEST PIT ID: TPB-7

DATE: 10-DEC-87 BACKGROUND HNU: 0.6 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1.5	LIGHT BROWN SILTY LOAM
1.5 - 2.5	INCREASING AMOUNT OF RED COLOR AND CLAY CONTENT (RED BROWN SILTY CLAY), RIBBONS SLIGHTLY, FEW STONES
2.5 - 3	RED BROWN SILTY CLAY, INCREASING DEGREE OF STONES AND FRAGMENTS
3 - 4	YELLOW BROWN SILTY CLAY (NO SIGN OF FILL), WITH ROCK FRAGMENTS, APPROXIMATELY 0.3 FEET IN DIAMETER, VISIB[illegible] QUARTZ, INCREASING MOISTURE CONTENT
4 - 5	BROWN, SILTY CLAY, BLUISH GRAY ROCK FRAGMENTS EVIDENT
5 - 6	BROWN SILTY LOAM, CLAY CONTENT GRADING OUT, ROCK FRAGMENTS NOTICEABLE
6 - 11	VERY LIGHT YELLOW BROWN SILT LOAM WITH A GRAY COMPONENT (MOTTLED IN APPEARANCE), COARSE ROCK FRAGMENTS ENDING, SOME BLACK STREAKS NOTICEABLE

TOTAL DEPTH: 11.0 FEET
PHOTOGRAPHS TAKEN AT 3.5 FEET
MOIST AT 11.0 FEET, GROUNDWATER RECHARGED TO 9.2 FEET OVER A 5.5 HOUR INTERVAL

TEST EXCAVATION LOG

TEST PIT ID: TPC-3

DATE: 09-DEC-87 BACKGROUND HNU: 0.6 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	MEDIUM BROWN SILT LOAM (ORGANIC TYPE SOIL), WHITE CAKE LIKE MATERIAL AT SURFACE
1 - 2	YELLOW BROWN CLAY LOAM BEGINS, SAMPLE COLLECTED AT TOP OF FIRST GOOD CLAY
2 - 3	YELLOW BROWN CLAY, RED SILTY CLAY BEGINS AT 3.0 FEET

TOTAL DEPTH: 3.0 FEET
NO PHOTOGRAPHS TAKEN
NO GROUNDWATER ENCOUNTERED

TEST EXCAVATION LOG

TEST PIT ID: TPC-4

DATE: 09-DEC-87 BACKGROUND HNU: 0.6 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	DARK BROWN LOAM
1 - 2	YELLOW BROWN CLAYEY SILT, SLICKENED SIDES
2 - 3	YELLOW BROWN CLAYEY SILT, RELATIVELY DRY
3 - 4	YELLOW BROWN CLAYEY SILT GRADES TO RED/BROWN SILT LOAM,
4 - 5	YELLOW BROWN SILT LOAM GRADES TO RED/BROWN SILTY LO WITH NOTICABLE SILT CONTENT
5 - 11	LIGHT PALE REDDISH BROWN SANDY SILTY LOAM (BRICK COLORATION), SOIL HAS A SANDSTONE APPEARANCE, MOTTLED WITH WHITE STREAKS, SLICKENED SIDES, NO SIGNS OF SURFACE DISPOSAL OR FILL, SLIGHTLY ELEVATED HNU READINGS, UPTO 1.5 PPM, SAMPLED AT 11.0 FEET

TOTAL DEPTH: 11 FEET
PHOTOGRAPH TAKEN AT 11.0 FEET
NO GROUNDWATER ENCOUNTERED

TEST EXCAVATION LOG

TEST PIT ID: TPC-1

DATE: 09-DEC-87 BACKGROUND HNU: 0.6 PPM

CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	ORGANIC TOPSOIL
1 - 3	YELLOW BROWN SILTY CLAY GRADING TO RED BROWN SILTY CLAY, COARSE CONCRETE AND ASPHALT DEBRIS
3 - 4	RED BROWN SILTY CLAY ALONG BANK, DARK BROWN SILTY CLAY IN CHANNEL, DEMOLITION DEBRIS NOTICEABLE, METAL SCRAPS VISIBLE IN STREAM CHANNEL AT 3.0 FEET, APPEARS TO BE REMNANTS OF A CORRUGATED METAL PIPE
4 - 5	RED BROWN SILTY CLAY TO YELLOW BROWN CLAY LOAM ALONG BANK, FILL MATERIAL ENDED AT 4.25 FEET

TOTAL DEPTH: 5.0 FEET
PHOTOGRAPH TAKEN AT 3.0 FEET
NO GROUNDWATER ENCOUNTERED

TEST EXCAVATION LOG

TEST PIT ID: TPC-2

DATE: 09-DEC-87 BACKGROUND HNU: 0.6 PPM

CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	RED BROWN CLAYEY LOAM, NOT MUCH ORGANIC MATTER, STONEY
1 - 2	RED BROWN CLAY LOAM GRADES TO LIGHT BROWN SANDY LOAM, SOIL STONEY IN CENTER OF CHANNEL, FABRIC REMNANTS NOTED
2 - 5	LIGHT BROWN SANDY LOAM, GRADES TO DARK BROWN SILT LOAM, SOIL DAMP, NO SIGNS OF SEEPAGE, ASPHALT COATED METAL PIPE NOTED
5 - 7	DARK BROWN SILTY LOAM, SOME DAMP CLAY INTERMIXED FIL AND DEBRIS, I.E. A LARGE TREE STUMP AND BLACK SHEET PLASTIC NOTED AT 5.0 FEET, SAMPLE ID: TPC2-1
7 - 12	DARK BROWN SILTY LOAM, RELATIVELY COARSE STONES, FILL VISIBLE TO 11.0 FEET

TOTAL DEPTH: 12 FEET
THREE PHOTOS TAKEN SHOWING METAL PIPE IN TEST PIT
NO GROUNDWATER ENCOUNTERED

TEST EXCAVATION LOG

TEST PIT ID: TPF-1

DATE: 11-DEC-87 BACKGROUND HNU: 1.0 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 0.5	MEDIUM BROWN SILT LOAM
0.5 - 1	MEDIUM BROWN SILT LOAM GRADES TO MEDIUM BROWN SILT, DENSE SHALE AND QUARTZ FRAGMENTS VISIBLE
1 - 3	APPEARANCE OF BLACK STREAKING WITHIN QUARTZ AND SHALE FRAGMENTS IN MEDIUM BROWN SILT, MOTTLED YELLOW, BROWN, RED, BLACK, AND WHITE IN VARIABLE AMOUNTS
3 - 8	PREDOMINANCE OF DENSE SHALE AND QUARTZITE FRAGMENTS, INTERMIXED WITH MEDIUM BROWN SILT, SAMPLE TAKEN AT 8.0 FEET

TOTAL DEPTH: 8.0 FEET
NO PHOTOGRAPHS TAKEN
NO GROUNDWATER ENCOUNTERED

TEST EXCAVATION LOG

TEST PIT ID: TPF-3

DATE: 11-DEC-87 BACKGROUND HNU: 0.8 PPM
CONTRACTOR: HARDIN-HUBER FIELD REP.: R. CALLAHAN

DEPTH (FT.)	DESCRIPTION
0 - 1	MEDIUM BROWN SILT LOAM
1 - 4	MEDIUM BROWN SILT LOAM GRADES TO LIGHT BROWN SILT INTERMIXED WITH QUARTZ FRAGMENTS, MOTTLED IN APPEARANCE WITH BLACK, YELLOW, RED, GRAY, AND BROWN SILT, SLICKENED SIDES, HARD LAYER OF QUARTZITE ENCOUNTERED AT 4.0 FEET, REFUSAL TO ANY FURTHUR EXCAVATION, SAMPLE COLLECTED AT 4.0 FEET

TOTAL DEPTH: 4.0 FEET
NO PHOTOGRAPHS TAKEN
NO GROUNDWATER ENCOUNTERED

APPENDIX D

GEOPHYSICAL SURVEY

APPENDIX D

GEOPHYSICAL SURVEY

INTRODUCTION

A geophysical investigation was conducted at the Black & Decker Hampstead, Maryland facility between 9 and 17 November 1987. This investigation was one component of the Phase I Environmental Investigation implemented by Roy F. Weston, Inc. (WESTON). The purpose of this appendix is to document the data acquisition and data reduction procedures of the WESTON geophysical investigation.

The geophysical investigation at the Black & Decker facility covered two sites: Zone D and Zone F (Figure 3-1). Both areas are located in the northwest corner of the facility.

SURVEY OBJECTIVES

The primary objective of the geophysical investigation was to locate the trenches of buried debris in Zone D and the burn area in Zone F. Delineation of anomalous magnetic and electromagnetic readings was used to determine test pit locations.

The magnetometer was used to identify areas containing relatively large concentrations of buried ferrous metal. Possible sources of the ferrous metals are the trenches in Zone D and the product burn area in Zone F.

The EM-31D terrain conductivity meter was used to identify areas having anomalous electrical conductivities. Metal debris associated with the burial and burning activities may be possible sources of anomalous conductivities.

GEOPHYSICAL SURVEYING TECHNIQUES

Survey Grid

The survey grid was established by WESTON personnel to encompass both Zone D and Zone F. A Nikon level was used to establish the orientation of two reference lines. From these reference lines, a base grid of 40 feet by 40 feet was placed over the 5-acre study area. The north-south axis of the grid was oriented north 10° west.

General Data Acquisition Procedures

Included in this subsection are brief explanations of the geophysical techniques used to survey Zones SD and F. General field procedures and quality assurance and quality control (QA/QC) protocols are also documented in this subsection.

Magnetics

Equipment

Magnetic measurements were obtained using an EDA Instruments Inc. Model ONMI IV "tie-line" magnetometer. The unit includes a double sensor, collapsible aluminum staff, signal cable, chest harness, and a rechargeable lead-acid battery cartridge. A detailed description of the magnetometer's operation principles can be found in the EDA Instruments Inc. operations manual.

Theory

The magnetic method detects variations in magnetic susceptibility within the subsurface environment. Magnetic susceptibility is a physical property of matter that describes the ease of its magnetization. For example, while most sedimentary rocks have magnetic susceptibilities ranging between 10^{-6} and 10^{-5} cgs, iron alloys have susceptibilities ranging from 1 to 10^{6} cgs (Breiner, 1973). When the earth's magnetic field encounters a material having a high magnetic susceptibility, induced magnetization occurs. The material is magnetized and the resulting induced magnetic field is the product of its volume magnetic susceptibility (cgs) and the earth's field intensity (gauss). A magnetometer measures the vector sum of the earth's magnetic field and the induced magnetic field. Consequently, local variations in the earth's magnetic field can be measured at locations of buried ferrous materials.

There are certain limitations of the magnetic method. Koerner et al. (1983) experimentally determined that a single 55- gallon drum buried approximately 10 to 11 feet below ground surface will not likely be detected. In addition, they have shown that a single drum buried at a depth of 3 feet will sometime escape detection at a lateral offset distance of 6 feet. Additional limitations include corrosion of metals and magnetic "noise" from scattered surface debris.

Field Preparation

Prior to the survey, the magnetometer was prepared for data acquisition. The magnetometer's internal clock was synchronized to local time, and the magnetometer was tuned to the regional magnetic field to achieve the optimum signal strength.

The magnetic surveys were conducted along preestablished grids. The sensors were set at a fixed height of 2.5 and 3.0 meters above the ground surface. Data were recorded for the total magnetic field and magnetic gradient by entering the grid coordinate location and the associated magnetic field measurements in the magnetometer's digital memory. During the survey, locations of cultural features (e.g., metallic fences, powerlines, railroad tracks, scrap metal, etc.) and inaccessible areas were recorded in the field notebook.

Quality Assurance and Quality Control

Several procedures were followed to ensure data integrity. For example, base station readings were obtained hourly throughout each of the surveys to monitor daily (diurnal) variation of the earth's magnetic field. The base station for this investigation was located approximately 200 feet west of the survey area. This area was chosen because it was thought to be free of known buried waste material and cultural interferences.

During the survey, the magnetic values obtained at the first and last stations along each traverse were manually recorded in the field notebook. Following each day's survey, the data were uploaded from the magnetometer's digital memory to a NEC portable computer. These values were then compared to the information recorded in the field notebook to ensure that the magnetometer was storing data correctly.

The field notebook was also used to document cultural features that may have influenced any magnetic measurements. Cultural features noted during the geophysical survey included overhead powerlines, fences, buildings, and scrap metal.

Electromagnetic Terrain Conductivity

Equipment

The Geonics Limited EM31-D terrain conductivity meter (EM31) was used to obtain conductivity measurements of the shallow subsurface. The EM31 system consists of a self-contained dipole transmitter (primary field source) and receiver (sensor), phase-sensing circuits, an amplifier, and an OMNIDATA Polycorder Electronic Notebook (Polycorder). The EM31 is powered by eight alkaline "C" cells and operates at a frequency of 9.8 kHz. The Polycorder is used to record and store the EM31 analog signal of the quadrature and in-phase component measurements for rapid and accurate data transfer to a computer or printer.

Theory

The electromagnetic method detects lateral and vertical variations of electrical conductivity in the subsurface. These variations may result from buried metal objects or from groundwater contaminant plumes with total dissolved solid concentrations above background levels.

Electrical conductivity is a physical property of matter describing its ability to conduct electrical current. Alternating current in the transmitter coil of the EM31 produces an alternating magnetic field, which induces circular eddy current loops in the subsurface. The instrument is designed so that the magnitude of any one of these current loops is directly proportional to the conductivity in the vicinity of that loop (Geonics, Ltd., 1984). An alternating secondary magnetic field is generated by the induced current with an intensity proportional to the current flowing within a loop.

The receiver coil and phase-sensing circuits measure the quadrature and in-phase components of the secondary magnetic field. The quadrature component is 90° out of phase with the in-phase component (which is in-phase with the primary alternating field). The quadrature component is used as a measure of the conductivity of the earth for relatively low conductivity materials (e.g., rocks and soils). As the conductivity increases, however, the quadrature component reaches a maximum and decreases, while the in-phase component continues to increase. This behavior of the in-phase component illustrates why it is used to detect buried metallic objects. It has a much higher sensitivity to good conductors then the quadrature component.

Quality Assurance and Quality Control

Operation of the terrain conductivity meter was in accordance with the operating manual supplied by Geonics, Ltd., 1984. A calibration check was conducted prior to the survey at a base station suspected to be free of buried metal objects and cultural interferences. The QA/QC check ensures proper meter calibration, instrument sensitivity, and instrument phasing. In addition, battery checks were performed for both the EM31 and Polycorder. All of the calibration readings were recorded on the OMNI Polycorder. At least one additional base station calibration check was recorded during the EM31 survey to ensure that the instrument was maintaining calibration.

In order to ensure that the data were being recorded accurately, measurements taken at the beginning and end of each traverse were recorded in the field notebook. The field notebook was also used to document cultural features that may have influenced any conductivity measurements.

Following the survey, the data were uploaded from the Polycorder's memory to a field computer using the DAT31 version 1.08 software package (Geonics, Limited), and were permanently stored on a 3 1/2-inch floppy disk. The uploaded data were then compared to the data recorded in the field notebook for quality assurance purposes.

DATA REDUCTION PROCEDURES

This subsection describes the analytical procedures utilized to process the geophysical data acquired at Black & Decker.

Magnetics

After the magnetics data were uploaded to the NEC portable computer, the data were formatted and edited using the Lotus software package. Prior to any interpretation, corrections for diurnal variations were applied to the data. The edited data file was then loaded into a Surfer contouring program (Golden Software). This program was used to produce vertical magnetic gradient (Figure D-1) and total field anomaly maps (Figure D-2).

A cultural features map was constructed based on the information recorded in the field notebook. Anomalous readings that coincided with the location of these cultural features were assumed to have been caused by surface metal rather than buried ferrous material. Consequently, these anomalies were considered to be unreliable indicators of buried metal debris. However, this assumption does not necessarily preclude the possibility that buried ferrous materials may exist in the subsurface at these locations. Profiles of each traverse were also generated from the final reduced data set in order to review individual two dimensional slices (a cross-section of the magnetic intensity plotted against distance along profile) through the survey grid.

Anomalies are defined as deviations from local magnetic background readings. All sites have certain levels of magnetic noise associated with localized variations in magnetic suseptibility due to changes in subsurface lithology or cultural interferences. These variations control the total range of background readings. Any subsurface material that generates an induced field having an intensity within the range of background readings will not be detected. Therefore, at a given site, only those measurements that deviate from the background readings are identifiable as anomalies.

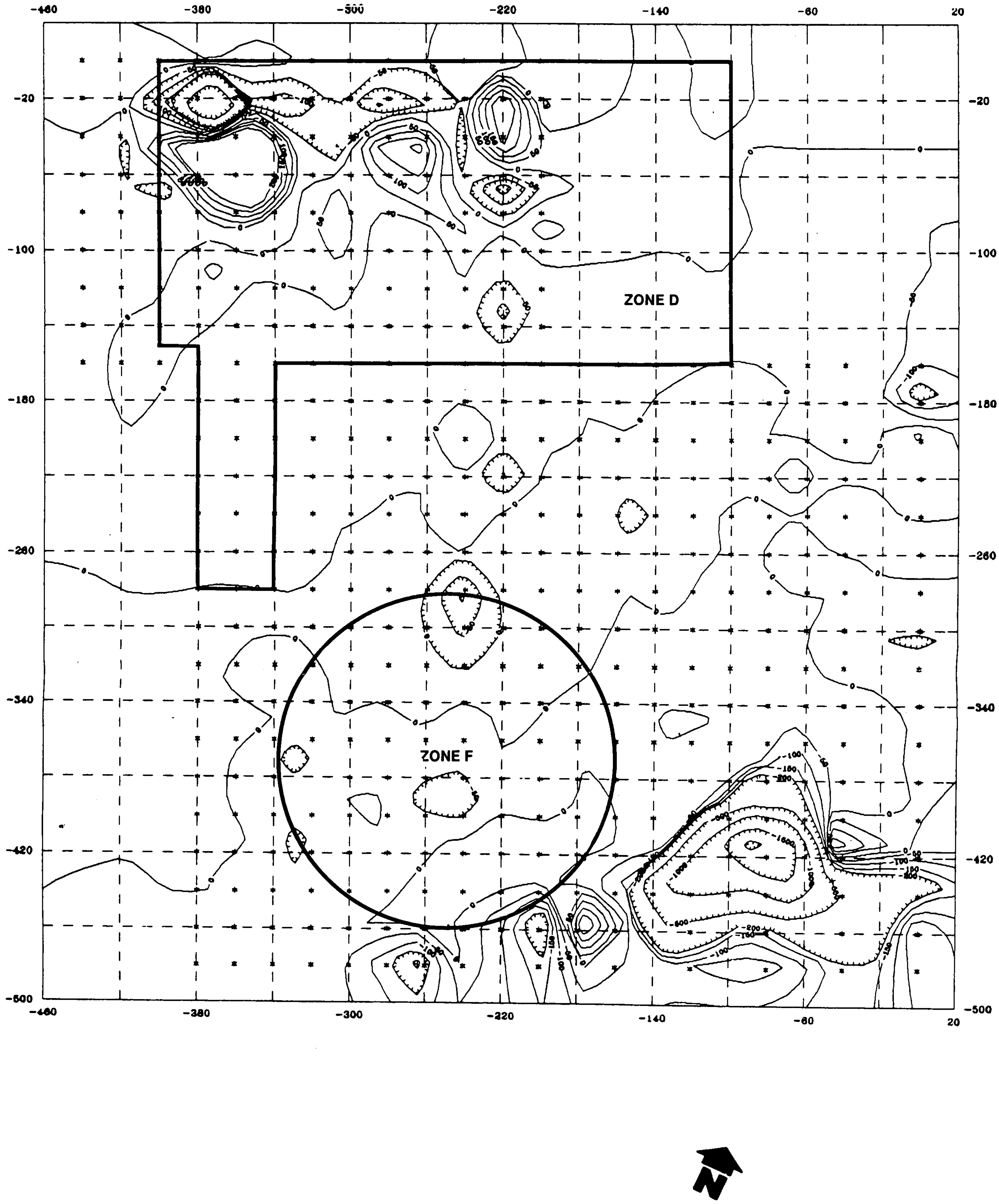
All of the displays (total field, vertical gradient, and cultural features maps, and the magnetic profiles) were incorporated into an integrated interpretation, which resulted in the identification of two types of magnetic anomalies. One type of anomaly resulted from surface cultural features. The second type of anomaly was interpreted to result from buried ferrous materials.

More emphasis was placed on the vertical gradient data and maps during the interpretation because gradient measurements decrease more rapidly than do total intensity measurements with distance from a buried magnetic source. Therefore, the areal extent of the magnetic anomaly is reduced with gradient measurements. This results in more accurate test pit placements.

Electromagnetic Terrain Conductivity Meter

The electromagnetic data files resident in the Polycorder were transferred to an NEC laptop computer using the DAT31 software package. ASCII files were generated from the EM31 data set and loaded into a Surfer contouring program (Golden Software). The contouring program produced quadrature (Figure D-3) and in-phase conductivity maps (Figure 3-14).

The cultural features map generated for the magnetic interpretation was incorporated in the conductivity interpretation. Anomalous conductivity readings that coincided with the location of these cultural features were assumed to be unreliable indicators of conductive materials. However, this assumption does not necessarily rule out the possibility that buried conductive materials may exist in the subsurface at these locations. Profiles of each traverse were also generated from the final reduced data set in order to review individual two dimensional slices (a cross-section of the electrical conductivity plotted against distance along profile) through the survey grid. Anomalies not associated with cultural features were interpreted to result from buried conductive materials. The in-phase conductivity measurements were primarily used to identify electromagnetic anomalies because they are more susceptible to buried metal than the quadrature measurements.



LEGEND

- * Magnetic Control Points
- Magnetic Contour
- Closed Magnetic Low Contour

Contour Interval

From -200 to +200 : 50 Gammas/Meter

From -500 and Less : 500 Gammas/Meter

From +500 and More : 500 Gammas/Meter

FIGURE D-1 BLACK AND DECKER GEOPHYSICAL SURVEY
ZONE D AND F VERTICAL MAGNETIC
GRADIENT CONTOURS 20X20 FOOT GRID

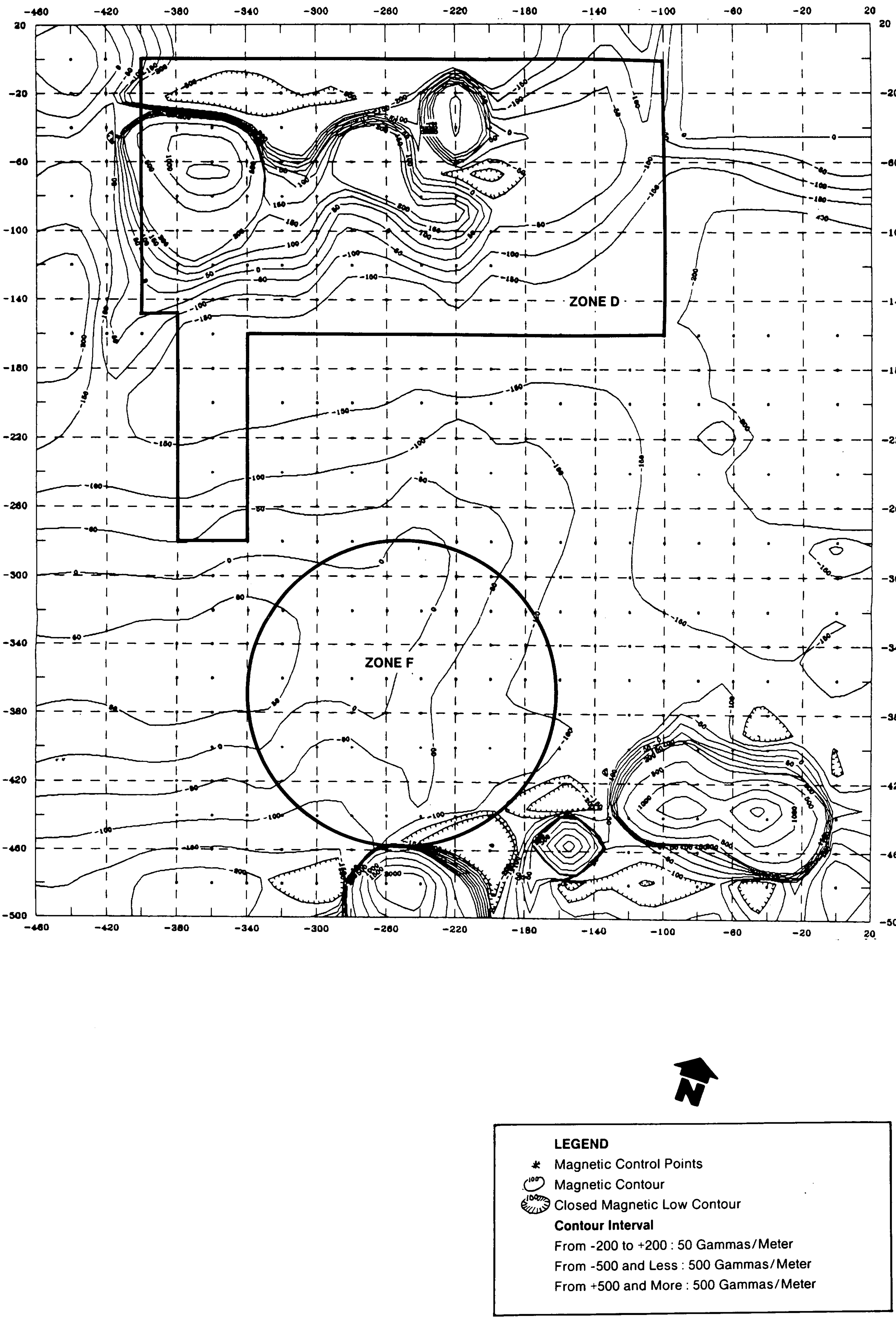


FIGURE D-2 BLACK AND DECKER GEOPHYSICAL SURVEY
ZONE D AND F TOTAL FIELD ANOMALY
CONTOURS 20X20 FOOT GRID

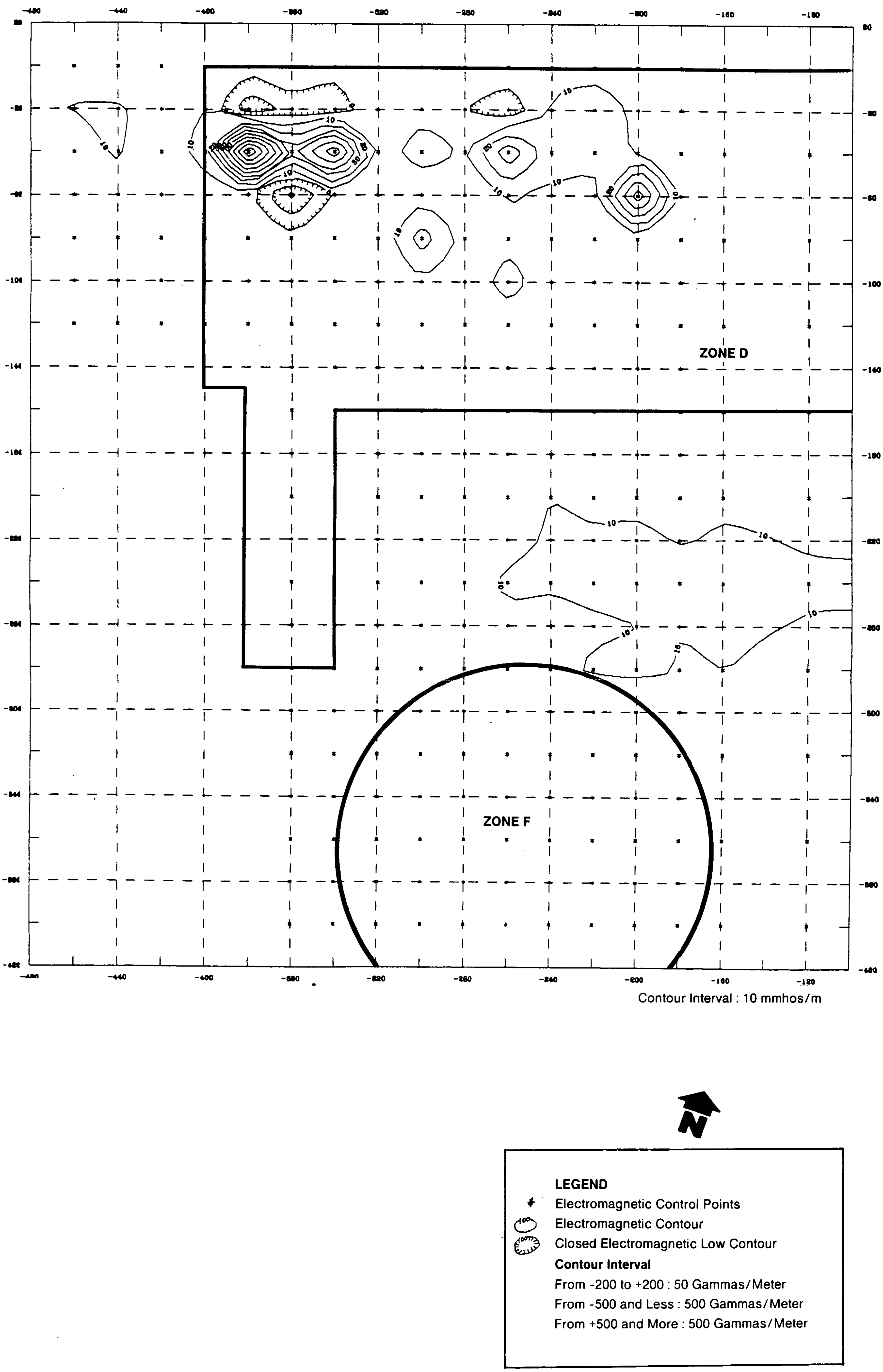


FIGURE D-3 BLACK AND DECKER GEOPHYSICAL SURVEY
ZONE D AND F EM31 - QUADRATURE
COMPONENT CONTOURS

APPENDIX E

PHASE IIa ANALYTICAL DATA

WESTON

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

X = Additional qualifiers used as required are explained in the case narrative.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

VOC ANALYSIS RESULTS: SOIL SAMPLES

WEST[illegible]ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8806-803 Client: BLACK AND DECKER Page: 1

	Cust ID:	SOIL BLANK		SBIIA-1-06		SBIIA-2-03		SBIIA-2-03					
Sample Information	RFW#:	88VY0053		006		012		012 MS					
	Matrix:	Soil		Soil		Soil		Soil					
	D.F.:	1		1.1		1.2		1.2					
	Units:	ug/kg		ug/kg		ug/kg		ug/kg					
Surrogate Recovery (%)	Toluene-d8:	100	%	100	%	90	%	96	%		%		%
	Bromofluorobenzene:	96	%	104	%	100	%	102	%		%		%
	1,2-Dichloroethane-d4:	94	%	100	%	94	%	102	%		%		%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	11	U	12	U	12	U				
Bromomethane		10	U	11	U	12	U	12	U				
Vinyl Chloride		10	U	11	U	12	U	12	U				
Chloroethane		10	U	11	U	12	U	12	U				
Methylene Chloride		34		36	B	34	B	40	B				
Acetone		43		58	B	67	B	65	B				
Carbon Disulfide		5	U	6	U	6	U	6	U				
1,1-Dichloroethene		5	U	6	U	6	U	35	%				
1,1-Dichloroethane		5	U	6	U	6	U	6	U				
Trans-1,2-Dichloroethene		5	U	6	U	6	U	6	U				
Chloroform		5	U	6	U	6	U	6	U				
1,2-Dichloroethane		5	U	6	U	6	U	6	U				
2-Butanone		10	U	11	U	12	U	12	U				
1,1,1-Trichloroethane		5	U	6	U	6	U	6	U				
Carbon Tetrachloride		5	U	6	U	6	U	6	U				
Vinyl Acetate		10	U	11	U	12	U	12	U				
Bromodichloromethane		5	U	6	U	6	U	6	U				
1,2-Dichloropropane		5	U	6	U	6	U	6	U				
Trans-1,3-Dichloropropene		5	U	6	U	6	U	3	J				
Trichloroethene		5	U	6	U	6	U	90	%				
Dibromochloromethane		5	U	6	U	6	U	6	U				
1,1,2-Trichloroethane		5	U	6	U	6	U	6	U				
Benzene		5	U	6	U	6	U	91	%				
cis-1,3-Dichloropropene		5	U	6	U	6	U	6	U				
2-Chloroethylvinylether		10	U	11	U	12	U	12	U				
Bromoform		5	U	6	U	6	U	6	U				
4-Methyl-2-pentanone		10	U	11	U	12	U	12	U				
2-Hexanone		10	U	11	U	12	U	12	U				

RFW Batch Number: 8806-803 Client: BLACK AND DECKER

Cust ID:	SOIL BLANK	SBIIA-1-06	SBIIA-2-03	SBIIA-2-03
RFW#:	88VY0053	006	012	012 MS
Tetrachloroethene	5 U	6 U	6 U	6 U
1,1,2,2-Tetrachloroethane	5 U	6 U	6 U	6 U
Toluene	5 U	6 U	6 U	102 %
Chlorobenzene	5 U	6 U	6 U	118 %
Ethylbenzene	5 U	6 U	6 U	6 U
Styrene	5 U	6 U	6 U	6 U
Total Xylenes	5 U	6 U	6 U	6 U

Other:

U=Analyzed, not detected. B=Present i ank. NRP=Not Reported
J=Present at less than detection limi NR=Not requested.

WEST[illegible] ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8806-803   Client: BLACK AND DECKER   Page: 1

Sample Information	Cust ID:	SOIL BLANK	SBIIA-1-06	SBIIA-2-03	SBIIA-2-03		
	RFW#:	88VY0053	006	012	012 MS		
	Matrix:	Soil	Soil	Soil	Soil		
	D.F.:	1	1.1	1.2	1.2		
	Units:	ug/kg	ug/kg	ug/kg	ug/kg		
Surrogate Recovery (%)	Toluene-d8:	100 %	100 %	90 %	96 %	%	%
	Bromofluorobenzene:	96 %	104 %	100 %	102 %	%	%
	1,2-Dichloroethane-d4:	94 %	100 %	94 %	102 %	%	%
		fl	fl	fl	fl	fl	fl
Chloromethane		10 U	11 U	12 U	12 U		
Bromomethane		10 U	11 U	12 U	12 U		
Vinyl Chloride		10 U	11 U	12 U	12 U		
Chloroethane		10 U	11 U	12 U	12 U		
Methylene Chloride		34	36 B	34 B	40 B		
Acetone		43	58 B	67 B	65 B		
Carbon Disulfide		5 U	6 U	6 U	6 U		
1,1-Dichloroethene		5 U	6 U	6 U	35 %		
1,1-Dichloroethane		5 U	6 U	6 U	6 U		
Trans-1,2-Dichloroethene		5 U	6 U	6 U	6 U		
Chloroform		5 U	6 U	6 U	6 U		
1,2-Dichloroethane		5 U	6 U	6 U	6 U		
2-Butanone		10 U	11 U	12 U	12 U		
1,1,1-Trichloroethane		5 U	6 U	6 U	6 U		
Carbon Tetrachloride		5 U	6 U	6 U	6 U		
Vinyl Acetate		10 U	11 U	12 U	12 U		
Bromodichloromethane		5 U	6 U	6 U	6 U		
1,2-Dichloropropane		5 U	6 U	6 U	6 U		
Trans-1,3-Dichloropropene		5 U	6 U	6 U	3 J		
Trichloroethene		5 U	6 U	6 U	90 %		
Dibromochloromethane		5 U	6 U	6 U	6 U		
1,1,2-Trichloroethane		5 U	6 U	6 U	6 U		
Benzene		5 U	6 U	6 U	91 %		
cis-1,3-Dichloropropene		5 U	6 U	6 U	6 U		
2-Chloroethylvinylether		10 U	11 U	12 U	12 U		
Bromoform		5 U	6 U	6 U	6 U		
4-Methyl-2-pentanone		10 U	11 U	12 U	12 U		
2-Hexanone		10 U	11 U	12 U	12 U		

RFW Batch Number: 8807-987   Client: BLACK & DECKER   (REVISED)

Cust ID:	PW06		PW07		PW07		W-4		W-4		RFW01B	
RFW#:	003		004		004 DL		005		005 DL		006	
		fl		fl		fl		fl		fl		fl
Tetrachloroethene..................	12		5900	E	3100		4100	E	1500		2	J
1,1,2,2-Tetrachloroethane...........	5	U	5	U	500	U	5	U	500	U	5	U
Toluene............................	5	U	5	U	500	U	5	U	500	U	5	U
Chlorobenzene......................	5	U	5	U	500	U	5	U	500	U	5	U
Ethylbenzene.......................	5	U	5	U	500	U	5	U	500	U	5	U
Styrene............................	5	U	5	U	500	U	5	U	500	U	5	U
Total Xylenes......................	5	U	5	U	500	U	5	U	500	U	5	U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
[illegible]=Present at less than detection limit. [illegible]=Not requested.

WESTON ALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8806-864 Client: BLACK & DECKER Page: 2

Sample Information	Cust ID:	SBIIA707D		88VY0056-		88VY0057-		88VY0059-		SB-IIA-705		SB-IIA-705	
	RFW#:	041		MB1		MB1		MBI		038 MS		038 MSD	
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1.2		1		1		125		1.2		1.2	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate Recovery (%)	Toluene-d8:	116	%	115	%	116	%	106	%	106	%	115	%
	Bromofluorobenzene:	114	%	107	%	109	%	105	%	104	%	115	%
	1,2-Dichloroethane-d4:	103	%	93	%	93	%	105	%	95	%	101	%
			fl		fl		fl		fl		fl		fl
Chloromethane		12	U	10	U	10	U	1300	U	12	U	12	U
Bromomethane		12	U	10	U	10	U	1300	U	12	U	12	U
Vinyl Chloride		12	U	10	U	10	U	1300	U	12	U	12	U
Chloroethane		12	U	10	U	10	U	1300	U	12	U	12	U
Methylene Chloride		45	B	45		26		2300		33	B	51	B
Acetone		120	B	36		35		2100		50	B	48	B
Carbon Disulfide		6	U	5	U	5	U	630	U	6	U	6	U
1,1-Dichloroethene		6	U	5	U	5	U	630	U	35	%	42	%
1,1-Dichloroethane		6	U	5	U	5	U	630	U	6	U	6	U
Trans-1,2-Dichloroethene		6	U	5	U	5	U	630	U	6	U	6	U
Chloroform		6	U	5	U	5	U	630	U	6	U	6	U
1,2-Dichloroethane		6	U	5	U	5	U	630	U	6	U	6	U
2-Butanone		12	U	10	U	10	U	1300	U	12	U	12	U
1,1,1-Trichloroethane		6	U	5	U	5	U	630	U	6	U	6	U
Carbon Tetrachloride		6	U	5	U	5	U	630	U	6	U	6	U
Vinyl Acetate		12	U	10	U	10	U	1300	U	12	U	12	U
Bromodichloromethane		6	U	5	U	5	U	630	U	6	U	6	U
1,2-Dichloropropane		6	U	5	U	5	U	630	U	6	U	6	U
Trans-1,3-Dichloropropene		6	U	5	U	5	U	630	U	6	U	6	U
Trichloroethene		6	U	5	U	5	U	630	U	77	%	85	%
Dibromochloromethane		6	U	5	U	5	U	630	U	6	U	6	U
1,1,2-Trichloroethane		2	J	5	U	5	U	630	U	6	U	6	U
Benzene		6	U	5	U	5	U	630	U	75	%	82	%
cis-1,3-Dichloropropene		6	U	5	U	5	U	630	U	6	U	6	U
2-Chloroethylvinylether		12	U	10	U	10	U	1300	U	12	U	12	U
Bromoform		6	U	5	U	5	U	630	U	6	U	6	U
4-Methyl-2-pentanone		12	U	10	U	10	U	1300	U	12	U	12	U
2-Hexanone		12	U	10	U	10	U	1300	U	12	U	12	U

RFW Batch Number: 8806-864 Client: BLACK & DECKER

Cust ID: RFW#:	SBIIA707D 041	fl	88VY0056- MB1	fl	88VY0057- MB1	fl	88VY0059- MBI	fl	SB-IIA-705 038 MS	fl	SB-IIA-705 038 MSD	fl
Tetrachloroethene....................	6	U	5	U	5	U	630	U	6	U	6	U
1,1,2,2-Tetrachloroethane...........	6	U	5	U	5	U	630	U	6	U	6	U
Toluene.............................	200		5	U	5	U	630	U	93	%	109	%
Chlorobenzene.......................	6	U	5	U	5	U	630	U	103	%	119	%
Ethylbenzene........................	2	J	5	U	5	U	630	U	6	U	6	U
Styrene.............................	6	U	5	U	5	U	630	U	6	U	6	U
Total Xylenes.......................	6	U	5	U	5	U	630	U	6	U	6	U

Other:

=Analyzed, not detected. B=Present in bl k. NRP=Not Reported
=Present at less than detection limit. =Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8806-864 Client: BLACK & DECKER

Sample Information	Cust ID:	SB-IIA-3FB	SB-IIA-TB	88VW0076-
	RFW#:	001	002	MB1
	Matrix:	Water	Water	Water
	D.F.:	1	1	1
	Units:	ug/L	ug/L	ug/L

Surrogate	Toluene-d8:	100 %	96 %	98 %	%	%	%
Recovery	Bromofluorobenzene:	99 %	100 %	95 %	%	%	%
(%)	1,2-Dichloroethane-d4:	97 %	98 %	101 %	%	%	%

		fl		fl		fl	fl	fl	fl
Chloromethane........................	10	U	10	U	10	U			
Bromomethane.........................	10	U	10	U	10	U			
Vinyl Chloride.......................	10	U	10	U	10	U			
Chloroethane.........................	10	U	10	U	10	U			
Methylene Chloride...................	4	JB	5	B	14				
Acetone..............................	9	JB	5	JB	32				
Carbon Disulfide.....................	5	U	5	U	5	U			
1,1-Dichloroethene...................	5	U	5	U	5	U			
1,1-Dichloroethane...................	5	U	5	U	5	U			
Trans-1,2-Dichloroethene.............	5	U	5	U	5	U			
Chloroform...........................	6		2	J	5	U			
1,2-Dichloroethane...................	5	U	5	U	5	U			
2-Butanone...........................	10	U	10	U	10	U			
1,1,1-Trichloroethane................	5	U	5	U	5	U			
Carbon Tetrachloride.................	5	U	5	U	5	U			
Vinyl Acetate........................	10	U	10	U	10	U			
Bromodichloromethane.................	5	U	5	U	5	U			
1,2-Dichloropropane..................	5	U	5	U	5	U			
Trans-1,3-Dichloropropene............	5	U	5	U	5	U			
Trichloroethene......................	5	U	5	U	5	U			
Dibromochloromethane.................	5	U	5	U	5	U			
1,1,2-Trichloroethane................	5	U	5	U	5	U			
Benzene..............................	5	U	5	U	5	U			
cis-1,3-Dichloropropene..............	5	U	5	U	5	U			
2-Chloroethylvinylether..............	10	U	10	U	10	U			
Bromoform............................	5	U	5	U	5	U			
4-Methyl-2-pentanone.................	10	U	10	U	10	U			
2-Hexanone...........................	10	U	10	U	10	U			

Cust ID: RFW#:	SB-IIA-3FB 001	fl	SB-IIA-TB 002	fl	88VW0076- MB1	fl		fl		fl		fl
Tetrachloroethene	5	U	5	U	5	U						
1,1,2,2-Tetrachloroethane	5	U	5	U	5	U						
Toluene	5	U	5	U	5	U						
Chlorobenzene	5	U	5	U	5	U						
Ethylbenzene	5	U	5	U	5	U						
Styrene	5	U	5	U	5	U						
Total Xylenes	5	U	5	U	5	U						

Other:

[illegible]=Analyzed, not detected. B=Present in b[illegible]k. NRP=Not Reported
J=Present at less than detection limit. [illegible]=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8806-864 Client: BLACK & DECKER Page: 1

	Cust ID:	SB-IIA-307		SB-IIA-403		SB-IIA-501		SB-IIA-606		SB-IIA-705		SB-IIA-707	
Sample Information	RFW#:	011		014		020		032		038		040	
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1.3		1562		142		160		1.2		1.2	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Surrogate Recovery (%)	Toluene-d8:	115	%	73	%	82	%	85	%	115	%	115	%
	Bromofluorobenzene:	115	%	101	%	86	%	79	%	107	%	115	%
	1,2-Dichloroethane-d4:	97	%	66	%	71	%	70	%	92	%	101	%
			fl		fl		fl		fl		fl		fl
Chloromethane		13	U	16000	U	1400	U	1600	U	12	U	12	U
Bromomethane		13	U	16000	U	1400	U	1600	U	12	U	12	U
Vinyl Chloride		13	U	16000	U	1400	U	1600	U	12	U	12	U
Chloroethane		13	U	16000	U	1400	U	1600	U	12	U	12	U
Methylene Chloride		50	B	55000	B	2700	B	3300	B	37	B	47	B
Acetone		60	B	33000	B	3800	B	4400	B	44	B	93	B
Carbon Disulfide		7	U	7800	U	710	U	800	U	6	U	6	U
1,1-Dichloroethene		7	U	7800	U	710	U	800	U	6	U	6	U
1,1-Dichloroethane		7	U	7800	U	710	U	800	U	6	U	6	U
Trans-1,2-Dichloroethene		7	U	7800	U	710	U	800	U	6	U	6	U
Chloroform		7	U	7800	U	710	U	800	U	6	U	6	U
1,2-Dichloroethane		7	U	7800	U	710	U	800	U	6	U	6	U
2-Butanone		13	U	16000	U	1400	U	1600	U	12	U	12	U
1,1,1-Trichloroethane		7	U	7800	U	710	U	800	U	6	U	6	U
Carbon Tetrachloride		7	U	7800	U	710	U	800	U	6	U	6	U
Vinyl Acetate		13	U	16000	U	1400	U	1600	U	12	U	12	U
Bromodichloromethane		7	U	7800	U	710	U	800	U	6	U	6	U
1,2-Dichloropropane		7	U	7800	U	710	U	800	U	6	U	6	U
Trans-1,3-Dichloropropene		7	U	7800	U	710	U	800	U	6	U	6	U
Trichloroethene		7	U	7800	U	710	U	800	U	6	U	6	U
Dibromochloromethane		7	U	7800	U	710	U	800	U	6	U	6	U
1,1,2-Trichloroethane		7	U	7800	U	710	U	800	U	6	U	6	U
Benzene		7	U	7800	U	710	U	800	U	6	U	6	U
cis-1,3-Dichloropropene		7	U	7800	U	710	U	800	U	6	U	6	U
2-Chloroethylvinylether		13	U	16000	U	1400	U	1600	U	12	U	12	U
Bromoform		7	U	7800	U	710	U	800	U	6	U	6	U
4-Methyl-2-pentanone		13	U	16000	U	1400	U	1600	U	12	U	12	U
2-Hexanone		13	U	16000	U	1400	U	1600	U	12	U	12	U

RFW Batch Number: 8806-864 Client: BLACK & DECKER

Cust ID:	SB-IIA-307		SB-IIA-403		SB-IIA-501		SB-IIA-606		SB-IIA-705		SB-IIA-707	
RFW#:	011		014		020		032		038		040	
		fl		fl		fl		fl		fl		fl
Tetrachloroethene....................	7	U	7800	U	710	U	800	U	6	U	6	U
1,1,2,2-Tetrachloroethane...........	7	U	7800	U	710	U	800	U	6	U	6	U
Toluene.............................	9		30000		160		2900		6	U	4	J
Chlorobenzene.......................	7	U	7800	U	710	U	800	U	6	U	6	U
Ethylbenzene........................	7	U	12000		710	U	800	U	6	U	6	U
Styrene.............................	7	U	7800	U	710	U	800	U	6	U	12	
Total Xylenes.......................	7	U	86000		3200		800	U	6	U	6	U

Other:

=Analyzed, not detected. B=Present in b k. NRP=Not Reported
J=Present at less than detection limit. =Not requested.

WESTON NALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8806-764 Client: BLACK & DECKER Page: 1

Sample Information	Cust ID:	RFW-901	RFW-905	RFW-801	88VY0052-		
	RFW#:	001	005	011	MB1		
	Matrix:	Soil	Soil	Soil	Soil		
	D.F.:	1.3	1.4	1.2	1		
	Units:	ug/kg	ug/kg	ug/kg	ug/kg		
Surrogate Recovery (%)	Toluene-d8:	112 %	114 %	120 %	110 %	%	%
	Bromofluorobenzene:	114 %	112 %	116 %	108 %	%	%
	1,2-Dichloroethane-d4:	112 %	118 %	120 %	104 %	%	%
Chloromethane		13 U	14 U	12 U	10 U		
Bromomethane		13 U	14 U	12 U	10 U		
Vinyl Chloride		13 U	14 U	12 U	10 U		
Chloroethane		13 U	14 U	12 U	10 U		
Methylene Chloride		34 B	42 B	35 B	18		
Acetone		51 B	56 B	78 B	24		
Carbon Disulfide		7 U	7 U	6 U	5 U		
1,1-Dichloroethene		7 U	7 U	6 U	5 U		
1,1-Dichloroethane		7 U	7 U	6 U	5 U		
Trans-1,2-Dichloroethene		7 U	7 U	6 U	5 U		
Chloroform		7 U	7 U	6 U	5 U		
1,2-Dichloroethane		7 U	7 U	6 U	5 U		
2-Butanone		13 U	14 U	12 U	10 U		
1,1,1-Trichloroethane		7 U	7 U	6 U	5 U		
Carbon Tetrachloride		7 U	7 U	6 U	5 U		
Vinyl Acetate		13 U	14 U	12 U	10 U		
Bromodichloromethane		7 U	7 U	6 U	5 U		
1,2-Dichloropropane		7 U	7 U	6 U	5 U		
Trans-1,3-Dichloropropene		7 U	7 U	6 U	5 U		
Trichloroethene		7 U	7 U	6 U	5 U		
Dibromochloromethane		7 U	7 U	6 U	5 U		
1,1,2-Trichloroethane		7 U	7 U	6 U	5 U		
Benzene		7 U	7 U	6 U	5 U		
cis-1,3-Dichloropropene		7 U	7 U	6 U	5 U		
2-Chloroethylvinylether		13 U	14 U	12 U	10 U		
Bromoform		7 U	7 U	6 U	5 U		
4-Methyl-2-pentanone		13 U	14 U	12 U	10 U		
2-Hexanone		13 U	14 U	12 U	10 U		

Cust ID:	RFW-901	RFW-905	RFW-801	88VY0052-		
RFW#:	001	005	011	MB1		
	fl	fl	fl	fl	fl	fl
Tetrachloroethene	7 U	7 U	6 U	5 U		
1,1,2,2-Tetrachloroethane	7 U	7 U	6 U	5 U		
Toluene	2 J	2 J	6 U	5 U		
Chlorobenzene	7 U	7 U	6 U	5 U		
Ethylbenzene	7 U	7 U	6 U	5 U		
Styrene	7 U	7 U	6 U	5 U		
Total Xylenes	7 U	7 U	6 U	5 U		

Other:

U=Analyzed, not detected. B=Present in b[illegible]k. NRP=Not Reported
J=Present at less than detection limit. [illegible]=Not requested.

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 8806-803-006

SAMPLE DESCRIPTION: SBIIA-I-06

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
C_6-OXYGENATED COMPOUND	655	24J

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 88VY0053-MB1

SAMPLE DESCRIPTION: SOIL BLANK

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
UNKNOWN	964	20J

DATA SUMMARY FOR: BLACK AND DECKER

R.F.W. NO.: 8806-764 BLANK

SAMPLE DESCRIPTION: BLANK

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
UNKNOWN	967	17J

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 88VY0057-MB1

SAMPLE DESCRIPTION: SOIL BLANK

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
UNKNOWN	972	15J

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 88VW0076-MB1

SAMPLE DESCRIPTION: 0709W270

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
UNKNOWN	272	17J

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 8806-864-014

SAMPLE DESCRIPTION: SB-IIA-403

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
C_9-CYCLOALKANES	771	16000J
C_9-CYCLOALKANES	781	9300J
UNKNOWN	816	8000J
C_{10}-ALKENYLBENZENES	998	68000J
C_{10}-HYDROCARBONS	1015	78000J
C_{10}-ALKYLBENZENES	1110	97000J

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 8806-864-020

SAMPLE DESCRIPTION: SB-IIA-501

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
C_9-CYCLOALKANES	770	1500J
C_9-CYCLOALKANES	780	900J
UNKNOWN	814	800J
UNKNOWN	968	700J
C_{10}-HYDROCARBONS	979	1500J
DECALON	1111	8500J

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 8806-864-032

SAMPLE DESCRIPTION: SB-IIA-606

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
DIETHYLBENZENES	932	1500J
DIETHYLBENZENES	989	2200J
C_{10}-ALKYLBENZENES	1084	17000J

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 8806-864-038

SAMPLE DESCRIPTION: SB-IIA-705

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
C6$_9$-OXYGENATED COMPOUND	655	325

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 8806-864-040

SAMPLE DESCRIPTION: SB-IIA-707

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
UNKNOWN	692	100J
OXYGENATED COMPOUNDS	725	75J
UNKNOWN	785	1700J
OXYGENATED COMPOUNDS	790	1000J
UNKNOWN	1101	800J

DATA SUMMARY FOR: BLACK & DECKER

R.F.W. NO.: 8806-864-041

SAMPLE DESCRIPTION: SB-IIA-707D

TENTATIVELY IDENTIFIED COMPOUNDS
(VOA FRACTION)

COMPOUND NAME	SCAN NUMBER	ESTIMATED CONCENTRATION (UG/KG)
$C_{10,11}$-ALKANES	826	6700J
$C_{10,11}$-ALKANES	830	6000J

VOC ANALYSIS RESULTS: GROUNDWATER SAMPLES

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8807-987 Client: BLACK & DECKER (REVISED 08/29/88) Page: 1

Sample Information	Cust ID:	BLANK	BLANK	BLANK	BLANK	RFW01A	PW05
	RFW#:	BLANK	BLANK	BLANK	BLANK	001	002
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery (%)	Toluene-d8:	99 %	93 %	93 %	99 %	130 %	79 %
	Bromofluorobenzene:	99 %	91 %	97 %	103 %	66 %	97 %
	1,2-Dichloroethane-d4:	113 %	91 %	83 %	89 %	135 %	83 %
		fl	fl	fl	fl	fl	fl
Chloromethane		10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride		17	10	8	18	25 B	4 JB
Acetone		34	26	19	20	200 B	10 U
Carbon Disulfide		5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene		5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Trans-1,2-Dichloroethene		5 U	5 U	5 U	5 U	5 U	19
Chloroform		5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride		5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Acetate		10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane		5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene		5 U	5 U	5 U	5 U	2 J	27
Dibromochloromethane		5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Benzene		5 U	5 U	5 U	5 U	3 J	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U	5 U
2-Chloroethylvinylether		10 U	10 U	10 U	10 U	10 U	10 U
Bromo[illegible]m		5 U	5 U	5 U	5 U	5 U	5 U
4-Met[illegible]-2-pentanone		10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U	10 U

RFW Batch Number: 8807-987 Client: BLACK & DECKER (REVISED 08/29/88) Page: 1

Cust ID:	BLANK		BLANK		BLANK		BLANK		RFW01A		PW05	
RFW#:	BLANK	fl	BLANK	fl	BLANK	fl	BLANK	fl	001	fl	002	fl
Tetrachloroethene...................	5	U	5	U	5	U	5	U	4	J	26	
1,1,2,2-Tetrachloroethane...........	5	U	5	U	5	U	5	U	5	U	5	U
Toluene.............................	5	U	5	U	5	U	5	U	5	U	5	U
Chlorobenzene.......................	5	U	5	U	5	U	5	U	5	U	5	U
Ethylbenzene........................	5	U	5	U	5	U	5	U	5	U	5	U
Styrene.............................	5	U	5	U	5	U	5	U	5	U	5	U
Total Xylenes.......................	5	U	5	U	5	U	5	U	5	U	5	U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8807-987 Client: BLACK & DECKER (REVISED)

Sample Information	Cust ID:	PW06		PW07		PW07		W-4		W-4		RFW01B	
	RFW#:	003		004		004 DL		005		005 DL		006	
	Matrix:	Water		Water		Water		Water		Water		Water	
	D.F.:	1		1		100		1		100		1	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery (%)	Toluene-d8:	80	%	80	%	99	%	74	%	97	%	122	%
	Bromofluorobenzene:	81	%	97	%	109	%	88	%	104	%	117	%
	1,2-Dichloroethane-d4:	82	%	80	%	84	%	74	%	82	%	160	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	1000	U	10	U	1000	U	10	U
Bromomethane		10	U	10	U	1000	U	10	U	1000	U	10	U
Vinyl Chloride		10	U	10	U	1000	U	10	U	1000	U	10	U
Chloroethane		10	U	10	U	1000	U	10	U	1000	U	10	U
Methylene Chloride		4	JB	2	JB	760	B	2	JB	770	B	16	B
Acetone		5	JB	10	U	2100	B	10	U	1900	B	40	B
Carbon Disulfide		5	U	5	U	500	U	34		500	U	870	E
1,1-Dichloroethene		5	U	5	U	500	U	5	U	500	U	5	U
1,1-Dichloroethane		5	U	5	U	500	U	5	U	500	U	5	U
Trans-1,2-Dichloroethene		3	J	5	U	500	U	8		500	U	5	U
Chloroform		5	U	5	U	500	U	5	U	500	U	5	U
1,2-Dichloroethane		5	U	5	U	500	U	5	U	500	U	5	U
2-Butanone		10	U	10	U	1000	U	10	U	1000	U	10	U
1,1,1-Trichloroethane		5	U	5	U	500	U	5	U	500	U	10	
Carbon Tetrachloride		5	U	5	U	500	U	5	U	500	U	5	U
Vinyl Acetate		10	U	10	U	1000	U	10	U	1000	U	10	U
Bromodichloromethane		5	U	5	U	500	U	5	U	500	U	5	U
1,2-Dichloropropane		5	U	5	U	500	U	5	U	500	U	5	U
Trans-1,3-Dichloropropene		5	U	5	U	500	U	5	U	500	U	5	U
Trichloroethene		5		15		500	U	26		500	U	5	
Dibromochloromethane		5	U	5	U	500	U	5	U	500	U	5	U
1,1,2-Trichloroethane		5	U	5	U	500	U	5	U	500	U	5	U
Benzene		5	U	5	U	500	U	5	U	500	U	2	J
cis-1,3-Dichloropropene		5	U	5	U	500	U	5	U	500	U	5	U
2-Chloroethylvinylether		10	U	10	U	1000	U	10	U	1000	U	10	U
Bromoform		5	U	5	U	500	U	5	U	500	U	5	U
4-Me[illegible]-2-pentanone		10	U	10	U	1000	U	10	U	1000	U	10	U
2-Hexanone		10	U	10	U	1000	U	10	U	1000	U	10	U

RFW Batch Number: 8807-987 Client: BLACK & DECKER (REVISED) Page: 2

Cust ID:	PW06	fl	PW07	fl	PW07	fl	W-4	fl	W-4	fl	RFW01B	fl
RFW#:	003		004		004 DL		005		005 DL		006	
Tetrachloroethene....................	12		5900	E	3100		4100	E	1500		2	J
1,1,2,2-Tetrachloroethane...........	5	U	5	U	500	U	5	U	500	U	5	U
Toluene..............................	5	U	5	U	500	U	5	U	500	U	5	U
Chlorobenzene........................	5	U	5	U	500	U	5	U	500	U	5	U
Ethylbenzene.........................	5	U	5	U	500	U	5	U	500	U	5	U
Styrene..............................	5	U	5	U	500	U	5	U	500	U	5	U
Total Xylenes........................	5	U	5	U	500	U	5	U	500	U	5	U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8807-987 Client: BLACK & DECKER (REVISED)

Sample Information	Cust ID:	RFW01B	P8	P8	P8	FB01	W-1
	RFW#:	006 DL	007	007 MS	007 MSD	008	009
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	10	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery (%)	Toluene-d8:	90 %	79 %	71 %	96 %	79 %	78 %
	Bromofluorobenzene:	103 %	99 %	81 %	101 %	92 %	91 %
	1,2-Dichloroethane-d4:	.78 %	80 %	75 %	89 %	77 %	77 %
		fl	fl	fl	fl	fl	fl
Chloromethane........................		100 U	10 U	10 U	10 U	10 U	10 U
Bromomethane.........................		100 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride.......................		100 U	10 U	10 U	10 U	10 U	10 U
Chloroethane.........................		100 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride...................		130 B	2 JB	4 JB	5 B	2 JB	2 JB
Acetone..............................		170 B	3 JB	4 JB	4 JB	10 U	10 U
Carbon Disulfide.....................		110	5 U	5 U	5 U	5 U	14
1,1-Dichloroethene...................		50 U	5 U	64 %	69 %	5 U	5 U
1,1-Dichloroethane...................		50 U	5 U	5 U	5 U	5 U	5 U
Trans-1,2-Dichloroethene.............		50 U	5 U	5 U	2 J	5 U	5
Chloroform...........................		50 U	5 U	5 U	5 U	5	5 U
1,2-Dichloroethane...................		50 U	5 U	5 U	5 U	5 U	5 U
2-Butanone...........................		100 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane................		50 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride.................		50 U	5 U	5 U	5 U	5 U	5 U
Vinyl Acetate........................		100 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane.................		50 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane..................		50 U	5 U	5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene............		50 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene......................		50 U	5	71 %	62 %	5 U	5
Dibromochloromethane.................		50 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane................		50 U	5 U	5 U	5 U	5 U	5 U
Benzene..............................		50 U	5 U	70 %	92 %	5 U	5 U
cis-1,3-Dichloropropene..............		50 U	5 U	0 U	5 U	5 U	5 U
2-Chloroethylvinylether..............		100 U	10 U	10 U	10 U	10 U	10 U
Bromoform............................		50 U	5 U	5 U	5 U	5 U	5 U
4-M[illegible]l-2-pentanone..................		100 U	10 U	10 U	10 U	10 U	10 U
2-He[illegible]one........................		100 U	10 U	10 U	10 U	10 [illegible]	10 U

RFW Batch Number: 8807-987 Client: BLACK & DECKER (REVISED) Page: 3

Cust ID:	RFW01B		P8		P8		P8		FB01		W-1	
RFW#:	006 DL	fl	007	fl	007 MS	fl	007 MSD	fl	008	fl	009	fl
Tetrachloroethene..................	50	U	110		130		75		2	J	180	
1,1,2,2-Tetrachloroethane...........	50	U	5	U	5	U	5	U	5	U	5	U
Toluene............................	50	U	5	U	80	%	100	%	5	U	5	U
Chlorobenzene......................	50	U	5	U	110	%	118	%	5	U	5	U
Ethylbenzene.......................	50	U	5	U	5	U	5	U	5	U	5	U
Styrene............................	50	U	5	U	5	U	5	U	5	U	5	U
Total Xylenes......................	50	U	5	U	5	U	5	U	5	U	5	U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8807-987 Client: BLACK & DECKER (REVISED)

	Cust ID:	S-1	S-1	RFW5A	RFW5B	B-1	B-1
Sample	RFW#:	010	010 DL	011	012	013	013 DL
Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	10	1	1	1	100
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate	Toluene-d8:	81 %	95 %	130 %	73 %	81 %	101 %
Recovery	Bromofluorobenzene:	83 %	102 %	50 %	75 %	75 %	113 %
(%)	1,2-Dichloroethane-d4:	83 %	83 %	137 %	72 %	177 %	81 %
		fl	fl	fl	fl	fl	fl
Chloromethane		10 U	100 U	10 U	10 U	10 U	1000 U
Bromomethane		10 U	100 U	10 U	10 U	10 U	1000 U
Vinyl Chloride		10 U	100 U	10 U	10 U	10 U	1000 U
Chloroethane		10 U	100 U	10 U	10 U	10 U	1000 U
Methylene Chloride		3 JB	64 B	6 B	2 JB	3 JB	1500 B
Acetone		3 JB	180 B	72 B	4 JB	13 B	2300 B
Carbon Disulfide		5 U	50 U	5 U	5 U	5 U	500 U
1,1-Dichloroethene		5 U	50 U	5 U	5 U	5 U	500 U
1,1-Dichloroethane		5 U	50 U	5 U	5 U	5 U	500 U
Trans-1,2-Dichloroethene		7	50 U	2 J	10	23	500 U
Chloroform		5 U	50 U	5 U	5 U	5 U	500 U
1,2-Dichloroethane		5 U	50 U	5 U	5 U	5 U	500 U
2-Butanone		10 U	100 U	10 U	10 U	10 U	1000 U
1,1,1-Trichloroethane		5 U	50 U	5 U	3 J	5 U	500 U
Carbon Tetrachloride		5 U	50 U	5 U	5 U	5 U	500 U
Vinyl Acetate		10 U	100 U	10 U	10 U	10 U	1000 U
Bromodichloromethane		5 U	50 U	5 U	5 U	5 U	500 U
1,2-Dichloropropane		5 U	50 U	5 U	5 U	5 U	500 U
Trans-1,3-Dichloropropene		5 U	50 U	5 U	5 U	5 U	500 U
Trichloroethene		2 J	50 U	1 J	12	34	500 U
Dibromochloromethane		5 U	50 U	5 U	5 U	5 U	500 U
1,1,2-Trichloroethane		5 U	50 U	5 U	5 U	5 U	500 U
Benzene		5 U	50 U	5 U	5 U	5 U	500 U
cis-1,3-Dichloropropene		5 U	50 U	5 U	5 U	5 U	500 U
2-Chloroethylvinylether		10 U	100 U	10 U	10 U	10 U	1000 U
Bromof[illegible]m		5 U	50 U	5 U	5 U	5 U	500 U
4-Met[illegible]2-pentanone		10 U	100 U	10 U	10 U	10 U	1000 U
2-Hexanone		10 U	100 U	10 U	10 U	10 U	1000 U

RFW Batch Number: 8807-987 Client: BLACK & DECKER (REVISED) Page: 4

Cust ID:	S-1	S-1	RFW5A	RFW5B	B-1	B-1
RFW#:	010	010 DL	011	012	013	013 DL
Tetrachloroethene..................	330 E	240	14	110	2100 E	2500
1,1,2,2-Tetrachloroethane...........	5 U	50 U	5 U	5 U	5 U	500 U
Toluene............................	5 U	50 U	5 U	5 U	5 U	500 U
Chlorobenzene......................	5 U	50 U	5 U	5 U	5 U	500 U
Ethylbenzene.......................	5 U	50 U	5 U	5 U	5 U	500 U
Styrene............................	5 U	50 U	5 U	5 U	5 U	500 U
Total Xylenes......................	5 U	50 U	5 U	5 U	5 U	500 U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8807-987 Client: BLACK & DECKER (REVISED)

Sample Information	Cust ID:	TB-01	RFW07
	RFW#:	014	015
	Matrix:	Water	Water
	D.F.:	1	1
	Units:	ug/L	ug/L

Surrogate Recovery (%)	Toluene-d8:	96	%	69	%		%		%		%		%
	Bromofluorobenzene:	104	%	76	%		%		%		%		%
	1,2-Dichloroethane-d4:	96	%	70	%		%		%		%		%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U								
Bromomethane		10	U	10	U								
Vinyl Chloride		10	U	10	U								
Chloroethane		10	U	10	U								
Methylene Chloride		3	JB	2	JB								
Acetone		4	JB	4	JB								
Carbon Disulfide		5	U	5	U								
1,1-Dichloroethene		5	U	5	U								
1,1-Dichloroethane		5	U	5	U								
Trans-1,2-Dichloroethene		5	U	2	J								
Chloroform		8		5	U								
1,2-Dichloroethane		5	U	5	U								
2-Butanone		10	U	10	U								
1,1,1-Trichloroethane		5	U	5	U								
Carbon Tetrachloride		5	U	5	U								
Vinyl Acetate		10	U	10	U								
Bromodichloromethane		5	U	5	U								
1,2-Dichloropropane		5	U	5	U								
Trans-1,3-Dichloropropene		5	U	5	U								
Trichloroethene		5	U	2	J								
Dibromochloromethane		5	U	5	U								
1,1,2-Trichloroethane		5	U	5	U								
Benzene		5	U	5	U								
cis-1,3-Dichloropropene		5	U	5	U								
2-Chloroethylvinylether		10	U	10	U								
Bromo[illegible]m		5	U	5	U								
4-Met[illegible]2-pentanone		10	U	10	U								
2-Hexanone		10	U	10	U								

Cust ID:	TB-01	RFW07
RFW#:	014	015
Tetrachloroethene..................	2 J	4 J
1,1,2,2-Tetrachloroethane...........	5 U	5 U
Toluene............................	5 U	5 U
Chlorobenzene......................	5 U	5 U
Ethylbenzene.......................	5 U	5 U
Styrene............................	5 U	5 U
Total Xylenes......................	5 U	5 U

Other:

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WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8807-008 Client: BLACK & DECKER (REVISED 08/29/88) Page: 1

Sample Information	Cust ID:	VWBK		VWBK		VWBK		VWBK		RFW06		RFW06	
	RFW#:	BLANK		BLANK		BLANK		BLANK		001		001 MS	
	Matrix:	Water		Water		Water		Water		Water		Water	
	D.F.:	1		1		1		1		1		1	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery (%)	Toluene-d8:	102	%	89	%	89	%	96	%	86	%	83	%
	Bromofluorobenzene:	107	%	87	%	99	%	99	%	99	%	99	%
	1,2-Dichloroethane-d4:	106	%	78	%	96	%	76	%	97	%	100	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		23		20		9		5		5	B	5	U
Acetone		23		20		25		20		8	JB	7	JB
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	5	U	5	U	5	U	5	U	64	%
1,1-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Trans-1,2-Dichloroethene		5	U	5	U	5	U	5	U	7		7	
Chloroform		5	U	5	U	5	U	5	U	2	J	2	J
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Acetate		10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U	5	U	5	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		5	U	5	U	5	U	5	U	20		75	%
Dibromochloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Benzene		5	U	5	U	5	U	5	U	5	U	88	%
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
2-Chloroethylvinylether		10	U	10	U	10	U	10	U	10	U	10	U
Bromoform		5	U	5	U	5	U	5	U	5	U	5	U
4-Met[illegible]2-pentanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	10	U

RFW Batch Number: 8807-008   Client: BLACK & DECKER   (REVISED 08/29/88)   Page: 1

Cust ID:	VWBK		VWBK		VWBK		VWBK		RFW06		RFW06	
RFW#:	BLANK	fl	BLANK	fl	BLANK	fl	BLANK	fl	001	fl	001 MS	fl
Tetrachloroethene	5	U	5	U	5	U	5	U	59		57	
1,1,2,2-Tetrachloroethane	5	U	5	U	5	U	5	U	5	U	5	U
Toluene	5	U	5	U	5	U	5	U	5	U	87	%
Chlorobenzene	5	U	5	U	5	U	5	U	5	U	109	%
Ethylbenzene	5	U	5	U	5	U	5	U	5	U	5	U
Styrene	5	U	5	U	5	U	5	U	5	U	5	U
Total Xylenes	5	U	5	U	5	U	5	U	5	U	5	U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8807-008 Client: BLACK & DECKER (REVISED 08/29/88)

	Cust ID:	RFW06	B-3	S-4	RFW04A	RFW04A	RFW02A
Sample Information	RFW#:	001 MSD	002	003	004	004 DL	005
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	10	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery (%)	Toluene-d8:	85 %	94 %	82 %	126 %	88 %	90 %
	Bromofluorobenzene:	93 %	93 %	88 %	118 %	88 %	91 %
	1,2-Dichloroethane-d4:	96 %	98 %	97 %	79 %	82 %	87 %
		fl	fl	fl	fl	fl	fl
Chloromethane		10 U	10 U	10 U	10 U	100 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	100 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	100 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	100 U	10 U
Methylene Chloride		5 B	6 B	3 JB	14 B	180 B	4 JB
Acetone		7 JB	7 JB	4 JB	14 B	120 B	4 JB
Carbon Disulfide		5 U	20	5 U	960 E	170	130
1,1-Dichloroethene		66 %	5 U	5 U	5 U	50 U	5 U
1,1-Dichloroethane		5 U	5 U	5 U	5 U	50 U	5 U
Trans-1,2-Dichloroethene		7	5 U	5 U	22	13 J	5 U
Chloroform		2 J	5 U	5 U	5 U	50 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U	50 U	5 U
2-Butanone		10 U	10 U	10 U	10 U	100 U	10 U
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U	50 U	5 U
Carbon Tetrachloride		5 U	5 U	5 U	5 U	50 U	5 U
Vinyl Acetate		10 U	10 U	10 U	10 U	100 U	10 U
Bromodichloromethane		5 U	5 U	5 U	5 U	50 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	50 U	5 U
Trans-1,3-Dichloropropene		72 %	5 U	5 U	5 U	50 U	5 U
Trichloroethene		5 U	5 U	5 U	24	24 J	5 U
Dibromochloromethane		5 U	5 U	5 U	5 U	50 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	50 U	5 U
Benzene		87 %	5 U	5 U	2 J	50 U	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	50 U	5 U
2-Chloroethylvinylether		10 U	10 U	10 U	10 U	100 U	10 U
Bromoform		5 U	5 U	5 U	5 U	50 U	5 U
4-Met[illegible]-2-pentanone		10 U	10 U	10 U	10 U	100 U	10 U
2-Hexa[illegible]ne		10 U	10 U	10 U	10 U	100 U	10 U

RFW Batch Number: 8807-008 Client: BLACK & DECKER (REVISED 08/29/88)

Cust ID:	RFW06		B-3		S-4		RFW04A		RFW04A		RFW02A	
RFW#:	001 MSD		002		003		004		004 DL		005	
		fl		fl		fl		fl		fl		fl
Tetrachloroethene	55		5	U	5	U	330	E	330		5	U
1,1,2,2-Tetrachloroethane	5	U	5	U	5	U	5	U	50	U	5	U
Toluene	88	%	5	U	5	U	5	U	50	U	5	U
Chlorobenzene	105	%	5	U	5	U	5	U	50	U	5	U
Ethylbenzene	5	U	5	U	5	U	5	U	50	U	5	U
Styrene	5	U	5	U	5	U	5	U	50	U	5	U
Total Xylenes	5	U	5	U	5	U	5	U	50	U	5	U

Other:

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J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8807-008 Client: BLACK & DECKER (REVISED 08/29/88)

Sample Information	Cust ID:	RFW02B		RFW04B		RFW04B		RFWO4B DUP		RFWO4B DUP		RFW03B	
	RFW#:	006		007		007 DL		008		008 DL		009	
	Matrix:	Water		Water		Water		Water		Water		Water	
	D.F.:	1		1		10		1		10		1	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery (%)	Toluene-d8:	74	%	114	%	89	%	72	%	80	%	72	%
	Bromofluorobenzene:	76	%	95	%	96	%	80	%	98	%	83	%
	1,2-Dichloroethane-d4:	68	%	30	%	88	%	68	%	85	%	68	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	100	U	10	U	100	U	10	U
Bromomethane		10	U	10	U	100	U	10	U	100	U	10	U
Vinyl Chloride		10	U	10	U	100	U	10	U	100	U	10	U
Chloroethane		10	U	10	U	100	U	10	U	100	U	10	U
Methylene Chloride		3	JB	9	B	180	B	2	JB	190	B	2	JB
Acetone		6	JB	30	B	400	B	3	JB	230	B	5	JB
Carbon Disulfide		4	J	5	U	50	U	5	U	50	U	5	
1,1-Dichloroethene		5	U	5	U	50	U	5	U	50	U	5	U
1,1-Dichloroethane		5	U	5	U	50	U	5	U	50	U	1	J
Trans-1,2-Dichloroethene		5	U	5	U	50	U	6		50	U	33	
Chloroform		5	U	5	U	50	U	1	J	50	U	5	U
1,2-Dichloroethane		5	U	5	U	50	U	5	U	50	U	5	U
2-Butanone		10	U	10	U	100	U	10	U	100	U	10	U
1,1,1-Trichloroethane		5	U	5	U	50	U	5	U	50	U	6	
Carbon Tetrachloride		5	U	5	U	50	U	5	U	50	U	5	U
Vinyl Acetate		10	U	10	U	100	U	10	U	100	U	10	U
Bromodichloromethane		5	U	5	U	50	U	5	U	50	U	5	U
1,2-Dichloropropane		5	U	5	U	50	U	5	U	50	U	5	U
Trans-1,3-Dichloropropene		5	U	5	U	50	U	5	U	50	U	5	U
Trichloroethene		5	U	24		23	J	23		20	J	19	
Dibromochloromethane		5	U	5	U	50	U	5	U	50	U	5	U
1,1,2-Trichloroethane		5	U	5	U	50	U	5	U	50	U	5	U
Benzene		1	J	5	U	50	U	5	U	50	U	5	U
cis-1,3-Dichloropropene		5	U	5	U	50	U	5	U	50	U	5	U
2-Chloroethylvinylether		10	U	10	U	100	U	10	U	100	U	10	U
Bromoform		5	U	5	U	50	U	5	U	50	U	5	U
4-Met[illegible]2-pentanone		10	U	10	U	100	U	10	U	100	U	10	U
2-Hexanone		10	U	10	U	100	U	10	U	100	U	10	U

RFW Batch Number: 8807-008 Client: BLACK & DECKER (REVISED 08/29/88)

Cust ID:	RFW02B		RFW04B		RFW04B		RFWO4B DUP		RFWO4B DUP		RFW03B	
RFW#:	006	fl	007	fl	007 DL	fl	008	fl	008 DL	fl	009	fl
Tetrachloroethene..................	5	U	650	E	500		690	E	410		430	E
1,1,2,2-Tetrachloroethane..........	5	U	5	U	50	U	5	U	50	U	5	U
Toluene............................	4	J	5	U	50	U	5	U	50	U	5	U
Chlorobenzene......................	5	U	5	U	50	U	5	U	50	U	5	U
Ethylbenzene.......................	5	U	5	U	50	U	5	U	50	U	5	U
Styrene............................	5	U	5	U	50	U	5	U	50	U	5	U
Total Xylenes......................	5	U	5	U	50	U	5	U	50	U	5	U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8807-008   Client: BLACK & DECKER   (REVISED 08/29/88)   Page: 4

Sample Information	Cust ID:	RFW03B		RFW08		RFW08		RFW09		TB02			
	RFW#:	009 DL		010		010 DL		011		012			
	Matrix:	Water		Water		Water		Water		Water			
	D.F.:	10		1		50		1		1			
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L			
Surrogate Recovery (%)	Toluene-d8:	80	%	82	%	90	%	126	%	88	%		%
	Bromofluorobenzene:	93	%	82	%	108	%	123	%	94	%		%
	1,2-Dichloroethane-d4:	92	%	74	%	98	%	113	%	102	%		%
			fl		fl		fl		fl		fl		fl
Chloromethane		100	U	10	U	500	U	10	U	10	U		
Bromomethane		100	U	10	U	500	U	10	U	10	U		
Vinyl Chloride		100	U	10	U	500	U	10	U	10	U		
Chloroethane		100	U	10	U	500	U	10	U	10	U		
Methylene Chloride		150	B	4	JB	910	B	18	B	4	JB		
Acetone		280	B	3	JB	1400	B	10	U	5	JB		
Carbon Disulfide		50	U	5	U	250	U	5	U	5	U		
1,1-Dichloroethene		50	U	3	J	250	U	5	U	5	U		
1,1-Dichloroethane		50	U	9		250	U	5	U	5	U		
Trans-1,2-Dichloroethene		38	J	20		250	U	14		5	U		
Chloroform		50	U	1	J	250	U	5	U	8			
1,2-Dichloroethane		50	U	5	U	250	U	5	U	5	U		
2-Butanone		100	U	10	U	500	U	10	U	10	U		
1,1,1-Trichloroethane		50	U	23		250	U	5	U	5	U		
Carbon Tetrachloride		50	U	5	U	250	U	5	U	5	U		
Vinyl Acetate		100	U	10	U	500	U	10	U	10	U		
Bromodichloromethane		50	U	5	U	250	U	5	U	5	U		
1,2-Dichloropropane		50	U	5	U	250	U	5	U	5	U		
Trans-1,3-Dichloropropene		50	U	5	U	250	U	5	U	5	U		
Trichloroethene		15	J	1900	E	1700		4	J	5	U		
Dibromochloromethane		50	U	5	U	250	U	5	U	5	U		
1,1,2-Trichloroethane		50	U	5	U	250	U	5	U	5	U		
Benzene		50	U	5	U	250	U	4	J	5	U		
cis-1,3-Dichloropropene		50	U	5	U	250	U	5	U	5	U		
2-Chloroethylvinylether		100	U	10	U	500	U	10	U	10	U		
Bromoform		50	U	5	U	250	U	5	U	5	U		
4-Methyl-2-pentanone		100	U	10	U	500	U	10	U	10	U		
2-Hexanone		100	U	10	U	500	U	10	U	10	U		

RFW Batch Number: 8807-008 Client: BLACK & DECKER (REVISED 08/29/88)

Cust ID:	RFW03B	RFW08	RFW08	RFW09	TB02
RFW#:	009 DL	010	010 DL	011	012
Tetrachloroethene....................	250	150	100 J	46	5 U
1,1,2,2-Tetrachloroethane...........	50 U	5 U	250 U	5 U	5 U
Toluene.............................	50 U	5 U	250 U	8	1 J
Chlorobenzene.......................	50 U	5 U	250 U	5 U	5 U
Ethylbenzene........................	50 U	5 U	250 U	5 U	5 U
Styrene.............................	50 U	5 U	250 U	5 U	5 U
Total Xylenes.......................	50 U	5 U	250 U	5 U	5 U

Other:

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

PETROLEUM HYDROCARBON ANALYSIS RESULTS: SOIL SAMPLES

WESTON ANALYTICS

ORGANICS DATA SUMMARY REPORT 07/22/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-803

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	SB-IIA-1-01	PETROLEUM HYDROCARBONS	20	MG/KG	0.2
-002	SB-IIA-1-02	PETROLEUM HYDROCARBONS	3	MG/KG	0.2
-003	SB-IIA-1-03	PETROLEUM HYDROCARBONS	32	MG/KG	0.2
-004	SB-IIA-1-04	PETROLEUM HYDROCARBONS	20	MG/KG	0.2
-005	SB-IIA-1-05	PETROLEUM HYDROCARBONS	45	MG/KG	0.5
-006	SB-IIA-1-06	PETROLEUM HYDROCARBONS	16	MG/KG	0.2
-007	SB-IIA-1-07	PETROLEUM HYDROCARBONS	17	MG/KG	0.2
-008	SB-IIA-1-08	PETROLEUM HYDROCARBONS	13	MG/KG	0.2
-009	SB-IIA-1-09	PETROLEUM HYDROCARBONS	21	MG/KG	0.2
-010	SB-IIA-2-01	PETROLEUM HYDROCARBONS	71	MG/KG	5
-011	SB-IIA-2-02	PETROLEUM HYDROCARBONS	14	MG/KG	0.2
-012	SB-IIA-2-03	PETROLEUM HYDROCARBONS	14	MG/KG	0.2
-013	SB-IIA-2-04	PETROLEUM HYDROCARBONS	14	MG/KG	0.2
-014	SB-IIA-2-05	PETROLEUM HYDROCARBONS	18	MG/KG	0.2
-015	SB-IIA-2-06	PETROLEUM HYDROCARBONS	6	MG/KG	0.2

WESTON ANALYTICS

ORGANICS DATA SUMMARY REPORT 07/28/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	SB-IIA-3FB	PETROLEUM HYDROCARBONS	1.0 u	MG/L	1.0
-003	SB-IIA-207	PETROLEUM HYDROCARBONS	15	MG/KG	1
-004	SB-II1-208	PETROLEUM HYDROCARBONS	4	MG/KG	1
-005	SB-IIA-301	PETROLEUM HYDROCARBONS	5	MG/KG	1
-006	SB-IIA-302	PETROLEUM HYDROCARBONS	3	MG/KG	0.9
-007	SB-IIA-303	PETROLEUM HYDROCARBONS	9	MG/KG	1
-008	SB-IIA-304	PETROLEUM HYDROCARBONS	4	MG/KG	1
-009	SB-11A-305	PETROLEUM HYDROCARBONS	5	MG/KG	1
-010	SB-IIA-306	PETROLEUM HYDROCARBONS	3	MG/KG	0.9
[illegible]11	SB-IIA-307	PETROLEUM HYDROCARBONS	5	MG/KG	1
-012	SB-IIA-401	PETROLEUM HYDROCARBONS	67	MG/KG	1
-013	SB-IIA-402	PETROLEUM HYDROCARBONS	8	MG/KG	1
-014	SB-IIA-403	PETROLEUM HYDROCARBONS	12000	MG/KG	1000
-015	SB-IIA-404	PETROLEUM HYDROCARBONS	15	MG/KG	1
-016	SB-IIA-405	PETROLEUM HYDROCARBONS	5	MG/KG	1
-017	SB-IIA-405D	PETROLEUM HYDROCARBONS	3	MG/KG	1
-018	SB-IIA-406	PETROLEUM HYDROCARBONS	4	MG/KG	1
-019	SB-IIA-407	PETROLEUM HYDROCARBONS	3	MG/KG	1
-020	SB-IIA-501	PETROLEUM HYDROCARBONS	6500	MG/KG	950
-021	SB-IIA-502	PETROLEUM HYDROCARBONS	140	MG/KG	11

WESTON ANALYTICS

ORGANICS DATA SUMMARY REPORT 07/28/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-022	SB-IIA-503	PETROLEUM HYDROCARBONS	9	MG/KG	1
-023	SB-IIA-504	PETROLEUM HYDROCARBONS	3	MG/KG	1
-024	SB-IIA-505	PETROLEUM HYDROCARBONS	3	MG/KG	1
-025	SB-IIA-506	PETROLEUM HYDROCARBONS	2	MG/KG	1
-026	SB-IIA-507	PETROLEUM HYDROCARBONS	3	MG/KG	1
-027	SB-IIA-601	PETROLEUM HYDROCARBONS	7	MG/KG	1
-028	SB-IIA-602	PETROLEUM HYDROCARBONS	4	MG/KG	1
-029	SB-IIA-603	PETROLEUM HYDROCARBONS	2	MG/KG	1
-030	SB-IIA-604	PETROLEUM HYDROCARBONS	2	MG/KG	1
-031	SB-IIA-605	PETROLEUM HYDROCARBONS	4	MG/KG	1
-032	SB-IIA-606	PETROLEUM HYDROCARBONS	10	MG/KG	1
-033	SB-IIA-607	PETROLEUM HYDROCARBONS	4	MG/KG	1
-034	SB-IIA-701	PETROLEUM HYDROCARBONS	9	MG/KG	1
-035	SB-IIA-702	PETROLEUM HYDROCARBONS	4	MG/KG	1
-036	SB-IIA-703	PETROLEUM HYDROCARBONS	4	MG/KG	1
-037	SB-IIA-704	PETROLEUM HYDROCARBONS	3	MG/KG	1
-038	SB-IIA-705	PETROLEUM HYDROCARBONS	4	MG/KG	1
-039	SB-IIA-706	PETROLEUM HYDROCARBONS	4	MG/KG	1
-040	SB-IIA-707	PETROLEUM HYDROCARBONS	2	MG/KG	1

WESTON ANALYTICS

ORGANICS PRECISION REPORT 07/28/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-015REP	SB-IIA-404	PETROLEUM HYDROCARBONS	15	37	83.4
-029REP	SB-IIA-603	PETROLEUM HYDROCARBONS	2	1	54.8

WESTON ANALYTICS

ORGANICS DUPLICATE SPIKE REPORT 07/28/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-029	SB-IIA-603	PETROLEUM HYDROCARBONS	134	98.9	30.2
BLANK10	88IR783C-MB1	PETROLEUM HYDROCARBONS	77.6	65.7	16.6

WESTON ANALYTICS

ORGANICS ACCURACY REPORT 07/28/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-009	SB-11A-305	PETROLEUM HYDROCARBONS	120	5	150	79.2
-029	SB-IIA-603	PETROLEUM HYDROCARBONS	180	2	140	134
		PETROLEUM HYDROCARBONS	140	2	140	98.9
BLANK10	88IR783C-MB1	PETROLEUM HYDROCARBONS	31	1.0 u	40	77.6
		PETROLEUM HYDROCARBONS	26	1.0 u	40	65.7
BLANK10	88IR721B-MB1	PETROLEUM HYDROCARBONS	120	2	120	95.4

WESTON ANALYTICS

ORGANICS METHOD BLANK DATA SUMMARY PAGE 07/28/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK10	88IR783C-MB1	PETROLEUM HYDROCARBONS	1.0 u	MG/L	1.0
BLANK10	88IR721B-MB1	PETROLEUM HYDROCARBONS	2	MG/KG	0.8
BLANK10	88IR783F-MB1	PETROLEUM HYDROCARBONS	2	MG/KG	0.8

WESTON ANALYTICS

ORGANICS DATA SUMMARY REPORT 07/14/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-003	SB-IIA-207	PETROLEUM HYDROCARBONS	15	MG/KG	1
-004	SB-II1-208	PETROLEUM HYDROCARBONS	4	MG/KG	1
-005	SB-IIA-301	PETROLEUM HYDROCARBONS	5	MG/KG	1
-006	SB-IIA-302	PETROLEUM HYDROCARBONS	3	MG/KG	0.9
-007	SB-IIA-303	PETROLEUM HYDROCARBONS	9	MG/KG	1
-008	SB-IIA-304	PETROLEUM HYDROCARBONS	4	MG/KG	1
-009	SB-11A-305	PETROLEUM HYDROCARBONS	5	MG/KG	1
-010	SB-IIA-306	PETROLEUM HYDROCARBONS	3	MG/KG	0.9
-011	SB-IIA-307	PETROLEUM HYDROCARBONS	5	MG/KG	1
-012	SB-IIA-401	PETROLEUM HYDROCARBONS	67	MG/KG	1
-013	SB-IIA-402	PETROLEUM HYDROCARBONS	8	MG/KG	1
-014	SB-IIA-403	PETROLEUM HYDROCARBONS	12000	MG/KG	1000
-015	SB-IIA-404	PETROLEUM HYDROCARBONS	15	MG/KG	1
-016	SB-IIA-405	PETROLEUM HYDROCARBONS	5	MG/KG	1
-017	SB-IIA-405D	PETROLEUM HYDROCARBONS	3	MG/KG	1
-018	SB-IIA-406	PETROLEUM HYDROCARBONS	4	MG/KG	1
-019	SB-IIA-407	PETROLEUM HYDROCARBONS	3	MG/KG	1
-020	SB-IIA-501	PETROLEUM HYDROCARBONS	6500	MG/KG	950

WESTON ANALYTICS

ORGANICS METHOD BLANK DATA SUMMARY PAGE 07/14/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK10	88IR721B-MB1	PETROLEUM HYDROCARBONS	2	MG/KG	0.8

WESTON ANALYTICS

ORGANICS ACCURACY REPORT 07/14/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-009	SB-11A-305	PETROLEUM HYDROCARBONS	120	5	150	79.2
BLANK10	88IR721B-MB1	PETROLEUM HYDROCARBONS	120	2	120	95.4

WESTON ANALYTICS

ORGANICS PRECISION REPORT 07/14/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-864

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-015REP	SB-IIA-404	PETROLEUM HYDROCARBONS	15	37	83.4

WESTON ANALYTICS

ORGANICS METHOD BLANK DATA SUMMARY PAGE 07/22/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-803

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK10	88IR680E-MB1	PETROLEUM HYDROCARBONS	3	MG/KG	0.2

WESTON ANALYTICS

ORGANICS ACCURACY REPORT 07/22/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-803

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-015	SB-IIA-2-06	PETROLEUM HYDROCARBONS	120	6	150	75.6
BLANK10	88IR680E-MB1	PETROLEUM HYDROCARBONS	130	3	140	91.4

WESTON ANALYTICS

ORGANICS PRECISION REPORT 07/22/88

CLIENT: BLACK & DECKER

WORK ORDER: 2501-02-01-0000

WESTON BATCH #: 8806-803

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-010REP	SB-IIA-2-01	PETROLEUM HYDROCARBONS	71	49	36.0

WESTON ANALYTICS

ORGANICS DATA SUMMARY REPORT 07/14/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-35

WESTON BATCH #: 8806-764

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	RFW901	PETROLEUM HYDROCARBONS	30	MG/KG	2
-002	RFW902	PETROLEUM HYDROCARBONS	28	MG/KG	2
-003	RFW903	PETROLEUM HYDROCARBONS	3	MG/KG	0.2
-004	RFW904	PETROLEUM HYDROCARBONS	4	MG/KG	0.2
-005	RFW905	PETROLEUM HYDROCARBONS	4	MG/KG	0.2
-006	RFW906	PETROLEUM HYDROCARBONS	2	MG/KG	0.2
-007	RFW907	PETROLEUM HYDROCARBONS	3	MG/KG	0.2
-008	RFW908	PETROLEUM HYDROCARBONS	7	MG/KG	0.2
-009	RFW909	PETROLEUM HYDROCARBONS	2	MG/KG	0.2
-010	RFW910	PETROLEUM HYDROCARBONS	5	MG/KG	0.2
-011	RFW801	PETROLEUM HYDROCARBONS	29000	MG/KG	210
-012	RFW802	PETROLEUM HYDROCARBONS	330	MG/KG	20
-013	RFW803	PETROLEUM HYDROCARBONS	930	MG/KG	47
-014	RFW804	PETROLEUM HYDROCARBONS	180	MG/KG	2
-015	RFW805	PETROLEUM HYDROCARBONS	8	MG/KG	0.2
-016	RFW806	PETROLEUM HYDROCARBONS	3	MG/KG	0.2
-017	RFW807	PETROLEUM HYDROCARBONS	4	MG/KG	0.2
-018	RFW808	PETROLEUM HYDROCARBONS	2	MG/KG	0.2
-019	RFW809	PETROLEUM HYDROCARBONS	4	MG/KG	0.2
-020	RFW810	PETROLEUM HYDROCARBONS	3	MG/KG	0.2

WESTON ANALYTICS

ORGANICS METHOD BLANK DATA SUMMARY PAGE 07/14/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-35

WESTON BATCH #: 8806-764

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK10	88IR667B-MB1	PETROLEUM HYDROCARBONS	3	MG/KG	0.2

WESTON ANALYTICS

ORGANICS ACCURACY REPORT 07/14/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-35

WESTON BATCH #: 8806-764

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-020	RFW810	PETROLEUM HYDROCARBONS	61	3	160	36.6

WESTON ANALYTICS

ORGANICS PRECISION REPORT 07/14/88

CLIENT: BLACK & DECKER
WORK ORDER: 2501-02-01-35

WESTON BATCH #: 8806-764

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-020REP	RFW810	PETROLEUM HYDROCARBONS	3	2	46.5

APPENDIX F

PHASE IIa SOIL BORING LOGS, WELL BOREHOLE LOGS, AND WELL CONSTRUCTION DIAGRAMS

Boring No. SB-IIA-3
Client: Black and Decker
Time/Date Began:____1305/6-27-88
Time/Date Ended:____1435/6-27-88

Geologist:________________Dave Cairns
Driller:__________________Gary Truver / Walton Corporation
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

Comments: Top 1 foot is concrete, water on spoon at 31.5 feet.

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)	HNu * reading (headspace)
1	3.5-5	1.4	3-7-9	Dry	orange-brown clayey SILT with some weathered schist fragments and few quartz pebbles.	ND	1
2	8.5-10	0.9	64-19-34	Dry	top 0.2 feet is quartz gravel. Bottom 0.7 feet is orange-brown clayey SILT with some quartz pebbles.	ND	1
3	13.5-15	1.2	8-10-21	Damp	orange-brown clayey SILT with some quartz pebbles and few augite lenses.	ND	0.5
4	18.5-20	1.0	28-24-26	Damp	same as above.	ND	ND
5	23.5-25	0.8	9-8-10	Damp	same as above.	ND	ND
6	28.5-30	1.5	28-38-36	Moist	top 0.1 feet is orange-brown clayey SILT. Bottom 1.4 feet reddish brown clayey SILT and weathered SCHIST fragments.	1	1
7	33.5-35	1.35	16-76-44	Wet	dark reddish-brown weathered SCHIST and clayey silt. Bottom of spoon has some quartz pebbles.	ND	5

ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-IIA-4
Client: Black and Decker
Time/Date Began:____0920/6-28-88
Time/Date Ended:____1115/6-28-88

Geologist:________________Dave Cairns
Driller:__________________Gary Truver / Walton Corporation
Drilling Method:___________Hollow-stem Auger
Sampling Method:___________Split Spoon

Comments: Water on spoon at 20 feet, in level C from 1000 - 1035.

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)	HNu * reading (headspace)
1	1-2.5	1.1	2-3-4	Dry	brown clayey SILT with some weathered rock fragments, consisting mainly of quartz.	12	15
2	3.5-5	1.0	2-2-2	Dry	brown clayey SILT with trace weathered rock fragments, consisting of quartz and feldspar.	15	30
3	8.5-10	1.25	3-3-5	Moist	dark brown clayey silt with trace rock fragments. Strong odor in this interval.	180	190
4	13.5-15	1.5	3-5-10	Moist	gray-brown clayey SILT with some rock fragments.	8	34
5	18.5-20	1.4	6-10-12	Moist-Wet	orange-brown clayey SILT with highly weathered schist fragments.	1	2.5
6	23.5-25	1.1	9-13-24	Wet	top 0.2 feet is coarse SAND and is saturated. Bottom 0.9 feet is orange-brown clayey SILT with highly wthd SCHIST.	ND	1.5
7	28.5-30	1.0	7-19-18	Wet	highly weathered SCHIST fragments and orange-brown clayey silt.	ND	2

ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-IIA-1
Client: Black and Decker
Time/Date Began:____1510/6-23-88
Time/Date Ended:____1710/6-23-88

Geologist:________________Dave Cairns
Driller:__________________Gary Truver / Walton Corporation
Drilling Method:___________Hollow-stem Auger
Sampling Method:___________Split Spoon

Comments: Water at 35 feet, perched zone at 30 feet.

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)	HNu * reading (headspace)
1	1-2.5	0.6	10-10-11	Dry	top 0.1 feet is top soil. Bottom 0.5 feet is brown clayey SILT with trace rock fragments.	ND	8
2	3.5-5	1.2	8-9-10	Dry	orangish-brown clayey SILT with some highly weathered rock fragments.	ND	10.5
3	8.5-10	1.2	6-16-12	Dry	orange-brown clayey SILT and rock fragments. Rock fragments larger than previous interval.	ND	6.5
4	13.5-15	1.1	5-13-19	Damp	light brown clayey SILT and weathered rock fragments, with quartz, feldspar, mica and lenses of augite.	ND	5
5	18.5-18.9	0.4	50/0.4'	Moist	light brown clayey SILT and weathered rock fragments, with some quartz pebbles. Spoon refusal.	ND	5.5
6	23.5-25	0.5	21-10-10	Moist	reddish-brown clayey SILT and weathered rock fragments.	ND	30
7	28.5-30	0.9	8-7-4	Moist-Wet	top 0.85 feet is reddish-brown weathered SCHIST. At bottom of spoon is a pink-white-black silty CLAY.	ND	10
8	33.5-35	1.2	28-24-42	Moist	highly weathered SCHIST with brown clayey silt.	ND	17
9	38.5-39.3	0.8	42-50/0.3'	Wet	highly weathered SCHIST with dark red-brown clayey silt. Spoon refusal.	ND	12

ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-IIA-2
Client: Black and Decker
Time/Date Began: 0935/6-24-88
Time/Date Ended: 1010/6-27-88

Geologist: Dave Cairns
Driller: Gary Truver / Walton Corporation
Drilling Method: Hollow-stem Auger
Sampling Method: Split Spoon

Comments: Water on spoon at 31 feet.

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)	HNu * reading (headspace)
1	1-2.5	0.9	5-6-5	Dry	top 0.2 feet is top soil and gravel. Bottom 0.7 feet is orange-brown clayey SILT and some weathered rock frags.	1	170
2	3.5-5	1.1	6-7-10	Dry	reddish-brown clayey SILT with some weathered rock frags.	ND	300
3	8.5-10	1.1	8-10-11	Moist	top 0.1 feet is dark reddish-brown clayey SILT. Bottom 1.0 feet is light orange-brown clayey SILT with trace quartz pebbles.	ND	480
4	13.5-15	1.2	7-14-18	Moist	light orangish-brown clayey SILT with some highly weathered schist.	ND	210
5	18.5-20	1.2	14-28-59	Moist	same as above with quartz pebbles in bottom 0.2 feet.	ND	210
6	23.5-25	1.1	27-36-42	Moist	light orangish-brown highly weathered SCHIST and clayey SILT with some quartz pebbles.	ND	200
7	28.5-30	1.3	28-56-41	Moist	same as above.	ND	50
8	33.5-35	1.2	10-15-37	Wet	reddish-brown weathered SCHIST and orange-reddish brown clayey SILT.	ND	85

ND - Not detected above background level.

* HNu readings in units above background.

SOIL BORING LOGS

Boring No. SB-IIA-5
Client: Black and Decker
Time/Date Began:____1430/6-28-88
Time/Date Ended:____1615/6-28-88

Geologist:________________Dave Cairns
Driller:________________Gary Truver / Walton Corporation
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

Comments: Water on spoon at 25 feet.

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)	HNu * reading (headspace)
1	1-2.5	0.6	4-4-4	Dry	orange-brown clayey SILT with few quartz pebbles and trace rock fragments.	110	80
2	3.5-5	0.55	1-2-1	Dry	same as above.	60	60
3	8.5-10	1.4	3-4-5	Moist	same as above.	50	40
4	13.5-15	1.1	6-10-10	Moist	top 0.2 feet is brown clayey SILT. Bottom 0.9 feet is reddish-brown highly weathered SCHIST fragments and clayey silt,with trace augite and chlorite.	3	7
5	18.5-20	1.1	7-10-14	Moist	brick-colored highly weathered SCHIST, with quartz, mica, feldspar and trace augite.	1	6
6	23.5-25	1.0	5-7-17	Moist-Wet	orange-brown to reddish-brown weathered SCHIST and clayey SILT. Augite lenses in bottom 0.1 feet.	ND	2
7	28.5-30	1.0	2-4-8	Wet	highly weathered SCHIST, variable in color due to concentrations of feldspar, quartz, chlorite and augite.	ND	1

ND - Not detected above background level
* HNu readings in units above background.

Boring No. SB-IIA-6
Client: Black and Decker
Time/Date Began:____0855/6-29-88
Time/Date Ended:____1050/6-29-88

Geologist:________________Dave Cairns
Driller:__________________Gary Truver / Walton Corporation
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

Comments: Water on spoon at 18.5 feet, level C from 1025-1115.

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)	HNu * reading (headspace)
1	1-2.5	1.15	3-4-2	Dry	top 0.2 feet top soil. Bottom 0.95 feet is orange-brown clayey SILT with trace quartz pebbles.	ND	ND
2	3.5-5	1.2	3-4-4	Dry	orange-brown clayey SILT with trace weathered schist fragments.	ND	ND
3	8.5-10	1.5	3-6-7	Damp	orange-brown clayey SILT with trace weathered schist and quartz pebbles.	ND	ND
4	13.5-15	1.05	4-5-7	Moist	gray-brown clayey SILT with little weathered schist fragments.	10	5
5	18.5-20	1.1	5-5-6	Wet	orange-brown highly weathered SCHIST fragments and clayey SILT. Feldspar, quartz and augite dominate minerals.	180	400
6	23.5-25	1.0	4-5-12	Wet	gray-brown highly weathered SCHIST fragments with some clayey silt.	900	800
7	28.5-30	0.9	10-14-23	Wet	top 0.1 feet is saturated SILT and f SAND. Bottom 0.8 feet is highly weathered SCHIST fragments.	450	800

ND - Not detected above background level.
* HNu readings in units above background.

Boring No: SB-IIA-7
Client: Black and Decker
Time/Date Began:____1350/6-29-88
Time/Date Ended:____1515/6-29-88

Geologist:________________Dave Cairns
Driller:__________________Gary Truver / Walton Corporation
Drilling Method:___________Hollow-stem Auger
Sampling Method:___________Split Spoon

Comments: Water on spoon at 23.5 feet.

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)	HNu * reading (headspace)
1	1-2.5	1.05	2-2-2	Dry	top 0.2 feet top soil. Bottom 0.85 feet is light orange-brown clayey SILT with trace quartz pebbles.	ND	ND
2	3.5-5	1.25	2-2-2	Dry	orange-brown clayey SILT with trace weathered schist fragments.	ND	ND
3	8.5-10	1.2	3-4-5	Dry	orange-brown clayey SILT with trace weathered schist fragments, quartz pebbles and augite.	ND	ND
4	13.5-15	1.3	4-5-6	Moist	gray-brown clayey SILT with highly weathered SCHIST fragments.	1	ND
5	18.5-20	1.5	9-10-15	Moist	same as above.	1	1
6	23.5-25	1.0	16-17-17	Wet	same as above, wet.	4	5
7	28.5-30	0.85	8-14-15	Wet	Gray-light brown weathered SCHIST fragments with trace quartz pebbles in bottom 0.1 feet. Feldspar, quartz, mica augite and chlorite all present.	60	200

ND - Not detected above background level.
* HNu readings in units above background.

WELL BOREHOLE LOGS

Well No. RFW-1A
Client: Black & Decker
Time/Date Began: 0826/6-29-88
Time/Date Ended: 1115/6-29-88

Geologist: J. Kimberly Harriz
Driller: Paul Foley
Subcontractor: Walton Corporation
Drilling Method: Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-30	Damp	pinkish- to orangish-brown clayey SILT, micaceous	ND
30-47	Moist-Damp	as above, except pinkish- to dark reddish-brown	ND
47-66	Moist	olive brown to greyish-brown weathered, micaceous SCHIST	ND
66-70	Wet	weathered SCHIST and quartzite veins, water-bearing fracture at 66.5', yield 6 gpm	ND
70-80	Wet	as above, except harder, water-bearing fracture at 77' yield 30 gpm	ND

ND - Not detected above background levels

Well No. RFW-1B

Client: Black & Decker

Time/Date Began:____1330/6-21-88

Time/Date Ended:____1135/6-22-88

Geologist:________________J. Kimberly Harriz

Driller:__________________Paul Foley

Subcontractor:_____________Walton Corporation

Drilling Method:___________Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-39	Damp	reddish- to yellowish-brown clayey SILT, micaceous	ND
39-66	Moist to Wet	weathered micaceous SCHIST/PHYLLITE at 63' quartz vein, water-bearing, yield 10 gpm	ND
39-80	Wet	slightly weathered micaceous SCHIST/PHYLLITE at 74 - 75' quartz vein, water-bearing, yield 20 gpm	ND
80-200	Wet	green-gray micaceous SCHIST/PHYLLITE at 148' water-bearing zone, yield <1 gpm	ND

ND - Not detected above background levels

Well No. RFW-2A
Client: Black & Decker
Time/Date Began: 1200/6-29-88
Time/Date Ended: 1400/6-29-88

Geologist: J. Kimberly Harriz
Driller: Paul Foley
Subcontractor: Walton Corporation
Drilling Method: Air-rotary

Comments:

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-10	Damp	pinkish- to orangish-brown clayey SILT	ND
10-25	Moist-Damp	as above, except olive brown to greyish-brown	ND
25-40	Wet	alternating weathered, micaceous SCHIST and quartz viens, water in fractures from 25' to 40', yield 10 gpm	ND

ND - Not detected above background levels

Well No. RFW-2B

Client: Black & Decker

Time/Date Began:____1330/6-22-88

Time/Date Ended:____1015/6-23-88

Geologist:________________J. Kimberly Harriz

Driller:__________________Paul Foley

Subcontractor:____________Walton Corporation

Drilling Method:__________Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-23	Damp	reddish-brown clayey SILT, micaceous	ND
23-50	Wet	quartz vein, fractured with micaceous SCHIST water-bearing zone, yield 40 gpm	ND
50-55	Moist	slightly weathered micaceous SCHIST and QUARTZ	ND
55-75	Wet	micaceous SCHIST/PHYLLITE at 64-65'- fractured quartz vein, water-bearing, 7 gpm at 72' - fractured quartz vein, water-bearing, 10 gpm	ND

ND - Not detected above background levels

Well No. RFW-3B
Client: Black & Decker
Time/Date Began: 1145/6-23-88
Time/Date Ended: 0950/6-24-88

Geologist: J. Kimberly Harriz
Driller: Paul Foley
Subcontractor: Walton Corporation
Drilling Method: Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-24	Damp	reddish- to yellowish brown clayey SILT, micaceous	ND
24-70	Moist	highly weathered brown SCHIST to clayey SILT, occasional thin quartz veins	ND
70-86	Moist	slightly weathered micaceous SCHIST	ND
86-153	Wet	green-gray micaceous SCHIST/PHYLLITE weathered zone at 94-97', water-bearing, <1 gpm	ND

ND - Not detected above background levels

Well No. RFW-4A
Client: Black & Decker
Time/Date Began:____1100/6-30-88
Time/Date Ended:____1330/6-30-88

Geologist:________________J. Kimberly Harriz
Driller:__________________Paul Foley
Subcontractor:____________Walton Corporation
Drilling Method:__________Air-rotary

Comments:

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-20	Damp	reddish- to orangish-brown clayey SILT with weathered SCHIST	ND
20-37	Damp	as above, except olive brown to greyish-brown	ND
37-50	Moist	greyish-brown weathered PHYLLITE/SCHIST	ND
50-63	Moist	blueish-grey PHYLLITE water-bearing zone at 57' to 58', yield 7.5 gpm	ND

ND - Not detected above background levels

Well No. RFW-4B
Client: Black & Decker
Time/Date Began:____1230/6-24-88
Time/Date Ended:____1130/6-27-88

Geologist:________________J. Kimberly Harriz
Driller:__________________Paul Foley
Subcontractor:____________Walton Corporation
Drilling Method:__________Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-45	Damp	reddish- to yellowish-brown clayey SILT, micaceous	ND
45-65	Moist to Wet	weathered micaceous SCHIST/PHYLLITE at 58' water-bearing, yield 10 gpm	ND
65-83	Wet	slightly weathered micaceous SCHIST/PHYLLITE at 75-77' quartz vein, water-bearing, yield 1 gpm	ND
83-120	Damp	green-gray micaceous SCHIST/PHYLLITE	ND

ND - Not detected above background levels

Well No. RFW-5A

Client: Black & Decker

Time/Date Began: 0830/6-30-88

Time/Date Ended: 1030/6-30-88

Geologist: J. Kimberly Harriz

Driller: Paul Foley

Subcontractor: Walton Corporation

Drilling Method: Air-rotary

Comments:

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-20	Damp	reddish- to orangish-brown clayey SILT	ND
20-22	Moist	as above	ND
22-32	Wet	weathered SCHIST and quartzite veins water-bearing zone at 24' to 25', yield 15 gpm	ND

ND - Not detected above background levels

Well No. RFW-5B
Client: Black & Decker
Time/Date Began:____1330/6-27-88
Time/Date Ended:____1330/6-28-88

Geologist:________________J. Kimberly Harriz
Driller:__________________Paul Foley
Subcontractor:____________Walton Corporation
Drilling Method:__________Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-37	Damp	reddish- to yellowish-brown clayey SILT, micaceous	ND
37-54	Moist to Wet	weathered micaceous SCHIST/PHYLLITE at 45-46' quartz vein with schist, water-bearing, 5 gpm at 54' water-bearing, yield 5 gpm	ND
54-78	Wet	green-gray micaceous SCHIST/PHYLLITE at 65-67' quartz vein, water-bearing, yield 60 gpm	ND

ND - Not detected above background level

Well No. RFW-6

Client: Black & Decker

Time/Date Began:____1547/6-27-88

Time/Date Ended:____1030/6-28-88

Geologist:________________J. Kimberly Harriz

Driller:__________________Paul Foley

Subcontractor:____________Walton Corporation

Drilling Method:__________Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-30	Damp to Wet	reddish-brown clayey SILT, micaceous at 15' water-bearing at 2-3 gpm	ND
30-75	Wet	weathered SCHIST/PHYLLITE at 66-68' quartz vein	ND
75-120	Wet	green-gray micaceous SCHIST/PHYLLITE at 82' quartz vein, water bearing, yield <1 gpm	ND

ND - Not detected above background levels

Boring No. RFW-7
Client: Black and Decker
Time/Date Began:____0900/6-30-88
Time/Date Ended:____1030/6-30-88

Geologist:________________Dave Cairns
Driller:________________Gary Truver
Subcontractor:____________Walton Corporation
Drilling Method:__________Hollow-stem Auger

Comments: Water at 15 feet.

SAMPLE COLLECTION INFORMATION

Depth Interval (ft.)	Moisture Content	SAMPLE DESCRIPTION	HNu reading
0-5	Dry-Damp	dark brown clayey SILT with trace quartz pebbles.	ND
5-10	Moist	brown silty CLAY with trace quartz pebbles and weathered schist.	ND
10-15	Moist	gray silty CLAY with trace quartz pebbles.	ND
15-20	Wet	gray-brown silty CLAY with trace pebbles.	ND
20-25	Wet	same as above.	ND
25-30	Wet	same as above. Auger refusal at 30 feet.	ND

ND - Not detected above background level.

Boring No. RFW-8
Client: Black and Decker
Time/Date Began:____1103/6-22-88
Time/Date Ended:____1505/6-22-88

Geologist:________________Dave Cairns
Driller:__________________Gary Truver / Walton Corporation
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

Comments: Last sample taken at 44 feet, drilled to 54 feet.

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)	HNu * reading (headspace)
1	1-2.5	1.0	5-3-3	Dry	orangish-brown clayey SILT with trace pebbles and f sand.	14	35
2	4-5.5	0.4	1-1-2	Dry	orangish brown clayey SILT with GRAVEL and trace f sand and pebbles. All material in this interval is fill.	ND	4
3	9-10.5	0.2	1/1.5	Dry	same as above	1	25
4	14-15.5	1.5	5-10-13	Damp	orange-brown clayey SILT with some rock fragments. Black lenses throughout interval are augite.	2	5
5	19-20.5	1.4	17-32-24	Damp	top 0.4′ is orange brown clayey SILT. Next 1.0′ is as above with highly weathered schist fragments.	ND	1
6	24-25.5	1.4	15-30-60	Damp	same as above.	ND	1
7	29-30.5	1.4	25-22-21	Moist	same as above, but with larger and increasing amounts of rock fragments.	ND	2
8	34-35.5	1.5	12-40-49	Moist	highly weathered SCHIST fragments with feldspar, quartz and lenses of augite.	1	3
9	39-39.4	0.4	50/0.4′	Wet	dark reddish-brown SCHIST fragments, saturated. Spoon refusal.	ND	5
10	44-44.8	0.8	38-50/0.3′	Wet	reddish-brown weathered SCHIST consisting of feldspar, mica, augite and quartz. Schist fragments in this interval are larger than those above. Spoon refusal.	ND	15

ND - Not detected above background level
* HNu readings in units above background.

Boring No. RFW-9
Client: Black and Decker
Time/Date Began:____1350/6-20-88
Time/Date Ended:____1050/6-21-88

Geologist:__________Dave Cairns
Driller:____________Gary Truver / Walton Corporation
Drilling Method:_____Hollow-stem Auger
Sampling Method:_____Split Spoon

Comments: Last sample taken at 44 feet, drilled to 49 feet.

SAMPLE COLLECTION INFORMATION

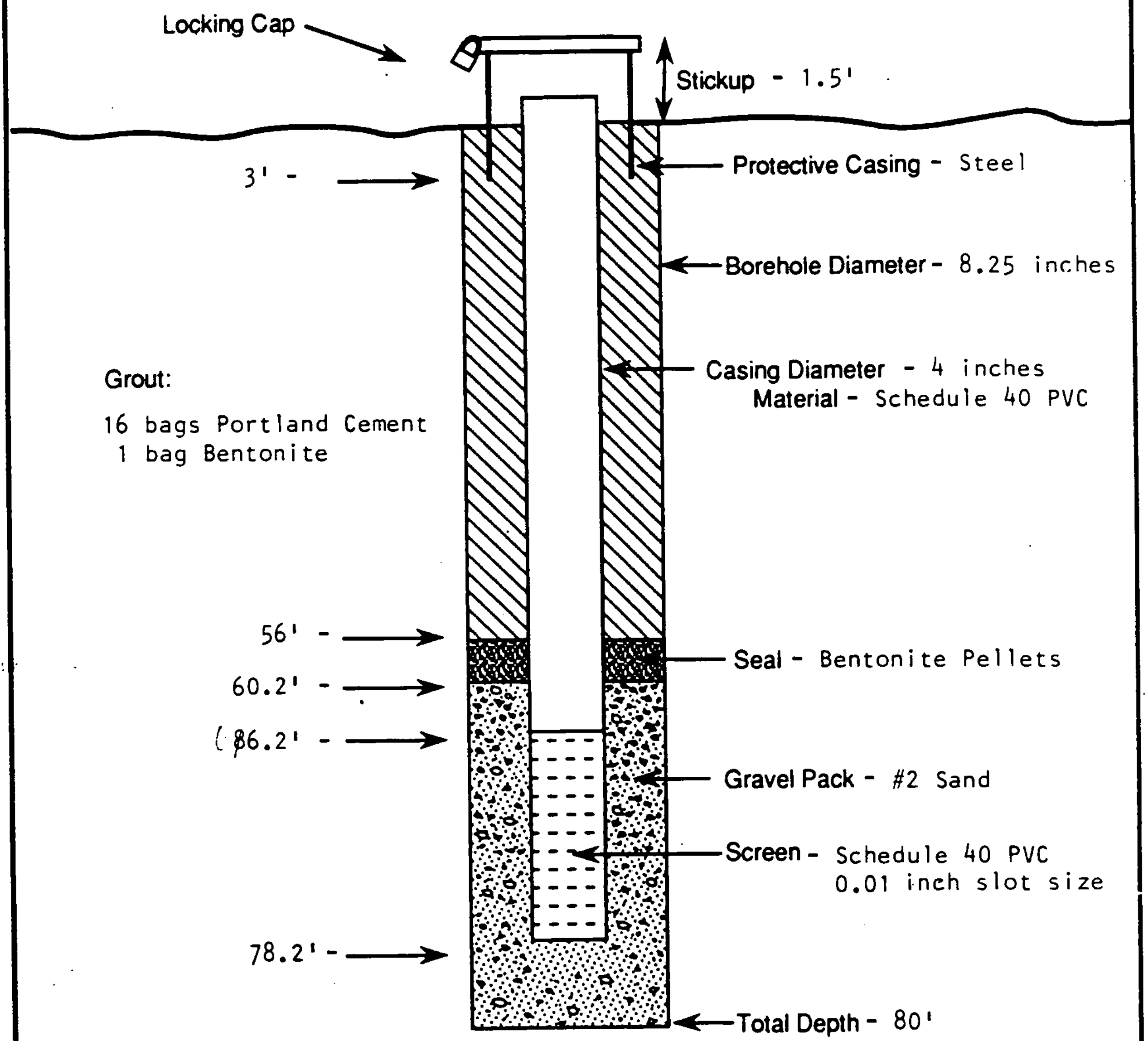
No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)	HNu * reading (headspace)
1	1-2.5	1.5	5-5-5	Dry	brown sandy SILT with little clay, and highly weathered rock fragments.	ND	170
2	4-5.5	1.0	2-2-2	Damp	same as above, but with increasing amounts of rock fragments.	ND	40
3	9-10.5	1.2	4-5-3	Damp	brown clayey SILT with some schist fragments.	ND	40
4	14-15.5	1.1	3-6-9	Damp	same as above, but with increasing amounts of rock frags.	ND	70
5	19-20.5	1.5	3-6-9	Damp	brown clayey SILT with some highly weathered rock fragments with quartz, mica, augite and feldspar.	ND	200
6	24-25.5	1.5	17-31-31	Moist	greenish-brown weathered SCHIST and clayey SILT. Top .4' of spoon is wet - possibly a perched zone.	ND	50
7	29-29.4	0.4	50/0.4'	Moist	same as above. Quartz, mica, augite, feldspar and chlorite are the dominant minerals present. Spoon refusal.	NS	NS
8	30-30.7	0.7	28-50/0.1'	Moist	same as above. Spoon refusal.	ND	70
9	34-34.5	0.5	74/0.5'	Wet	same as above. Schist is more weathered than above, spoon refusal in first 6".	26	150
10	39-39.2	0.2	50/0.2'	Wet	same as above. Spoon refusal.	ND	75
11	44-44.2	0.2	50/0.2'	Wet	same as above. Spoon refusal.	ND	120

ND - Not detetected above background level.
* HNu readings in units above background.
NS - No sample taken in interval.

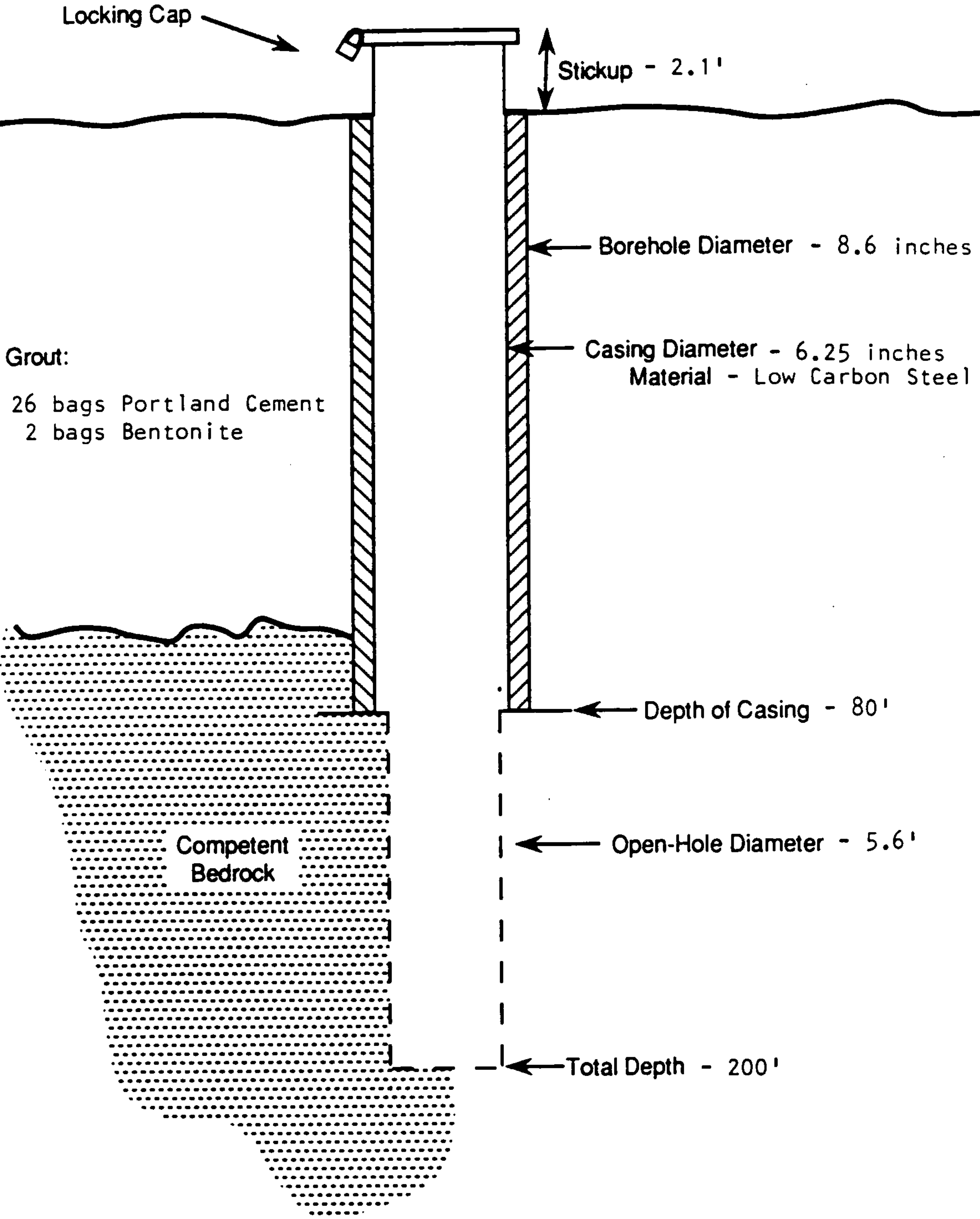
WELL CONSTRUCTION DIAGRAMS

Well Construction Diagram

Well No. RFW-1A



Well Construction Diagram
Well No. RFW-1B



Stickup - 2.1'

Borehole Diameter - 8.6 inches

Casing Diameter - 6.25 inches
Material - Low Carbon Steel

Grout:

26 bags Portland Cement
2 bags Bentonite

Depth of Casing - 80'

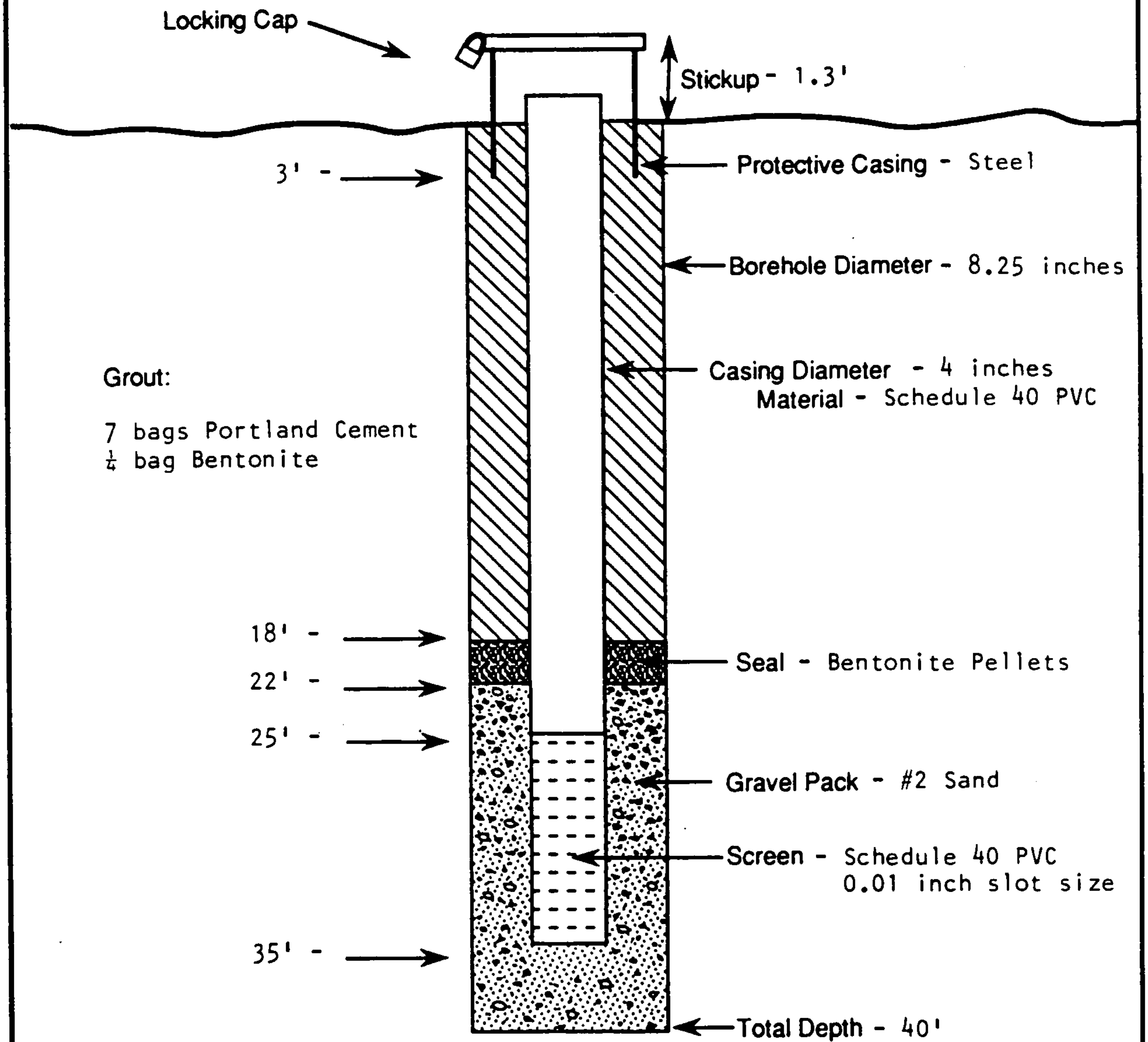
Open-Hole Diameter - 5.6'

Total Depth - 200'

74-484

Well Construction Diagram

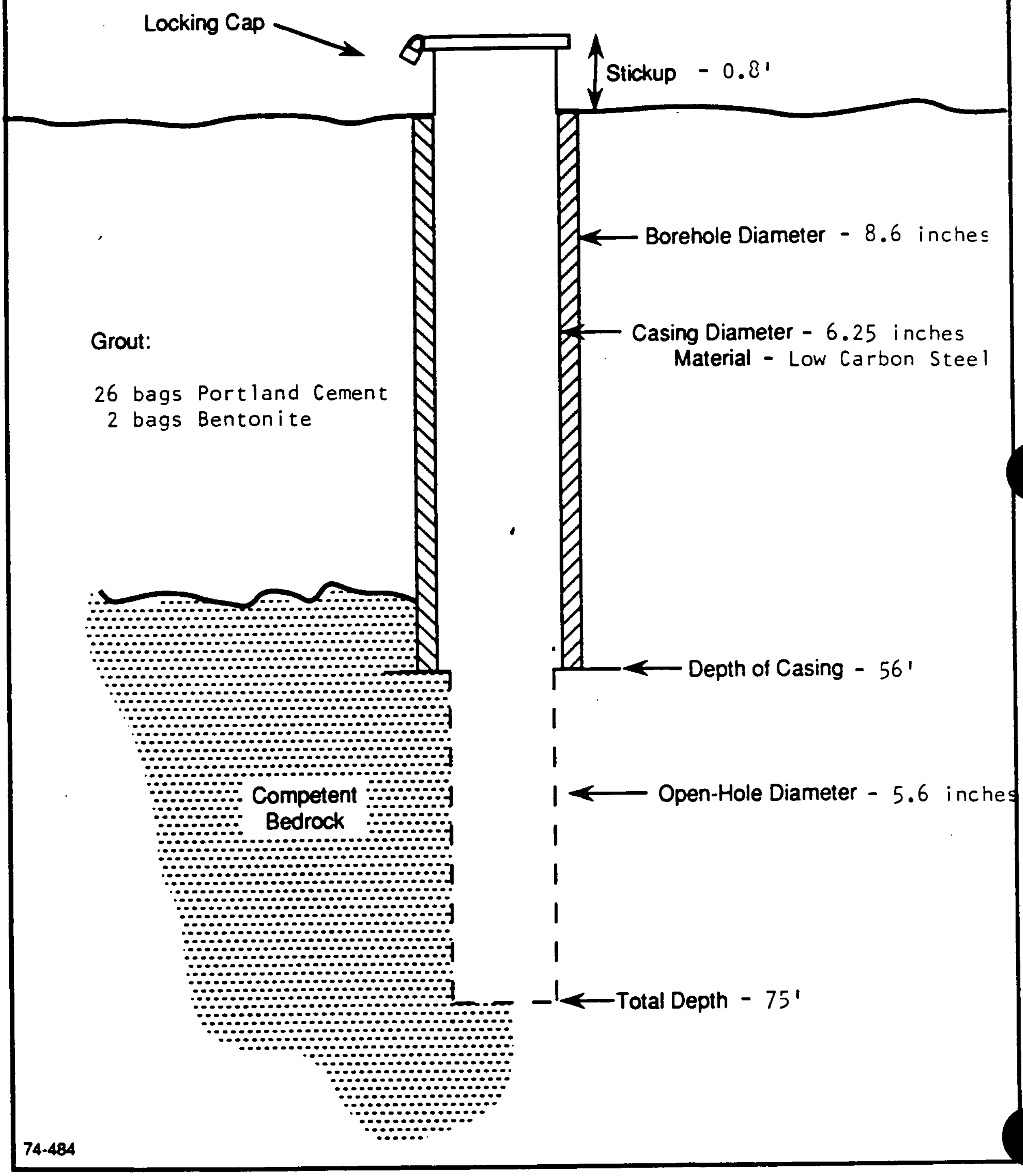
Well No. RFW-2A



Grout:

7 bags Portland Cement
¼ bag Bentonite

Well Construction Diagram
Well No. RFW-2B



Stickup - 0.8'

Borehole Diameter - 8.6 inches

Casing Diameter - 6.25 inches
Material - Low Carbon Steel

Grout:

26 bags Portland Cement
2 bags Bentonite

Depth of Casing - 56'

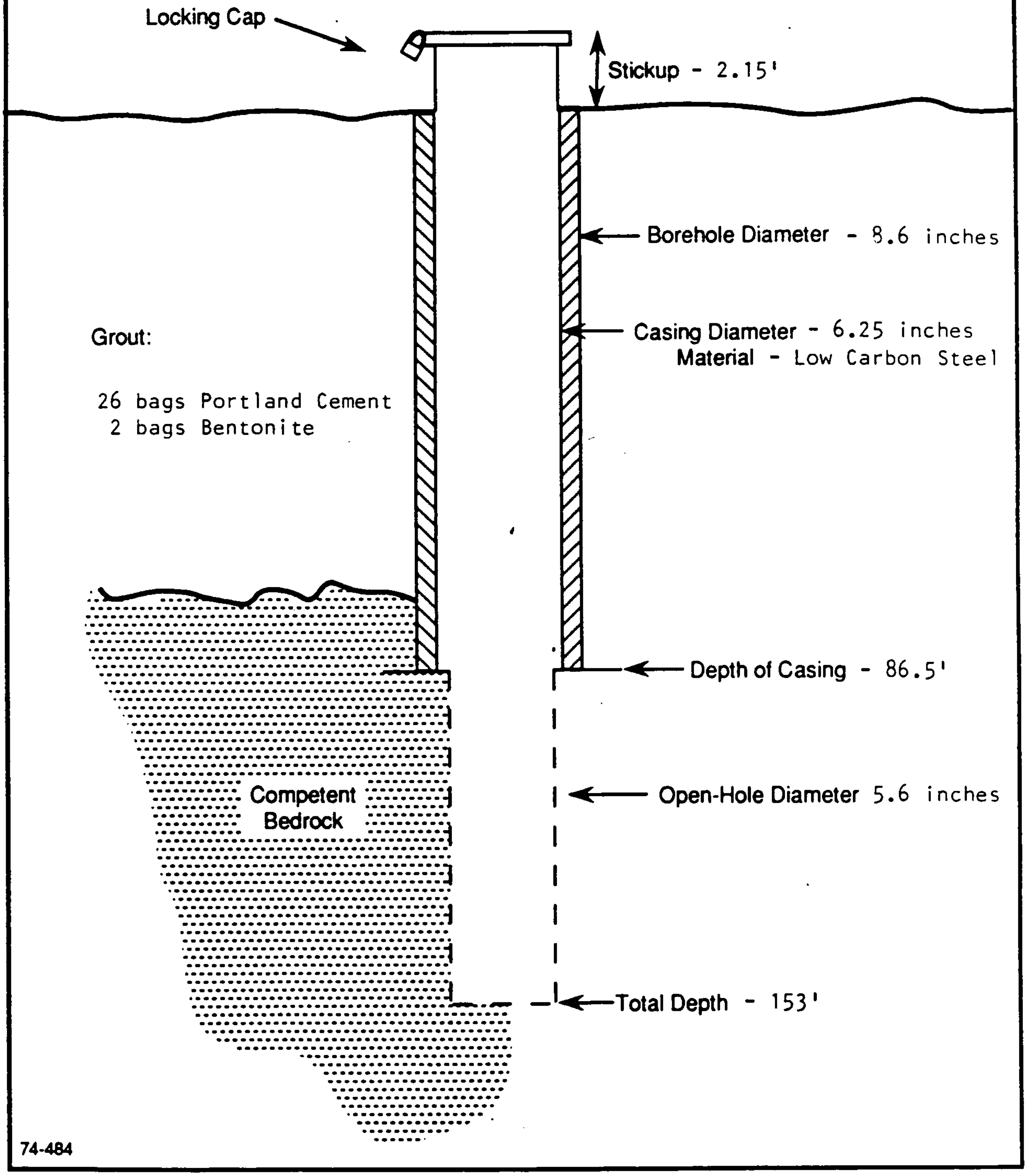
Open-Hole Diameter - 5.6 inches

Total Depth - 75'

74-484

Well Construction Diagram

Well No. RFW-3B



Stickup - 2.15'

Borehole Diameter - 8.6 inches

Grout:

26 bags Portland Cement
2 bags Bentonite

Casing Diameter - 6.25 inches
Material - Low Carbon Steel

Depth of Casing - 86.5'

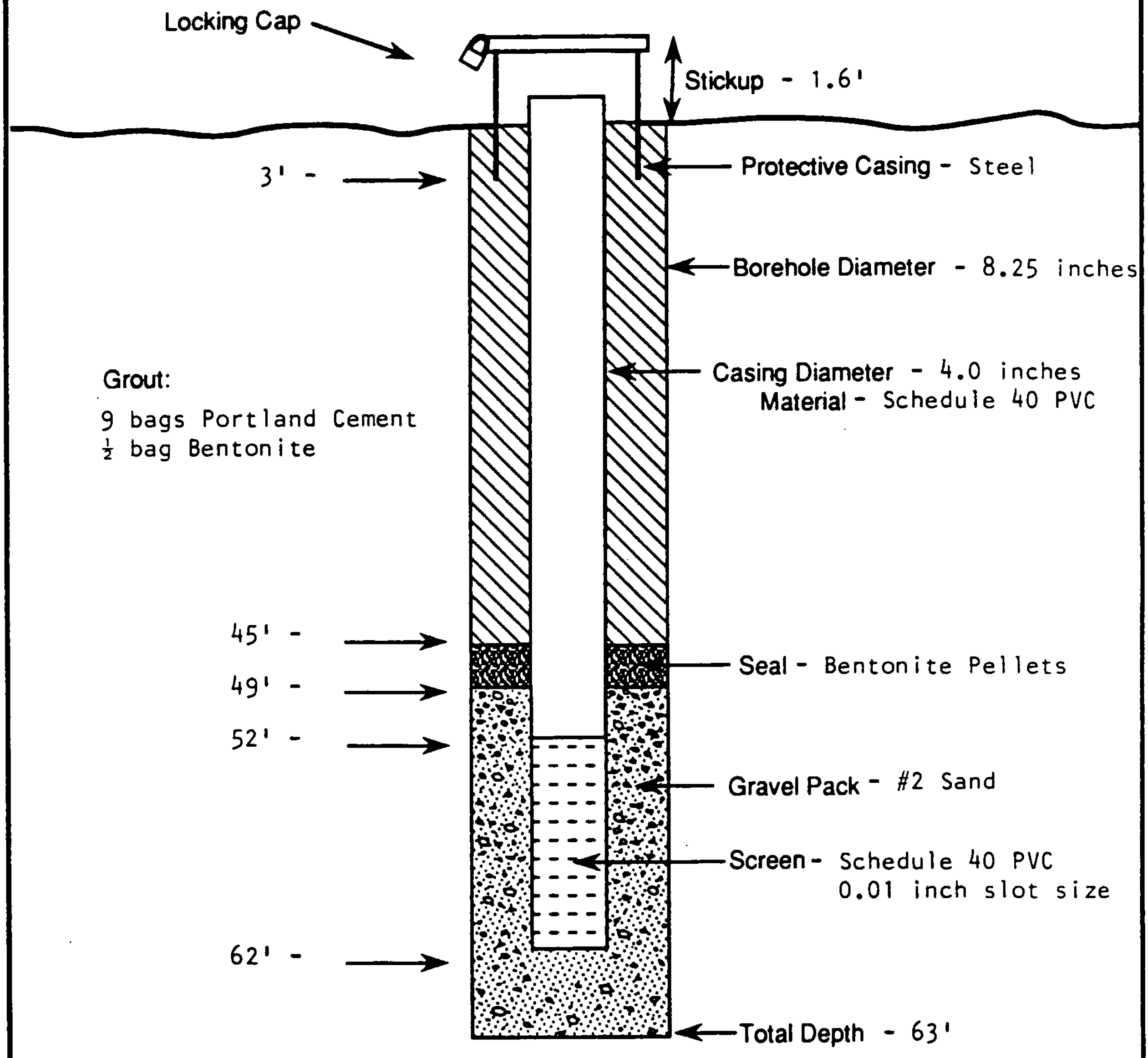
Open-Hole Diameter 5.6 inches

Total Depth - 153'

74-484

Well Construction Diagram

Well No. RFW-4A



Locking Cap

Stickup - 1.6'

Protective Casing - Steel

Borehole Diameter - 8.25 inches

Casing Diameter - 4.0 inches
Material - Schedule 40 PVC

Grout:
9 bags Portland Cement
½ bag Bentonite

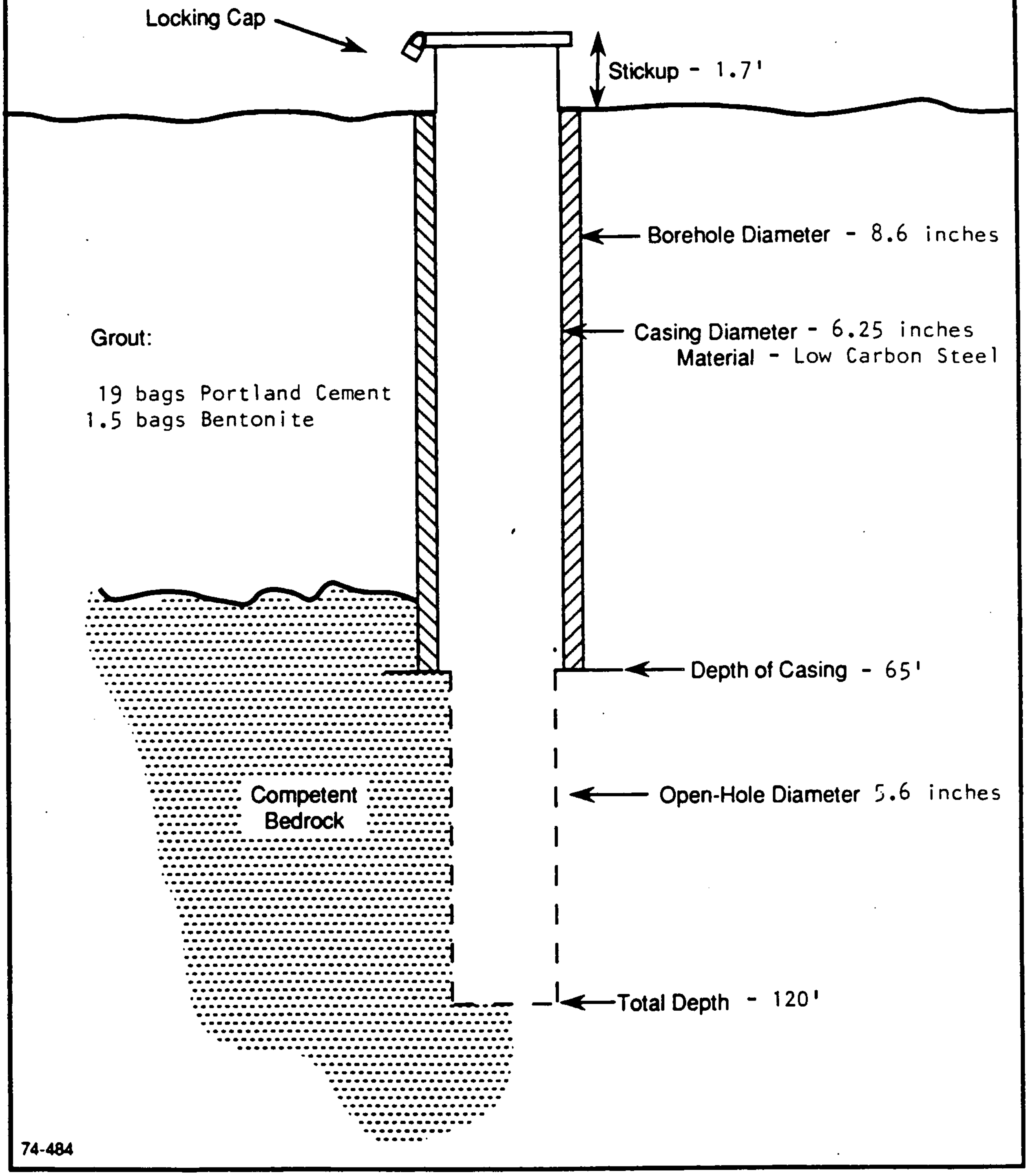
Seal - Bentonite Pellets

Gravel Pack - #2 Sand

Screen - Schedule 40 PVC
0.01 inch slot size

Total Depth - 63'

Well Construction Diagram
Well No. RFW-4B



Stickup - 1.7'

Borehole Diameter - 8.6 inches

Grout:

19 bags Portland Cement
1.5 bags Bentonite

Casing Diameter - 6.25 inches
Material - Low Carbon Steel

Depth of Casing - 65'

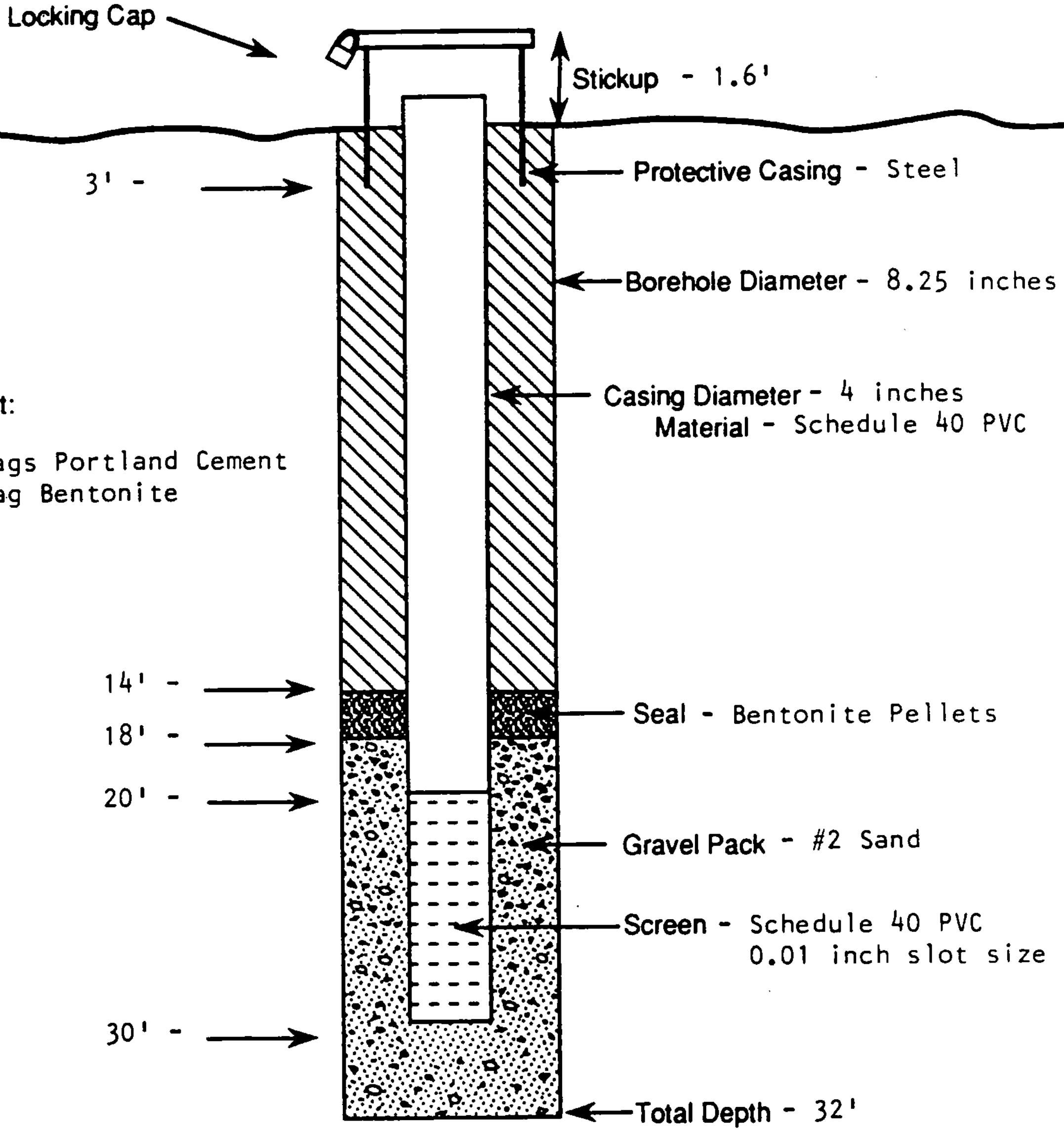
Open-Hole Diameter 5.6 inches

Total Depth - 120'

74-484

Well Construction Diagram

Well No. RFW-5A



Locking Cap

Stickup - 1.6'

Protective Casing - Steel

Borehole Diameter - 8.25 inches

Casing Diameter - 4 inches
Material - Schedule 40 PVC

Grout:

5 bags Portland Cement
¼ bag Bentonite

Seal - Bentonite Pellets

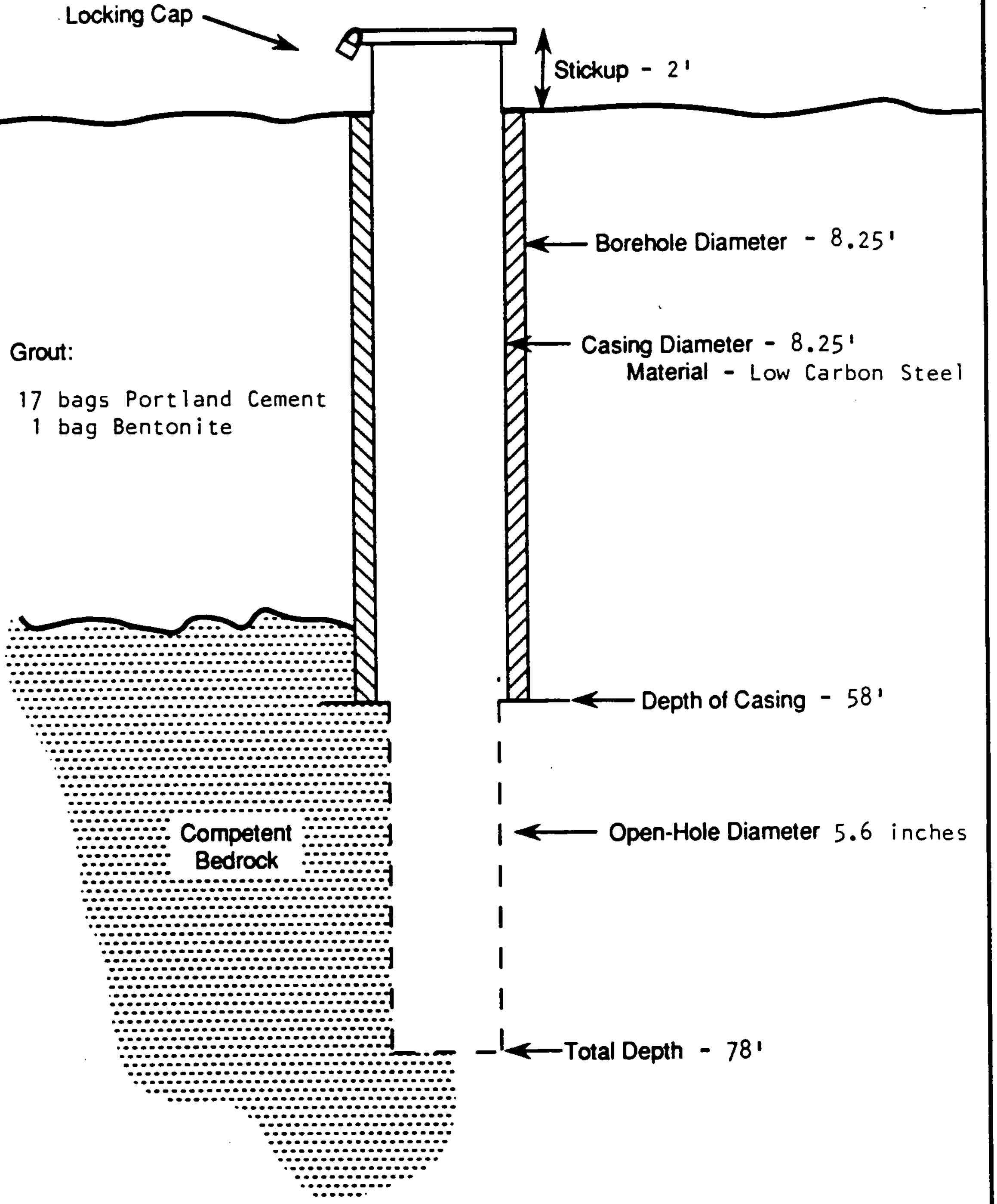
Gravel Pack - #2 Sand

Screen - Schedule 40 PVC
0.01 inch slot size

Total Depth - 32'

Well Construction Diagram

Well No. RFW-5B



Stickup - 2'

Borehole Diameter - 8.25'

Casing Diameter - 8.25'
Material - Low Carbon Steel

Grout:

17 bags Portland Cement
1 bag Bentonite

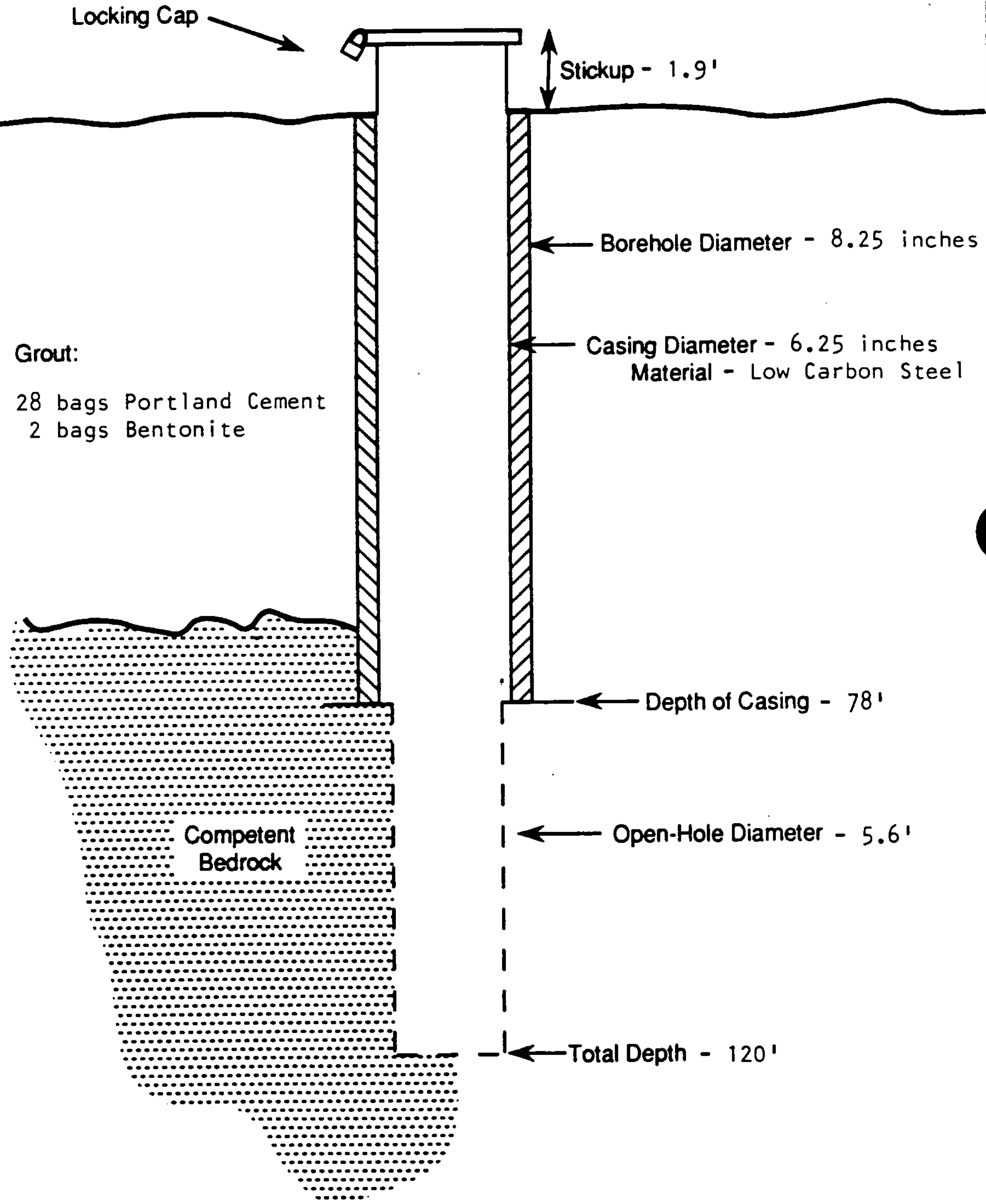
Depth of Casing - 58'

Open-Hole Diameter 5.6 inches

Total Depth - 78'

74-484

Well Construction Diagram
Well No. RFW-6



Stickup - 1.9'

Borehole Diameter - 8.25 inches

Casing Diameter - 6.25 inches
Material - Low Carbon Steel

Grout:

28 bags Portland Cement
2 bags Bentonite

Depth of Casing - 78'

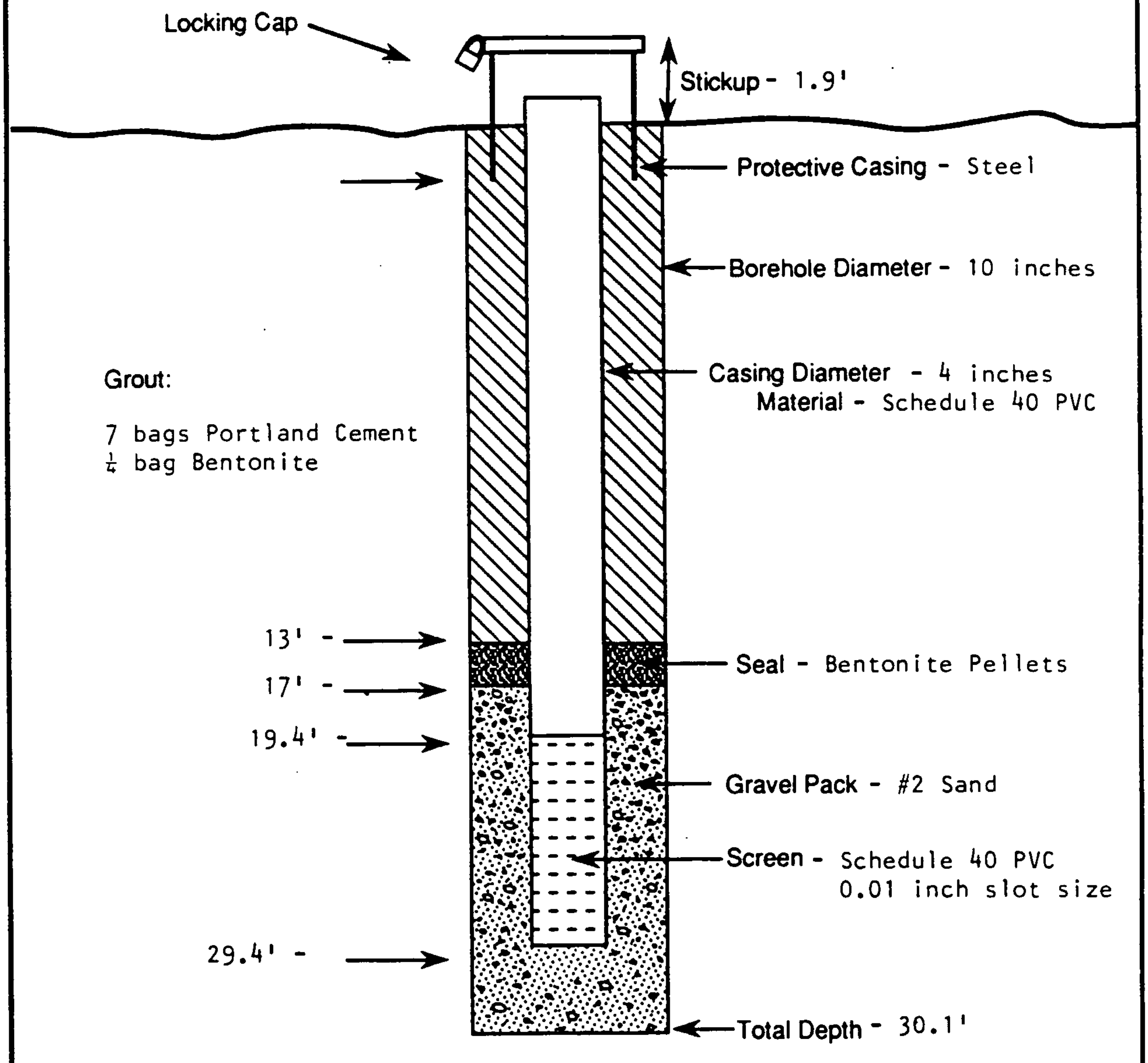
Open-Hole Diameter - 5.6'

Total Depth - 120'

74-484

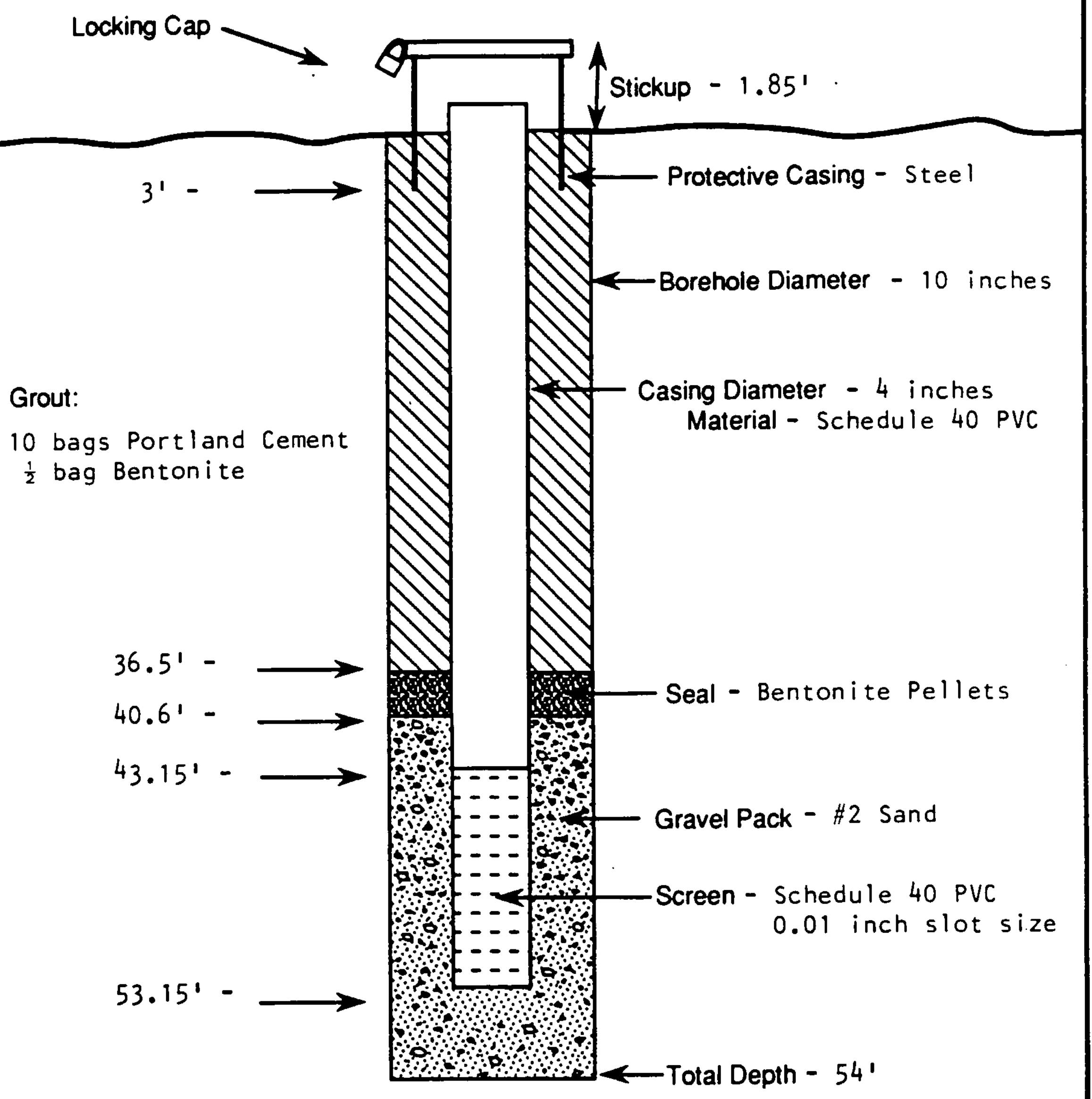
Well Construction Diagram

Well No. RFW-7



74-484b

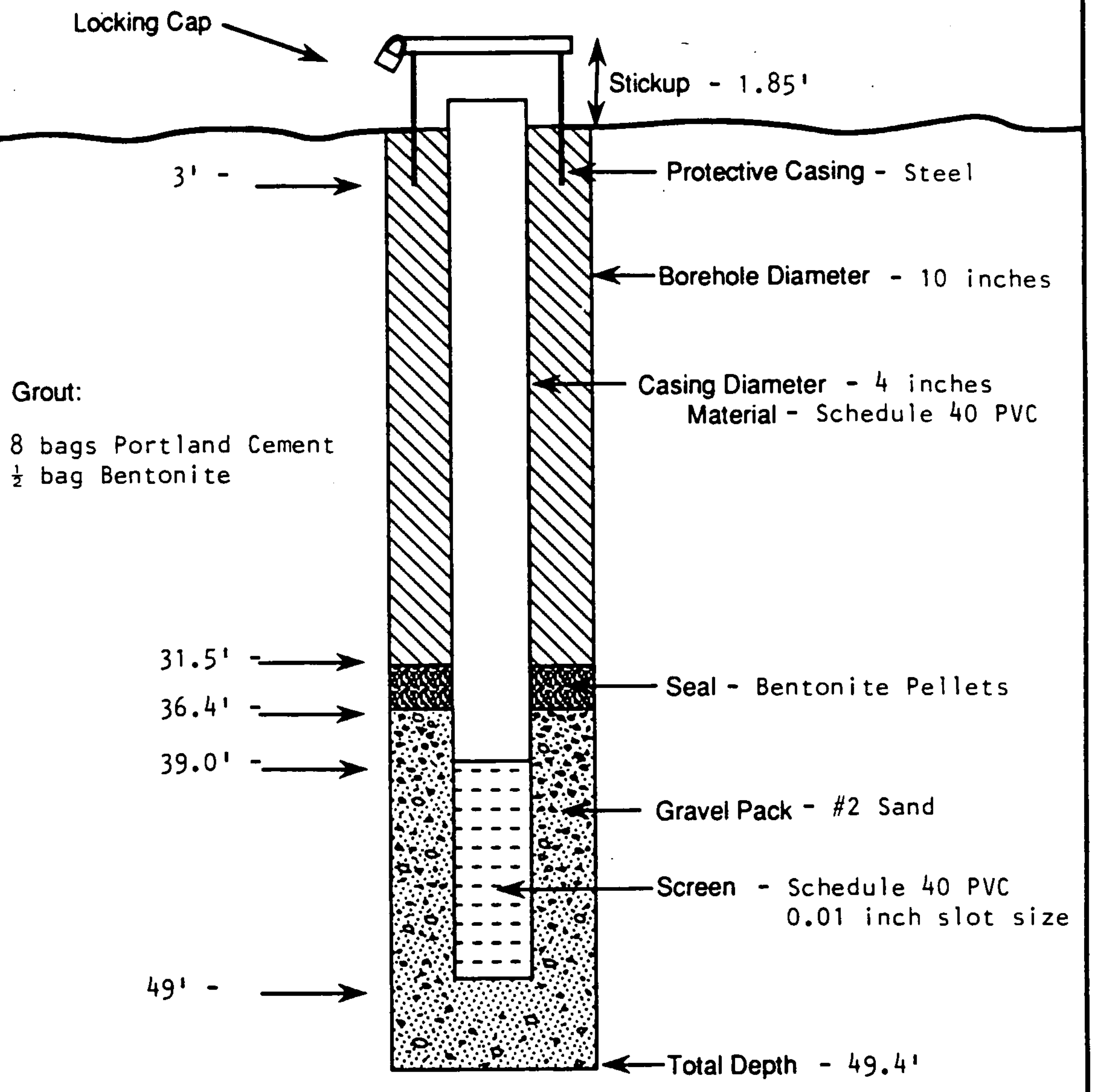
Well Construction Diagram
Well No. RFW-8



WESTON

Well Construction Diagram

Well No. RFW-9



74-484b

APPENDIX G

PHASE IIb ANALYTICAL DATA

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

X = Additional qualifiers used as required are explained in the case narrative.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not applicable.

DF = Dilution factor.

NR = Not required.

VOC ANALYSIS RESULTS: SOIL SAMPLES

VOC ANALYSIS RESULTS: GROUNDWATER SAMPLES

WESTON ANALYTICS
GC DATA SUMMARY
VOLATILE COMPOUNDS

RFW Batch Number: FIELD DATA Client: BLACK & DECKER

Sample Information

Cust ID:	SB3-A-105	fl	SB3-A-106	fl	SB3-A-107	fl	SB3-A-108	fl	SB3-A-109	fl	SB3-A-202	fl
RFW#:												
Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
D.F.:	1		2		1		1		1		1	
Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane	31		150		24		2.0		0.6	J	1	U
Trichloroethene	1	U	0.8	J	1	U	1	U	1	U	1	U
Tetrachloroethene	44		170		1	U	1	U	1	U	1	U

Sample Information

Cust ID:	SB3-A-204	fl	SB3-A-206	fl	SB3-A-206	fl	SB3-A-208	fl	SB3-A-209	fl	SBE-A-302	fl
RFW#:					R							
Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
D.F.:	1		2		5		1		1		1	
Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane	1	U	210		80		1	U	1	U	1	U
Trichloroethene	1	U	30		7.2		1	U	1	U	1	U
Tetrachloroethene	3.5		1000		1000		1	U	1	U	1	U

Sample Information

Cust ID:	SB3-A-302	fl	SB3-A-305	fl	SB3-A-305	fl	SB3-A-306	fl	SBE-A-309	fl	SB3-A-310	fl
RFW#:	R				R							
Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
D.F.:	1		1		1		1		1		1	
Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	1	U	1	U	1	U	1	U	1	U	1	U

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC DATA SUMMARY
VOLATILE COMPOUNDS

RFW Batch Number: FIELD DATA Client: BLACK & DECKER Page: 2

	Cust ID:	SB3-A-403	fl	SB3-A-406	fl	SB3-A-409	fl	SB3-A-409	fl	SB3-A-501	fl	SB3-A-504	fl
Sample Information	RFW#:							R					
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		1		1		1		1		1	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane		1.5		1	U	1	U	1	U	59		1	U
Trichloroethene		1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	1	U

	Cust ID:	SB3-A-507	fl	SB3-A-604	fl	SB3-A-606	fl	SB3-A-607	fl	SB3-A-607	fl	SB3-A-609	fl
Sample Information	RFW#:									R			
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		1		1		1		1		1	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane		1	U	1	U	1	U	1	U	1	U	20	
Trichloroethene		1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene		1	U	1	U	1	U	1	U	1	U	2.7	

	Cust ID:	SB3-A-609	fl	SB3-A-611	fl	SB3-A-611	fl	SB3-A-701	fl	SBE-A-705	fl	SB3-A-707	fl
Sample Information	RFW#:	R				R							
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		1		5		1		1		2	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane		32		130		120		1	U	1	U	12	
Trichloroethene		1	U	1	U	1	U	1	U	1	U	2	U
Tetrachloroethene		2.7		700	E	300		1	U	1	U	150	

U=Analyzed, not detected. B=Present in b[illegible]k. NRP=Not Reported. E=Out of calibra[illegible]n range.
=Present at less than detection limit. NR=Not requested.

WEST[illegible] ANALYTICS
GC DATA SUMMARY
VOLATILE COMPOUNDS

RFW Batch Number: FIELD DATA Client: BLACK & DECKER Page: 3

Sample Information	Cust ID:	SB3-A-709	SB3-A-712	SB3-A-802	SB3-A-806	SB3-A-901	SB3-A-904
	RFW#:						
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	2	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane		4.6	64	1 U	1 U	1 U	1 U
Trichloroethene		1 U	0.6 J	1 U	1 U	1 U	1 U
Tetrachloroethene		32	590	1 U	1 U	180	1 U

Sample Information	Cust ID:	SB3-A-906	SB3-A-1002	SB3-A-1005	SB3-A-1005	SB3-A-1007	SB3-A-1101
	RFW#:				R		
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane		1 U	0.6 J	120	140	1 U	1 U
Trichloroethene		1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene		1 U	45	1 U	1 U	1 U	10

Sample Information	Cust ID:	SB3-A-1105	SB3-A-1105	SB3-A-1202	SB3-A-1204	SB3-A-1204	SB3-A-1206
	RFW#:		R			R	
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	5	5	25	25
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane		1 U	1.8	2.7 J	140	*	520
Trichloroethene		1 U	1 U	5.5	360	*	1300
Tetrachloroethene		1 U	1 U	100	5100 E	1100	38000 E

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported. E=Out of calibration range.
J=Present at less than detection limit. NR=Not requested. *=Refer to lower dilution.

WESTON ANALYTICS
GC DATA SUMMARY
VOLATILE COMPOUNDS

RFW Batch Number: FIELD DATA Client: BLACK & DECKER

Sample Information	Cust ID:	SB3-A-1206	SB3-A-1209	SB3-A-1209	SB3-A-1301	SB3-A-1304	SB3-A-1306
	RFW#:	R		R			
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	500	1	5	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane		*	20	63	1 U	1 U	1 U
Trichloroethene		*	30	30	1 U	1 U	1 U
Tetrachloroethene		70000	1900 E	4300	4.4	290 E	23

Sample Information	Cust ID:	SB3-A-1401	SB3-A-1403	SB3-A-1502	SB3-A-1502	SB3-A-1503	SB3-A-1504
	RFW#:				R		
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane		1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene		1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene		19	11	1 U	6.5	165	300 E

Sample Information	Cust ID:	SB3-A-1504	SB3-A-1506	SB3-A-1601	SB3-A-1603	SB3-A-1603	SB3-A-1604
	RFW#:	R				R	
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	2	1	1	1	25	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane		2 U	1 U	1 U	2.3	*	1 U
Trichloroethene		2 U	1 U	1 U	12	*	1 U
Tetrachloroethene		400	2.4	4.0	1500 E	3400	4.8

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported. E=Out of calibration range.
[illegible]=Present less than detection limit. NR=Not requested. +=Refer to lower dilution.

WESTON ANALYTICS
GC DATA SUMMARY
VOLATILE COMPOUNDS

RFW Batch Number: FIELD DATA Client: BLACK & DECKER Page: 5

	Cust ID:	SB3-A-1606	fl	SB3-A-1701	fl	SB3-A-1701	fl	SB3-A-1703	fl	SB3-A-1708	fl	SB3-A-1803	fl
Sample Information	RFW#:					R							
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		1		2		1		1		1	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane..............		1	U	1.8		*		1.1		1	U	4.6	
Trichloroethene...........		1	U	5.5		*		6.2		1	U	62	
Tetrachloroethene..................		5.7.		470	E	460		91		2.5		2200	E

	Cust ID:	SB3-A-1803	fl	SB3-A-1805	fl	SB3-A-1807	fl	SB3-A-1807	fl	SB3-A-1809	fl		fl
Sample Information	RFW#:	R						R					
	Matrix:	Soil		Soil		Soil		Soil		Soil			
	D.F.:	25		1		1		25		1			
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg			
1,1,1-Trichloroethane..............		*		1	U	240	E	420		0.9	J		
Trichloroethene...........		*		1	U	900	E	1600		1	U		
Tetrachloroethene..................		5000		2.3		2300	E	15000	E	4.1			

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported. E=Out of calibration range.
J=Present at less than detection limit. NR=Not requested. *=Refer to lower dilution.

WESTON Analytics - Dedicated Lab

CLIENT: BLACK & DECKER
RFW # : FIELD WORK-VOA'S
W.O.# : 2501-02-01-0000

DATA QUALIFIER

1. The following qualifiers are used on the data summary:

U - Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD - Indicates blank spike duplicate.

MS - Indicates matrix spike.

MSD - Indicates matrix spike duplicate.

DL - Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.

NA - Not applicable.

DF - Dilution factor.

NR - Not required.

I - Interference.

J. Michael Taylor
Project Director
Lionville Analytical Laboratory

DATE

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: FIELD DATA Client: BLACK & DECKER Page: 1

	Cust ID:	SB3-A-105		SB3-A-106		SB3-A-108		SB3-A-109		SB3-A-202		SB3-A-206	
Sample Information	RFW#:												
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		200		1		1		5		2000	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
			fl		fl		fl		fl		fl		fl
Benzene		5	U	1000	U	5	U	5	U	25	U	10000	U
Toluene		22		480000	E	100	E	5.9		26		1300000	E
Ethylbenzene		5	U	35000		2.0	J	2.2	J	1500		160000	
Total Xylenes		93		NR		NR		NR		8600	E	1100000	E

	Cust ID:	SB3-A-206		SB3-A-208		SB3-A-209		SB3-A-302		SB3-A-302		SB3-A-305	
Sample Information	RFW#:	R								R			
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	10000		1		1		1		1		1	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
			fl		fl		fl		fl		fl		fl
Benzene		50000	U	5	U	5	U	5	U	5	U	5	U
Toluene		1000000		5	U	5	U	5	U	5	U	48	
Ethylbenzene		120000		5	U	5	U	5	U	5	U	34	
Total Xylenes		310000		5	U	5	U	5	U	5	U	300	

	Cust ID:	SB3-A-305		SB3-A-306		SB3-A-309		SB3-A-310		SB3-A-403		SB3-A-406	
Sample Information	RFW#:	R											
	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		1		1		1		1		1	
	Units:	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
			fl		fl		fl		fl		fl		fl
Benzene		5	U	5	U	5	U	5	U	5	U	5	U
Toluene		5	U	3.7	J	5	U	5.3		5	U	5	U
Ethylbenzene		5	U	3.0	J	5	U	6.0		5	U	5	U
Total Xylenes		5	U	29		5	U	65		5	U	5	U

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported. E=Out of calibration range.
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: FIELD DATA   Client: BLACK & DECKER

Sample Information

Cust ID:	SB3-A-409	SB3-A-501	SB3-A-504	SB3-A-604	SB3-A-606	SB3-A-607
RFW#:						
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl
Benzene..........................	5 U	5 U	5 U	5 U	5 U	5 U
Toluene..........................	5 U	5 U	5 U	5 U	5 U	2000 E
Ethylbenzene.....................	5 U	5 U	5 U	5 U	5 U	5 U
Total Xylenes....................	5 U	5 U	5 U	5 U	5 U	5 U

Sample Information

Cust ID:	SB3-A-607	SB3-A-609	SB3-A-609	SB3-A-611	SB3-A-701	SB3-A-705
RFW#:	R		R			
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	200	1	1	10000	1	1
Units:	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl
Benzene..........................	1000 U	5 U	5 U	50000 U	5 U	5 U
Toluene..........................	2900	240	100	4600000 E	5 U	5 U
Ethylbenzene.....................	1000 U	5 U	5 U	50000 U	5 U	5 U
Total Xylenes....................	1000 U	5 U	5 U	50000 U	5 U	5 U

Sample Information

Cust ID:	SB3-A-707	SB3-A-709	SB3-A-712	SB3-A-802	SB3-A-806	SB3-A-901
RFW#:						
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	50	5	50	1	1	1
Units:	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl
Benzene..........................	250 I	25 U	250 U	5 U	5 U	5 U
Toluene..........................	250 I	750 I	330000 E	5 U	5 U	5 U
Ethylbenzene.....................	250 I	100 I	4100	5 U	5 U	5 U
Total Xylenes....................	1800	270 I	10000 I	5 U	5 U	5 U

U=Analyzed, not detected. B=Present in [illegible]nk. NRP=Not Reported. E=Out of calibr[illegible]on range.
J=Present at less than detection limit. [illegible]R=Not requested.
[illegible]To[illegible] Pe[illegible]le[illegible]yd[illegible]arb[illegible]Int[illegible]fer[illegible]e.

WEST[illegible] ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: FIELD DATA Client: BLACK & DECKER Page: 3

Sample Information	Cust ID:	SB3-A-904	SB3-A-906	SB3-A-1002	SB3-A-1005	SB3-A-1101	SB3-A-1105
	RFW#:						
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl
Benzene...........................		5 U	5 U	5 U	5 U	5 U	5 U
Toluene...........................		5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene......................		5 U	5 U	5 U	5 U	5 U	5 U
Total Xylenes.....................		5 U	5 U	5 U	5 U	5 U	5 U

Sample Information	Cust ID:	SB3-A-1105	SB3-A-1202	SB3-A-1204	SB3-A-1206	SB3-A-1206	SB3-A-1209
	RFW#:	R				R	
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	5	5	1
	Units:	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl
Benzene...........................		5 U	5 U	110	460	280	190
Toluene...........................		5 U	5 U	5 U	25 U	25 U	1100 E
Ethylbenzene......................		5 U	5 U	5 U	25 U	25 U	5 U
Total Xylenes.....................		5 U	5 U	5 U	25 U	25 U	5 U

Sample Information	Cust ID:	SB3-A-1301	SB3-A-1304	SB3-A-1401	SB3-A-1502	SB3-A-1503	SB3-A-1504
	RFW#:						
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl	ug/kg fl
Benzene...........................		5 U	2.1 J	5 U	5 U	5 U	5 U
Toluene...........................		5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene......................		5 U	5 U	5 U	5 U	5 U	5 U
Total Xylenes.....................		5 U	5 U	5 U	5 U	5 U	5 U

U=Analyzed, not detected. B=Present in blank. NRP=Not Reported. E=Out of calibration range.
J=Present at less than detection limit. NR=Not requested.

WESTON ANALYTICS
GC/MS DATA SUMMARY
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: FIELD DATA   Client: BLACK & DECKER

	Cust ID:	SB3-A-1603	SB3-A-1603	SB3-A-1604	SB3-A-1606	SB3-A-1701	SB3-A-1703
Sample Information	RFW#:		R				
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Benzene		25	5 U	5 U	5 U	5 U	5 U
Toluene		5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene		5. U	5 U	5 U	5 U	5 U	5 U
Total Xylenes		5 U	5 U	5 U	5 U	5 U	5 U

	Cust ID:	SB3-A-1708	SB3-A-1803	SB3-A-1807	SB3-A-1809
Sample Information	RFW#:				
	Matrix:	Soil	Soil	Soil	Soil
	D.F.:	1	1	2	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg
Benzene		5 U	130	1500 E	5 U
Toluene		5 U	5 U	10 U	5 U
Ethylbenzene		5 U	5 U	10 U	5 U
Total Xylenes		5 U	5 U	10 U	5 U

[illegible]=Analyzed, not detected. B=Present in bl[illegible] NRP=Not Reported. E=Out of calibrat[illegible] range.
J=Present at less than detection limit. [illegible]Not requested.

Roy F. Weston, Inc. [illegible]nville Laboratory
Volatiles by [illegible]MS, HSL List
Report Date: 02/03/89 [illegible].09

RFW Batch Number: 8812L023
Client: BLACK & DECKER
Work Order: 2501-02-01-0000
Page: 1a

	Cust ID:	RFW-10		RFW-10		RFW-10		RFW-11A		RFW-11B		RFW-11A DUP	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		2.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Toluene-d8	87 *	%	97	%	91	%	99	%	100	%	95	%
	Bromofluorobenzene	84 *	%	97	%	91	%	72 *	%	81 *	%	93	%
	1,2-Dichloroethane-d4	78	%	89	%	83	%	73 *	%	72 *	%	82	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	20	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	20	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	20	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	20	U	10	U	10	U
Methylene Chloride		3	JB	8	B	7	B	15	B	6	B	5	B
Acetone		2	J	8	J	7	J	52	B	120	B	6	JB
Carbon Disulfide		5	U	5	U	5	U	10	U	5	U	5	U
1,1-Dichloroethene		5	U	104	%	95	%	10	U	5	U	5	U
1,1-Dichloroethane		5	U	5	U	5	U	10	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	10	U	5	U	5	U
Chloroform		5	U	5	U	5	U	2	J	1	J	1	J
1,2-Dichloroethane		5	U	5	U	5	U	10	U	5	U	5	U
2-Butanone		6	J	8	J	10	U	17	J	10	U	10	U
1,1,1-Trichloroethane		5	U	5	U	5	U	10	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	10	U	5	U	5	U
Vinyl Acetate		10	U	10	U	10	U	20	U	10	U	10	U
Bromodichloromethane		5	U	5	U	5	U	10	U	5	U	5	U
1,2-Dichloropropane		5	U	5	U	5	U	10	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	10	U	5	U	5	U
Trichloroethene		340		115	%	130 *	%	51		20		51	
Dibromochloromethane		5	U	5	U	5	U	10	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	10	U	5	U	5	U
Benzene		5	U	133 *	%	118	%	10	U	5	U	5	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	10	U	5	U	5	U
Bromoform		5	U	5	U	5	U	10	U	5	U	5	U
4-Methyl-2-pentanone		10	U	10	U	10	U	20	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	20	U	10	U	10	U
Tetrachloroethene		1	J	1	J	1	J	10	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	10	U	5	U	5	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 8812L023 Client: BLACK & DECKER Work Order: 2501-02-01-0000

Cust ID:	RFW-10		RFW-10		RFW-10		RFW-11A		RFW-11B		RFW-11A DUP	
RFW#:	001		001 MS		001 MSD		002		003		004	
Toluene	5	U	96	%	87	%	10	U	5	U	5	U
Chlorobenzene	5	U	104	%	97	%	10	U	5	U	5	U
Ethylbenzene	5	U	5	U	5	U	10	U	5	U	5	U
Styrene	5	U	5	U	5	U	2	J	5	U	5	U
Xylene (total)	5	U	5	U	5	U	10	U	5	U	5	U

*= Outside of EPA CLP QC limits.

Roy F. Weston, Inc. [illegible]onville Laboratory
Volatiles by [illegible]/MS, HSL List
Report Date: 02/03/89 [illegible]:09

RFW Batch Number: 8812L023 Client: BLACK & DECKER Work Order: 2501-02-01-0000 Page: 2a

	Cust ID:	RFW-12		RFW-12		RFW-13		RFW-14		VBLK		VBLK	
Sample Information	RFW#:	005		005 DL		006		007		89LVY002-MB1		89LVQ008-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		100		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Surrogate Recovery	Toluene-d8	98	%	110	%	101	%	91	%	103	%	101	%
	Bromofluorobenzene	95	%	97	%	77 *	%	96	%	105	%	91	%
	1,2-Dichloroethane-d4	76	%	87	%	70 *	%	83	%	94	%	82	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	NA		10	U	10	U	10	U	10	U
Bromomethane		10	U	NA		10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	NA		10	U	10	U	10	U	10	U
Chloroethane		10	U	NA		10	U	10	U	10	U	10	U
Methylene Chloride		6	B	760	B	5	B	16	B	5		7	
Acetone		79	B	940	JB	8	JB	5	JB	10	U	18	
Carbon Disulfide		5	U	NA		5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	NA		5	U	5	U	5	U	5	U
1,1-Dichloroethane		5	U	NA		5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	NA		5	U	5	U	5	U	5	U
Chloroform		1	J	120	J	1	J	2	J	5	U	5	U
1,2-Dichloroethane		5	U	NA		5	U	5	U	5	U	5	U
2-Butanone		8	J	NA		10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		5	U	NA		5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	NA		5	U	5	U	5	U	5	U
Vinyl Acetate		10	U	NA		10	U	10	U	10	U	10	U
Bromodichloromethane		5	U	NA		5	U	5	U	5	U	5	U
1,2-Dichloropropane		5	U	NA		5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	NA		5	U	5	U	5	U	5	U
Trichloroethene		650		1100		5	U	5	U	5	U	5	U
Dibromochloromethane		5	U	NA		5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	NA		5	U	5	U	5	U	5	U
Benzene		5	U	NA		5	U	5	U	5	U	5	U
Trans-1,3-Dichloropropene		5	U	NA		5	U	5	U	5	U	5	U
Bromoform		5	U	NA		5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		10	U	NA		10	U	10	U	10	U	10	U
2-Hexanone		10	U	NA		10	U	10	U	10	U	10	U
Tetrachloroethene		12		NA		5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	NA		5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 8812L023 Client: BLACK & DECKER Work Order: 2501-02-01-0000

Cust ID:	RFW-12		RFW-12		RFW-13		RFW-14		VBLK		VBLK	
RFW#:	005		005 DL		006		007		89LVY002-MB1		89LVQ008-MB1	
Toluene	5	U	200	J	5	U	5	U	5	U	5	U
Chlorobenzene	5	U	NA		5	U	5	U	5	U	5	U
Ethylbenzene	5	U	NA		5	U	5	U	5	U	5	U
Styrene	1	J	NA		1	J	5	U	5	U	5	U
Xylene (total)	5	U	NA		5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

RFW-11A

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: BLACK & DECKER

Matrix: WATER

Lab Sample ID: 8812L023-002

Sample wt/vol: 2.50 (g/mL) ML

Lab File ID: Q011213

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. ____

Date Analyzed: 01/12/89

Column: (pack/cap) PACK

Dilution Factor: 2.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.03	400	J
2.	UNKNOWN	29.87	10	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

RFW-11B

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: BLACK & DECKER

Matrix: WATER

Lab Sample ID: 8812L023-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: Q011207

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. ____

Date Analyzed: 01/12/89

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.30	10	J
2.	UNKNOWN	29.87	10	J

FORM 1 VOA-TIC

12/88 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

RFW-11A DUP

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: BLACK & DECKER

Matrix: WATER

Lab Sample ID: 8812L023-004

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: 0011208

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. ____

Date Analyzed: 01/12/89

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	29.87	8	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

RFW-13

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: BLACK & DECKER

Matrix: WATER

Lab Sample ID: 8812L023-006

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: 0011209

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. ____

Date Analyzed: 01/12/89

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	29.90	6	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

RFW-14

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: BLACK & DECKER

Matrix: WATER

Lab Sample ID: 8812L023-007

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: Q011210

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. _____

Date Analyzed: 01/12/89

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	29.87	8	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

VBLK

Lab Name: Roy F. Weston, Inc.   Work Order: 2501-02-01-0000

Client: LAB

Matrix: WATER

Lab Sample ID: 89LV0008-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: 0011203

Level: (low/med) LOW

Date Received: 01/12/89

% Moisture: not dec. ____

Date Analyzed: 01/12/89

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.00	300	J
2.	UNKNOWN	10.80	5	J
3.	UNKNOWN	29.87	10	J

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

RFW-12

Lab Name: Roy F. Weston,Inc. Work Order: 2501-02-01-0000

Client: BLACK & DECKER

Matrix: WATER

Lab Sample ID: 8812L023-005

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: 0011212

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. ____

Date Analyzed: 01/12/89

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	10.80	10000	J
2.	UNKNOWN	29.87	10000	J

PETROLEUM HYDROCARBON ANALYSIS RESULTS: SOIL SAMPLES

WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER Page: 1

	Cust ID:	SB3-A-101	SB3-A-101	SB3-A-102	SB3-A-102	BLANK	B.S.
Sample	RFW#:	1	1 DUP	2	2 MS	BLANK	B.S.
Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:		fl	fl	fl	fl	fl	fl
PHC (wet weight)		26.0	44.0	17.0	108 %	3.0 J	96 %
Date		12/07/88	12/07/88	12/07/88	12/07/88	12/07/88	12/07/88

	Cust ID:	CHECK STD	SB3-A-103	SB3-A-104	SB3-A-105	SB3-A-106	SB3-A-107
Sample	RFW#:	100	3	4	5	6	7
Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:		fl	fl	fl	fl	fl	fl
PHC (wet weight)		140.0	7 J	20.0	20.0	750.0	12.0 J
Date		12/07/88	12/08/88	12/08/88	12/08/88	12/08/88	12/08/88

	Cust ID:	SB3-A-108	SB3-A-109	SB3-A-104	SB3-A-105	BLANK	B.S.
Sample	RFW#:	8	9	4 DUP	5 MS	BLANK	B.S.
Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:		fl	fl	fl	fl	fl	fl
PHC (wet weight)		14.0 J	12.0 J	12.0 J	87 %	3.9 J	91 %
Date		12/08/88	12/08/88	12/08/88	12/08/88	12/08/88	12/08/88

U=Analyzed, not detected. J=Present below detection limit.

WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER Page: 2

Sample Information	Cust ID:	SB3-A-201	SB3-A-202	SB3-A-203	SB3-A-204	SB3-A-205	SB3-A-206
	RFW#:	10	11	12	13	14	15
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)....................		39.0	46.0	34.0	74.0	170.0	1800.0
Date............................		12/08/88	12/08/88	12/08/88	12/08/88	12/08/88	12/08/88

Sample Information	Cust ID:	SB3-A-207	SB3-A-208	SB3-A-209	SB3-A-204	SB3-A-205	BLANK
	RFW#:	16	17	18	13 DUP	14 MS	BLANK
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)....................		7.8 B	4.0 U	4.0 U	68.0	92 %	5.1
Date............................		12/08/88	12/08/88	12/08/88	12/08/88	12/08/88	12/08/88

Sample Information	Cust ID:	B.S.	SB3-A-301	SB3-A-302	SB3-A-303	SB3-A-304	SB3-A-305
	RFW#:	B.S.	19	20	21	22	23
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)....................		96 %	9.5	28.0	17.0	25.0	11.0
Date............................		12/08/88	12/08/88	12/08/88	12/08/88	12/08/88	12/08/88

[redacted] U[redacted]hal[redacted]d. [redacted]t d[redacted]cte[redacted]J=[redacted]sen[redacted]elo[redacted]dete[redacted]ion[redacted]imit[redacted]

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                            WESTON ANALYTICS
                       TOTAL PETROLEUM HYDROCARBON

===================================================================
RFW Batch Number:        Client:   BLACK & DECKER            Page: 3
-------------------------------------------------------------------
                    Cust ID: SB3-A-306 SB3-A-307 SB3-A-308 SB3-A-309 SB3-A-310 SB3-A-309
Sample                RFW#:        24        25        26        27        28    27 DUP
Information         Matrix:      Soil      Soil      Soil      Soil      Soil      Soil
                      D.F.:         1         1         1         1         1         1
                     Units:     mg/kg     mg/kg     mg/kg     mg/kg     mg/kg     mg/kg
==============================fl========fl========fl========fl========fl========fl
Analyte:
PHC (wet weight)...........      32.0       5.0      11.0      12.0      11.0      10.0

Date....................... 12/08/88  12/08/88  12/08/88  12/08/88  12/08/88  12/08/88

-------------------------------------------------------------------
                    Cust ID: SB3-A-310     BLANK      B.S. SB3-A-401 SB3-A-402 SB3-A-403
Sample                RFW#:     28 MS     BLANK      B.S.        29        30        31
Information         Matrix:      Soil      Soil      Soil      Soil      Soil      Soil
                      D.F.:         1         1         1         1         1         1
                     Units:     mg/kg     mg/kg     mg/kg     mg/kg     mg/kg     mg/kg
==============================fl========fl========fl========fl========fl========fl
Analyte:
PHC (wet weight)...........        88 %     4.0 U     103 %    12.0       5.4       2.1 J

Date....................... 12/08/88  12/08/88  12/08/88  12/08/88  12/08/88  12/08/88


-------------------------------------------------------------------
                    Cust ID: SB3-A-404 SB3-A-405 SB3-A-406 SB3-A-407 SB3-A-408 SB3-A-409
Sample                RFW#:        32        33        34        35        36        37
Information         Matrix:      Soil      Soil      Soil      Soil      Soil      Soil
                      D.F.:         1         1         1         1         1         1
                     Units:     mg/kg     mg/kg     mg/kg     mg/kg     mg/kg     mg/kg
==============================fl========fl========fl========fl========fl========fl
Analyte:
PHC (wet weight)...........       2.5 J     4.9       4.3       4.0 U     6.9       4.0 U

Date....................... 12/08/88  12/08/88  12/08/88  12/08/88  12/08/88  12/08/88


 U=Analyzed, not detected. J=Present below detection limit.
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WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER Page: 4

Sample Information						
Cust ID:	SB3-A-405	SB3-A-409	BLANK	B.S.	SB3-A-501	SB3-A-502
RFW#:	33 DUP	37 MS	BLANK	B.S.	38	39
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)....................	3.3 J	102 %	4.0 U	103 %	50.0	16.0 B
Date..............................	12/08/88	12/08/88	12/08/88	12/08/88	12/09/88	12/09/88

Sample Information						
Cust ID:	SB3-A-503	SB3-A-504	SB3-A-505	SB3-A-506	SB3-A-507	SB3-A-508
RFW#:	40	41	42	43	44	45
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)....................	11.0 B	18.0 B	17.0 B	13.0 B	17.0 B	17.0 B
Date..............................	12/09/88	12/09/88	12/09/88	12/09/88	12/09/88	12/09/88

Sample Information						
Cust ID:	SB3-A-509	SB3-A-510	BLANK	B.S.	SB3-A-801	SB3-A-802
RFW#:	46	47	BLANK	B.S.	48	49
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)....................	12.0 B	11.0 B	9.9	93 %	6.2	20.0
Date..............................	12/09/88	12/09/88	12/09/88	12/09/88	12/09/88	12/09/88

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WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER

Sample Information	Cust ID:	SB3-A-803	SB3-A-804	SB3-A-805	SB3-A-806	SB3-A-807	SB3-A-808
	RFW#:	50	51	52	53	54	55
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
PHC (wet weight)		7.0	13.0	4.0 J	9.6	4.0 U	6.6
Date		12/09/88	12/09/88	12/09/88	12/09/88	12/09/88	12/09/88

Sample Information	Cust ID:	SB3-A-809	SB3-A-803	SB3-A-801	BLANK	B.S.	SB3-A-701
	RFW#:	56	50 DUP	48 MS	BLANK	B.S.	57
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
PHC (wet weight)		8.1	4.8	100 %	1.4	99 %	110.0
Date		12/09/88	12/09/88	12/09/88	12/09/88	12/09/88	12/09/88

Sample Information	Cust ID:	SB3-A-702	SB3-A-703	SB3-A-704	SB3-A-705	SB3-A-706	SB3-A-707
	RFW#:	58	59	60	61	62	63
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
PHC (wet weight)		11.0	3.3 JB	4.0 U	7.4	4.0 U	7500.0
Date		12/09/88	12/09/88	12/09/88	12/09/88	12/09/88	12/09/88

U=Analyzed, not detected. J=Present below detection limit.

WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER

Sample Information	Cust ID:	SB3-A-708	SB3-A-709	SB3-A-710	SB3-A-711	SB3-A-712	SB3-A-701
	RFW#:	64	65	66	67	68	57 DUP
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
PHC (wet weight)		14000	340.0	21.0	2200.0	860.0	71.0
Date		12/09/88	12/09/88	12/09/88	12/09/88	12/09/88	12/10/88

Sample Information	Cust ID:	SB3-A-706	SB3-A-710	BLANK	B.S.	CHECK STD	SB3-A-601
	RFW#:	62 DUP	66 DUP	BLANK	B.S.	100	69
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
PHC (wet weight)		51.0	42.0	4.7	89 %	140.0	13.0
Date		12/10/88	12/10/88	12/10/88	12/10/88	12/10/88	12/12/88

Sample Information	Cust ID:	SB3-A-602	SB3-A-603	SB3-A-604	SB3-A-605	SB3-A-606	SB3-A-607
	RFW#:	70	71	72	73	74	75
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:							
PHC (wet weight)		18.0	33.0	74.0	2.4 J	1.7 J	3.1 J
Date		12/12/88	12/12/88	12/12/88	12/12/88	12/12/88	12/12/88

U=Analyzed, not detected. J=Present below detection limit.

WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER Page: 7

Sample Information	Cust ID:	SB3-A-608	SB3-A-609	SB3-A-611	SB3-A-901	SB3-A-902	SB3-A-903
	RFW#:	76	77	78	79	80	81
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:		fl	fl	fl	fl	fl	fl
PHC (wet weight)...................		7.2	10.0	400.0	34.0	25.0	24.0
Date............................		12/12/88	12/12/88	12/12/88	12/12/88	12/12/88	12/12/88

Sample Information	Cust ID:	SB3-A-904	SB3-A-905	SB3-A-906	SB3-A-907	SB3-A-908	SB3-A-909
	RFW#:	82	83	84	85	86	87
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:		fl	fl	fl	fl	fl	fl
PHC (wet weight)...................		26.0	21.0	3.8 J	9.4	17.0	4.2
Date............................		12/12/88	12/12/88	12/12/88	12/12/88	12/12/88	12/12/88

Sample Information	Cust ID:	SB3-A-908	SB3-A-909	BLANK	B.S.	SB3-A-1001	SB3-A-1002
	RFW#:	86 DUP	87 MS	BLANK	B.S.	88	89
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:		fl	fl	fl	fl	fl	fl
PHC (wet weight)...................		12.0	110 %	1.3	91 %	16.0	52.0
Date............................		12/12/88	12/12/88	12/12/88	12/12/88	12/12/88	12/12/88

U=Analyzed, not detected. J=Present below detection limit.

WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER

Sample Information	Cust ID:	SB3-A-1003	SB3-A-1004	SB3-A-1005	SB3-A-1006	SB3-A-1007	SB3-A-1008
	RFW#:	90	91	92	93	94	95
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)		17.0	20.0	64.0	4.6	5.2	2.7 J
Date		12/12/88	12/12/88	12/12/88	12/12/88	12/12/88	12/12/88

Sample Information	Cust ID:	SB3-A-1009	BLANK	B.S.	SB3-A-1101	SB3-A-1102	SB3-A-1103
	RFW#:	96	BLANK	B.S.	97	98	99
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)		4.0 U	2.4	97 %	11.0	3.5 J	4.0 U
Date		12/12/88	12/12/88	12/12/88	12/13/88	12/13/88	12/13/88

Sample Information	Cust ID:	SB3-A-1104	SB3-A-1105	SB3-A-1106	SB3-A-1107	SB3-A-1108	SB3-A-1109
	RFW#:	100	101	102	103	104	105
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)		4.0 U	3.6 J	4.0 U	7.4	4.0 U	3.6 J
Date		12/13/88	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88

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WEST ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER

Sample Information

Cust ID:	BLANK	SB3-A-1108	SB3-A-1109	B.S.	SB3-A-1201	SB3-A-1202
RFW#:	BLANK	104 DUP	105 MS	B.S.	106	107
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:						
PHC (wet weight)...................	4.0 U	4.0 U	93 %	99 %	390.0	1700.0
Date............................	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88

Sample Information

Cust ID:	SB3-A-1203	SB3-A-1204	SB3-A-1205	SB3-A-1206	SB3-A-1207	SB3-A-1208
RFW#:	108	109	110	111	112	113
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:						
PHC (wet weight)...................	34.0	3100.0	77000.0	93000.0	110.0	310.0
Date............................	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88

Sample Information

Cust ID:	SB3-A-1209	SB3-A-1203	SB3-A-1204	BLANK	B.S.	SB3-A-1301
RFW#:	114	108 DUP	109 MS	BLANK	B.S.	115
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:						
PHC (wet weight)...................	35.0	27.0	101 %	4.0 U	98 %	2600.0
Date............................	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88

U=Analyzed, not detected. J=Present below detection limit.

WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER

Sample Information	Cust ID:	SB3-A-1302	SB3-A-1303	SB3-A-1304	SB3-A-1305	SB3-A-1306	SB3-A-1307
	RFW#:	116	117	118	119	120	121
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)...................		48.0	2.2 J	130.0	24.0	46.0	4.0 U
Date............................		12/13/88	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88

Sample Information	Cust ID:	SB3-A-1308	SB3-A-1309	SB3-A-1303	SB3-A-1401	SB3-A-1402	SB3-A-1403
	RFW#:	122	123	117 DUP	124	125	126
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)...................		4.0 U	4.0 U	4.2	180.0	20.0	4.0 U
Date............................		12/13/88	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88

Sample Information	Cust ID:	SB3-A-1404	SB3-A-1405	SB3-A-1406	SB3-A-1407	SB3-A-1408	SB3-A-1409
	RFW#:	127	128	129	130	131	132
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte: PHC (wet weight)...................		4.0 U	20.0	7.1	4.0	4.0 U	1.6 J
Date............................		12/13/88	12/13/88	12/13/88	12/13/88	12/13/88	12/13/88

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WESTON ALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER

	Cust ID:	SB3-A-1406		SB3-A-1406		BLANK		SB3-A-1501		SB3-A-1502		SB3-A-1503	
Sample	RFW#:	129 DUP		129 MS		BLANK		133		134		135	
Information	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		1		1		1		1		1	
	Units:	mg/kg	fl	mg/kg	fl	mg/kg	fl	mg/kg	fl	mg/kg	fl	mg/kg	fl
Analyte:													
PHC (wet weight)...................		6.8		98	%	4.0	U	1200.0		4.0	U	1800.0	
Date...............................		12/13/88		12/13/88		12/13/88		12/13/88		12/13/88		12/13/88	

	Cust ID:	SB3-A-1504		SB3-A-1505		SB3-A-1506		SB3-A-1507		SB3-A-1508		SB3-A-1509	
Sample	RFW#:	136		137		138		139		140		141	
Information	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		1		1		1		1		1	
	Units:	mg/kg	fl	mg/kg	fl	mg/kg	fl	mg/kg	fl	mg/kg	fl	mg/kg	fl
Analyte:													
PHC (wet weight)...................		35.0		8.4		5.0		4.0	U	18.0		4.0	U
Date...............................		12/13/88		12/13/88		12/13/88		12/13/88		12/13/88		12/13/88	

	Cust ID:	BLANK		B.S.		SB3-A-1601		SB3-A-1602		SB3-A-1603		SB3-A-1604	
Sample	RFW#:	BLANK		B.S.		142		143		144		145	
Information	Matrix:	Soil		Soil		Soil		Soil		Soil		Soil	
	D.F.:	1		1		1		1		1		1	
	Units:	mg/kg	fl	mg/kg	fl	mg/kg	fl	mg/kg	fl	mg/kg	fl	mg/kg	fl
Analyte:													
PHC (wet weight)...................		4.0	U	109	%	57.0		39.0		1100.0		22.0	B
Date...............................		12/13/88		12/13/88		12/14/88		12/14/88		12/14/88		12/14/88	

U=Analyzed, not detected. J=Present below detection limit.

WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER

Sample Information	Cust ID:	SB3-A-1605	SB3-A-1606	SB3-A-1607	SB3-A-1608	SB3-A-1609	SB3-A-1609
	RFW#:	146	147	148	149	150	150 DUP
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:		fl	fl	fl	fl	fl	fl
PHC (wet weight)		2.6 JB	27.0 B	20.0 B	4.0 U	15.0 B	19.5 B
Date		12/14/88	12/14/88	12/14/88	12/14/88	12/14/88	12/14/88

Sample Information	Cust ID:	SB3-A-1609	BLANK	B.S.	SB3-A-1701	SB3-A-1702	SB3-A-1703
	RFW#:	150 MS	BLANK	B.S.	151	152	153
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:		fl	fl	fl	fl	fl	fl
PHC (wet weight)		94 %	8.4 *	91 %	220.0	23.0	13.0
Date		12/14/88	12/14/88	12/14/88	12/14/88	12/14/88	12/14/88

Sample Information	Cust ID:	SB3-A-1704	SB3-A-1705	SB3-A-1706	SB3-A-1707	SB3-A-1708	SB3-A-1709
	RFW#:	154	155	156	157	158	159
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:		fl	fl	fl	fl	fl	fl
PHC (wet weight)		9.0	29.0	13.0	8.5	23.0	18.0
Date		12/14/88	12/14/88	12/14/88	12/14/88	12/14/88	12/14/88

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U=Analyzed, not detected. J=Present below detection limit.

WESTON ANALYTICS
TOTAL PETROLEUM HYDROCARBON

RFW Batch Number: Client: BLACK & DECKER Page: 13

Sample Information

Cust ID:	SB3-A-1801	SB3-A-1802	SB3-A-1803	SB3-A-1804	SB3-A-1805	SB3-A-1806
RFW#:	160	161	162	163	164	165
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:						
PHC (wet weight)..................	850.0	1400.0	1500.0	14.0	17.0	9100.0
Date.............................	12/14/88	12/14/88	12/14/88	12/14/88	12/14/88	12/14/88

Sample Information

Cust ID:	SB3-A-1807	SB3-A-1808	SB3-A-1809	SB3-A-1803	SB3-A-1803	BLANK
RFW#:	166	167	168	162 DUP	162 MS	BLANK
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Analyte:						
PHC (wet weight)..................	3300.0	220.0	28.0	28.9	106 %	4.0 U
Date.............................	12/14/88	12/14/88	12/14/88	12/14/88	12/14/88	12/14/88

Sample Information

Cust ID:	B.S.
RFW#:	B.S.
Matrix:	Soil
D.F.:	1
Units:	mg/kg
Analyte:	
PHC (wet weight)..................	95 %
Date.............................	12/14/88

U=Analyzed, not detected. J=Present below detection limit.

VOC ANALYSIS RESULTS: TCLP LEACHATE SAMPLES

Roy F. Weston, Inc. [illegible]onville Laboratory

Volatiles by GC/MS, TCLP Leachate

Report Date: 01/21/89 10:42

RFW Batch Number: 8812L946

Client: BLACK & DECKER

Work Order: 2501-02-01-0000

Page: 1a

	Cust ID:	SB3-A-1206		SB3-A-1803		SB3-A-1803		VBLK		TCLPBK 12-27		TCLPBK 12-28	
Sample Information	RFW#:	003		004		004 MS		88VW0201-MB1		88VW0201-MB2		88VW0201-MB3	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
	Toluene-d8	97	%	99	%	103	%	92	%	92	%	96	%
Surrogate	Bromofluorobenzene	108	%	101	%	108	%	97	%	96	%	98	%
Recovery	1,2-Dichloroethane-d4	96	%	98	%	109	%	87	%	97	%	98	%
			fl		fl		fl		fl		fl		fl
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		5	B	48	B	77	B	3	J	8	B	4	JB
Carbon Disulfide		3	J	5	U	1	J	5	U	5	U	5	U
1,1-Dichloroethene		5	U	5	U	70	%	5	U	5	U	5	U
Chloroform		1	J	1	J	2	J	5	U	1	J	1	J
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		5	JB	8	JB	6	JB	9	J	8	JB	7	JB
1,1,1-Trichloroethane		21		5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		60		2	J	73	%	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Benzene		5	U	5	U	83	%	5	U	5	U	5	U
Tetrachloroethene		170		52		44		5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Toluene		1	J	5	U	79	%	5	U	5	U	5	U
Chlorobenzene		5	U	5	U	82	%	5	U	5	U	5	U
1,1,1,2-Tetrachloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Isobutanol		20	U	20	U	20	U	20	U	20	U	20	U
Acrylonitrile		10	U	10	U	10	U	10	U	10	U	10	U

*= Outside of EPA CLP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, TCLP Leachate
Report Date: 01/21/89 10:42
RFW Batch Number: 8812L946 Client: **BLACK & DECKER** Work Order: 2501-02-01-0000

Cust ID: **VBLK**

Sample Information
RFW#: **89LVW001-MB1**
Matrix: WATER
D.F.: 1.00
Units: ug/L

	Toluene-d8	101	%
Surrogate	Bromofluorobenzene	108	%
Recovery	1,2-Dichloroethane-d4	103	%

		fl	fl	fl	fl	fl	fl
Vinyl Chloride	10	U					
Methylene Chloride	17						
Carbon Disulfide	5	U					
1,1-Dichloroethene	5	U					
Chloroform	5	U					
1,2-Dichloroethane	5	U					
2-Butanone	6	J					
1,1,1-Trichloroethane	5	U					
Carbon Tetrachloride	5	U					
Trichloroethene	5	U					
1,1,2-Trichloroethane	5	U					
Benzene	5	U					
Tetrachloroethene	5	U					
1,1,2,2-Tetrachloroethane	5	U					
Toluene	5	U					
Chlorobenzene	5	U					
1,1,1,2-Tetrachloroethane	10	U					
Isobutanol	20	U					
Acrylonitrile	10	U					

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SB3-A-1206

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: BLACK & DECKER

Matrix: WATER

Lab Sample ID: 8812L946-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: W123012

Level: (low/med) LOW

Date Received: 12/16/88

% Moisture: not dec. _____

Date Analyzed: 12/30/88

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

Number TICs found: 11

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ACETONE	3.63	3000	C
2.	TOTAL XYLENES	29.07	3.0	C
3.	C6-ALKANE/ALKENE	10.50	30	J
4.	UNKNOWN	14.27	30	J
5.	UNKNOWN	16.87	10	J
6.	UNKNOWN	18.40	10	J
7.	UNKNOWN	21.37	30	J
8.	ETHYLDIMETHYL-BENZENE	24.10	90	J
9.	UNKNOWN	31.50	90	J
10.	ETHYLDIMETHYL-BENZENE	35.40	300	J
11.	UNKNOWN	39.07	90	J

C: Response Factor from daily standard.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SB3-A-1803

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: BLACK & DECKER

Matrix: WATER

Lab Sample ID: 8812L946-004

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: W123013

Level: (low/med) LOW

Date Received: 12/16/88

% Moisture: not dec. ____

Date Analyzed: 12/31/88

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 11

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ACETONE	3.60	2700	C
2.	TOTAL XYLENES	29.07	3.0	C
3.	C6-ALKANE/ALKENE	10.50	30	J
4.	C10-UNKNOWN BENZENE	12.57	30	J
5.	C6-ALKANE	14.23	30	J
6.	ETHYLMETHYL-BENZENE	16.87	10	J
7.	ETHYLMETHYL-BENZENE	18.40	10	J
8.	UNKNOWN	21.33	40	J
9.	ETHYLMETHYL-BENZENE	23.40	7	J
10.	UNKNOWN	31.43	6	J
11.	UNKNOWN	35.73	20	J

C: Response Factor from daily standard.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

TCLPBK 12-27

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: LAB

Matrix: WATER

Lab Sample ID: 88VW0201-MB2

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: W123008

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. ____

Date Analyzed: 12/30/88

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

Number TICs found: 8

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ACETONE	3.63	3400	C
2.	C6-ALKANE/ALKENE	10.50	200	J
3.	UNKNOWN	12.57	30	J
4.	UNKNOWN	14.27	200	J
5.	UNKNOWN	16.87	10	J
6.	UNKNOWN	18.40	20	J
7.	UNKNOWN	21.37	40	J
8.	UNKNOWN	23.47	6	J

C: Response Factor from daily standard.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

TCLPBK 12-28

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: LAB

Matrix: WATER

Lab Sample ID: 88VW0201-MB3

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: W123009

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. ____

Date Analyzed: 12/30/88

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

Number TICs found: 8

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ACETONE	3.60	810	C
2.	C6-ALKANE/ALKENE	10.50	30	J
3.	UNKNOWN	12.57	20	J
4.	UNKNOWN	14.27	90	J
5.	UNKNOWN	16.87	10	J
6.	UNKNOWN	18.43	20	J
7.	UNKNOWN	21.37	50	J
8.	UNKNOWN	23.50	6	J

C: Response Factor from daily standard.

Roy F. Weston, Inc. - [illegible]nville Laboratory
Volatiles by GC/MS, TCLP Leachate
Report Date: 01/21/89 10:06
RFW Batch Number: 8812L854 Client: BLACK AND DECKER Work Order: 2501-02-01-0000 Page: 1a

	Cust ID:	SB3-A-206		SB3-A-206		SB3-A-305		VBLK		TCLPBK 12-27		TCLPBK 12-28	
Sample Information	RFW#:	003		003 DL		004		88VW0201-MB1		88VW0201-MB2		88VW0201-MB3	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		100		1.00		1.00		1.00		1.00	
	Units:	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
	Toluene-d8	81 *	%	104	%	102	%	92	%	92	%	96	%
Surrogate	Bromofluorobenzene	101	%	110	%	106	%	97	%	96	%	98	%
Recovery	1,2-Dichloroethane-d4	106	%	111	%	105	%	87	%	97	%	98	%
			fl		fl		fl		fl		fl		fl
Vinyl Chloride		10	U	NA		10	U	10	U	10	U	10	U
Methylene Chloride		9	B	1800	B	18	B	3	J	8	B	4	JB
Carbon Disulfide		5	U	NA		5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	NA		5	U	5	U	5	U	5	U
Chloroform		1	J	NA		1	J	5	U	1	J	1	J
1,2-Dichloroethane		5	U	NA		5	U	5	U	5	U	5	U
2-Butanone		7	JB	390	JB	5	JB	9	J	8	JB	7	JB
1,1,1-Trichloroethane		5	U	NA		5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	NA		5	U	5	U	5	U	5	U
Trichloroethene		5	U	NA		5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	NA		5	U	5	U	5	U	5	U
Benzene		5	U	NA		5	U	5	U	5	U	5	U
Tetrachloroethene		4	J	NA		5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	NA		5	U	5	U	5	U	5	U
Toluene		880	E	1600		11		5	U	5	U	5	U
Chlorobenzene		5	U	NA		5	U	5	U	5	U	5	U
1,1,1,2-Tetrachloroethane		10	U	NA		10	U	10	U	10	U	10	U
Isobutanol		20	U	NA		20	U	20	U	20	U	20	U
Acrylonitrile		10	U	NA		10	U	10	U	10	U	10	U

*= Outside of EPA CLP QC limits.

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, TCLP Leachate
Report Date: 01/21/89 10:06
RFW Batch Number: 8812L854
Client: **BLACK AND DECKER**
Work Order: 2501-02-01-0000
Page: 2a

Cust ID: **VBLK**

Sample Information
RFW#: 89LVW001-MB1
Matrix: WATER
D.F.: 1.00
Units: ug/L

	Toluene-d8	101	%
Surrogate	Bromofluorobenzene	108	%
Recovery	1,2-Dichloroethane-d4	103	%
	Vinyl Chloride	10	U
	Methylene Chloride	17	
	Carbon Disulfide	5	U
	1,1-Dichloroethene	5	U
	Chloroform	5	U
	1,2-Dichloroethane	5	U
	2-Butanone	6	J
	1,1,1-Trichloroethane	5	U
	Carbon Tetrachloride	5	U
	Trichloroethene	5	U
	1,1,2-Trichloroethane	5	U
	Benzene	5	U
	Tetrachloroethene	5	U
	1,1,2,2-Tetrachloroethane	5	U
	Toluene	5	U
	Chlorobenzene	5	U
	1,1,1,2-Tetrachloroethane	10	U
	Isobutanol	20	U
	Acrylonitrile	10	U

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

TCLPBK 12-27

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: LAB

Matrix: WATER

Lab Sample ID: 88VW0201-MB2

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: W123008

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. ____

Date Analyzed: 12/30/88

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ACETONE	3.63	3400	C
2.	C6-ALKANE/ALKENE	10.50	200	J
3.	UNKNOWN	12.57	30	J
4.	UNKNOWN	14.27	200	J
5.	UNKNOWN	16.87	10	J
6.	UNKNOWN	18.40	20	J
7.	UNKNOWN	21.37	40	J
8.	UNKNOWN	23.47	6	J

C: Response Factor from daily standard.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

TCLPBK 12-28

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: LAB

Matrix: WATER

Lab Sample ID: 88VW0201-MB3

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: W123009

Level: (low/med) LOW

Date Received: 12/30/88

% Moisture: not dec. _____

Date Analyzed: 12/30/88

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ACETONE	3.60	810	C
2.	C6-ALKANE/ALKENE	10.50	30	J
3.	UNKNOWN	12.57	20	J
4.	UNKNOWN	14.27	90	J
5.	UNKNOWN	16.87	10	J
6.	UNKNOWN	18.43	20	J
7.	UNKNOWN	21.37	50	J
8.	UNKNOWN	23.50	6	J

C: Response Factor from daily standard.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SB3-A-206

Lab Name: Roy F. Weston, Inc. Work Order: 2501-02-01-0000

Client: BLACK AND DECKER

Matrix: WATER

Lab Sample ID: 8812L854-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: W123010

Level: (low/med) LOW

Date Received: 12/12/88

% Moisture: not dec. ____

Date Analyzed: 12/30/88

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 13

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ACETONE	3.63	3800	C
2.	ETHYLBENZENE	22.67	350	C
3.	TOTAL XYLENES	29.07	2200	C
4.	C6-ALKANE/ALKENE	10.50	60	J
5.	UNKNOWN	12.60	30	J
6.	UNKNOWN	14.27	50	J
7.	UNKNOWN	18.43	10	J
8.	UNKNOWN	21.40	40	J
9.	METHYLETHYL-BENZENE	25.63	100	J
10.	UNKNOWN	31.20	100	J
11.	UNKNOWN	32.93	10	J
12.	UNKNOWN	36.07	600	J
13.	ETHYLMETHYLBENZENE	37.93	400	J

C: Response Factor from daily standard.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SB3-A-305

Lab Name: Roy F. Weston, Inc.   Work Order: 2501-02-01-0000

Client: BLACK AND DECKER

Matrix: WATER

Lab Sample ID: 8812L854-004

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: W010307

Level: (low/med) LOW

Date Received: 12/12/88

% Moisture: not dec. _____

Date Analyzed: 01/03/89

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 11

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ACETONE	3.60	3800	C
2.	TOTAL XYLENES	29.13	42	C
3.	C6-ALKANE/ALKENE	10.53	80	J
4.	UNKNOWN	12.60	30	J
5.	UNKNOWN	14.27	50	J
6.	UNKNOWN	16.90	10	J
7.	UNKNOWN	18.43	10	J
8.	UNKNOWN	21.37	40	J
9.	TRIMETHYL-BENZENE	32.73	7	J
10.	C9-METHYL-BENZENE	36.10	20	J
11.	ETHYL-METHYL-BENZENE	38.03	10	J

C: Response Factor from daily standard.

APPENDIX H

PHASE IIb SOIL BORING LOGS, WELL BOREHOLE LOGS, AND WELL CONSTRUCTION DIAGRAMS

SOIL BORING LOGS

Boring No. SB-3A-1
Client: Black and Decker
Time/Date Began:____1300/12-07-88
Time/Date Ended:____0952/12-08-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading (spoon)
1	0-2.0	1.0	2-2-4-5	Moist	reddish-brown, sandy, clayey SILT, slight to medium plasticity	1.0
2	2.0-4.0	0.5	1-2-2-3	Moist	reddish-brown, sandy, clayey SILT, slight to medium plasticity	ND
3	4.0-6.0	0.9	3-3-4-4	Moist	reddish-brown to grey clayey, sandy SILT, slightly plastic	1.0
4	6.0-8.0	1.4	2-3-2-3	Moist	greyish-brown, SILT, some fine sand	ND
5	8.0-10.0	0.8	2-2-3-3	Moist	greyish-brown, fine sandy, SILT, slightly plastic	ND
6	10.0-12.0	1.7	2-3-4-6	Moist	light brown SILT, non plastic to slightly plastic	ND
7	12.0-14.0	2.0	5-4-5-7	Dry	light brown, sandy SILT, some gravel, last 4" interbedded with micaceous fragments, weathered, nonplastic	ND
8	14.0-16.0	1.8	2-3-5-5	Dry	light brown, sandy SILT, weathered, micaceous fragments nonplastic	ND
9	18.0-20.0	1.8	3-4-6-7	Moist	highly weathered mica SCHIST	ND

ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-2
Client: Black & Decker
Time/Date Began:____1050/12-08-88
Time/Date Ended:____1130/12-08-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.5	4-4-4-4	Moist	reddish-brown, sandy, clayey SILT, trace gravel, slightly plastic	ND
2	2.0-4.0	0.5	2-2-4-4	Moist	as above	9.0
3	4.0-6.0	1.0	2-2-3-3	Moist	brown, sandy, clayey SILT, some pebbles, slightly plastic	1.0
4	6.0-8.0	0.8	2-1-3-3	Moist	as above, micaceous, middle 3 inches: fine to medium sand, loose	ND
5	8.0-10.0	1.5	2-1-1-2	Moist	0-0.33': brown, fine to medium SAND 0.33-1.5: clayey SILT, slightly plastic	20
6	10.0-12.0	2.0	2-2-4-7	Moist	0-0.5: brown, clayey SILT, slightly plastic 0-2.0: brown-grey, sandy SILT to weathered SCHIST	15
7	12.0-14.0	1.2	7-6-7-9	Dry to Moist	greyish brown, highly weathered mica SCHIST	ND
8	14.0-16.0	1.4	7-6-10-15	Dry	greyish brown, highly weathered mica SCHIST	20
9	18.0-20.0	1.4	6-9-7-6	Wet	highly weathered mica SCHIST	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-3
Client: Black & Decker
Time/Date Began:____1320/12-08-88
Time/Date Ended:____1403/12-08-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.8	2-2-3-4	Moist	reddish-brown, sandy, clayey SILT, trace gravel, slightly plastic	ND
2	2.0-4.0	1.0	1-4-8-6	Moist	as above	ND
3	4.0-6.0	1.5	1-1-2-4	Moist	0-0.5′: as above 0.5-1.5′: greyish-brown SILT, micaceous, nonplastic	ND
4	6.0-8.0	1.0	1-1-2-4	Moist	greyish-brown, clayey SILT, nonplastic-slightly plastic	ND
5	8.0-10.0	1.4	3-4-5-5	Moist	brown clayey SILT, slightly plastic	ND
6	10.0-12.0	1.8	4-4-5-7	Moist	brown, sandy SILT, micaceous, nonplastic	20
7	12.0-14.0	1.6	2-6-7-9	Dry to Moist	0-0.5′: as above 0.5-1.6: greyish-brown, highly weathered mica SCHIST	10
8	14.0-16.0	1.0	7-10-15-18	Dry	highly weathered mica SCHIST	20
9	18.0-20.0	1.2	9-12-16-19		greyish-brown, highly weathered mica SCHIST	ND

* ND - Not detected above background level.

* HNu readings in units above background.

Boring No. SB-3A-4
Client: Black & Decker
Time/Date Began:____1510/12-08-88
Time/Date Ended:____1605/12-08-88

Geologist:________________Daya Bettadapura
Driller:________________Pat Benson / Hardin-Huber
Drilling Method:___________Hollow-stem Auger
Sampling Method:___________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	1.0	6-5-2-7	Moist	reddish-brown, sandy, clayey SILT, slightly plastic	ND
2	2.0-4.0	1.0	3-4-5-7	Moist	as above	ND
3	4.0-6.0	1.2	3-4-4-5	Moist	as above	ND
4	6.0-8.0	1.0	4-7-10-9	Moist	as above except more clay, slight to medium plasticity middle 0.25′ grey clayey SILT, trace gravel	ND
5	8.0-10.0	1.0	1-9-11-13	Moist	brown clayey SILT, slightly plastic	ND
6	10.0-12.0	1.2	4-6-6-7	Moist	brown, sandy clayey SILT, micaceous, nonplastic	ND
7	12.0-14.0	1.3	5-5-4-7	Dry to Moist	reddish-brown silty SAND, micaceous, nonplastic	ND
8	14.0-16.0	1.0	6-7-7-9	Dry	as above with some gravel, weathered mica SCHIST last .25′	ND
9	18.0-20.0	0.8	9-16-29-27		brownish-red, highly weathered micaceous SCHIST	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-5
Client: Black & Decker
Time/Date Began:____0732/12-09-88
Time/Date Ended:____0839/12-09-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:___________Hollow-stem Auger
Sampling Method:___________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.8	9-5-5-7	Moist	light brown, sandy clayey SILT, trace gravel slightly plastic	ND
2	2.0-4.0	1.4	5-9-9-10	Moist	as above	ND
3	4.0-6.0	1.2	4-4-4-9	Moist	as above	ND
4	6.0-8.0	0.8	1-3-9-4	Moist	as above	ND
5	8.0-10.0	1.6	2-5-14-12	Moist	as above	ND
6	10.0-12.0	1.4	5-6-8-8	Moist	as above	ND
7	12.0-14.0	1.0	8-9-12-14	Dry to Moist	reddish-brown SILT, weathered mica SCHIST	ND
8	14.0-16.0	1.0	7-14-14-15	Dry	reddish-brown micaceous SCHIST, weathered	ND
9	18.0-20.0	0.5	14-17-20-15		as above	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-6
Client: Black & Decker
Time/Date Began:____1100/12-10-88
Time/Date Ended:____1230/12-10-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:___________Hollow-stem Auger
Sampling Method:___________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0	6-7-9-2			ND
2	2.0-4.0	0.2	2-3-4-4	Moist	light brown, clayey SILT, frozen	ND
3	4.0-6.0	1.0	2-3-4-4	Moist	clayey SILT, slightly plastic, micaceous	ND
4	6.0-8.0	0.6	3-6-2-3	Wet to Moist	clayey SILT, trace gravel, highly plastic	ND
5	8.0-10.0	1.0	4-2-4-6	Moist	as above, fill?	ND
6	10.0-12.0	0.8	2-4-7-9	Moist	as above, fill?	ND
7	12.0-14.0	1.2	6-7-7-9	Moist	light reddish-brown weathered mica SCHIST	20
8	14.0-16.0	1.2	4-9-11-12	Moist	as above	20
9	18.0-20.0	2.0	3-7-7-9	Moist	as above, with hydocarbon odor	20
	25.0-27.0		8-12-12-51	Wet	as above, with hydocarbon odor	2000

* ND - Not detected above background level.

* HNu readings in units above background.

Boring No. SB-3A-7
Client: Black & Decker
Time/Date Began:____1509/12-09-88
Time/Date Ended:____1738/12-09-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.5	2-2-3-3	Moist -Wet	brown, clayey SILT, slightly plastic	ND
2	2.0-4.0	0.5	1-3-4-7	Moist	as above, with trace gravel	ND
3	4.0-6.0	0.7	3-5-7-7	Moist	as above	ND
4	6.0-8.0	1.0	2-4-5-5	Moist	light brown silty CLAY, medium plasticity	ND
5	8.0-10.0	0.6		Moist	light brown clayey SILT, high-medium plasticity	ND
6	10.0-12.0	1.2	4-4-5-5	Moist	light brown clayey SILT, highly plastic, micaceous	ND
7	12.0-14.0	0.5	2-2-6-9	Moist	light yellow sandy SILT, weathered mica SCHIST gasoline odor	500
8	14.0-16.0	1.2	3-4-7-7	Dry	as above	500
9	18.0-20.0	0.5	3-7-7-9		weathered mica SCHIST, oily with strong odor	20
	20.0-22.0				yellowish-grey mica SCHIST, weathered spoon rod oily from 15-27'	200
	250-27.0			Wet	as above	2000

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-8
Client: Black & Decker
Time/Date Began: 1107/12-09-88
Time/Date Ended: 1245/12-09-88

Geologist: Daya Bettadapura
Driller: Pat Benson / Hardin-Huber
Drilling Method: Hollow-stem Auger
Sampling Method: Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.5	4-5-5-5	Wet	light brown, sandy clayey SILT, trace gravel slightly plastic	ND
2	2.0-4.0	0.5	1-3-4-7	Wet	as above	ND
3	4.0-6.0	0.5		Wet	as above	ND
4	6.0-8.0	0.4		Moist	light brown silty CLAY, trace gravel, medium to high plasticity	ND
5	8.0-10.0	1.0		Moist	as above	ND
6	10.0-12.0	1.6	2-3-2-3	Wet	light brown sandy SILT, nonplastic, micaceous	ND
7	12.0-14.0	1.4		Moist	brown sandy SILT, weathered mica SCHIST	ND
8	14.0-16.0	1.0		Dry	reddish-brown micaceous SCHIST, weathered	ND
9	18.0-20.0	0.5	14-18-18-19		as above	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-9
Client: Black & Decker
Time/Date Began:____1445/12-10-88
Time/Date Ended:____1540/12-10-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	1.0	4-5-4-5		light brown, clayey, sandy SILT, slightly plastic - fill?	ND
2	2.0-4.0	1.2	6-8-11-12	Moist	0-0.5: as above 0.5-1.2: brown and white sandy SILT, trace gravel	ND
3	4.0-6.0	1.0	4-9-12-18	Dry	brown and white sandy SILT, nonplastic	ND
4	6.0-8.0	1.4	4-13-17-19	Dry	as above	ND
5	8.0-10.0	2.0	9-12-13-10	Dry	as above, with trace of quartz gravel	ND
6	10.0-12.0	2.0	12-19-21-30	Dry	as above	ND
7	12.0-14.0	2.0	17-35-45-51	Dry to Moist	as above	ND
8	14.0-16.0	0.8	17-45-51/0.5	Moist	as above, auger and spoon refusal	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-10
Client: Black & Decker
Time/Date Began:____1600/12-12-88
Time/Date Ended:____1705/12-12-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:___________Hollow-stem Auger
Sampling Method:___________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	1.0	3-4-4-4	Moist	light brown, clayey SILT, slightly plastic	ND
2	2.0-4.0	1.2	3-5-8-8	Moist	0-0.5: as above 0.5-1.2: brown, sandy SILT, nonplastic	ND
3	4.0-6.0	1.4	5-7-11-13	Dry	light brown, sandy clayey SILT, nonplastic	ND
4	6.0-8.0	2.0	13-14-16-17	Dry	as above	ND
5	8.0-10.0	1.6	8-14-13-14	Dry	as above	ND
6	10.0-12.0	1.8	9-12-15-21	Dry	as above	ND
7	12.0-14.0	1.4	15-21-18-16	Dry	light brown and white, mica SCHIST	ND
8	14.0-16.0	1.4	7-10-20-26	Dry	as above	ND
9	18.0-20.0	1.6	15-29-41-46	Dry	as above	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-11
Client: Black & Decker
Time/Date Began:____0815/12-13-88
Time/Date Ended:____0920/12-13-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:___________Hollow-stem Auger
Sampling Method:___________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.8	4-4-4-6	Moist	light brown, clayey SILT, slightly plastic	ND
2	2.0-4.0	1.2	4-11-21-34	Moist	0-0.5: as above 0.5-1.2: light brown, sandy, clayey SILT, nonplastic	ND
3	4.0-6.0	1.2	16-14-11-16	Dry	light brown, sandy clayey SILT, nonplastic	ND
4	6.0-8.0	1.0	14-17-20-18	Dry	weathered mica-SCHIST and SILT, nonplastic	ND
5	8.0-10.0	0.8	8-9-12-15	Dry	as above	ND
6	10.0-12.0	1.4	5-6-21-22	Dry	as above, trace quartz gravel	ND
7	12.0-14.0	1.0	13-17-18-23	Dry	as above	ND
8	14.0-16.0	1.0	9-12-20-24	Dry	as above	ND
9	18.0-20.0	0.6	18-22-22-19	Dry	as above.	ND

* ND - Not detected above background level.

* HNu readings in units above background.

Boring No. SB-3A-12
Client: Black & Decker
Time/Date Began: 0940/12-13-88
Time/Date Ended: 1100/12-13-88

Geologist: Daya Bettadapura
Driller: Pat Benson / Hardin-Huber
Drilling Method: Hollow-stem Auger
Sampling Method: Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.4	3-3-2-3		light brown, clayey SILT, frozen	ND
2	2.0-4.0	0.6	9-7-6-5	Moist	light brown, clayey SILT, trace gravel, slightly plastic	ND
3	4.0-6.0	1.0	6-7-4-5	Moist	as above	ND
4	6.0-8.0	0.3	3-4-5-6	Moist	as above, with wooden pieces at end of spoon	ND
5	8.0-10.0	1.0	5-4-3-2	Moist	light brown, sandy SILT, trace gravel, with weathered mica SCHIST	ND
6	10.0-12.0	0.6	3-3-3-4	Moist	brown clayey SILT, slightly plastic	ND
7	12.0-14.0	1.2	3-4-7-11	Dry	weathered mica-SCHIST	ND
8	14.0-16.0	1.4	3-4-7-5	Dry	as above	ND
9	18.0-20.0	2.0	18-21-22-26	Dry	as above, some quartz gravel	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-13
Client: Black & Decker
Time/Date Began:____1300/12-12-88
Time/Date Ended:____1400/12-12-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.5	20-22-17-9	Moist	Fill. sand and silt, gravel (quartz)	ND
2	2.0-4.0	1.0	4-7-5-3	Moist	light brown, sandy, clayey SILT, slightly plastic	ND
3	4.0-6.0	1.0	3-3-3-3	Dry	as above	ND
4	6.0-8.0	1.0	2-2-3-3	Dry	as above	ND
5	8.0-10.0	1.2	3-3-4-4	Dry	as above	ND
6	10.0-12.0	0.8	3-3-4-4	Dry	weathered mica SCHIST, some gravel, nonplastic	ND
7	12.0-14.0	1.4	3-6-10-12	Dry	as above	ND
8	14.0-16.0	1.4	12-14-25-31	Dry	as above	ND
9	18.0-20.0	2.0	19-19-21-42	Dry	as above	ND

* ND - Not detected above background level.

* HNu readings in units above background.

Boring No. SB-3A-14
Client: Black & Decker
Time/Date Began: 1430/12-13-88
Time/Date Ended: 1530/12-13-88

Geologist: Daya Bettadapura
Driller: Pat Benson / Hardin-Huber
Drilling Method: Hollow-stem Auger
Sampling Method: Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.4	14-9-10-6	Moist	clayey SILT, some gravel, frozen	ND
2	2.0-4.0	0.5	3-4-4-4	Moist	brown clayey SILT, trace gravel, slightly plastic 0.5-1.2: light brown, sandy, clayey SILT, nonplastic	ND
3	4.0-6.0	1.0	3-3-3-3	Dry	brown, sandy SILT, slightly plastic	ND
4	6.0-8.0	1.0	2-1-3-2	Dry	as above	ND
5	8.0-10.0	0.3	2-2-3-2	Dry	light brown, clayey SILT, slightly plastic	ND
6	10.0-12.0	0.5	3-2-2-2	Dry	brown, sandy SILT, slightly plastic to nonplastic	ND
7	12.0-14.0	0.6	4-11-19-30	Dry	weathered mica SCHIST	ND
8	14.0-16.0	1.0	16-24-31-45	Dry	as above	ND
9	18.0-20.0		26-26-31-37	Dry	as above	ND

* ND - Not detected above background level.

* HNu readings in units above background.

Boring No. SB-3A-15
Client: Black & Decker
Time/Date Began:____1625/12-13-88
Time/Date Ended:____1723/12-13-88

Geologist:________________Daya Bettadapura
Driller:________________Pat Benson / Hardin-Huber
Drilling Method:___________Hollow-stem Auger
Sampling Method:___________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.2	12-9-4-4	Moist	light brown, fine SAND, some gravel, frozen	ND
2	2.0-4.0	0.2	3-3-4-3	Moist	light brown, gravelly, clayey SILT	ND
3	4.0-6.0	0.5	4-4-4-5	Moist	brown, sandy SILT and weathered mica SCHIST	ND
4	6.0-8.0	0.5	4-4-3-5	Moist	brown gravelly, sandy SILT	ND
5	8.0-10.0	1.2	1-2-3-4		highly weathered mica SCHIST	ND
6	10.0-12.0	1.4	3-5-4-7		as above	ND
7	12.0-14.0	1.6	10-20-37-37		gravelly, sandy SILT, slightly plastic	ND
8	14.0-16.0		25-11-7-11		as above	ND
9	18.0-20.0		13-22-25-28		weathered mica SCHIST	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-16
Client: Black & Decker
Time/Date Began: 0905/12-14-88
Time/Date Ended: 1000/12-14-88

Geologist: Daya Bettadapura
Driller: Pat Benson / Hardin-Huber
Drilling Method: Hollow-stem Auger
Sampling Method: Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.3	13-17-8-9	Moist	gravelly, fine SAND and frozen clayey SILT	ND
2	2.0-4.0	1.0	7-3-7-10	Moist	light brown, clayey SILT, slightly plastic	ND
3	4.0-6.0	1.0	2-2-4-3	Moist	0-0.5': as above 0.5-1.0': weathered mica SCHIST	ND
4	6.0-8.0	1.2	3-4-8-10	Moist	as above	ND
5	8.0-10.0	0.8	7-10-13-12		as above	ND
6	10.0-12.0	0.6	11-8-8-15		as above	ND
7	12.0-14.0	0.8	21-31-37-31		as above	ND
8	14.0-16.0	1.0	9-11-12-18		as above	ND
9	18.0-20.0	1.2	21-27-37-45		as above	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-17
Client: Black & Decker
Time/Date Began:____1015/12-14-88
Time/Date Ended:____1115/12-14-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.6	15-7-6-6	Moist	gravelly, fine SAND and frozen clayey SILT	ND
2	2.0-4.0	0.5	7-7-8-8	Moist	as above with weathered mica SCHIST	ND
3	4.0-6.0	1.0	4-5-6-8	Moist	as above	ND
4	6.0-8.0	1.0	8-9-9-8	Moist	weathered mica SCHIST	ND
5	8.0-10.0	1.2	4-6-8-11		as above	ND
6	10.0-12.0	1.2	8-10-16-19		as above	ND
7	12.0-14.0	0.8			as above	ND
8	14.0-16.0	1.4	7-11-23-27		as above	ND
9	18.0-20.0	1.4	20-25-35-40		as above	ND

* ND - Not detected above background level.
* HNu readings in units above background.

Boring No. SB-3A-18
Client: Black & Decker
Time/Date Began:____1250/12-14-88
Time/Date Ended:____1355/12-14-88

Geologist:________________Daya Bettadapura
Driller:__________________Pat Benson / Hardin-Huber
Drilling Method:__________Hollow-stem Auger
Sampling Method:__________Split Spoon

SAMPLE COLLECTION INFORMATION

Sample No.	Depth Interval (ft.)	Recovery (ft.)	Blow Counts	Moisture Content	SAMPLE DESCRIPTION	HNu * reading
1	0-2.0	0.6	9-5-4-4	Moist	brown, frozen clayey SILT, some fine sand, trace gravel	ND
2	2.0-4.0	0.8	1-2-3-5	Moist	as above	ND
3	4.0-6.0	0.9	2-2-4-4	Moist	as above	ND
4	6.0-8.0	1.0	6-7-7-8	Moist	weathered mica SCHIST	ND
5	8.0-10.0	1.0	8-9-7-17	Dry	0-0.5': as above 0.5-1.0': quartz gravel	ND
6	10.0-12.0	1.0	11-15-21-25		weathered mica SCHIST	ND
7	12.0-14.0	0.8	16-15-20-50/.5		as above	ND
8	14.0-16.0		16-45-45-39		as above	ND
9	18.0-20.0		8-2-51/.16'		as above	ND

* ND - Not detected above background level.
* HNu readings in units above background.

WELL BOREHOLE LOGS

Well No. RFW-10
Client: Black & Decker
Time/Date Began: 1045/12-08-88
Time/Date Ended: 1642/12-08-88

Geologist: J. Kimberly Harriz
Driller: Dave Taylor
Subcontractor: Hardin-Huber, Inc
Drilling Method: Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-46	Damp	reddish- to greyish brown clayey SILT, micaceous	ND
46-50	Moist	weathered brown SCHIST	ND
50-51	Wet	weathered micaceous SCHIST with QUARTZ at 50′ water-bearing, yield 10 gpm	ND
51-61	Wet	slightly weathered green-gray micaceous SCHIST/PHYLLITE	ND

Well No. RFW-11A
Client: Black & Decker
Time/Date Began: 0800/12-14-88
Time/Date Ended: 1030/12-14-88

Geologist: J. Kimberly Harriz
Driller: Dave Taylor
Subcontractor: Hardin-Huber, Inc
Drilling Method: Air-rotary

Comments:

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-50	Damp	reddish- to greyish brown clayey SILT, micaceous to weathered SCHIST	ND
50-72	Wet	yellowish brown weathered SCHIST at 64-70' water-bearing, yield 5 gpm	ND

ND - Not detected above background levels

WELL CONSTRUCTION DIAGRAMS

4178B

Well No. RFW-11B
Client: Black & Decker
Time/Date Began: 1330/12-09-88
Time/Date Ended: 1400/12-13-88

Geologist: J. Kimberly Harriz
Driller: Dave Taylor
Subcontractor: Hardin-Huber, Inc.
Drilling Method: Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-30	Damp	reddish- to yellowish brown clayey SILT, micaceous	ND
30-96	Moist to Wet	weathered brown SCHIST at 62-68' water-bearing zone, yield 10 gpm	ND
96-110	Wet	slightly weathered micaceous SCHIST with QUARTZ possible fracture zone, water-bearing, yield 5 gpm	ND
110-120	Wet	green-grey SCHIST/PHYLLITE, micaceous at 114' water-bearing zone, yield <1 gpm	ND

ND - Not detected above background levels

Well No. RFW-12
Client: Black & Decker
Time/Date Began: 1300/12-14-88
Time/Date Ended: 1700/12-14-88

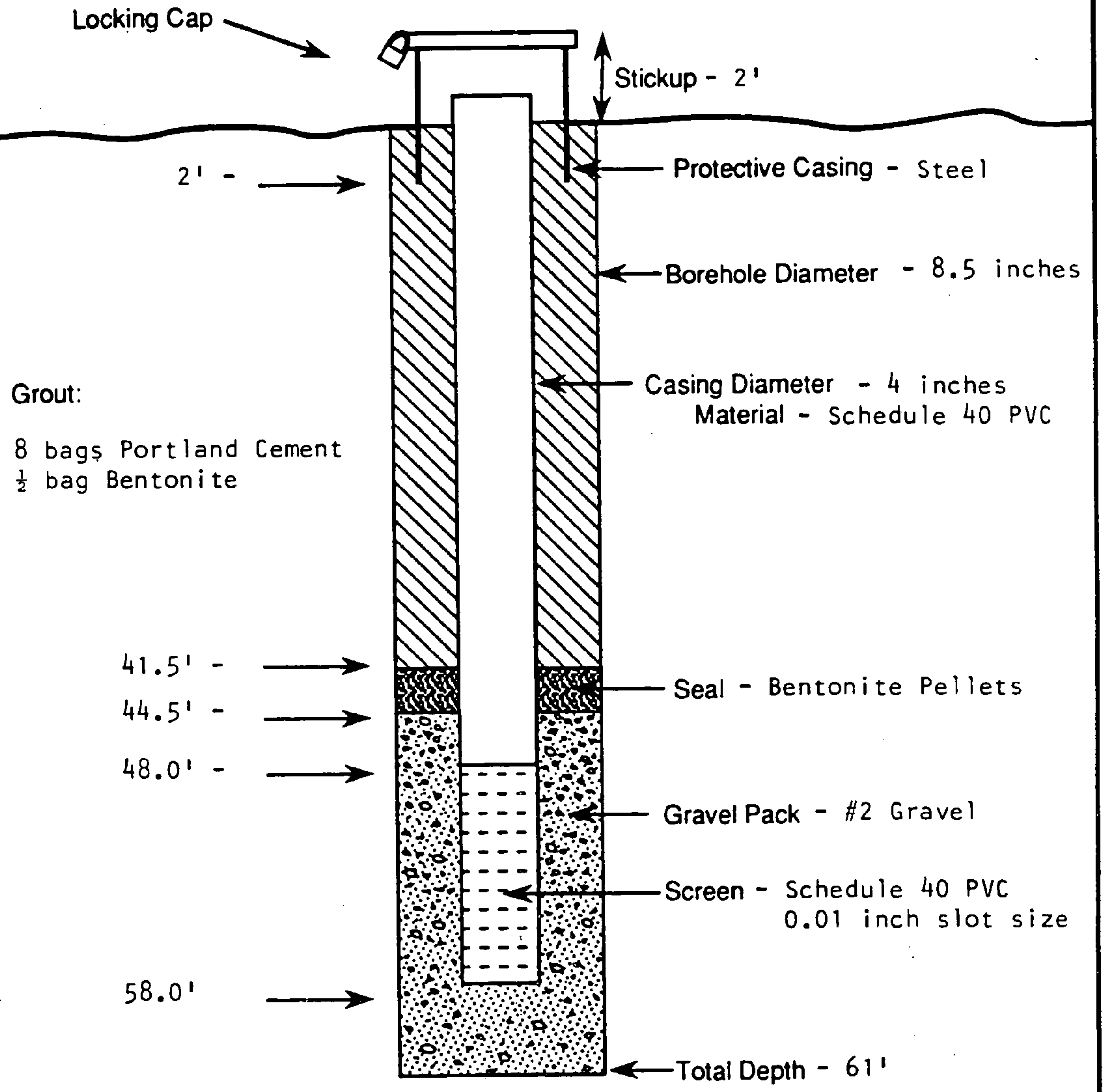
Geologist: J. Kimberly Harriz
Driller: Dave Taylor
Subcontractor: Hardin-Huber, Inc
Drilling Method: Air-rotary

Depth Interval (ft.)	Moisture Content	LITHOLOGIC LOG	HNu reading
0-42	Damp	reddish- to yellowish-brown weathered SCHIST, micaceous	ND
42-43	Wet	Quartz vein, fractured water-bearing, yield 10 gpm	ND
43-59	Wet	slightly weathered micaceous SCHIST	ND
59	Wet	green-gray micaceous SCHIST/PHYLLITE	ND

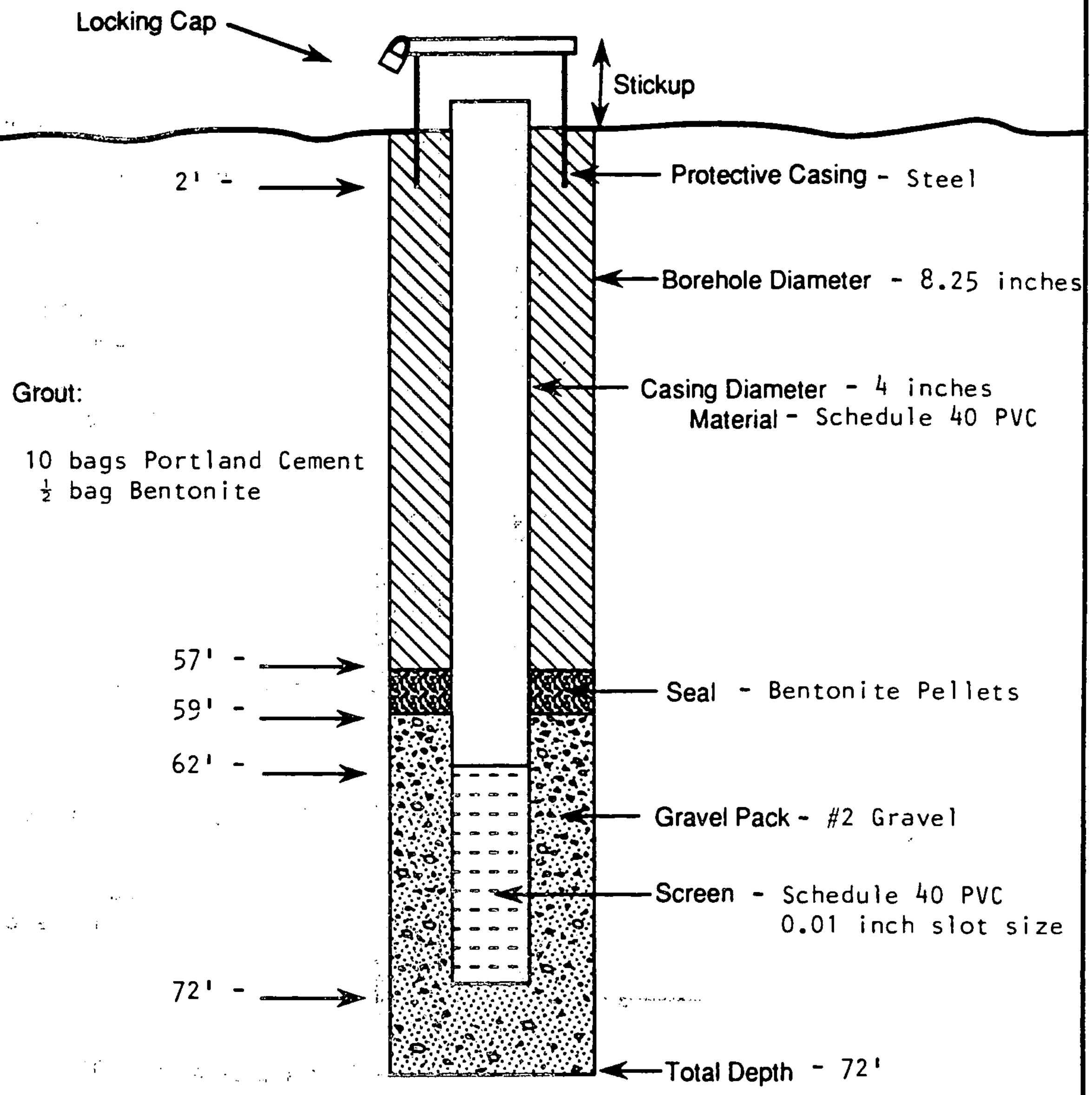
ND - Not detected above background levels

Well Construction Diagram

Well No. RFW-10

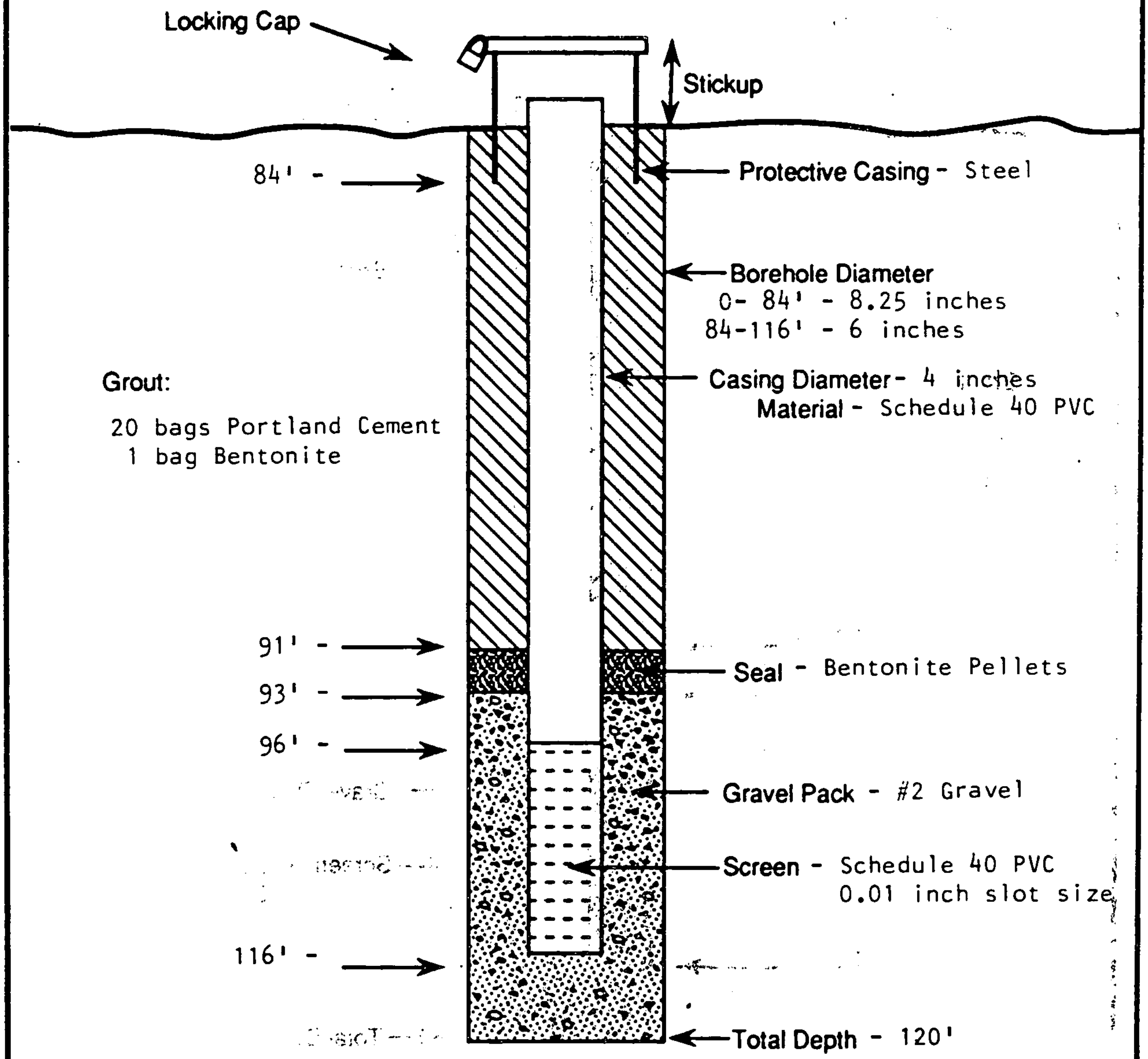


Well Construction Diagram
Well No. RFW-11A



Well Construction Diagram

Well No. RFW-11B



Protective Casing - Steel

Borehole Diameter
0- 84' - 8.25 inches
84-116' - 6 inches

Casing Diameter - 4 inches
Material - Schedule 40 PVC

Grout:
20 bags Portland Cement
1 bag Bentonite

Seal - Bentonite Pellets

Gravel Pack - #2 Gravel

Screen - Schedule 40 PVC
0.01 inch slot size

Total Depth - 120'

Well Construction Diagram

Well No. RFW-12