

6.0 BASELINE RISK ASSESSMENT

A baseline Risk Assessment (RA) has been prepared for the Hunterstown Road site by Remediation Technologies, Inc. The RA report is included as Appendix K.

7.0 DEFINITION OF OPERABLE UNITS

Review of the RI data indicates that former and potential source areas have been characterized. The surface water and sediment data, indicate that the East Stream currently contains COI attributed to the site. The distribution of COI in groundwater suggests that the former Lagoon and former Drum Burial Areas were the source area for COI in the groundwater. Three distinct plumes are currently present on site. The extent of COI distribution in the groundwater appears to be defined in the easterly direction, but not in the southwesterly direction. The full extent of COI in the deep wells has not been defined. However, COI concentrations decrease rapidly with increasing distance from the former source areas. Surficial soils in the Cornfield Area and the Stressed Vegetation Area contain metal concentrations above soil background levels.

In order to assess the RI data, a delineation of Operable Units associated with the remediation of this site and preliminary remedial objectives has been made. Based on the findings of the RI, the following Operable Units have been identified:

- Groundwater contamination consisting of three distinct plumes (Operable Unit 1). Hydrogeologic conditions along with chemical characteristics of the plumes indicate three distinct plumes are currently present on site. Two plumes considered to have originated from the former Drum Burial Areas are similar in chemical characteristics. The primary VOC is 1,1,1-TCA in these plumes. The third plume (former Lagoon Area) has a different primary VOC (TCE).
- Former waste disposal areas (Operable Unit 2) which include the former Borrow Area, former Drum Burial Area 1, and former Drum Burial Area 2. These areas have been remediated in the past and only residual soil contamination remains.
- The former Lagoon Area (Operable Unit 3) is a former source of groundwater contamination.

Although the area has been previously remediated, waste has been removed, and the remaining soil concentrations are significantly reduced, the results indicate that soils from this area could be a continuing source of surface water, sediment, and groundwater contamination.

- Operable Unit 4 includes two areas that have not been remediated. The Cornfield Area and Stressed Vegetation Area have similar levels of COI (i.e. inorganics) above background levels.
- The final operable unit is the East Stream (Operable Unit 5). The East Stream may currently receive surface runoff and shallow groundwater discharge originating from the previously mentioned source areas. Both surface water and sediment are included in this operable unit.

Based on the preceding information, possible remedial approaches associated with each Operable Unit are as follows:

- Operable Unit 1 - Groundwater
 - Establishment of institutional controls for areas in which applicable or relevant and appropriate requirements (ARARs) cannot realistically be obtained;
 - Collection, containment and treatment of COI in groundwater; or
 - Provide alternate water supplies (already implemented).
- Operable Unit 2 - Former Disposal Area Soils
 - No action or institutional actions;
 - Removal and off-site disposal of former Borrow Area surface debris; or
 - Installation of exposure control measures (already performed in former drum burial areas).
- Operable Unit 3 - Former Lagoon Area Soils
 - No action or institutional actions;
 - Capping of area;
 - On-site treatment of soils; or
 - Removal and off-site disposal.

- Operable Unit 4 - Cornfield and Stressed Vegetation Area
 - Capping;
 - On-site soil treatment;
 - Excavation and treatment/disposal; or
 - No action or institutional action.

- Operable Unit 5A - East Stream Surface Water
 - Source control actions at other operable units; or
 - Collection, treatment and discharge.

- Operable Unit 5B - East Stream Sediment
 - Removal and disposal/treatment;
 - Source control actions; or
 - No action or institutional action.

The above possible remedial response actions are aimed at achieving the objectives of protecting human health and the environment consistent with the provisions of the National Contingency Plan.

8.0 SUMMARY OF FINDINGS

This RI Report provides an overview of the site history and previous site investigations at the Hunterstown Road Site, details the procedures used in conducting the investigation, presents findings on the physical and chemical characteristics of the site, and provides an overview of fate and transport processes. Based on the studies conducted during the RI, the following findings have been established:

- The bedrock underlying the site consists of hornfels with numerous igneous intrusives. The strata strike at N41° E with a dip of 26° NW.
- The fracture traces and lineaments assessed in this study appear to mainly reflect bedding, with a secondary trend nearly perpendicular to bedding of unknown origin, but which could be strike-slip faulting. Although the joint azimuths appear to be reflected in the pattern of fracture traces, most of the fracture traces or lineaments do not appear to be joint controlled.
- Groundwater movement is characterized by fracture flow. Groundwater appears to flow horizontally in the shallow, weathered bedrock. In the vertical plane, downward hydraulic gradients combine with anisotropic hydraulic conductivities to produce groundwater movement that is primarily within the bedding planes and near vertical joints within bedding.
- In the former Borrow Area, lead, copper, and zinc were detected at levels above background soil concentrations in the western portion of the area, between the center pile of debris and the East Stream. The only organic COI detected at significant levels was BEHP, near the bottom of the center pile of debris. Asbestos was not detected.

- In the former Lagoon Area, remaining surficial soils contain levels of heavy metals (antimony, chromium, copper, lead, mercury, and zinc) above background soil concentrations. One of three surface soil samples also contained VOC (ketones, chlorinated aliphatic hydrocarbons, and aromatic hydrocarbons). Subsurface soils in and around the Lagoon Area contained levels of copper, lead, zinc above background soil concentrations, and ketones, with lesser levels of chlorinated aliphatics and aromatic hydrocarbons.
- In the Cornfield Area, levels of barium and copper above background soil concentrations were identified in both Phase I and Phase II soil samples. Levels of chromium, lead, mercury, selenium, zinc, and VOC above background soil concentrations were reported primarily in soil samples from within one foot of ground surface. Deeper soil samples do not display this pattern. The lead, barium, selenium, and zinc appears to have originated from the white, clay-like material located near the ground surface. The RI samples have defined the horizontal and vertical limits of impacted soil.
- In the Stressed Vegetation Area, locations of elevated barium, chromium, copper, lead, and zinc above background soil concentrations are found to the south and west, with the highest levels found within the area and attenuating beyond in the perimeter. Several VOC were found inside the area in 1988 but are not currently detected beyond the perimeter.
- Former Drum Burial Area 1 appeared to contain VOC (aromatic and chlorinated aliphatic hydrocarbons) in surficial soil shortly after waste removal. Perimeter subsurface soil sample results indicate that VOC are not present at the soil-bedrock interface. Trace VOC were measured in the Phase II soil samples from the

soil-bedrock interface directly beneath the former disposal area. Based on the RI results, the area is not considered a current source of VOC and the previous removal action was successful.

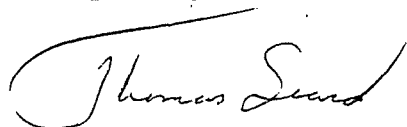
- Former Drum Burial Area 2 no longer appears to contain levels of COI above background concentrations.
- Surface water in the East Stream contains levels of lead and chlorinated aliphatics above upstream reference concentrations. Copper may also be slightly above background. These were contained within 400 feet of two possible sources: runoff from the former Borrow Area, the Stressed Vegetation Area, and the former Lagoon Area; and shallow groundwater discharge associated with these three source areas. East Stream sediments which contained chromium, copper, lead, and zinc at concentrations above upstream reference concentrations are due probably to runoff from the former Borrow Area, Lagoon Area, and Stressed Vegetation Area. Low levels of xylenes and chlorinated aliphatics are also found in East Stream sediments. As with the inorganics, organics in East Stream sediments are limited to the reaches downstream of the former Lagoon Area and upstream of Shealer Road.
- Surface water in the Middle Stream contains low levels of lead and zinc limited to the areas upstream of Shealer Road. Middle Stream sediments contain zinc, lead, cyanide, and BEHP at concentrations above upstream reference concentrations and are restricted to the reach above Shealer Road.
- West Stream surface water and sediments contain no significant levels of COI.
- Groundwater is impacted by VOC from three source areas: the former Lagoon Area, former Drum Burial Area 1, and former Drum Burial Area 2. Each source appears to impact both shallow and deep flow zones.

In the shallow zones, VOC attenuate quickly with distance downgradient. In the deep zones, VOC follow the dip of the bedrock. The deep groundwater plume from the former Lagoon Area is bounded laterally, but not vertically in the areas of HMW-2BL and HMW-5CL. The deep groundwater plume from former Drum Burial Area 2 is bounded. The deep groundwater plume from former Drum Burial Area 1 is not bounded laterally or vertically.

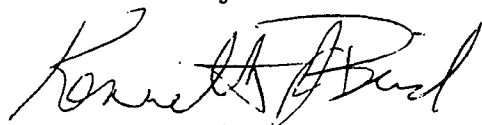
- The chemical characteristics of the former Lagoon Area groundwater plume are different from the characteristics of the plumes associated with the two former drum burial areas. The two former drum burial area plumes are similar to each other with respect to chemical characteristics. This finding is consistent with the waste disposal histories.
- Remediation has occurred at four probable source areas. The remediation based on RI samples appears to have successfully removed the waste materials in these areas and most of the soils having levels of COI above background concentrations.
- An alternative water supply is present in the vicinity of the site.
- A groundwater treatability study has been proposed and will be conducted concurrently with the RI/FS process.

In closing, we feel that this report has fulfilled the objectives of the RI. We would like to acknowledge Westinghouse, PADER, and USEPA for their major contributions to this effort.

Respectfully submitted,



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TABLES

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TABLE 1-1
SAMPLING CHRONOLOGY

Date	Sampler	Waste	Soil	Surface Water/	Ground
12/14/83	PaDER				2
12/19-21/83	PaDER			4	
1/28/84	NUS for EPA	3		1	
2/23/84	PaDER				2
3/13-14/84	PaDER				6
3/27-28/84	PaDER				12
3/29/84	OH Materials	30			
4/24/84	PaDER				5
5/10/84	NUS for EPA*		3	12	
5/21/84	PaDER				5
8/1/84	PaDER				5
8/14/84	PaDER				1
10/10/84	PaDER				1
12/21/84	Culligan				6
1/28/85	NUS for EPA				8
2/6/85	PaDER				3
4/17/85	Weston for EPA		1	4	
4/24/85	PaDER				2
6/20/85	NUS for EPA				11
8/5/85	PaDER				3
10/21/85	Weston for EPA		3	5	
11/19/85	PaDER				2
11/25/85	PaDER				1
12/9/85	PaDER				1
5/14/86	Weston for EPA	<u>2</u>	<u>3</u>	<u>7</u>	—
	TOTALS	35	10	33	76

*Five samples from this group are not included because locations are indeterminate: junk pile (soil and water), field auger, leachate soil, and filled hole.

Source: Metcalf & Eddy (1987)

AR302558

TABLE 1-2
SUMMARY OF WASTE SAMPLING

Date	Location	Test	No. of Samples	No. of Detections	Compound	Range in Concentration
1/28/84	Lagoon	RCRA Organics	3	2	Flashpoint	57 ⁰ +48 ⁰ C
			1	1	1,4-dichlorobenzene	81,000 ppb
				1	4,4 DDT	34,000 ppb
				1	di-n-butyl phthalate	10,000 ppb
3/29/84	Lagoon	pH	27	27	-	2.8-9.58
		Flashpoint	27	2	-	70 ⁰ +85 ⁰
		EP Tox	16	3	lead	5.5-95 ppm
		Cyanide	27	0	-	D.L. 5 ppm
		Sulfide	27	0	-	D.L. 10 ppm
		Acid E	30	0	-	D.L. 25 ppm
		B-N E	30	1	naphthalene	1,700 ppb
			30	1	bis-phthalate	290 ppb
3/29/84	Lagoon	Purgeable Organics	30	4	benzene	38-110 ppb
			30	13	chloroform	17-130 ppb
			30	2	1,1-DCA	150-890 ppb
			30	13	1,1-DCE	16-16,000 ppb
			30	9	ethyl benzene	110-100,000 ppb
			30	9	methyl chloride	29-230 ppb
			30	16	TCA	29->90,000 ppb
			30	3	TCE	89-410 ppb
			30	12	toluene	11-17,000 ppb
3/29/84	Lagoon	Pesticides	30	0	-	D.L. 10 ppb
3/29/84	Lagoon	PCBs	30	0	-	D.L. 10 ppb

AR302559

TABLE 1-2
(Continued)

Date	Location	Test	No. of Samples	No. of Detections	Compound	Range in Concentration			
3/29/84	Lagoon	Inorganics	30	4	antimony	5.4-93 ppm			
			30	7	arsenic	12-49 ppm			
			30	1	beryllium	2.6 ppm			
			30	3	cadmium	2.6-8.0 ppm			
			30	27	chromium	8.4-4,600 ppm			
			30	25	copper	2.1-9,900 ppm			
			30	20	lead	5.8-25,000 ppm			
			30	3	mercury	.64-3.4 ppm			
			30	17	nickel	1.1-270 ppm			
			30	1	silver	62 ppm			
			30	30	zinc	.68 - 79,000 ppm			
			30	1	cyanide	13 ppm			
			5/14/86	Borrow Area	Asbestos	2	2	amosite asbestos	70%

Note: D.L. Detection Limit

Source: Metcalf & Eddy (1987)

AR302560

TABLE 1-3

SUMMARY OF SOIL SAMPLING

Date Collected	Location/ Matrix	Sampler	Test	Results
5/10/84	Lagoon- stained soil	NUS	Organics	Phenol (3 ppm), benzoic acid (29 ppm), 4-methylphenol (1.4 ppm), 1,4-dichlorobenzene (1.2 ppm), Naphthalene (2 ppm), aniline (2.3 ppm), 4-chloroaniline (24 ppm), TCA (2.8%), 1,1-DCE (<0.4%), 1,2-DCE (9.3%), ethyl benzene (0.8%), toluene (2.9%) TCE (24%), o-xylene (2%).
			Metals	Aluminum (0.6%), chromium (0.1%), barium (0.03%), beryllium (1.4 ppm) cobalt (5.6 ppm), copper (0.2%), iron (1.1%), nickel (5.6 ppm), manganese (0.05%), zinc (0.06%), vanadium (24.5 ppm), arsenic (2.4 ppm), antimony (1.15 ppm), mercury (0.18 ppm), Lin (3.5 ppm), cadmium (0.35 ppm), lead (0.7%).
			Other	Cyanide (1.2 ppm).
5/10/84	Drum area Shealer Backyard Soil	NUS	Organics	Di-n-butyl phthalate (DNQ); 1,2-DCE (35 ppb) ethyl benzene (DNQ), methylene chloride (DNQ) benz (a) anthracene (840 ppb), benz (a) pyrene (<1406 ppm) benz (2) fluoranthene (<1406 ppb), chrysene (110 ppb) pyrene (<903 ppb).
			Metals	Aluminum (1%), chromium (20.2 ppm), barium (DNQ) beryllium (2.2 ppm), cobalt (18.9 ppm), copper (DNQ) iron (3.1%), nickel (16.6 ppm), manganese (0.1%), zinc (60.5 ppm), vanadium (44.5 ppm), arsenic (8.4 ppm), selenium (0.1 ppm), cadmium (0.14 ppm), lead (6.5 ppm).

AR302561

TABLE 1-3
(Continued)

Date Collected	Location/ Matrix	Sampler	Test	Results
4/17/85	Soil between lagoon and E stream	Weston-Sper	VOA	Benzene (ND); bromodichloromethane (ND); bromoform (ND); methylbromide (ND); carbon tetrachloride (ND); chlorobenzene (ND); ethylchloride (ND); 2-chloroethylvinylether (ND); chloroform (ND); methylchloride (ND), dibromochloromethane (ND); dichlorobenzenes (ND); 1,1-DCA (ND); 1,2-DCA (ND); 1,1-DCE (ND); 1,2-DCE (280 ppb); 1,2-dichloropropane (ND); 1,3-dichloropropene (ND); ethylbenzene/xylenes (ND); methylene chloride (ND); 1,1,2,2-tetrachloroethane (ND); PCE (ND); toluene (ND); 1,1,1-TCA (140 ppb); 1,1,2-TCA (ND); TCE (ND); Trichlorofluoromethane (ND); vinyl chloride (ND).
10/21/85	Soil from lagoon area	Weston-Sper	VOA	Chloromethane (ND 800 ppm); bromomethane (ND 400 ppm); dichlorodifluoromethane (ND 200 ppm); vinylchloride (ND 80 ppm); chloroethane (ND 80 ppm); methylene chloride (ND 200 ppm); trichlorofluoromethane (ND 200 ppm); 1,1-DCE (ND 40 ppm); 1,1-DCA (ND 40 ppm); 1,2-DCE (ND 40 ppm); chloroform (ND 40 ppm); 1,2-DCA (ND 40 ppm) 1,1,1-TCA (ND 80 ppm); carbon tetrachloride (ND 80 ppm); Bromodichloromethane (ND 80 ppm); 1,2-dichloropropane (ND 40 ppm); 1,3-trans dichloropropene (ND 200 ppm); TCE (ND 80 ppm); bromochloromethane (ND 80 ppm); 1,1,2-TCA (ND 200 ppm); 1,3-Cis dichloropropene (ND 200 ppm); 2-chloroethylvinylether (ND 200 ppm); Bromoform (ND 400 ppm); 1,1,2,2-Tetrachloroethane (ND 400 ppm); PCE (ND 80 ppm); chlorobenzene (ND 40 ppm); dichlorobenzene (ND 40 ppm).

TABLE 1-3
(Continued)

Date Collected	Location/ Matrix	Sampler	Test	Results
10/21/85	Soil stressed vegetation area near cornfield	Weston- Sper	VOA	<p>Beryllium (<0.5 ppm); cadmium (1.9 ppm); chromium (0.1%); copper (0.1%); nickel (23.3 ppm); lead (0.5%); zinc (640 ppm); arsenic (3.6 ppm); silver (<0.01 ppm); selenium (<0.6 ppm); thallium (4.0 ppm); mercury (0.07 ppm); antimony (15 ppm).</p> <p>Chloromethane (ND 800 ppm); bromomethane (ND 400 ppm); dichlorodifluoromethane (ND 220 ppm); vinylchloride (ND 80 ppm); chloroethane (ND 80 ppm); methylene chloride (ND 200 ppm); trichlorofluoromethane (ND 200 ppm); 1,1-DCE (ND 40 ppm); 1,1-DCA (ND 40 ppm); 1,2-DCE (ND 40 ppm); chloroform (ND 40 ppm); 1,2-DCA (ND 40 ppm) 1,1,1-TCA (ND 80 ppm); carbon tetrachloride (ND 80 ppm); Bromodichloromethane (ND 80 ppm); 1,2-dichloropropane (ND 40 ppm); 1,3-trans dichloropropene (ND 200 ppm); TCE (ND 80 ppm); bromochloromethane (ND 80 ppm); 1,1,2-TCA (ND 200 ppm); 1,3-Cis dichloropropene (ND 200 ppm); 2-chloroethylvinylether (ND 200 ppm); Bromoform (ND 400 ppm); 1,1,2,2-Tetrachloroethane (ND 400 ppm); PCE (ND 80 ppm); chlorobenzene (ND 40 ppm); dichlorobenzene (ND 40 ppm).</p>
			Metals	<p>Beryllium (<0.5 ppm); cadmium (1.4 ppm); chromium (0.1%); copper (0.1%); nickel (23.5 ppm); lead (0.5%); zinc (493 ppm) arsenic (4.3 ppm); silver (<0.01 ppm); selenium (<0.6 ppm); thallium (6.0 ppm); mercury (0.08 ppm); antimony (12 ppm).</p>

AR302563

TABLE 1-3
(Continued)

Date Collected	Location/ Matrix	Sampler	Test	Results
10/21/85	Soil stressed vegetation near lagoon	Weston- Sper	VOA	Chloromethane (ND 800 ppm); bromomethane (ND 400 ppm); dichlorodifluoromethane (ND 200 ppm); vinylchloride (ND 80 ppm); chloroethane (ND 80 ppm); methylene chloride (ND 200 ppm); trichlorofluoromethane (ND 200 ppm); 1,1-DCE (ND 40 ppm); 1,1-DCA (ND 40 ppm); 1,2-DCE (ND 40 ppm); chloroform (ND 40 ppm); 1,2-DCA (ND 40 ppm) 1,1,1-TCA (ND 80 ppm); carbon tetrachloride (ND 80 ppm); Bromodichloromethane (ND 80 ppm); 1,2-dichloropropane (ND 40 ppm); 1,3-trans dichloropropene (ND 200 ppm); TCE (ND 80 ppm); bromochloromethane (ND 80 ppm); 1,1,2-TCA (ND 200 ppm); 1,3-Cis dichloropropene (ND 200 ppm); 2-chloroethylvinylether (ND 200 ppm); Bromoform (ND 400 ppm); 1,1,2,2-Tetrachloroethane (ND 400 ppm); PCE (ND 80 ppm); chlorobenzene (ND 40 ppm); dichlorobenzene (ND 40 ppm).
			Metals	Beryllium (<0.5 ppm); cadmium (1.6 ppm); chromium (360 ppm); copper (0.2%); nickel (18.8 ppm) lead (0.8%); zinc (190 ppm); arsenic (6.9 ppm); silver (<0.01 ppm); selenium (<0.6 ppm); thallium (3.0 ppm); mercury (0.06 ppm); antimony (13.5 ppm).
5/14/86	Soil stressed vegetation area	Weston- Sper	Base neutral extractables	Di-n-butyl phthalate (2.7 ppm); butyl benzyl phthalate (910 ppb); bis (2-ethylhexyl) phthalate (9.1 ppm).

Source: Metcalf & Eddy (1987)

AR302564

TABLE 1-3
(Continued)

Date Collected	Location/Matrix	Sampler	Test	Results
5/14/86	Soil, stressed vegetation area, mound	Weston-Sper	Metals	Antimony (<22.6 ppm); arsenic (<9.05 ppm); beryllium (<9.04 ppm); cadmium (<2.26 ppm); chromium (22 ppm); copper (0.3%); lead (0.7%); magnesium (<1.14 ppm); nickel (12 ppm), selenium (<4.53 ppm); silver (<9.05 ppm); thallium (<9.05 ppm); zinc (742 ppm).
			Base neutral extractables	Di-n-butyl phthalates (4.9 ppm); butyl benzyl phthalate (1.5 ppm); bis (2-ethylhexyl) phthalate (1.1 ppm).
			Metals	Antimony (264 ppm); arsenic (2.35 ppm); beryllium (<2.26 ppm); cadmium (<0.6 ppm); chromium (0.8%); copper (1.1%); lead (4.9%); magnesium (0.96 ppm); nickel (8.6 ppm); selenium; (1.34 ppm); silver (<2.26 ppm); thallium (<2.26 ppm); zinc (0.3%).
5/14/86	Soil beneath ponded water outside lagoon fence	Weston-Sper	Base neutral extractables	Di-n-butyl phthalates (690 ppb); butyl benzyl phthalate (690 ppb); bis (2-ethylhexyl) phthalate (1.4 ppm).
			Metals	Antimony (25.2 ppm); arsenic (4.55 ppm); beryllium (<3.27 ppm); cadmium (<0.82 ppm); chromium (0.2%); copper (0.3%); lead (0.9%); magnesium (<0.36 ppm); nickel (20 ppm); selenium; (<1.64 ppm); silver (<3.27 ppm); thallium (<3.27 ppm); zinc (0.1%).

Note: DNQ - Detected, not quantified
 ND - Not detected or below detection limit
 ND 40 ppm - Not detected, detection limit 40 ppm

AR302565

TABLE 1-4

SUMMARY OF SURFACE WATER AND SEDIMENT SAMPLING

Date Sampled	Location/ Matrix	Sampler	Test	Results
12/19/83	Lagoon puddles 5 to 16 yards downgradient	PaDER	VOA Organics	Chloroethylene (1.1 ppm), Chloroethane (0.72 ppm) Dichloromethane (est 0.1 ppm), 1,1-DCE (0.18 ppm) 1,1-DCA (1.1 ppm), 1,2-DCE (3.1 ppm), TCA (1.9 ppm) TCE (0.12 ppm) 1,1,2-TCA (<25 ppb)
12/19/83	Surface water E. Stream 60-80 yards upgradient of lagoon	PaDER	Acid and Base Neutral extractables Metals	ND (1 ppb) Cadmium (0.2 ppb), Chromium (10 ppb), Copper (10 ppb) Iron (20 ppb), and Lead (5. F ppb), Manganese (<10 ppb) Nickel (L 10 ppb), Zinc (30 ppb)
12/19/83	Surface water E. Stream 40-50 yards downgradient of lagoon	PaDER	Acid and Base Neutral extractables	ND (1 ppb)
12/21/83	Surface water Tributary below dump site	PaDER	TCA Scan	TCA (8.0 ppb), TCE (20.0 ppb), PCE (ND)
1/12/84	Sediment E. Stream above culvert	PaDER	RCRA Priority Pollutant	Flash point (56° C) 1,2-DCA (ND), 1,4-Dichlorobenzene (30 ppm), di-n-butyl phthalate (38 ppm) 4,4 ddt (16 ppm), trichlorofluoromethane (1 ppm), naphthalene (ND) ethylbenzene (ND), 1,1-DCA (ND), TCA (ND), Chloroethane (ND) TCE (1 ppm) benzene (ND), phenol (2.6 ppm), cyanide (0.86 ppm)

Source: Metcalf & Eddy (1987)

AR302566

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
1/12/84	(cont.)		Metals	Antimony (23.2 ppm), Arsenic (2.9 ppm), Cadmium (8.6%), Chromium (0.9 ppm), Copper (206 ppm), Lead (8.7 ppm) Nickel (7.4 ppm), Selenium (4.4 ppm), Zinc (53%)
5/10/84	Ponded water on lagoon	NUS	Organics	Naphthalene (240 ppb), TCA (DNQ), Ethylbenzene (380 ppm), Toluene (38 ppm), Ortho-xylene (0.2%)
			Metals	Aluminum (21.8 ppm), Chromium (2.2 ppm), Barium (658 ppb), Copper (6.6 ppm), Iron (62.5 ppm), Manganese (6.24 ppm), Zinc (3.3 ppm), Cadmium (3.0 ppb), Lead (14.8 ppm)
			Inorganics	Cyanide (10 ppb)
5/10/84	Subsurface E. Stream upgradient of lagoon	NUS	Organics	ND
			Metals	Aluminum (169 ppb), Iron (DNQ), Manganese (20.8 ppb)
5/10/84	Sediment E. Stream upgradient of lagoon	NUS	Organics	ND
			Metals	Aluminum (0.5%), Chromium (6.8 ppm), Barium (41.9 ppm), Beryllium (DNQ) Cobalt (4.3 ppm) Copper (DNQ) Iron (0.5%) Nickel (4.3 ppm), Manganese (341 ppm), Zinc (23.7 ppm) Vanadium (13.1 ppm) Arsenic (0.80 ppm) Selenium (0.15 ppm) Cadmium (0.11 ppm), Lead (13 ppm)

AR302567

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
5/10/84	Surface water E. Stream downgradient of lagoon	NUS	Organics	Di-n-butyl Phthalate (DNQ) TCA (25 ppb) 1,2-DCE (35 ppb), TCE (330 ppb)
			Metals	Aluminium (271 ppb), Copper (DNQ), Iron (DNQ), Manganese (230 ppb), Zinc (129 ppb), Lead (DNQ)
5/10/84	Sediment E. Stream downgradient of lagoon	NUS	Organics	ND
			Metals	Aluminum (0.7%), Chromium (258 ppm), Barium (13.9 ppm), Beryllium (2.1 ppm), Cobalt (25.1 ppm), Copper (380 ppm), Iron (3%) Nickel (14.5 ppm), Manganese (0.4%), Zinc (540 ppm), Vanadium (49 ppm), Arsenic (4.8 ppm), Cadmium (0.83 ppm), Lead (0.2%), Cyanide (0.30 ppm)
5/10/84	Ponded Water drum area Shealers backyard	NUS	Organics	TCA (21 ppb), 1,1-DCA (25 ppb), 1,2- DCE (220 ppb), Toluene (DNQ), TCE (39 ppb), Carbon Disulfide (<10 ppb), Ortho-xylene (DNQ)
			Metals	Lead (DNQ), Aluminum (936 ppb), Copper (DNQ), Iron (7.2 ppm), Manganese (507 ppb), Zinc (DNQ)
5/10/84	Surface water W. Stream upgradient Shealers backyard	NUS	Organics	ND
			Metals	Aluminum (415 ppb), Iron (DNQ), Manganese (31.1 ppb) Zinc (DNQ), Lead (DNQ)

AR302568

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
5/10/84	Sediment W. Stream upstream of Shealers backyard	NUS	Organics Metals	Methylene Chloride (DNQ) Aluminum (0.9%), Chromium (15.8 ppm), Barium (58 ppm), Beryllium (DNQ), Cobalt (24.7 ppm), Copper (DNQ), Iron (2.6%), Nickel (10.1 ppm), Manganese (700 ppm), Zinc (116.8 ppm), Vanadium (36.1 ppm), Arsenic (2.5 ppm), Mercury (0.16 ppm), Cadmium (DNQ), Lead (22.2 ppm)
5/10/84	Surface water W. Stream downgradient of Shealers backyard	NUS	VOA	TCA (430 ppb), 1,1-DCA (80 ppb), 1,1-DCE (6.0 ppb), 1,2-DCE (240 ppb); Methylene Chloride (DNQ), TCE (125 ppb); Vinyl chloride (<5 ppb)
5/10/84	Sediment W. Stream downgradient of Shealer's backyard	NUS	Metals VOA Metals	Aluminum (145 ppb); Beryllium (DNQ); Iron (2.4 ppm) Manganese (371 ppb); Zinc (DNQ); Silver (19.7 ppb) Lead (DNQ) TCA (13 ppb) 1,1-DCA (< 3.6 ppb); 1,2- DCE (10 ppb) Methylene Chloride (DNQ) Aluminum (1.2%); Chromium (17 ppm); Barium (51.5 ppm) Beryllium (0.9 ppm); Cobalt (6.9 ppm); Copper (DNQ); Iron (1.6%); Nickel (9.8 ppm); Manganese (229 ppm); Zinc (28.9 ppm); Vanadium (33.9 ppm) Arsenic (3.2 ppm)

AR302569

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
4/17/85	Surface water upper lagoon	Weston Sper	VOA	<p>Benzene (ND); Bromochloromethane (ND); Bromoform (ND); Methyl Bromide (ND); Carbon tetrachloride (ND); Chlorobenzene (ND); Ethyl Chloride (ND); 2 - Chloroethylvinylether (ND); Chloroform (ND); Methylchloride (ND); Dibromochlorobenzene (ND); Dichlorobenzene (ND); 1,1-DCA (320 ppb); 1,2-DCA (ND); 1,1-DCE (ND); 1,2-DCE (4300 ppb); 1,2-Dichloropropane (ND) 1,3-Dichloropropane (ND); Ethylbenzene/xylene (94 ppb); Methylene Chloride (ND); 1,1,2,2 - Tetrachloroethane (ND); PCE (ND); toluene (70 ppb); 1,1,1-TCA (890); 1,1,2-TCA (ND); TCE (1200 ppb); Trichlorofluoromethane (ND); Vinyl Chloride (ND)</p>
4/17/85	Surface water lower lagoon	Weston Sper	VOA	<p>Benzene (ND); Bromodichloromethane (ND); Bromoform (ND); Methyl Bromide (ND); Carbon tetrachloride (ND); Chlorobenzene (ND); Ethylchloride (10 ppm); 2-Chloroethylvinylether (ND); Chloroform (ND); Methylchloride (ND); Dibromochloromethane (ND); Dichlorobenzene (ND); 1,1-DCA (90 ppb); 1,2-DCA (ND); 1,1-DCE (ND); 1,2-DCE (710 ppb); 1,2-Dichloropropane (ND); 1,3-Dichloropropane (ND); Ethylbenzene/xylene (ND); Methylchloride (ND); 1,1,2,2 - Tetrachloroethane (ND); PCE (ND); Toluene (7 ppb); 1,1,1 - TCA (280 ppb); 1,1,2 - TCA (ND); TCE (410 ppb); Trichlorofluoromethane (ND); Vinyl chloride (ND)</p>

Source: Metcalf & Eddy (1987)

AR302570

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
4/17/85	Surface water E. Stream upgradient of lagoon	Weston- Sper	VOA	Benzene (ND); Bromochloromethane (ND); Bromoform (ND); Methylbromide (ND); Carbon tetrachloride (ND) Chlorobenzenes (ND); Ethylchloride (ND); 2 - Chloroethylvinylether (ND); Chloroform (ND); Methylchloride (ND); Dibromochloromethane (ND); Dichlorobenzene (ND); 1,1 - DCA (ND); 1,2 - DCA (ND); 1,1 - DCE (ND); 1,2-DCE (ND); 1,2 - Dichloropropane (ND); 1,3 Dichloropropane (ND); 1,1,2,2 - Tetrachloroethane (ND); PCE (ND); Toluene (ND); 1,1,1 TCA (ND); 1,1,2 - TCA (ND); Ethylbenzenexylenes (ND); Methylchloride (ND)
4/17/85	Surface water E. Stream downgradient of lagoon culvert	Weston Sper	VOA	Benzene (ND); Bromodichloromethane (ND); Bromoform (ND); Methylbromide (ND); Carbon tetrachloride (ND); Chlorobenzene (ND); Ethylchloride (ND); 2 - Chloroethylvinyl ether (ND) Chloroform (ND); Methylchloride (ND); Dibromochloromethane (ND); Dichlorobenzene (ND); 1,1 - DCA (ND); 1,2 - DCA (ND); 1,1 - DCE (ND); 1,2-DCE (73 ppb) 1,2-Dichloropropane (ND); 1,3 - Dichloropropane (ND); 1,1,2,2 - Tetrachloromethane (ND); PCE (ND); Toluene (ND); 1,1,1 - TCA (ND); 1,1,2 TCA (ND); TCE (170 ppb); Tetrachlorofluoromethane (ND); Vinyl chloride (ND); Ethylbenzene/xylenes (ND); Methylchloride (ND)

Source: Metcalf & Eddy (1987)

AR302571

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
10/21/85	Surface water Pond near buried drums in Shealer's backyard	Weston Sper	VOA	Chloromethane (ND 2 ppb); Bromomethane (ND 10 ppb); Dichlorodifluoromethane (ND 5 ppb); Vinyl chloride (ND 2 ppb); Chloroethane (ND 2 ppb); Ethylene Chloride (6.3 ppb); Trichlorofluoromethane (ND 5 ppb); 1,1 - DCE (ND ppb); 1,1, - DCA (ND 1 ppb); 1,2 - trans-DCE (ND 1 ppb); Chloroform (ND 2 ppb); 1,2 - DCA (ND 1 ppb); 1,1,1 - TCA (ND 2 ppb); Carbon tetrachloride (ND 2 ppb) Bromodichloromethane (ND 1 ppb); 1,2 Dichloropropane (ND 5 ppb); Trans-1,3 - Dichloropropene (ND 5 ppb); TCE (ND 2 ppb); Bromochloromethane (ND 5 ppb); 1,1,2-TCA (ND 5 ppb); cis-1,3-Dichloropropane (ND 5 ppb); 2-Chloroethylvinylether (ND 5 ppb); Bromoform (ND 10 ppb); 1,1,2,2-Tetrachloroethane (ND 10 ppb); PCE (ND 2 ppb); Chlorobenzene (ND 1 ppb); Dichlorobenzene (ND 1 ppb)
10/21/85	Surface water West stream near buried drums Shealer's backyard	Weston Sper	VOA	Chloromethane (ND 20 ppb); Bromomethane (ND 100 ppb); Dichlorodifluoromethane (ND 50 ppb); Vinyl chloride (ND 20 ppb); Chloroethane (ND 20 ppb); Ethylene Chloride (66 ppb); Trichlorofluoromethane (ND 50 ppb); 1,1 - DCE (ND 10 ppb); 1,1, - DCA (3100 ppb); 1,2 - trans DCE (ND 1100 ppb); Chloroform (ND 20 ppb); 1,2 - DCA (10 ppb); 1,1,1 - TCA (1500 ppb); Carbon tetrachloride (ND 20 ppb) Bromodichloromethane

AR302572

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
10/21/85	Surface water W. Stream downgradient of buried drums Shealer's backyard	Weston Sper	VOA	<p>(ND 20 ppb); 1,2-Dichloropropane (ND 10 ppb); Trans-1,3 - Dichloropropane (ND 50 ppb); TCE (ND 20 ppb); Bromochloromethane (ND 50 ppb); 1,1,2-TCA (ND 50 ppb); cis 1,3-Dichloropropane (ND 50 ppb); 2 - Chloroethylvinylether (ND 100 ppb); Bromoform (ND 100 ppb); 1,1,2,2-Tetrachloroethane (ND 100 ppb); PCE (ND 20 ppb); Chlorobenzene (ND 10 ppb); Dichlorobenzene (ND 10 ppb)</p> <p>Chloromethane (ND 2 ppb); Bromomethane (ND 10 ppb); Dichlorodifluoromethane (ND 5 ppb); Vinyl chloride (ND 2 ppb); Chloroethane (ND 2 ppb); Ethylene Chloride (1.3 ppb); Trichlorofluoromethane (ND 5 ppb); 1,1 - ICE (ND 1 ppb); 1,1, - DCA (61 ppb); 1,2 - trans DCE (15 ppb); Chloroform (ND 2 ppb); 1,2 - DCA (ND 1 ppb); 1,1,1 - TCA (ND 2 ppb); Carbon tetrachloride (ND 2 ppb); Bromodichloromethane (ND 2 ppb); 1,2- Dichloropropane (ND 1 ppb); Trans-1,3 - Dichloropropane (ND 5 ppb); TCE (ND 2 ppb); Bromochloromethane (ND 5 ppb); 1,1,2-TCA (ND 5 ppb); cis-1,3-Dichloropropane (ND 5 ppb); 2 - Chloromethylvinylether (ND 5 ppb); Bromoform (ND 10 ppb); 1,1,2,2-Tetrachloroethane (ND 10 ppb); PCE (ND 2 ppb); Chlorobenzene (ND 1 ppb); Dichlorobenzene (ND 1 ppb)</p>

AR302573

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
10/21/85	Surface water Ponded on Lagoon	Weston Sper	VOA	Chloromethane (ND 2 ppb); Bromomethane (ND 10 ppb); Dichlorodifluoromethane (ND 5 ppb); Vinyl chloride (ND 2 ppb); Chloroethane (ND 2 ppb); Ethylene Chloride (ND 5 ppb); Trichlorofluoromethane (ND 5 ppb); 1,1 - DCE (ND 1 ppb); 1,1, - DCA (ND 1 ppb); 1,2 - trans DCE (ND 1 ppb); Chloroform (ND 2 ppb); 1,2 - DCA (ND 1 ppb); 1,1,1 - TCA (ND 2 ppb); Carbon tetrachloride (ND 2 ppb) Bromodichloromethane (ND 2 ppb); 1,2-Dichloropropane (ND 1 ppb); Trans-1,3 - Dichloropropane (ND 5 ppb); TCE (ND 2 ppb); Bromochloromethane (ND 5 ppb); 1,1,2-TCA (ND 5 ppb); cis-1,3-Dichloropropane (ND 5 ppb); 2-Chloromethylvinylether (ND 5 ppb); Bromoform (ND 10 ppb); 1,1,2,2-Tetrachloroethane (ND 10 ppb); PCE (ND 2 ppb); Chlorobenzene (ND 1 ppb); Dichlorobenzene (ND 1 ppb)
10/21/85	Sediment E. Stream downgradient of lagoon	Weston Sper	VOA	Chloromethane (ND 2 ppb); Bromomethane (ND 10 ppb); Dichlorodifluoromethane (ND 5 ppb); Vinyl chloride (ND 2 ppb); Chloroethane (ND 5 ppb); Ethylene Chloride (ND 2 ppb); Trichlorofluoromethane (ND 5 ppb); 1,1 - DCE (ND 5 ppb); 1,1 - DCA (ND 1 ppb); 1,2 - trans DCE (ND 1 ppb); 1,2 - DCA (ND 1 ppb); 1,1,1 - TCA (ND 2 ppb); Carbon tetrachloride (ND 2 ppb) Bromodichloromethane (ND 2 ppb); 1,2-Dichloropropane (ND 1 ppb); Trans-1,3 - Dichloropropane (ND 5 ppb); TCE (ND 2 ppb); Bromochloromethane (ND 5 ppb); 1,1,2-TCA (ND 5 ppb); cis-1,3-Dichloropropane (ND 5 ppb); 2-Chloromethylvinylether (ND 5 ppb); Bromoform (ND 10 ppb); 1,1,2,2-Tetrachloroethane (ND 10 ppb); PCE (ND 2 ppb); Chlorobenzene (ND 1 ppb); Dichlorobenzene (ND 1 ppb)

Source: Metcalf & Eddy (1987)

AR302574

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
5/14/86	Surface water E. Stream upgradient of lagoon	Weston Sper	Base Neutral Extractables	Data Not Available
			Metals	Antimony (<0.025 ppm); Arsenic (<0.01 ppm); Beryllium (<0.005 ppm); Cadmium (<0.003 ppm); Chromium (0.065 ppm); Copper (0.895 ppm); Lead (1.14 ppm); Mercury (<0.0005 ppm); Nickel (<0.01 ppm); Selenium (<0.005 ppm); Silver (<0.01 ppm); Thallium (<0.01 ppm); Zinc (0.34 ₂ ppm)
5/14/86	Sediment E. Stream upgradient of lagoon	Weston Sper	Base Neutral Extractables	di-n-butyl Phthalate (6.9 ppm) Butyl Benzyl Phthalate (860 ppb); bis (2 - ethylhexyl); Phthalate (27 ppb)
			Metals	Antimony (<6.93 ppm); Arsenic (3.05 ppm); Beryllium (<2.77 ppm); Cadmium (<0.693 ppm); Chromium (15.8 ppm); Copper (17 ppm); Lead (74.8 ppm); Mercury (<0.347 ppm); Nickel (11 ppm); Selenium (<1.39 ppm); Silver (<2.77 ppm); Thallium (<2.77 ppm); Zinc (0.1 ₇)

AR302575

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
5/14/86	Surface water E. Stream downgradient of lagoon	Weston Sper	Base Neutral Extractables	Data Not Available
			Metals	Antimony (<0.025 ppm); Arsenic (<0.01 ppm); Beryllium (<0.005 ppm); Cadmium (<0.003 ppm); Chromium (<0.01 ppm); Copper (0.037 ppm); Lead (0.17 ppm); Mercury (<0.0005 ppm); Nickel (<0.01 ppm); Selenium (<0.005 ppm); Silver (<0.01 ppm); Thallium (<0.01 ppm); Zinc (0.108 ppm)
5/14/86	Sediment E. Stream downgradient of lagoon	Weston Sper	Base Neutral Extractables	di-n-butyl Phthalate (9.6 ppm) butyl Benzyl Phthalate (650 ppb); bis (2 - ethylhexyl) Phthalate (310 ppb)
			Metals	Antimony (<7.7 ppm); Arsenic (<3.08 ppm); Beryllium (<3.08 ppm); Cadmium (<0.77 ppm); Chromium (0.27); Copper (425 ppm); Lead (0.17); Magnesium (<0.039 ppm); Nickel (12 ppm); Selenium (<1.54 ppm); Silver (<3.08 ppm); Thallium (<3.08 ppm); Zinc (375 ppm)

Source: Metcalf & Eddy (1987)

AR302576

TABLE 1-4
(Continued)

Date Sampled	Location/ Matrix	Sampler	Test	Results
5/14/86	Sediment E. Stream at Culvert below lagoon	Weston Sper	Base Neutral Extractables	di-n-butyl Phthalate (2.2 ppm) Butyl Benzyl Phthalate (2.7 ppm); bis (2 - ethylhexyl) Phthalate (810 ppb)
			Metals	Antimony (14 ppm); Arsenic (2.35 ppm); Beryllium (<2.28 ppm); Cadmium (<0.571 ppm); Chromium (0.27); Copper (0.17); Lead (0.97); Magnesium (<0.29 ppm); Nickel (16 ppm); Selenium (<1.14 ppm); Silver (<2.28 ppm); Thallium (<3.42 ppm); Zinc (431 ppm)
5/14/86	Surface water Pond outside of lagoon fence	Weston Sper	Base Neutral Extractables	Data Not Available
			Metals	Antimony (<0.03 ppm); Arsenic (<0.01 ppm); Beryllium (<0.005 ppm); Cadmium (<0.003 ppm); Chromium (0.065 ppm); Copper (0.895 ppm); Lead (1.14 ppm); Mercury (<0.0005 ppm); Nickel (<0.01 ppm); Selenium (<0.005 ppm); Silver (<0.01 ppm); Thallium (<0.01 ppm); Zinc (0.342 ppm)

AR302577

TABLE 1-5

OFF-SITE WELL LOCATIONS AND ADDRESSES

Name	Lot Number #1	Street Number	Street Name	Phone Number (717)	Well Depth (Feet)	Casing Depth (Feet)	Water Depth (Feet)	Number of Well Water Analyses
Aikins, Wilmer L.	13 A	555	Hunterstown	334-7916	296			2
Allen, Robert M.	33 A		Oak Lane					0
Black, James F., Sr.	7	544	Hunterstown	334-3584	210			1
Black, Orville D.	94	125	Hunterstown	334-3638	94	20	25	1
Fair, Cleason Jr.	44	1315	Old Harrisburg	334-3282				0
Fissel, Stephen C.	*2 39 E	485	Hunterstown	337-3814				4
Flynn, Mary								1
Gunnert, Emanuel C.	46	1295	Old Harrisburg	334-1064				0
Harbaugh, E. Frank	4	455	Shealer	334-3291	126			1
Heflin, Lee W.	*3 45	230 A	Shealer	334-2214	220			2
Heflin, Vernon	*3 45	230 B	Shealer	334-3747	220			2
Heflin, William F.	44 B	336	Hunterstown	334-2687	250			3
Heiges Masonry Inc.	67	235	Hunterstown	334-1249				1
Hoffman, Dale C.	35	335	Shealer	334-3583				3
Hoffman, Kathryn M.	36	325	Shealer	334-3545				3
Hull, John A.	30	460	Shealer	334-1926				1
Kauffman, Earl H.	65	217	Hunterstown	334-1828				5
Kennedy, Vincent	39 B		Hunterstown					1
Kessler, Mrs. Hazel I.	64	211	Hunterstown	334-3675				1
Ketterman, Barbara	9	520	Hunterstown	334-8323				3
Klunk, Michael J.	47 A	55	Shealer	334-8412				1
Knox, David P.	48	1275	Old Harrisburg	334-2766				0
Kuhn, Paul W.	47	1285	Old Harrisburg	334-9490				0
Laughman, Carole M.	33		Oak Lane	334-8812				0
Light, Larry K.	63	209	Hunterstown	334-9442				1
Lott, John K.	*4 3		Old Harrisburg					0
Lott, John K.	*5 50		Old Harrisburg					0
Lott, John K.	*6 51	646	Hunterstown	334-3560				1
Martin, Paul W.	*7 8	534	Hunterstown		150			1
Maslowski, Angela A.	43	1325	Old Harrisburg	334-1530				0
McDemmitt Concrete Inc.	112	83	Hunterstown	334-2131				1
McIlhenny, Hugh C.	1	1264	Old Harrisburg	334-4219				0
McMahan, Thomas J.	*8 12	545	Hunterstown	334-3823				2
Moritz, Charles W.	6	554	Hunterstown	334-3580	210			2
Phiel, Richard	*9 10 A		Hunterstown					1
Platt, Marlin L.	13	559	Hunterstown	334-7531				1
Rice, Fred H.	93	115	Hunterstown	334-2690	130	20	20	1
Sanders, Francis	*10 46	181	Shealer		65			2
Shealer, Edgar G.	*11 39	476	Hunterstown					0
Shealer, Frederick M.	10	510	Hunterstown	334-3565	275			2
Shealer, Frederick M.	*12 39 D		Hunterstown					0
Shealer, Gerald F.	*13 11	531	Hunterstown	334-6360	280			2
Shealer, James M.	*14 39 F	495	Hunterstown	334-8761				
Shealer, Mrs. S. Catherine	34	345	Shealer	334-3788				2
Shriver, Frank	39 C		Hunterstown		100			1
Shultz, Ruth I.	40		Shealer					0
Shupe, Ray M.	62	190	Hunterstown	334-7419				1
Smith, Ronald H.	- 37	315	Shealer	334-8898				4
Sparks, Gary	*15 39 E	485	Hunterstown					
Taughinbaugh, George W	*16 31	416	Shealer	334-1923				1
Topper, Robert H.	92	103	Hunterstown	334-5902	40	40	42	1
Tressler, Melvin E.	5	566	Hunterstown	334-3581	190			1
Vaughn, William	39 G	445	Hunterstown	334-3592	45			1
Waddell, Donald C.	*17 44 A	340	Hunterstown	334-3587	65			2
Waddell, Donald H.	*18 45 A	295	Shealer	334-5291	220			2
Waddell, Samuel C.	*19 44	318	Hunterstown	334-6024	15			
Wagner, Rufus J.	95	135	Hunterstown	334-5087	85			1
Weaver, Dennis M.	39 A	455	Hunterstown	334-7272				5
Wells, Julius E.	32 A	315	Oak Lane	334-4838				0
Wisotzkey, Joseph	1 A		Old Harrisburg					0

Source: Metcalf & Eddy (1987)

AR302578

TABLE 1-5
(Continued)

* Footnotes:

- 1) Lot numbers refer to tax map numbers assigned to residents at each site. In some cases these have been changed so that no duplication of numbers occurs within a site.
- 2) Previous tenant at 485 Hunterstown Road was Gary Sparks up until June 1986. This residence shares a well with James M. Shealer 495 Hunterstown, lot 39 F.
- 3) Probably the "white farmhouse apartments". Residence contained on section of lot 45 closest to Western Maryland Railroad line. Property owned by Donald C. Maddell, 340 Hunterstown, Gettysburg 334-3587.
- 4) Property owned by J.K. Lott; home address 646 Hunterstown, Gettysburg 334-3560.
- 5) Property co-owned by John K. Lott, William Lott and E. Robert Lott.
- 6) Residence contained on section of lot 51 north of lot 5 (Melvin E. Tressler) on the west side of Hunterstown Road.
- 7) Current address: Centennial Avenue Ext., Hanover 632-2662.
- 8) Current address: unknown; not in July 1986 phone book. Possibly still residing at this address.
- 9) Property owned by R. Phiel; home address 3097 Baltimore, Gettysburg 334-3586.
- 10) Sometimes referred to as the "Kilgore residence". Additional reference to a 75 foot well. Property owned by Donald C. Maddell, 340 Hunterstown, Gettysburg 334-3587.

- 11) Residence contained on section of lot 39 closest to the Old Harrisburg Road.
- 12) Property owned by F.M. Shealer; home address 510 Hunterstown, Gettysburg 334-3565.
- 13) Listed in July 1986 phone book as "B.A. Shealer".
- 14) This residence shares a well with Stephen C. Fissel 485 Hunterstown, lot 39 E.
- 15) Resident at 485 Hunterstown Road up to June 1986. This residence shares a well with James M. Shealer 495 Hunterstown, lot 39 F.
- 16) Also the residence of Margaret Laughlinbaugh.
- 17) Donald C. Maddell is sometimes referred to as "Donald Maddell, Sr.". July 1986 phone book lists a "Mrs. Caryl Maddell" at 340 Hunterstown. This residence possibly shares a well with Samuel C. Maddell 318 Hunterstown, lot 44.
- 18) Donald H. Maddell is sometimes referred to as "Donald Maddell, Jr.".
- 19) Property owned by Donald C. Maddell, 340 Hunterstown, Gettysburg 334-3587. This residence possibly shares a well Donald C. Maddell 340 Hunterstown, lot 44 A.

AR302579

TABLE 1-6

OFF-SITE WELL ANALYTICAL DATA

Name	Lot Number #1	Date		Chemical Tests #2	Contaminant Concentrations (micrograms per liter) #3							Other Compounds	Original Lab Data Report	Data Source file #4	
		Mo	Day		TCE	1,1,1-TCA	1,1,1-DCE	1,1,1-DCA	PCE						
Aikins, Wilmer L.	13 A	3 27 84	5 21 84	VOA											PADER
"				VOA											PADER
Black, James F., Sr.	7	3 27 84		VOA											PADER
Black, Orville D.	94	6 20 85		VOA											MUS
Fissel, Stephen C. #5	39 E	5 21 84	3 27 84	VOA	-500.0	95.0	1.5	1.6	1,2-DCE	1.2	See #6				PADER
"		12 21 84		VOA	436.0										PADER
"		1 28 85		*7	181.8										Culligan
Flynn, Mary		11 25 85		VOA	480.0	71.0									MUS
"					<1.0										PADER
Marbaugh, E. Frank	4	8 1 84		VOA											PADER
"															PADER
Weflin, Lee V./Vernon #8	45	3 14 84	1 28 85	VOA	18.0	12.0	12.0								PADER
"				*7	19.0	-13.0									MUS
Weflin, William F.	44 B	4 24 84	12 21 84	VOA	5.9	5.1	1.6								PADER
"		1 28 85		VOA	7.4	3.4									Culligan
"				*7	<5.0										MUS
Helges Masonry Inc.	67	6 20 85		VOA											MUS
"															MUS
Hoffman, Dale C.	35	4 24 84	12 21 84	VOA	9.0	>120.0	55.0	14.0	1,2-DCE	3.4					PADER
"		1 28 85		VOA	11.6										Culligan
"				*7	9.0	300.0	16.0	63.0							MUS
Hoffman, Kathryn M.	36	4 24 84	12 21 84	VOA	<1.0	26.0	3.5								PADER
"		1 28 85		VOA	Trace	7.0									Culligan
"				*7											MUS
Hull, John A.	30	8 1 84		VOA											PADER
"															PADER
Keuffman, Earl H.	65	5 21 84	2 6 85	VOA	<1.0										PADER
"		4 24 85		VOA											PADER
"		8 5 85		VOA											PADER
"		11 19 85		VOA											PADER
Kennedy, Vincent	39 B	2 23 84		VOA	2.5	2.1	1.0								PADER
"															MUS
Kessler, Mrs. Hazel I.	64	6 20 85		VOA											MUS
"															MUS
Ketterman, Barbara	9	3 14 84	2 6 85	VOA											PADER
"				VOA											PADER

Source: Metcalf & Eddy (1987)

TABLE 1-6
(Continued)

Name	Lot Number #1	Date		Chemical Tests #2	Contaminant Concentrations (micrograms per liter) #3					Original Lab Data Report	Data Source file #4		
		Mo	Day		Yr	TCE	1,1,1-TCA	1,1-DCE	1,1-DCA			PCE	Other Compounds
Klunk, Michael J.	47 A	8	5	85	VOA							XXX	PADER
Light, Larry K.	63	10	10	84	VOA								PADER
Lott, John K. #9	51	3	13	84	SCAN					MA			PADER
Martin, Paul M.	8	3	27	84	VOA								PADER
McDermitt Concrete Inc.	112	3	28	84	VOA						Lot contains two wells; see #10		PADER
McMahon, Thomas J.	12	6	20	85	VOA								MUS
Moritz, Charles W.	6	3	27	84	VOA								PADER
"		5	21	84	VOA						Significant peak unidentified		PADER
Phiel, Richard	10 A	12	14	83	VOA	1.2	1.7	<1.0	<1.0				PADER
Platt, Marlin L.	13	3	27	84	VOA								PADER
Rice, Fred H.	93	6	20	85	VOA								MUS
Sanders, Francis #11	46	3	14	84	VOA	>150.0	1.7	2.4	<1.0				PADER
"		12	21	84	VOA	105.3	Trace				1,2-DCE>150.0; Vinyl Chloride<1.0	XXX	Culligan
Shealer, Frederick M.	10	3	28	84	VOA								PADER
"		8	1	84	VOA	<1.0	1.1		<1.0				PADER
Shealer, Gerald F.	11	3	27	84	VOA								PADER
"		8	1	84	VOA								PADER
Shealer, James M. #12	39 F												
Shealer, Mrs. S. Catherine	34	4	24	84	VOA	1.5	63.0	9.2	1.4	<1.0			PADER
"		1	28	85	*7	85.0	20.0						MUS
Shriver, Frank	39 C	3	14	84	VOA								PADER
Shupe, Ray H.	62	6	20	85	VOA								MUS
Smith, Ronald H.	37	3	28	84	VOA	8.4	1.4	<1.0	1.0				PADER
"		5	21	84	VOA	6.5	1.4	<1.0	1.5		1,2-DCE 1.2	XXX	PADER
"		12	21	84	VOA	1.4							Culligan
"		1	28	85	*7	-1.0	-4.0						MUS

TABLE 1-6
(Continued)

Name	Lot Number #1	Date Mo Day Yr	Chemical Tests #2	Contaminant Concentrations (micrograms per liter) #3						Original Lab Data Report	Data Source File #4
				TCE	1,1,1-TCA	1,1-DCE	1,1-DCA	PCE	Other Compounds		
Sparks, Gary #13	39 E	*****									
Taughinbaugh, George M #14	31	8 1 84	VOA								PADER
Topper, Robert H.	92	6 20 85	VOA								MUS
Tressler, Melvin E.	5	3 27 84	VOA								PADER
Vaughn, William	39 G	12 14 83	VOA	<1.0	<1.0	<1.0	1.3				PADER
Meddell, Donald C. #15	44 A	4 24 84 8 14 84	VOA VOA	24.0	4.7	<1.0		Sample from 15 foot dug well Sample from 65 foot well			PADER PADER
Meddell, Donald H.	45 A	2 23 84 1 28 85	VOA #7	66.0	82.0	26.0					PADER MUS
Meddell, Samuel C. #16	44	*****		52.0	36.0	9.0		1,2-DCE 9.7			MUS
Wagner, Rufus J.	95	6 20 85	VOA								MUS
Weaver, Dennis H.	39 A	3 14 84	VOA							XXX	PADER
"	"	2 6 85	VOA							XXX	PADER
"	"	4 24 85	VOA							XXX	PADER
"	"	8 5 85	VOA							XXX	PADER
"	"	11 19 85	VOA								PADER

TABLE 1-6
(Continued)

* Footnotes:

1) Lot numbers refer to tax map numbers assigned to residents at each site. In some cases these have been changed so that no duplication of numbers occurs within a site.

2) The chemical tests listed are defined as follows:

VOA: Full range of volatile organic compounds with detection limits of approximately 0.5-1.0 ug/l.
 SCAN: "TCE scan" which analyzes for TCE, 1,1,1-TCA and PCE only; detection limits same as above.

Note: a blank space indicates that the compound in question was tested for but found to be at or below the detection limit. "NA" means that the compound was not tested for.

3) The contaminants listed are defined as follows:

TCE: Trichloroethylene
 1,1,1-TCA: 1,1,1-Trichloroethane
 1,1-DCE: 1,1-Dichloroethylene
 1,1-DCA: 1,1-Dichloroethane
 PCE: Perchloroethylene or Tetrachloroethylene

Note: "ethylene" and "ethene" are the same exact compound with formula CH₂=CH₂.

4) Explanation of "Data Source File" Headings:

Culligan: Sample originally collected by Culligan I.M.T. Enterprises Inc., Biglerville PA.
 MUS: Sample originally collected by MUS Corporation.
 PADER: Sample originally collected by Pennsylvania Dept. of Environmental Resources.
 Ramp (Westinghouse): Data from the "Remedial Action Master Plan" report and originally supplied by Westinghouse Corporation.

5) Previous tenant at this residence was Gary Sparks up until June 1986. This residence also shares a well with James M. Shealer 495 Munster Road, lot 39 F. All data for G. Sparks and J.M. Shealer are included here.

- 6) The values of 500 parts per billion for ICE and 1,1,1-TCA are estimates.
- 7) Type of chemical test performed is unknown.
- 8) Residence is the "White farmhouse apartments" with one well. Tenants are Lee W. Heflin 230-A Shealer Road and Vernon Heflin 230-B Shealer Road. Property is owned by Donald C. Maddell 340 Munster Road, Gettysburg 334-3587.
- 9) Residence contained on section of lot 51 north of lot 5 (Melvin E. Tressler) on the west side of Munster Road.
- 10) McDermitt Concrete Inc. owns two wells. Both were tested and volatile organics were not detected in either.
- 11) Sometimes referred to as the "Kilgore Residence". Property is owned by Donald C. Maddell 340 Munster Road, Gettysburg 334-3587.
- 12) This residence shares a well with Stephen C. Fissel 405 Munster Road lot 39 E. See that heading for all data.
- 13) Resident at lot 39 E (405 Munster) up to June 1986. Current resident at this address is Stephen C. Fissel. Please see that name for tabulation of all data from this well.
- 14) Also the residence of Margaret Taughinbaugh.
- 15) Donald C. Maddell is sometimes referred to as "Donald Maddell, Sr.". This residence possibly shares a well with Samuel C. Maddell 318 Munster Road, lot 44.
- 16) This residence possibly shares a well with Donald C. Maddell 340 Munster Road, lot 44 A.

**TABLE 2-1
RESIDENTIAL WELL SURVEY RESULTS
HUNTERSTOWN ROAD SITE**

LOCATION #	WELL OWNER	IS WELL OPERATIONAL (Y/N)	WELL DEPTH	WELL USE	PUBLIC WATER SERVICE (Y/N)	ACTIVE SEPTIC SYSTEM (Y/N)
1	Richard & Alice Phiel	Yes	235'	Garden watering, washing cars	Yes	Yes
2	Charles W. Mortz	Yes	210'	Garden watering	Yes	Yes
3	John K. Lott	Yes	135'	Drinking, cooking, bathing/washing, garden watering, livestock	No	Yes
4	Dennis M. Weaver	Yes	Unknown	Garden watering, washing cars	Yes	Yes
5	Barbara Ketterman	Yes	Unknown	Drinking, cooking, bathing	Yes	Yes
6	Ronald H. Smith	No	Unknown	N/A	Yes	Yes
7	F. M. Shealer	Yes	170'	General use	Yes	Yes
8	Melvin E. Tressler	Yes	190'	General use	No	Yes
9	S. Catherine Shealer	No	Unknown	N/A	Yes	Yes
10	William Vaughn	Yes	45'	None	Yes	Yes
11	Jack & Tina Stevens	Yes	Unknown	Garden watering	Yes	Yes
12	Marlin L. Platt	Yes	200'	Presently none	Yes	Yes
13	Gerald F. Shealer	Yes	300'	Drinking, cooking, bathing/washing	Yes	Yes
14	Adriel Bowie	No Well	N/A	None	Yes	Yes

Note: Location numbers refer to lots indicated on Figure 2-11.

AR302584

TABLE 3-1

**GROUNDWATER PIEZOMETRIC LEVELS
HUNTERSTOWN ROAD SITE RI/FS**

WELL	PIEZOMETRIC LEVEL ⁽¹⁾ (ft. MSL) MEASURE ON				
	06/28/89	07/20/89	11/12/90	02/04/91	05/21/91
HMW-1AL	551.70	549.04	549.42	550.41	549.29
HMW-1BL	523.70	522.99	521.59	525.75	523.11
HMW-2AS	538.75	536.82	538.93	537.21	536.16
HMW-2BL	490.11	488.40	486.99	489.51	484.83
HMW-3AL	538.28	537.87	538.36	538.09	537.40
HMW-3BL	488.60	486.84	485.64	487.90	483.53
HMW-4AL	547.97	545.23	541.68	547.68	545.75
HMW-4BL	545.85	542.70	538.88	546.01	543.28
HMW-5AS	536.40	535.96	536.78	535.94	535.68
HMW-5BL	493.24	491.65	491.60	493.74	490.13
HMW-5CL	--	--	486.99	489.36	484.96
HMW-6AS	535.71	533.90	535.15	534.37	533.03
HMW-6BL	489.27	487.62	485.17	488.76	484.41
HMW-7AE	538.72	538.11	537.94	538.40	537.29
HMW-7BL	489.03	487.33	486.20	488.66	484.31
HMW-8AF	552.89	551.73	551.77	552.60	550.68
HMW-8BF	516.15	515.70	512.62	516.93	513.88
HMW-9AW	523.76	524.35	518.08	524.59	524.30
HMW-9BF	512.86	512.19	509.09	512.96	509.96
HMW-10AF	535.29	535.28	530.68	535.59	535.16
HMW-10BE	515.83	516.00	514.11	516.75	513.90
HMW-10CL	--	--	--	--	483.56
HMW-11AL	--	--	530.12	529.87	529.80
HMW-12BE	--	--	405.14 ⁽²⁾	516.14	518.39
HMW-12CL	--	--	486.90	488.13	484.46
HMW-13AE	--	--	523.58	523.06	522.16
HMW-13BL	--	--	483.55	485.93	481.49
HMW-14AE	--	--	529.20	530.14	529.76
HMW-14BS	--	--	504.40	491.40	488.80
HMW-15AW	--	--	507.45	517.25	518.01
HMW-16AW	--	--	509.35	514.51	512.18
HMW-16BF	--	--	479.48	503.71	500.73
HMW-17AW	--	--	520.57	525.50	523.02
HMW-17BF	--	--	538.74	519.38	516.63
HMW-18CL	--	--	485.64	488.27	483.64
HMW-19CL	--	--	487.16	489.39	485.03
PW-1	--	--	--	--	484.15

NOTES:

1. Piezometric levels measured in monitoring wells using M-Scope electronic water level meters.
2. Water level measured under non-steady state conditions.

TABLE 4-1

SUMMARY OF COMPOUNDS OF INTEREST

PARAMETER	Borrow Area	Lagoon Area	Cornfield Areas	Stressed Vegetation Area	Drum Burial Area 1	Drum Burial Area 2	Surface Water	Sediments	Ground Water
Antimony		X		X			X	X	
Arsenic								X	
Barium			X	X					X
Cadmium		X	X	X			X	X	
Chromium		X	X	X			X	X	X
Copper	X	X	X	X			X	X	
Lead	X	X	X	X			X	X	X
Manganese							X		
Mercury		X	X	X					X
Selenium			X	X			X	X	
Zinc	X	X	X	X			X	X	
Cyanide								X	
VOCs	X	X	X	X	X	X	X	X	X
bis(2-Ethylhexyl) phthalate	X							X	X
DDT				X					
PCBs					X				
Asbestos	X								

AR302586

TABLE 4-2

BACKGROUND CORNFIELD SOIL SAMPLES
SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)	SS-BG	1-B	1-C	1-D	2-B	2-C	2-D	3-B
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	12/07/88	11/21/90	11/21/90	11/21/90	11/21/90	11/21/90	11/21/90	11/21/90
Sample Depth	inches	9	16-20	28-32	40-44	16-20	28-32	40-44	16-20
pH	---	NA (c)	5.17	6.15	6.66	4.95	4.84	5.31	5.02
Moisture	% by weight	22.5	15.4	16.7	15.2	20.3	13.8	13.6	13.9
Inorganics (d)									
Aluminum	mg/kg	12,500	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	5	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	64	74	122	102	69	72	69	35
Calcium	mg/kg	2,030	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	22	36 J (g)	42 J	34 J	34 J	40 J	11 J	8 J
Cobalt	mg/kg	14	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	8	7 J	8 J	4 J	8 J	6 J	2 J	--
Iron	mg/kg	18,600	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	28	7.7	9.1	9.6	13.6	11.6	10.6	108
Magnesium	mg/kg	2,100	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	1,150	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	--	0.04	--	--	--	--	--	--
Nickel	mg/kg	9	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	645	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--	--
Vanadium	mg/kg	36	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	41	77 J	124 J	89 J	54 J	86 J	99 J	83 J
Volatiles (d)									
Acetone	ug/kg	26	NA	26	NA	NA	17 * (f)	NA	14 *
Methylene Chloride	ug/kg	28	NA	8	NA	NA	--	NA	9
Tetrachloroethene	ug/kg	10	NA	--	NA	NA	--	NA	--

AR302587

TABLE 4-2
(continued)

PARAMETER (a)	UNITS (b)	3-C	3-D	4-B	4-C	4-D	4-DD	5-B	5-C
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/21/90	11/21/90	11/21/90	11/21/90	11/21/90	11/21/90	11/21/90	11/21/90
Sample Depth	inches	28-32	40-44	16-20	28-32	40-44	40-44	16-20	28-32
pH	---	5.21	7.53	5.50	7.12	7.15	5.14	7.87	8.06
Moisture	% by weight	12.9	14.1	20.2	19.9	19.9	19.1	18.3	15.8
Inorganics (d)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	61	95	70	148	146	142	111	129
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	33 J	31 J	33 J	35 J	43 J	35 J	32 J	18 J
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	5 J	6 J	10 J	11 J	12 J	10 J	7 J	31 J
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	11.1	12.0	14.5	965.0	10.3	11.6	16.1	12.4
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	---	---	---	---	---	---	0.06	---
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	0.70	---	---	---	---	---	---	---
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	94 J	94 J	43 J	72 J	91 J	90 J	69 J	77 J
Volatiles (d)									
Acetone	ug/kg	NA	NA	NA	NA	34	36	NA	27
Methylene Chloride	ug/kg	NA	NA	NA	NA	15	---	NA	14
Tetrachloroethene	ug/kg	NA	NA	NA	NA	---	---	NA	---

AR302588

TABLE 4-2
(continued)

PARAMETER (a)	UNITS (b)	5-D	6-B	6-C	6-D
Sample Type	---	grab	grab	grab	grab
Collection Date	---	11/21/90	11/21/90	11/21/90	11/21/90
Sample Depth	inches	40-44	16-20	28-32	40-44
pH	---	7.90	4.93	5.49	6.23
Moisture	% by weight	15.7	19.8	12.6	13.0
Inorganics (d)					
Aluminum	mg/kg	NA	NA	NA	NA
Arsenic	mg/kg	NA	NA	NA	NA
Barium	mg/kg	119	61	110	111
Calcium	mg/kg	NA	NA	NA	NA
Chromium	mg/kg	38 J	38 J	27 J	30 J
Cobalt	mg/kg	NA	NA	NA	NA
Copper	mg/kg	5 J	13 J	7 J	7 J
Iron	mg/kg	NA	NA	NA	NA
Lead	mg/kg	11.1	13.0	9.0	11.6
Magnesium	mg/kg	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA
Mercury	mg/kg	--	--	--	--
Nickel	mg/kg	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--
Vanadium	mg/kg	NA	NA	NA	NA
Zinc	mg/kg	79 J	92 J	82 J	85 J
Volatiles (d)					
Acetone	ug/kg	NA	NA	20 *	NA
Methylene Chloride	ug/kg	NA	NA	10	NA
Tetrachloroethene	ug/kg	NA	NA	--	NA

NOTES:

- Compounds not listed were not detected in the above quantitation limits. Refer to Appendix F for a complete listing of analytical results and quantitation limits.
- "mg/kg" indicates milligrams per kilogram or parts per million (ppm), and "ug/kg" refers to micrograms per kilogram or parts per billion (ppb).
- "NA" indicates the sample was not analyzed for this parameter.
- Results reported on a dry-weight basis: dry-weight = as-received divided by D, where D=(100-moisture content)/100.
- "--" indicates the parameter was analyzed but not detected in the sample above quantitation limits. Refer to Appendix F for quantitation limits.
- "*" indicates the compound was not detected at a concentration substantially above the level in the laboratory or field blanks.
- "J" indicates the value listed is estimated.

**TABLE 4-3
SITE-SPECIFIC AND REGIONAL SOIL
BACKGROUND CONCENTRATIONS**

Depth	Background Concentration				
	Barium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Zinc (mg/kg)
B (16"-20")	124	53.6	15.8	114	109
C (28"-32")	183	51.8	32.8	14.1	130
D (40"-44")	169	52.3	13.7	12.8	103
Combined	158	48.0	19.6	57.6	113
Global Background Range (a)	100-3000	5-1000	2-100	2-200	10-300

Notes:

(a) Global background ranges from Levinson (1980).

Obsolete, See next page.

TABLE 4-3
 SITE-SPECIFIC AND REGIONAL SOIL
 BACKGROUND CONCENTRATIONS

Depth	Background Concentration									
	Barium Mean (mg/kg)	Barium Reference Value ^(a) (mg/kg)	Chromium Mean (mg/kg)	Chromium Reference Value ^(a) (mg/kg)	Copper Mean (mg/kg)	Copper Reference Value ^(a) (mg/kg)	Lead Mean (mg/kg)	Lead Reference Value ^(a) (mg/kg)	Zinc Mean (mg/kg)	Zinc Reference Value ^(a) (mg/kg)
B (16"-20")	68.3	124	30.5	53.6	7.83	15.8	28.8	114	69.8	109
C (28"-32")	106.7	183	32.5	51.8	11.3	32.8	10.6	14.1	89.2	130
D (40"-44")	112.9	169	31.7	52.3	6.71	13.7	11.0	12.8	89.6	103
Combined	96.8	158	31.5	48.0	8.53	19.6	16.8	57.6	83.2	113
Global Background Range (b)	--	100-3000	--	5-1000	--	2-100	--	2-200	--	10-300

Notes:

- (a) Reference value is the upper 95 percent confidence limit (one tail) obtained by using analysis of variance statistical methodology.
- (b) Global background ranges from Levinson (1980).

ORIGINAL
 (Red)

AR302591

TABLE 4-4

BORROW AREA SOIL SAMPLES
SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)	SS-1 composite	BA-1 grab	BA-2 grab	BA-3 grab	BA-4 grab	BA-5 grab	BA-5D grab
Sample Type	---							
Collection Date	---	12/6/88	11/19/90	11/19/90	11/19/90	11/19/90	11/19/90	11/19/90
Sample Depth	inches	4-8	6	6	6	6	4-6	4-6
Moisture	% by weight	13.2	16.3	19.8	14.9	20.7	18.0	18.6
Inorganics (c,d)								
Aluminum	mg/kg	22,800	NA (f)	NA	NA	NA	NA	NA
Barium	mg/kg	100	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	1.2	NA	NA	NA	NA	NA	NA
Calcium	mg/kg	2,720	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	47	NA	NA	NA	NA	NA	NA
Cobalt	mg/kg	22	NA	NA	NA	NA	NA	NA
Copper	mg/kg	70	13	188	125	1,190	16	16
Iron	mg/kg	17,000	NA	NA	NA	NA	NA	NA
Lead	mg/kg	336	13.7 J (h)	37.9 J	627 J	48.8 J	24.3 J	28.7 J
Magnesium	mg/kg	8,090	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	692	NA	NA	NA	NA	NA	NA
Nickel	mg/kg	24	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	1,020	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	69	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	35	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	129	65 J	76 J	240 J	209 J	114 J	128 J
Asbestos	% by weight	NA	--	--	--	--	--	--
Volatiles (d)								
Acetone	ug/kg	--	-- (e)	14 * (g)	--	19 *	--	--
Methylene Chloride	ug/kg	20	48	36	88	72	22	11
Toluene	ug/kg	--	8	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--	--	--
Semivolatiles (d)								
bis(2-Ethylhexyl) phthalate	ug/kg	--	--	--	--	--	--	--

TABLE 4-4
(continued)

PARAMETER (a)	UNITS (b)	BA-6	BA-7	BA-8A	BA-8B	BA-9
Sample Type	---	grab	grab	grab	grab	grab
Collection Date	---	11/19/90	11/19/90	11/19/90	11/19/90	11/19/90
Sample Depth	inches	6	6	29-33	59-75	4-9
Moisture	% by weight	22.3	14.9	31.0	18.9	23.6
Inorganics (c,d)						
Aluminum	mg/kg	NA	NA	NA	NA	NA
Barium	mg/kg	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA
Calcium	mg/kg	NA	NA	NA	NA	NA
Chromium	mg/kg	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA
Copper	mg/kg	12	15	29	244	461
Iron	mg/kg	NA	NA	NA	NA	NA
Lead	mg/kg	11.4 J	15.3 J	93.9 J	64.2 J	93.2 J
Magnesium	mg/kg	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA
Zinc	mg/kg	95 J	63 J	94 J	164 J	469 J
Asbestos	% by weight	--	--	--	--	--
Volatiles (d)						
Acetone	ug/kg	--	36	15 *	--	--
Methylene Chloride	ug/kg	18	44	34	34	120 J
Toluene	ug/kg	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	7 J
Semivolatiles (d)						
bis(2-Ethylhexyl) phthalate	ug/kg	--	--	--	680	8,200

NOTES:

- Compounds not listed were not detected in the samples above quantitation limits. Refer to Appendix F for a complete listing of analytical results and quantitation limits.
- "mg/kg" indicates milligrams per kilogram or parts per million (ppm), and "ug/kg" refers to micrograms per kilogram or parts per billion (ppb).
- Results reported on a dry-weight basis: dry-weight = as-received divided by D, where D=(100-moisture content)/D.
- "--" indicates the parameter was analyzed but not detected in the sample above quantitation limits. Refer to Appendix F for quantitation limits.
- "NA" indicates the sample was not analyzed for this parameter.
- "ND" indicates the compound was not detected at a concentration substantially above the level in laboratory or field blanks.
- "J" indicates the value listed is estimated.

AR302593

TABLE 4-5

LAGOON AREA SOIL SAMPLES
SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)	SS-2	Surface 1	Surface 2	HTB-4,S-4	HTB-5,S-5
Sample Type	---	composite	grab	grab	grab	grab
Collection Date	---	12/06/88	11/19/90	11/19/90	10/24/90	10/24/90
Sample Depth	feet	1.0	0.0-0.6	0.0-0.6	7.5-8.7	10.0-11.3
pH	---	NA(c)	6.50	6.91	NA	NA
Moisture	% by weight	23.3	31.2	19.1	13.0	14.5
<u>Inorganics (d,e)</u>						
Aluminum	mg/kg	15,300	NA	NA	NA	NA
Antimony	mg/kg	--(f)	18 L (j)	10 L	--	--
Barium	mg/kg	91	NA	NA	NA	NA
Beryllium	mg/kg	0.9	NA	NA	NA	NA
Cadmium	mg/kg	--	--	--	0.7	0.7
Calcium	mg/kg	2,140	NA	NA	NA	NA
Chromium	mg/kg	72	1,600	680	34 J (h)	30 J
Cobalt	mg/kg	16	NA	NA	NA	NA
Copper	mg/kg	60	2,370	1,510	81 J	11 J
Iron	mg/kg	30,200	NA	NA	NA	NA
Lead	mg/kg	118	5,020 L	1,830 L	11.1 J	5.4 J
Magnesium	mg/kg	3,120	NA	NA	NA	NA
Manganese	mg/kg	390	NA	NA	NA	NA
Mercury	mg/kg	--	0.14 J	0.13 J	--	--
Nickel	mg/kg	13	NA	NA	NA	NA
Potassium	mg/kg	847	NA	NA	NA	NA
Sodium	mg/kg	140	NA	NA	NA	NA
Vanadium	mg/kg	46	NA	NA	NA	NA
Zinc	mg/kg	56	442	493	69 J	134 J
<u>Volatiles (e)</u>						
Acetone	ug/kg	--	260 * (g)	--	13 *	220
2-Butanone	ug/kg	--	--	--	--	96
Chloroethane	ug/kg	--	600	--	--	--
1,1-Dichloroethane	ug/kg	--	6,000	--	--	--
1,2-Dichloroethane	ug/kg	--	38	--	--	--
1,1-Dichloroethene	ug/kg	--	290	--	--	--
1,2-Dichloroethene (total)	ug/kg	--	21,000	--	--	--
Ethylbenzene	ug/kg	--	--	--	--	230
4-Methyl-2-Pentanone	ug/kg	--	150	--	--	190
Methylene Chloride	ug/kg	20	190	20	--	--
Tetrachloroethene	ug/kg	--	170	--	--	--
Toluene	ug/kg	--	530	--	--	42 K (i)
1,1,1-Trichloroethane	ug/kg	--	11,000	--	--	--
1,1,2-Trichloroethane	ug/kg	--	48	--	--	--
Trichloroethene	ug/kg	--	330	--	--	--
Vinyl Chloride	ug/kg	--	610	--	--	--
Xylenes (total)	ug/kg	--	300	--	--	1,200

AR302594

TABLE 4-5
(continued)

PARAMETER (a)	UNITS (b)	HTB-6,S-4	HTB-7,S-4	HTB-8,S-3	HTB-9,S-5	HTB-10,S-2
Sample Type	---	grab	grab	grab	grab	grab
Collection Date	---	10/24/90	10/25/90	10/24/90	10/25/90	10/24/90
Sample Depth	feet	7.5-8.9	7.5-9.5	5.0-6.4	10.0-12.0	2.5-4.0
pH	---	NA	NA	NA	NA	NA
Moisture	% by weight	14.7	19.2	17.6	17.7	12.8
<u>Inorganics (d,e)</u>						
Aluminum	mg/kg	NA	NA	NA	NA	NA
Antimony	mg/kg	--	--	--	--	--
Barium	mg/kg	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA
Cadmium	mg/kg	--	0.46	--	0.8	--
Calcium	mg/kg	NA	NA	NA	NA	NA
Chromium	mg/kg	27 J	35 J	32 J	42 J	30 J
Cobalt	mg/kg	NA	NA	NA	NA	NA
Copper	mg/kg	5 J	28 J	67 J	44 J	10 J
Cyanide (total)	mg/kg	NA	NA	NA	NA	NA
Lead	mg/kg	14.3 J	10.7 J	106 J	43.6 J	11.9 J
Magnesium	mg/kg	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA
Mercury	mg/kg	--	--	--	--	--
Nickel	mg/kg	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA
Zinc	mg/kg	118 J	99 J	90 J	107 J	61 J
<u>Volatiles (e)</u>						
Acetone	ug/kg	--	2,600	--	180	49
2-Butanone	ug/kg	--	560	--	35	--
Chloroethane	ug/kg	--	--	--	--	--
1,1-Dichloroethane	ug/kg	--	--	--	--	--
1,2-Dichloroethane	ug/kg	--	--	--	--	--
1,1-Dichloroethene	ug/kg	--	--	--	--	--
1,2-Dichloroethene (total)	ug/kg	--	--	--	--	--
Ethylbenzene	ug/kg	--	--	--	--	--
4-Methyl-2-Pentanone	ug/kg	--	350	--	--	--
Methylene Chloride	ug/kg	--	75	9	21	--
Tetrachloroethene	ug/kg	--	--	--	--	--
Toluene	ug/kg	--	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	8	--	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--
Vinyl Chloride	ug/kg	--	--	--	--	--
Xylenes (total)	ug/kg	--	--	35	--	--

AR302595

TABLE 4-5
(continued)

PARAMETER (a)	UNITS (b)	HTB-11,S-3	HTB-11D,S-3	HTB-12,S-2	HTB-13,S-2
Sample Type	---	grab	grab	grab	grab
Collection Date	---	10/24/90	10/24/90	10/25/90	10/25/90
Sample Depth	feet	5.0-6.9	5.0-6.9	2.5-4.0	2.5-3.5
pH	---	NA	NA	NA	NA
Moisture	% by weight	12.3	16.4	11.1	15.1
<u>Inorganics (d,e)</u>					
Aluminum	mg/kg	NA	NA	NA	NA
Antimony	mg/kg	--	--	--	--
Barium	mg/kg	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA
Cadmium	mg/kg	--	0.52	0.40	--
Calcium	mg/kg	NA	NA	NA	NA
Chromium	mg/kg	24 J	42 J	9 J	15 J
Cobalt	mg/kg	NA	NA	NA	NA
Copper	mg/kg	21 J	50	321 J	8 J
Iron	mg/kg	NA	NA	NA	NA
Lead	mg/kg	14.8 J	325 J	240 J	12.3 J
Magnesium	mg/kg	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA
Mercury	mg/kg	--	--	--	--
Nickel	mg/kg	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA
Zinc	mg/kg	94 J	77 J	37 J	59 J
<u>Volatiles (e)</u>					
Acetone	ug/kg	14 *	14 *	22 *	--
2-Butanone	ug/kg	--	--	--	--
Chloroethane	ug/kg	--	--	--	--
1,1-Dichloroethane	ug/kg	--	--	--	--
1,2-Dichloroethane	ug/kg	--	--	--	--
1,1-Dichloroethene	ug/kg	--	--	--	--
1,2-Dichloroethene (total)	ug/kg	--	--	--	--
Ethylbenzene	ug/kg	--	--	--	--
4-Methyl-2-Pentanone	ug/kg	--	--	--	--
Methylene Chloride	ug/kg	--	--	9	22
Tetrachloroethene	ug/kg	--	--	--	--
Toluene	ug/kg	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--
Vinyl Chloride	ug/kg	--	--	--	--
Xylenes (total)	ug/kg	--	--	--	--

AR302596

TABLE 4-5
(continued)

NOTES:

- a. The compounds not listed were not detected in the samples above quantitation limits. Refer to Appendix F for a complete listing of analytical results and quantitation limits.
- b. "mg/kg" indicates milligrams per kilogram or parts per million (ppm), and "ug/kg" refers to micrograms per kilogram or parts per billion (ppb).
- c. "NA" indicates the sample was not analyzed for this parameter.
- d. The inorganic Compounds of Interest (COI), mercury and antimony, were analyzed but not detected above quantitation limits. Refer to Appendix F for a complete listing of quantitation limits and analytical results.
- e. Results reported on a dry-weight basis: dry-weight = as-received divided by D, where $D = (100 - \text{moisture content}) / 100$.
- f. "--" indicates the parameter was analyzed for but not detected in the sample above quantitation limits. Refer to Appendix E for quantitation limits.
- g. "*" indicates the compound was not detected at a concentration substantially above the level in laboratory or field blanks.
- h. "J" indicates the value listed is estimated.
- i. "K" indicates the value listed may be biased high; the actual value is expected to be lower.
- j. "L" indicates the value listed may be biased low; the actual value is expected to be higher.

AR302597

TABLE 4-6
 CORNFIELD AREA SOIL SAMPLES
 SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)	SS-3 composite 12/06/88	SS-4 composite 12/06/88	SS-5 composite 12/06/88	SS-5D composite 12/06/88	SS-6 composite 12/06/88	SS-7 composite 12/07/88	SS-8 composite 12/07/88	CORNFIELD grab
Sample Type	---								
Collection Date	---								
Sample Depth	inches	8-12	10-12	9-11	9-11	8-12	9	8-10	NA
Moisture	% by weight	20.8	22.2	17.4	19.2	17.3	18.3	17.3	23.0
pH	---	NA (c)	NA	NA	NA	NA	NA	NA	NA
Inorganics (d)									
Aluminum	ng/kg	12,600	21,300	17,800	20,200	16,300	19,800	11,800	12,400
Antimony	ng/kg	-- (e)	--	--	--	--	--	--	--
Arsenic	ng/kg	--	--	--	--	--	--	2	3
Barium	ng/kg	560	170	150	190	240	950	340	7,030
Beryllium	ng/kg	--	0.8	--	--	0.6	0.6	0.7	--
Cadmium	ng/kg	1.4	--	--	--	--	--	--	1.2
Calcium	ng/kg	6,460	1,900	1,260	1,410	1,310	2,200	1,460	11,900
Chromium	ng/kg	313	36	34	45	34	36	62	65
Cobalt	ng/kg	11	32	11	14	15	22	18	169
Copper	ng/kg	702	59	27	28	71	70	73	188
Cyanide	ng/kg	--	--	--	--	--	--	0.07	--
Iron	ng/kg	11,900	25,800	24,100	33,200	17,500	19,100	12,000	3,300
Lead	ng/kg	1,770	62.0	38.5	31.1	173	246	241	6,550
Magnesium	ng/kg	2,730	3,180	2,950	3,040	2,200	2,360	1,700	1,770
Manganese	ng/kg	489	1,980	734	745	580	791	972	309
Mercury	ng/kg	0.51	0.22	0.12	0.09	0.35	0.17	0.24	0.31
Nickel	ng/kg	21	15	13	16	13	22	12	294
Potassium	ng/kg	871	1,000	968	1,190	1,210	1,380	629	1,820
Selenium	ng/kg	0.76	--	--	--	--	--	--	3.5
Silver	ng/kg	1.3	--	--	--	--	--	--	--
Sodium	ng/kg	240	77	85	110	60	150	--	2,230
Thallium	ng/kg	--	--	--	--	--	--	--	--
Vanadium	ng/kg	23	48	46	62	31	38	22	21
Zinc	ng/kg	585	123	77	89	133	200	123	2,940
Volatiles (d)									
Acetone	ug/kg	--	--	--	12	--	--	24	--
Methylene Chloride	ug/kg	20	12	16	20	12	11	7	--
Tetrachloroethene	ug/kg	6	--	--	--	--	--	--	--
Toluene	ug/kg	14	--	--	--	--	--	--	--
Trichloroethene	ug/kg	11	--	--	--	--	--	--	--
Semivolatiles (d)									
bis(2-Ethylhexyl) phthalate	ug/kg	0.42	--	--	--	--	--	--	--
Pesticides (d)									
DDT	ug/kg	--	--	--	--	--	29	--	--

AR302598

TABLE 4-6
(continued)

PARAMETER (a)	UNITS (b)	AC-1A	AC-1B	AC-1C	AC-1D	A4-B	A4-C	A4-D	BA-2A
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/19/90	11/19/90	11/19/90	11/19/90	11/20/90	11/20/90	11/20/90	11/19/90
Sample Depth	inches	4-8	16-20	28-32	40-44	16-20	28-32	40-44	4-8
Moisture	% by weight	18.9	16.9	17.1	15.9	17.0	16.2	17.1	25.0
pH	---	6.63	7.32	7.38	7.45	7.21	7.08	7.01	6.56
Inorganics (d)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	69 J (g)	154 J	142 J	120 J	174	164 J	220 J	61 J
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	0.6	--	0.6	0.7	0.5	--	0.4	--
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	29 J	17 J	30 J	33 J	31 J	35 J	29 J	18 J
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	10 J	15 J	24 J	13 J	17 J	14 J	8 J	19 J
Cyanide	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	17.1 J	10.2 J	11.3 J	11.3 J	8.2 J	10.4 J	11.1 J	27.1 J
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	0.07 J	--	--	--	--	--	--	--
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	35	52	68	58	64	53	88	56
Volatiles (d)									
Acetone	ug/kg	--	NA	NA	NA	NA	--	NA	NA
Methylene Chloride	ug/kg	--	NA	NA	NA	NA	10	NA	NA
Tetrachloroethene	ug/kg	--	NA	NA	NA	NA	--	NA	NA
Toluene	ug/kg	--	NA	NA	NA	NA	--	NA	NA
Trichloroethene	ug/kg	--	NA	NA	NA	NA	--	NA	NA
Semivolatiles (d)									
bis(2-Ethylhexyl) phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (d)									
DDT	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302599

TABLE 4-6
(continued)

PARAMETER (a)	UNITS (b)	BA-2B	BA-2C	BA-2D	B4-B	B4-8D	B4-C	B4-D	B5-B
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/19/90	11/19/90	11/19/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90
Sample Depth	inches	16-20	28-32	40-44	16-20	16-20	28-32	40-44	16-20
Moisture	% by weight	21.8	22.0	26.0	17.9	17.0	18.6	16.9	14.9
pH	---	5.55	5.76	5.81	5.51	5.39	5.04	5.00	5.05
Inorganics (d)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	59 J	50 J	48 J	160	107	107	73	34 J
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	--	--	--	--	--	--	--	--
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	35 J	23 J	14 J	34 L (h)	29 L	35 L	24 L	13 J
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	17 J	22 J	19 J	64 J	23 J	17 J	10 J	10 J
Cyanide	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	11.7 J	15.3 J	11.6 J	54.9	35.0	22.7	52.7	6.6 J
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	--	--	--	0.60	0.19	0.06	--	--
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	35	57	38	96 L	67 L	55 L	36 L	70
Volatiles (d)									
Acetone	ug/kg	NA	--	NA	28 * (f)	--	NA	NA	NA
Methylene Chloride	ug/kg	NA	19	NA	28	38	NA	NA	NA
Tetrachloroethene	ug/kg	NA	--	NA	--	--	NA	NA	NA
Toluene	ug/kg	NA	--	NA	--	--	NA	NA	NA
Trichloroethene	ug/kg	NA	--	NA	--	--	NA	NA	NA
Semivolatiles (d)									
bis(2-Ethylhexyl) phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (d)									
DDT	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302600

TABLE 4-6
(continued)

PARAMETER (a)	UNITS (b)	B5-C	B5-D	B5-DD	CA-3A	CA-3B	CA-3C	CA-3D	C1-B
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/19/90
Sample Depth	inches	28-32	40-44	40-44	4-8	16-20	28-32	40-44	16-20
Moisture	% by weight	17.1	16.2	17.0	18.3	21.1	18.9	26.8	19.2
pH	---	4.79	4.89	4.85	4.87	4.88	4.85	4.85	5.01
Inorganics (d)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	38 J	34 J	41 J	94	89	64	93	123
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	0.6	0.5	--	--	0.4	--	0.6	0.5
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	21 J	18 J	13 J	27 L	32 L	25 L	29 L	29 J
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	8 J	12 J	6 J	11 J	16 J	19 J	56 J	11 J
Cyanide	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	6.7 J	7 J	9.1 J	11.0	13.4	19.6	44.9	10.7 J
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	--	0.07 J	0.04	--	--	--	--	0.07
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	49	48	46	49 L	44 L	43 L	65 L	47
Volatiles (d)									
Acetone	ug/kg	NA	16 *	25	NA	NA	13 *	NA	NA
Methylene Chloride	ug/kg	NA	--	17	NA	NA	9	NA	NA
Tetrachloroethene	ug/kg	NA	--	--	NA	NA	--	NA	NA
Toluene	ug/kg	NA	--	--	NA	NA	--	NA	NA
Trichloroethene	ug/kg	NA	--	--	NA	NA	--	NA	NA
Semivolatiles (d)									
bis(2-Ethylhexyl) phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (d)									
DDT	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302601

TABLE 4-6
(continued)

PARAMETER (a)	UNITS (b)	C1-C	C1-D	C2-B	C2-C	C2-D	C3-B	C3-C	C3-D
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/19/90	11/19/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90
Sample Depth	inches	28-32	40-44	16-20	28-32	40-44	16-20	28-32	40-44
Moisture	% by weight	20.1	19.1	16.5	18.2	22.2	18.4	16.7	17.2
pH	---	5.09	5.23	5.91	5.33	5.13	5.42	5.13	7.19
Inorganics (d)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	NA	NA	--	NA	NA	NA	NA	NA
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	172 J	105 J	72	150	183	72 J	54 J	74
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	0.60	--	--	--	--	0.8	--	--
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	28 J	19 J	28	40	44	42 J	31 J	31
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	35 J	21 J	14	20	13	16 J	8 J	10
Cyanide	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	19.9 J	27.7 J	14.1 L	15.1 L	16.6 L	35 J	13.5 J	16.7
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	--	0.04 J	0.05 J	--	0.05	0.05 J	--	0.05
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	0.7 L	--	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	62	78	54	55	90	53	36	52
Volatiles (d)									
Acetone	ug/kg	19 *	NA	--	--	NA	NA	22	NA
Methylene Chloride	ug/kg	16	NA	17	17	NA	NA	18	NA
Tetrachloroethene	ug/kg	--	NA	--	--	NA	NA	--	NA
Toluene	ug/kg	--	NA	--	--	NA	NA	--	NA
Trichloroethene	ug/kg	--	NA	--	--	NA	NA	--	NA
Semivolatiles (d)									
bis(2-Ethylhexyl) phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (d)									
DDT	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302602

TABLE 4-6
(continued)

PARAMETER (a)	UNITS (b)	C4-B	C4-C	C4-D	C-10B	C-10C	C-10D	D4-B	D4-C
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90
Sample Depth	inches	16-20	28-32	40-44	16-20	28-32	40-44	16-20	28-32
Moisture	% by weight	18.1	18.5	19.0	17.9	21.1	22.9	18.3	20.6
pH	---	4.87	4.91	4.88	5.03	4.82	4.79	5.08	5.11
Inorganics (d)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	53	78	62	64	52	353	63	92
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	--	--	--	--	--	--	--	0.43
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	27 L	27 L	19 L	18 L	13 L	33	17 L	33 L
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	9 J	10 J	8 J	12 J	11 J	26	22 J	67 J
Cyanide	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	17.5	17.6	17.0	11.6	26.9	24.1 L	24.4	13.4
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	--	--	--	--	0.06	0.07 J	--	--
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	0.8 L	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	34 L	42 L	44 L	45 L	31	103	90 L	74 L
Volatiles (d)									
Acetone	ug/kg	NA	--	NA	NA	31 *	NA	NA	NA
Methylene Chloride	ug/kg	NA	14	NA	NA	17	NA	NA	NA
Tetrachloroethene	ug/kg	NA	--	NA	NA	--	NA	NA	NA
Toluene	ug/kg	NA	--	NA	NA	--	NA	NA	NA
Trichloroethene	ug/kg	NA	--	NA	NA	--	NA	NA	NA
Semivolatiles (d)									
bis(2-Ethylhexyl) phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (d)									
DDT	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302603

TABLE 4-6
(continued)

PARAMETER (a)	UNITS (b)	D4-D	D4-DD	DB-5A	DB-5B	DB-5C	DB-5D	D9-B	D9-C
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90
Sample Depth	inches	40-44	40-44	4-8	16-20	28-32	40-44	16-20	28-32
Moisture	% by weight	22.1	23.8	18.8	19.2	20.1	23.6	17.5	18.6
pH	---	5.42	5.31	4.72	5.02	4.99	5.08	5.97	4.98
Inorganics (d)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	172	132	61	51	66	107	36	72
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	0.56	0.44	--	--	--	--	--	--
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	33 L	34 L	7	25	24	23	18 L	32 L
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	161 J	147 J	5	11	17	39	16 J	51 J
Cyanide	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	16.9	20.4	9.1 L	11.6 L	21.2 L	29.6 L	13.9	23.8
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	--	--	--	--	--	--	--	0.08
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	84 L	90 L	29	43	44	83	40 L	44 L
Volatiles (d)									
Acetone	ug/kg	24 *	--	NA	NA	23	NA	NA	--
Methylene Chloride	ug/kg	33	38	NA	NA	11	NA	NA	20
Tetrachloroethene	ug/kg	--	--	NA	NA	--	NA	NA	--
Toluene	ug/kg	--	--	NA	NA	--	NA	NA	--
Trichloroethene	ug/kg	--	--	NA	NA	--	NA	NA	--
Semivolatiles (d)									
bis(2-Ethylhexyl) phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (d)									
DDT	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302604

TABLE 4-6
(continued)

PARAMETER (a)	UNITS (b)	D9-D	D-11B	D-11C	D-11D	D-11DD	D12-B	D12-C	D12-D
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90	11/20/90
Sample Depth	inches	40-44	16-20	28-32	40-44	40-44	16-20	28-32	40-44
Moisture	% by weight	15.4	20.9	19.8	21.4	22.8	20.9	21.1	17.0
pH	---	4.86	4.85	4.64	4.57	4.55	6.52	4.76	4.74
Inorganics (d)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	55	169	64	77	93	53	50	90
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	--	--	--	--	--	--	--	--
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	18 L	31	25	32	33	20	11	28
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	44 J	38	25	44	69	31	23	39
Cyanide	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	28.1	28.9 L	4.0 L	27.2 L	20.9 L	25.2 L	24.8 L	24.1 L
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	--	0.06 J	0.05 J	0.04 J	--	0.06 J	0.06 J	0.05 J
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	36 L	62	53	50	58	70	44	68
Volatiles (d)									
Acetone	ug/kg	NA	NA	NA	39	33	NA	NA	15
Methylene Chloride	ug/kg	NA	NA	NA	13	15	NA	NA	17
Tetrachloroethene	ug/kg	NA	NA	NA	--	--	NA	NA	--
Toluene	ug/kg	NA	NA	NA	--	--	NA	NA	--
Trichloroethene	ug/kg	NA	NA	NA	--	--	NA	NA	--
Semivolatiles (d)									
bis(2-Ethylhexyl) phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (d)									
DDT	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302605

TABLE 4-6
(continued)

PARAMETER (a)	UNITS (b)	D12-DD
Sample Type	---	grab
Collection Date	---	11/20/90
Sample Depth	inches	40-44
Moisture	% by weight	21.1
pH	---	4.61
<u>Inorganics (d)</u>		
Aluminum	ng/kg	NA
Antimony	ng/kg	NA
Arsenic	ng/kg	NA
Barium	ng/kg	89
Beryllium	ng/kg	NA
Cadmium	ng/kg	--
Calcium	ng/kg	NA
Chromium	ng/kg	39
Cobalt	ng/kg	NA
Copper	ng/kg	60
Cyanide	ng/kg	NA
Iron	ng/kg	NA
Lead	ng/kg	20.2 L
Magnesium	ng/kg	NA
Manganese	ng/kg	NA
Mercury	ng/kg	0.05 J
Nickel	ng/kg	NA
Potassium	ng/kg	NA
Selenium	ng/kg	--
Silver	ng/kg	NA
Sodium	ng/kg	NA
Thallium	ng/kg	NA
Vanadium	ng/kg	NA
Zinc	ng/kg	83
<u>Volatiles (d)</u>		
Acetone	ug/kg	24
Methylene Chloride	ug/kg	25
Tetrachloroethene	ug/kg	--
Toluene	ug/kg	--
Trichloroethene	ug/kg	--
<u>Semivolatiles (d)</u>		
bis(2-Ethylhexyl) phthalate	ug/kg	NA
<u>Pesticides (d)</u>		
DDT	ug/kg	NA

AR302606

TABLE 4-6
(continued)

NOTES:

- a. Compounds not listed were not detected in the samples above quantitation limits. Refer to Appendix a complete listing of analytical results and quantitation limits.
- b. "mg/kg" indicates milligrams per kilogram or parts per million (ppm), and "ug/kg" refers to microgram or parts per billion (ppb).
- c. "NA" indicates the sample was not analyzed for this parameter.
- d. Results reported on a dry-weight basis: dry-weight = as-received divided by D, where D=(100-moisture).
- e. "..." indicates the parameter was analyzed but not detected in the sample above quantitation limits. for quantitation limits.
- f. "x" indicates the compound was not detected at a concentration substantially above the level in laboratory or field blanks.
- g. "J" indicates the value listed is estimated.
- h. "L" indicates the value listed may be biased low; the actual value is expected to be higher.

AR302607

TABLE 4-7

STRESSED VEGETATION AREA SOIL SAMPLES
SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)	SV-1	SV-2	SV-3	SV-4	SV-5	SV-6	SV-7
Sample Type	---	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	12/07/88	12/07/88	12/07/88	12/07/88	12/07/88	11/29/90	11/29/90
Sample Depth	inches	8-12	12-14	9-10	3-12	6-9	8-12	10-14
Moisture	% by weight	43.3	18.9	20.2	31.2	22.2	24.2	17.9
pH	---	NA (c)	NA	NA	NA	NA	6.68	5.32
<u>Inorganics (d)</u>								
Aluminum	mg/kg	16,800	18,100	14,300	12,200	16,200	NA	NA
Antimony	mg/kg	92	--	--	73	--	--	--
Arsenic	mg/kg	-- (e)	2	8	3	1	NA	NA
Barium	mg/kg	1,100	140	290	1,530	80	72	50
Beryllium	mg/kg	--	1.1	2.3	--	--	NA	NA
Cadmium	mg/kg	--	--	--	--	--	--	--
Calcium	mg/kg	1,180	2,790	3,140	870	2,000	NA	NA
Chromium	mg/kg	8,590	120	38	10,000	30	50	25
Cobalt	mg/kg	--	14	23	--	--	NA	NA
Copper	mg/kg	2,820	889	122	7,180	14	63	13
Cyanide	mg/kg	2.0	--	0.16	1.7	--	NA	NA
Iron	mg/kg	12,500	20,600	42,600	9,220	15	NA	NA
Lead	mg/kg	54,300	1,820	120	24,400	15	45.0 J	18.2 J
Magnesium	mg/kg	1,360	3,240	2,640	890	2,160	NA	NA
Manganese	mg/kg	155	766	3,420	131	179	NA	NA
Mercury	mg/kg	1.5	0.05	--	1.5	--	--	--
Nickel	mg/kg	11	12	15	6	8	NA	NA
Potassium	mg/kg	723	1,410	1,180	465	1,210	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--
Sodium	mg/kg	300	74	--	334	64	NA	NA
Vanadium	mg/kg	37	48	74	29	46	NA	NA
Zinc	mg/kg	547	312	207	1,030	42	108 J (g)	47 J
<u>Volatiles (d)</u>								
Acetone	ug/kg	53	25	13	29	--	20 * (f)	--
1,1-Dichloroethane	ug/kg	11	--	--	33	--	--	--
trans-1,2-Dichloroethene	ug/kg	--	--	--	48	--	--	--
Methylene Chloride	ug/kg	--	33	25	36	12	18	8
Tetrachloroethene	ug/kg	129	--	--	16	--	--	--
Toluene	ug/kg	--	--	--	9	--	--	--
1,1,1-Trichloroethane	ug/kg	194	--	--	509	--	--	--
Trichloroethene	ug/kg	37	--	--	93	--	--	--
<u>Pesticides (d)</u>								
DDD	ug/kg	229	--	--	--	--	--	--
DDT	ug/kg	670	--	--	--	--	--	--
Endosulfan I	ug/kg	--	--	--	--	--	--	--

AR302608

TABLE 4-7
(continued)

PARAMETER (a)	UNITS (b)	SV-8	SV-9	SV-10	SV-11	SV-12	SV-13	SV-14
Sample Type	---	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/29/90	11/29/90	11/29/90	11/29/90	11/29/90	11/29/90	11/29/90
Sample Depth	inches	10-14	--	10-14	10-14	6-10	10-14	5-9
Moisture	% by weight	23.7	18.1	21.7	22.8	25.8	32.8	32.9
pH	----	5.18	5.43	6.13	6.38	6.14	5.95	6.41
Inorganics (d)								
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	--	--	--	--	--	--	--
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	50	55	120	87	102	99	114
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	--	--	--	--	--	--	--
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	27	23	20	33	30	35	129
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/kg	11	9	11	14	13	193	531
Copper	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cyanide	mg/kg	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	22.5 J	17.9 J	24.4 J	22.2 J	13.7 J	227 J	763 J
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	--	--	--	--	--	--	--
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	35 J	42 J	55 J	56 J	56 J	129 J	139 J
Volatiles (d)								
Acetone	ug/kg	--	--	--	15 *	--	--	--
1,1-Dichloroethane	ug/kg	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/kg	--	--	--	--	--	--	--
Methylene Chloride	ug/kg	7	14	24	21	--	28	11
Tetrachloroethene	ug/kg	--	--	--	--	--	--	--
Toluene	ug/kg	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--	--	--
Pesticides (d)								
DDD	ug/kg	--	--	--	--	--	--	--
DDT	ug/kg	--	--	--	--	--	--	--
Endosulfan I	ug/kg	--	--	--	--	--	--	--

AR302609

TABLE 4-7
(continued)

PARAMETER (b)	UNITS (c)	SV-15	SV-16	SV-17	SV-18	SV-19	SV-20	SV-21
Sample Type	---	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/29/90	11/29/90	11/29/90	11/29/90	11/29/90	11/29/90	11/29/90
Sample Depth	inches	5-9	10-14	4-8	6-10	4-8	10-14	9-13
Moisture	% by weight	29.9	24.8	52.0	44.8	22.9	30.0	22.7
pH	---	6.63	5.99	6.60	6.77	6.68	6.63	6.54
Inorganics (d)								
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	--	--	--	--	--	--	--
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	100	93	132	144	89	63	68
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	--	--	--	--	--	--	--
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	21	30	363	118	36	28	28
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	68	12	1,500	793	388	45	16
Cyanide	mg/kg	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	34 J	12.1 J	3560 J	1970 J	229 J	202 J	16.9 J
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	--	--	0.12	--	--	--	--
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	1.0	--	--	--	--
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	119 J	41 J	461 J	417 J	349 J	57 J	43 J
Volatiles (d)								
Acetone	ug/kg	--	14 *	--	81	28 *	25 *	19 *
1,1-Dichloroethane	ug/kg	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/kg	--	--	--	--	--	--	--
Methylene Chloride	ug/kg	9	13	--	15	25	21	19
Tetrachloroethene	ug/kg	--	--	--	--	--	--	--
Toluene	ug/kg	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--	--	--
Pesticides (d)								
DDD	ug/kg	--	--	--	--	--	--	--
DDT	ug/kg	--	--	60	--	--	--	--
Endosulfan I	ug/kg	--	--	24	--	--	--	--

AR302610

TABLE 4-7
(continued)

PARAMETER (b)	UNITS (c)	BW-1A	BW-2A	BW-3A	BW-3B
Sample Type		grab	grab	grab	grab
Collection Date		11/29/90	11/30/90	11/30/90	11/30/90
Sample Depth	inches	18-21	8-12	3-5	14-16
Moisture	% by weight	19.3	20.1	15.8	15.3
pH		6.60	5.59	6.64	6.53
Inorganics (d)					
Aluminum	mg/kg	NA	NA	NA	NA
Antimony	mg/kg	--	--	--	--
Arsenic	mg/kg	NA	NA	NA	NA
Barium	mg/kg	72	62	113	.82
Beryllium	mg/kg	NA	NA	NA	NA
Cadmium	mg/kg	--	--	--	--
Calcium	mg/kg	NA	NA	NA	NA
Chromium	mg/kg	76	27	42	20
Cobalt	mg/kg	NA	NA	NA	NA
Copper	mg/kg	63	13	49	10
Cyanide	mg/kg	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA
Lead	mg/kg	209 J	24.4 J	92.9 J	12.9 J
Magnesium	mg/kg	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA
Mercury	mg/kg	--	--	--	--
Nickel	mg/kg	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--
Sodium	mg/kg	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA
Zinc	mg/kg	90 J	48 J	115 J	54 J
Volatiles (d)					
Acetone	ug/kg	13 *	20 *	--	--
1,1-Dichloroethane	ug/kg	--	--	--	--
trans-1,2-Dichloroethane	ug/kg	--	--	--	--
Methylene Chloride	ug/kg	--	20	27	15
Tetrachloroethene	ug/kg	--	--	--	--
Toluene	ug/kg	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--
Trichloroethane	ug/kg	--	--	--	--
Pesticides (d)					
DDD	ug/kg	--	--	--	--
DDT	ug/kg	--	--	--	--
Endosulfan I	ug/kg	--	--	--	--

AR302611

TABLE 4-7
(continued)

- a. Compounds not listed were not detected in the samples above quantitation limits. Refer to Appendix F for a complete listing of analytical result and quantitation limits.
- b. "mg/kg" indicates milligrams per kilogram or parts per million (ppm), and "ug/kg" refers to micrograms per kilogram or parts per billion (ppb).
- c. "NA" indicates the sample was not analyzed for this parameter.
- d. Results reported on a dry-weight basis: dry-weight = as-received divided by D, where $D = (100 - \text{moisture content}) / 100$.
- e. "--" indicates the parameter was analyzed but not detected in the sample above quantitation limits. Refer to Appendix F for quantitation limits.
- f. "***" indicates the compound was not detected at a concentration substantially above the level in laboratory or field blanks.
- g. "J" indicates the value listed is estimated.

AR302612

TABLE 4-8

STRESSED VEGETATION AREA WATER SAMPLES
SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)	SW-1	SW-2	SW-3
Sample Type	---	grab	grab	grab
Collection Date	---	11/28/90	11/28/90	11/28/90
<u>Field Parameters (c)</u>				
pH	---	6.02	5.52	6.68
Conductivity	umhos/cm	293	256	293
Temperature	°C	4.2	11.8	8.4
<u>Inorganics</u>				
Aluminum	mg/l	54.2 J (f)	1.3 J	130 J
Antimony	mg/l	0.06	-- (d)	0.79
Barium	mg/l	0.5 J	0.15	7.4 J
Beryllium	mg/l	0.003	--	0.006
Calcium	mg/l	27.6 J	16.6 J	43.4 J
Chromium	mg/l	1.80 J	0.25 J	30.2 J
Cobalt	mg/l	--	--	0.04
Copper	mg/l	2.65 J	1.50 J	64.8 J
Cyanide	mg/l	--	--	0.041
Iron	mg/l	27.4 J	1.0 J	113 J
Lead	mg/l	12.30	4.64	154 J
Magnesium	mg/l	17.3 J	9.7 J	31.7 J
Manganese	mg/l	0.57 J	0.10 J	2.04 J
Mercury	mg/l	0.0004	--	0.0083
Nickel	mg/l	0.04	--	0.08
Potassium	mg/l	10.2 J	--	14.4 J
Sodium	mg/l	8.5 J	9.9 J	11.0 J
Silver	mg/l	--	--	0.0082
Vanadium	mg/l	0.07	--	0.29
Zinc	mg/l	0.89 J	0.28 J	13.1 J
<u>Volatiles</u>				
Acetone	ug/l	14 * (g)	14 *	18 *
1,1-Dichloroethane	ug/l	5	--	6
1,2-Dichloroethane	ug/l	--	--	--
1,1-Dichloroethene	ug/l	--	--	--
1,2-Dichloroethene (e)	ug/l	--	7	5
Methylene Chloride	ug/l	--	--	--
1,1,1-Trichloroethane	ug/l	13	20	11
1,4-Dichlorobenzene	ug/l	--	--	11
<u>Pesticides</u>				
DDD	ug/l	--	--	0.2
DDT	ug/l	--	--	0.7

NOTES:

- Only parameters detected above quantitation limits are listed. Refer to Appendix F for a complete listing of analytical results and quantitation limits.
- "umhos/cm" indicates micromhos per centimeter, "°C" indicates degrees centigrade, "mg/l" indicates milligrams per liter or parts per million (ppm), and "ug/l" indicates micrograms per liter or parts per billion (ppb).
- Reported values are field measurements.
- "--" indicates the parameter was analyzed but not detected in the sample above quantitation limits. Refer to Appendix F for quantitation limits.
- The value listed for 1,2-Dichloroethene represents both the cis and trans isomers.
- "J" indicates the value listed is estimated.
- "**" indicates the compound was not detected at a concentration substantially above the level in laboratory or field blanks.

AR302613

TABLE 4-9

DRUM BURIAL AREA 1 SOIL SAMPLES
SUMMARY OF ANALYTICAL RESULTS ABOVE QUANTITATION LIMITS

PARAMETER (a)	UNITS (b)	1AS	1AD	1BS	1BD	1CS	1CD	1DS	1DD
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89
Sample Depth	feet	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
Moisture	% by weight	27.5	23.4	18.0	18.1	20.1	19.8	21.1	26.3
Inorganics (d)									
Aluminum	mg/kg	NA (e)	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Volatiles (d)									
Acetone	ug/kg	28	39	--	12	--	75	--	27,000
2-Butanone	ug/kg	-- (f)	--	--	--	--	12	--	--
1,2-Dichloroethene (total)	ug/kg	63	7.8	--	--	--	27	--	--
Ethylbenzene	ug/kg	--	--	--	--	--	15,000	46,000	20,000
4-Methyl-2-Pentanone	ug/kg	--	--	--	--	--	12	--	--
Methylene Chloride	ug/kg	23	29	18	9.8	19	25	--	--
Tetrachloroethene	ug/kg	--	--	--	--	--	--	15,000	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	140	--	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	--	--	--	--
Trichloroethene	ug/kg	28	--	--	--	--	--	--	--
Toluene	ug/kg	--	--	--	--	--	940	--	--
Xylenes (total)	ug/kg	--	--	--	--	--	2,200	11,000	--
							100,000	300,000	180,000
Semivolatiles (d)									
Napthalene	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs									
PCBs	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302614

TABLE 4-9
(continued)

PARAMETER (a)	UNITS (b)	ZAS	2AD	2BS	2BD	2CS	2CD	2DS	2DD
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89
Sample Depth	feet	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
Moisture	% by weight	16.0	18.5	16.3	16.0	23.9	26.9	16.3	14.3
<u>Inorganics (d)</u>									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
<u>Volatiles (d)</u>									
Acetone	ug/kg	--	25	48	48	26	--	84	140
2-Butanone	ug/kg	--	--	24	12	--	--	24	58
1,2-Dichloroethene (total)	ug/kg	--	--	--	--	--	--	--	--
Ethylbenzene	ug/kg	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	ug/kg	--	--	24	24	--	--	48	93
Methylene Chloride	ug/kg	8	15	--	--	17	34	--	8.2
Tetrachloroethene	ug/kg	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/kg	--	--	16	14	--	--	--	--
Trichloroethene	ug/kg	--	--	20	23	--	--	13	62
Toluene	ug/kg	--	--	--	--	--	--	--	--
Xylenes (total)	ug/kg	--	--	--	--	--	--	--	65
<u>Semivolatiles (d)</u>									
Napthalene	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
<u>Pesticides/PCBs</u>									
PCBs	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302615

TABLE 4-9
(continued)

PARAMETER (a)	UNITS (b)	3AS	3AD	3BS	3BD	3CS	3CD	3DS	3DD
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89
Sample Depth	feet	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
Moisture	% by weight	18.6	14.5	19.1	16.5	11.6	11.0	19.4	22.8
<u>Inorganics (d)</u>									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
<u>Volatiles (d)</u>									
Acetone	ug/kg	74	94	140	--	--	--	--	120
2-Butanone	ug/kg	--	23	--	--	--	--	--	130
1,2-Dichloroethene (total)	ug/kg	17	--	--	--	--	--	--	--
Ethylbenzene	ug/kg	--	--	--	--	--	--	7,100	140
4-Methyl-2-Pentanone	ug/kg	--	--	--	--	--	--	--	--
Methylene Chloride	ug/kg	17	--	--	--	--	--	--	--
Tetrachloroethene	ug/kg	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	--	--	--	52
Trichloroethene	ug/kg	12	--	--	--	--	--	--	--
Toluene	ug/kg	--	--	--	--	--	--	--	--
Xylenes (total)	ug/kg	--	--	8.7	1,400	2,400	1,500	68,000	1,700
<u>Semivolatiles (d)</u>									
Napthalene	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
<u>Pesticides/PCBs</u>									
PCBs	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302616

TABLE 4-9
(continued)

PARAMETER (a)	UNITS (b)	4AS	4AD	4BS	4BD	4CS	4CD	4DS	4DD
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89	04/13/89
Sample Depth	feet	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
Moisture	% by weight	17.3	19.9	12.5	14.6	21.9	22.2	17.8	16.7
<u>Inorganics (d)</u>									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
<u>Volatiles (d)</u>									
Acetone	ug/kg	24	25	--	--	220	490	36	36
2-Butanone	ug/kg	--	--	--	--	780	1,300	61	36
1,2-Dichloroethene (total)	ug/kg	--	--	--	--	--	--	7.3	6.0
Ethylbenzene	ug/kg	--	--	5,500	4,100	--	--	--	--
4-Methyl-2-Pentanone	ug/kg	--	--	--	--	13	--	--	--
Methylene Chloride	ug/kg	--	6	--	--	--	--	--	6.0
Tetrachloroethene	ug/kg	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	9	--	19	16
Trichloroethene	ug/kg	--	--	--	--	--	--	--	--
Toluene	ug/kg	--	--	3,200	--	--	--	--	--
Xylenes (total)	ug/kg	--	--	410,000	47,000	--	--	--	--
<u>Semivolatiles (d)</u>									
Napthalene	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
<u>Pesticides/PCBs</u>									
PCBs	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302617

TABLE 4-9
(continued)

PARAMETER (a)	UNITS (b)	1-COMP composite 04/13/89 (c)	2-COMP composite 04/13/89 (c)	3-COMP composite 04/13/89 (c)	4-COMP composite 04/13/89 (c)	HTB-28, S-2 grab 10/31/90 2.5-4.5 17.9	HTB-28D, S-2 grab 10/31/90 2.5-4.5 17.7	HTB-28, S-3 grab 10/31/90 5.0-7.0 18.5	HTB-29, S-1 grab 10/30/90 0.0-2.0 17.1
Sample Type	---								
Collection Date	---								
Sample Depth	feet								
Moisture	% by weight	19.3	17.2	18.0	18.9				
Inorganics (d)									
Aluminum	mg/kg	24,800	18,800	27,600	21,900	NA	NA	NA	NA
Barium	mg/kg	112	133	159	185	NA	NA	NA	NA
Beryllium	mg/kg	2.11	1.57	1.83	1.97	NA	NA	NA	NA
Calcium	mg/kg	3,660	2,960	3,460	2,360	NA	NA	NA	NA
Chromium	mg/kg	33.5	25.4	31.7	30.8	NA	NA	NA	NA
Cobalt	mg/kg	22.3	31.4	26.8	27.1	NA	NA	NA	NA
Copper	mg/kg	8.7	7.2	7.3	8.6	NA	NA	NA	NA
Iron	mg/kg	42,800	35,300	45,200	50,800	NA	NA	NA	NA
Lead	mg/kg	9.54	9.78	13.2	15.4	NA	NA	NA	NA
Magnesium	mg/kg	15,600	11,500	17,000	17,800	NA	NA	NA	NA
Manganese	mg/kg	693	698	933	894	NA	NA	NA	NA
Nickel	mg/kg	40.9	44.7	46.3	48.1	NA	NA	NA	NA
Potassium	mg/kg	5,180	2,630	5,460	7,150	NA	NA	NA	NA
Silver	mg/kg	--	--	--	1.2	NA	NA	NA	NA
Sodium	mg/kg	372	326	232	197	NA	NA	NA	NA
Vanadium	mg/kg	81.8	61.6	67.1	80.1	NA	NA	NA	NA
Zinc	mg/kg	92.9	93	107	111	NA	NA	NA	NA
Volatiles (d)									
Acetone	ug/kg	--	36	--	110	--	24 * (g)	29 *	--
2-Butanone	ug/kg	--	--	--	99	--	--	--	--
1,2-Dichloroethene (total)	ug/kg	--	--	--	--	--	--	--	--
Ethylbenzene	ug/kg	1,100	--	7.3	--	--	--	--	--
4-Methyl-2-Pentanone	ug/kg	--	--	--	--	--	--	--	--
Methylene Chloride	ug/kg	--	--	--	--	6	--	6	--
Tetrachloroethene	ug/kg	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--	--	--	7 K (h)
Toluene	ug/kg	--	--	--	--	--	--	--	--
Xylenes (total)	ug/kg	7,700	--	76	10	--	--	--	--
Semivolatiles (d)									
Napthalene	ug/kg	--	--	--	2.21	NA	NA	NA	NA
Pesticides/PCBs									
PCBs	ug/kg	--	--	--	--	--	--	--	--

AR302618

TABLE 4-9
(continued)

PARAMETER (a)	UNITS (b)	HTB-29, S-3	HTB-30, S-5	HTB-31, S-2	HTB-31, S-5	HTB-32, S-1	HTB-32, S-2	HTB-33, S-2	HTB-33, S-3
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	10/30/90	10/30/90	10/29/90	10/29/90	10/30/90	10/30/90	10/29/90	10/29/90
Sample Depth	feet	5.0-7.0	10.0-12.0	2.5-4.5	10.0-11.0	0.0-2.0	2.5-3.5	2.5-4.5	5.0-7.0
Moisture	% by weight	9.7	15.8	17.4	10.0	20.6	8.5	15.6	15.0
Inorganics (d)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Volatiles (d)									
Acetone	ug/kg	--	--	--	--	--	--	--	--
2-Butanone	ug/kg	--	--	--	--	--	--	--	--
1,2-Dichloroethene (total)	ug/kg	--	--	--	--	--	--	--	--
Ethylbenzene	ug/kg	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	ug/kg	--	--	--	--	--	--	--	--
Methylene Chloride	ug/kg	--	--	--	--	--	--	--	--
Tetrachloroethene	ug/kg	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	--	--	--	--
Trichloroethene	ug/kg	--	7 K	--	--	--	--	--	--
Toluene	ug/kg	--	--	--	--	--	--	--	--
Xylenes (total)	ug/kg	--	9	--	--	--	--	--	--
Semivolatiles (d)									
Napthalene	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs									
.PCBs	ug/kg	--	--	--	--	--	--	--	--

AR302619

TABLE 4-9
(continued)

PARAMETER (a)	UNITS (b)	HTB-34,S-1	HTB-35,S-2	HTB-35,S-4	HTB-35D,S-4	HTB-36,S-3	HTB-36,S-5	HTB-37,S-3	HTB-37,S-4	
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab	
Collection Date	---	10/30/90	10/30/90	10/30/90	10/30/90	10/29/90	10/29/90	10/30/90	10/30/90	
Sample Depth	feet	5.0-7.0	2.5-4.5	7.5-9.5	7.5-9.5	5.0-7.0	10.0-12.0	5.0-7.0	7.5-9.5	
Moisture	% by weight	11.4	22.6	28.7	28.8	15.0	13.4	25.6	19.5	
Inorganics (d)										
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Lead	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Volatiles (d)										
Acetone	ug/kg	930 *	21 *	30	170	--	--	--	110	
2-Butanone	ug/kg	290	--	--	56	--	--	--	38	
1,2-Dichloroethene (total)	ug/kg	--	12	21	34	--	--	--	--	
Ethylbenzene	ug/kg	6	--	--	34	--	--	--	--	
4-Methyl-2-Pentanone	ug/kg	1,100	--	--	--	--	--	--	54	
Methylene Chloride	ug/kg	--	8	--	--	--	--	--	--	
Tetrachloroethene	ug/kg	--	--	--	--	--	--	--	--	
1,1,1-Trichloroethane	ug/kg	--	--	--	--	--	--	--	--	
1,1,2-Trichloroethane	ug/kg	10	--	--	--	--	--	--	--	
Trichloroethene	ug/kg	53 K	--	--	--	--	--	--	--	
Toluene	ug/kg	8 K	--	--	20 K	--	--	--	--	
Xylenes (total)	ug/kg	54	--	--	380	--	--	--	7	
Semivolatiles (d)										
Naphthalene	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA	
Pesticides/PCBs										
PCBs	ug/kg	--	--	--	--	--	--	--	--	

AR302620

TABLE 4-9
(continued)

NOTES:

- a. Compounds not listed were not detected in the samples above quantitation limits. Refer to Appendix F for a complete listing of analytical results and quantitation limits.
- b. "ug/kg" refers to micrograms per kilogram or parts per billion (ppb).
- c. Post-excavation sample taken prior to backfilling of drum burial area.
- e. "NA" indicates the parameter was not analyzed for this parameter. Refer to Appendix F for a complete listing of analytical results.
- f. "... " indicates the parameter was analyzed but not detected in the sample above quantitation limits. Refer to Appendix E for quantitation limits.
- g. "x" indicates the compound was not detected at a concentration substantially above the level in laboratory or field blanks.
- h. "y" indicates the value listed may be biased high; the actual value is expected to be lower.

AR302621

TABLE 4-10

DRUM BURIAL AREA 2 SOIL SAMPLES
SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)	1AS	1AD	1BS	1BD	1-COMP
Sample Type	---	grab	grab	grab	grab	composite
Collection Date	---	05/23/89	05/23/89	05/23/89	05/23/89	05/23/89
Sample Depth	feet	(c)	(c)	(c)	(c)	(c)
Moisture	% by weight	21.2	19.8	16.6	19.3	18.9
<u>Inorganics (d)</u>						
Aluminum	mg/kg	NA (e)	NA	NA	NA	30,000
Barium	mg/kg	NA	NA	NA	NA	173
Beryllium	mg/kg	NA	NA	NA	NA	1.97
Calcium	mg/kg	NA	NA	NA	NA	2,430
Chromium	mg/kg	NA	NA	NA	NA	28.4
Cobalt	mg/kg	NA	NA	NA	NA	16.0
Copper	mg/kg	NA	NA	NA	NA	13.6
Iron	mg/kg	NA	NA	NA	NA	22,900
Lead	mg/kg	NA	NA	NA	NA	15.8
Magnesium	mg/kg	NA	NA	NA	NA	8,710
Manganese	mg/kg	NA	NA	NA	NA	533
Nickel	mg/kg	NA	NA	NA	NA	41.9
Potassium	mg/kg	NA	NA	NA	NA	2,610
Sodium	mg/kg	NA	NA	NA	NA	222
Vanadium	mg/kg	NA	NA	NA	NA	41.9
Zinc	mg/kg	NA	NA	NA	NA	97.4
<u>Volatiles (d)</u>						
Acetone	ug/kg	720	940	12	--	350
2-Butanone	ug/kg	460	500	--	--	200
4-Methyl-2-Pentanone	ug/kg	-- (f)	62	--	--	12
Methylene Chloride	ug/kg	--	--	--	--	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	7.4
Trichloroethene	ug/kg	--	86	--	--	--
Xylenes	ug/kg	--	90	--	--	--

AR302622

TABLE 4-10
(continued)

PARAMETER (a)	UNITS (b)	2AS	2AD	2BS	2BD	2-COMP
Sample Type	---	grab	grab	grab	grab	composite
Collection Date	---	05/23/89	05/23/89	05/23/89	05/23/89	05/23/89
Sample Depth	feet	(c)	(c)	(c)	(c)	(c)
Moisture	% by weight	21.1	21.0	25.3	25.6	22.5
<u>Inorganics (d)</u>						
Aluminum	mg/kg	NA	NA	NA	NA	39,100
Barium	mg/kg	NA	NA	NA	NA	297
Beryllium	mg/kg	NA	NA	NA	NA	2.06
Calcium	mg/kg	NA	NA	NA	NA	4,890
Chromium	mg/kg	NA	NA	NA	NA	40.0
Cobalt	mg/kg	NA	NA	NA	NA	24.5
Copper	mg/kg	NA	NA	NA	NA	11.6
Iron	mg/kg	NA	NA	NA	NA	28,800
Lead	mg/kg	NA	NA	NA	NA	1.68
Magnesium	mg/kg	NA	NA	NA	NA	15,400
Manganese	mg/kg	NA	NA	NA	NA	1,040
Nickel	mg/kg	NA	NA	NA	NA	41.3
Potassium	mg/kg	NA	NA	NA	NA	6,230
Sodium	mg/kg	NA	NA	NA	NA	555
Vanadium	mg/kg	NA	NA	NA	NA	58.1
Zinc	mg/kg	NA	NA	NA	NA	111
<u>Volatiles (d)</u>						
Acetone	ug/kg	51	51	120	160	120
2-Butanone	ug/kg	190	320	27	67	230
4-Methyl-2-Pentanone	ug/kg	--	--	--	--	--
Methylene Chloride	ug/kg	--	--	--	--	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--
Xylenes	ug/kg	--	--	--	--	31

AR302623

TABLE 4-10
(continued)

PARAMETER (a)	UNITS (b)	HTB-23,S-2	HTB-23,S-6	HTB-24,S-2	HTB-24,S-3	HTB-25,S-2
Sample Type	---	grab	grab	grab	grab	grab
Collection Date	---	10/29/90	10/29/90	10/31/90	10/31/90	10/31/90
Sample Depth	feet	5.0-7.0	15.0-16.7	2.5-4.5	5.0-6.5	7.5-9.5
Moisture	% by weight	16.4	22.8	12.3	14.0	7.7
<u>Inorganics (d)</u>						
Aluminum	mg/kg	NA	NA	NA	NA	NA
Barium	mg/kg	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA
Calcium	mg/kg	NA	NA	NA	NA	NA
Chromium	mg/kg	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA
Copper	mg/kg	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA
Lead	mg/kg	NA	NA	NA	NA	NA
Magnesium	mg/kg	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA
Zinc	mg/kg	NA	NA	NA	NA	NA
<u>Volatiles (d)</u>						
Acetone	ug/kg	20 * (g)	18 *	24 *	23 *	12 *
2-Butanone	ug/kg	--	--	--	--	--
4-Methyl-2-Pentanone	ug/kg	--	--	--	--	--
Methylene Chloride	ug/kg	--	--	--	7	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--
Xylenes	ug/kg	--	--	--	--	--

AR302624

TABLE 4-10
(continued)

PARAMETER (a)	UNITS (b)	HTB-26,S-3	HTB-26D,S-3	HTB-26,S-5	HTB-27,S-3	HTB-27,S-4
Sample Type	---	grab	grab	grab	grab	grab
Collection Date	---	10/31/90	10/31/90	10/31/90	10/31/90	10/31/90
Sample Depth	feet	5.0-7.0	5.0-7.0	10.0-12.0	5.0-7.0	12.5-14.5
Moisture	% by weight	18.4	18.8	16.1	14.8	9.5
<u>Inorganics (d)</u>						
Aluminum	mg/kg	NA	NA	NA	NA	NA
Barium	mg/kg	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA
Calcium	mg/kg	NA	NA	NA	NA	NA
Chromium	mg/kg	NA	NA	NA	NA	NA
Cobalt	mg/kg	NA	NA	NA	NA	NA
Copper	mg/kg	NA	NA	NA	NA	NA
Iron	mg/kg	NA	NA	NA	NA	NA
Lead	mg/kg	NA	NA	NA	NA	NA
Magnesium	mg/kg	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA
Zinc	mg/kg	NA	NA	NA	NA	NA
<u>Volatiles (d)</u>						
Acetone	ug/kg	29 *	39 *	33 *	24 *	34 *
2-Butanone	ug/kg	--	--	--	--	--
4-Methyl-2-Pentanone	ug/kg	--	--	--	--	--
Methylene Chloride	ug/kg	--	13	--	10	--
1,1,2-Trichloroethane	ug/kg	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--
Xylenes	ug/kg	--	--	--	--	--

NOTES:

- Compounds not listed were not detected in the samples above the quantitation limits. Refer to Appendix F for a complete listing of analytical results and quantitation limits.
- "ug/kg" refers to micrograms per kilogram or parts per billion (ppb).
- Post-excavation sample taken prior to backfilling of drum burial area.
- Results reported on a dry-weight basis: dry-weight = as-received value divided by D, where $D = (100 - \text{moisture content}) / 100$.
- "NA" indicates the sample was not analyzed for this parameter.
- "--" indicates the parameter was analyzed but not detected in the sample above quantitation limits. Refer to Appendix F for quantitation limits.
- "*" indicates the compound was not detected at a concentration substantially above the level in laboratory or field blanks.

AR302625

TABLE 4-11

SURFACE WATER SAMPLES
SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)		SW-1	SW-2	SW-3	SW-3D	SW-6	SW-7	SW-10	SW-10D	SW-14
	grab	01/16/89	grab	grab	grab	grab	grab	grab	grab	grab	grab
Sample Type	---										
Collection Date	---	01/16/89	01/16/89	01/16/89	01/16/89	01/16/89	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90
Field Parameters (c)											
pH	---	6.54	6.35	6.20	6.20	6.20	6.56	6.60	6.13	6.12	6.90
Conductivity	umhos/cm	360	240	190	190	190	288	275	250	248	284
Temperature	°C	2.6	3.8	4.0	4.0	4.0	17.9	17.8	18.1	18.0	15.1
Inorganics											
Total Hardness	mg/l	NA (d)	NA	NA	NA	NA	99	101	90	88	104
Aluminum	mg/l	1.0	0.8	1.5	1.4	1.4	NA	NA	NA	NA	NA
Calcium	mg/l	25.7	17.7	13.2	13.0	13.0	NA	NA	NA	NA	NA
Chromium	mg/l	-- (e)	--	--	--	--	--	0.01	0.01	0.02	--
Cobalt	mg/l	--	--	--	--	--	NA	NA	NA	NA	NA
Cyanide	mg/l	--	--	--	--	--	NA	NA	NA	NA	NA
Copper	mg/l	--	--	--	--	--	--	0.04	0.02	0.04	0.01
Iron	mg/l	0.52	0.47	0.79	0.75	0.75	NA	NA	NA	NA	NA
Lead	mg/l	0.01	--	--	--	--	0.004	0.031	0.036	0.077	0.003
Magnesium	mg/l	9.24	7.45	5.52	5.41	5.41	NA	NA	NA	NA	NA
Manganese	mg/l	0.02	0.12	0.11	0.10	0.10	0.06	0.23	0.11	0.24	0.04
Potassium	mg/l	5.1	2.6	3.8	3.6	3.6	NA	NA	NA	NA	NA
Sodium	mg/l	14.4	7.8	8.1	7.6	7.6	NA	NA	NA	NA	NA
Zinc	mg/l	0.04	0.08	--	--	--	0.12	0.09	0.04	0.06	0.02
Volatiles											
Acetone	ug/l	--	--	--	--	--	13 * (f)	16 *	--	--	--
1,1-Dichloroethane	ug/l	--	--	11	11	11	--	--	25	29	--
1,1-Dichloroethene	ug/l	--	--	--	--	--	--	--	5	6	--
1,2-Dichloroethene (total)	ug/l	18	--	8	8	8	--	280	35	40	--
Methylene Chloride	ug/l	--	--	7	8	8	--	--	--	--	--
1,1,1-Trichloroethane	ug/l	8	--	37	38	38	--	--	65	76	--
Trichloroethene	ug/l	24	--	--	--	--	--	310	17	20	--

AR302626

TABLE 4-11
(continued)

PARAMETER (a)	UNITS (b)	SW-15	SW-16	SW-17	SW-18	SW-18D	SW-19	SW-20	SW-21	SW-22
Sample Type		grab	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date		11/21/90	10/19/90	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90
Field Parameters (c)										
pH	---	5.80	5.86	6.90	6.80	6.82	6.88	6.24	6.33	6.83
Conductivity	µmhos/cm	310	168	275	369	370	189	276	341	384
Temperature	°C	5.9	11.2	14.4	10.6	10.4	11.7	14.8	11.4	14.6
Inorganics										
Total Hardness	mg/L	58	65	104	128	130	68	99	126	86
Aluminum	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/L	--	0.03	0.01	--	--	0.02	--	--	--
Cobalt	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/L	--	0.02	0.01	--	--	0.04	0.01	--	--
Iron	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/L	--	0.014	0.007	--	--	0.006	--	--	--
Magnesium	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/L	0.01	0.91	0.27	0.24	0.21	0.21	0.14	2.61	0.56
Potassium	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/L	0.03	0.08 J (g)	0.33	0.06	0.05	0.06	0.03	0.02	--
Volatiles										
Acetone	ug/L	--	18	--	--	--	--	20 *	23 *	22 *
1,1-Dichloroethane	ug/L	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ug/L	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene (total)	ug/L	--	--	--	--	--	--	--	--	--
Methylene Chloride	ug/L	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/L	--	--	7	--	--	--	8	--	--
Trichloroethene	ug/L	--	--	--	--	--	--	--	--	--

TABLE 4-11
(continued)

PARAMETER (a)	UNITS (b)	SW-23	SW-24	SW-25	SW-26	SW-27	REF-1	HA-2
Sample Type		grab	grab	grab	grab	grab	grab	grab
Collection Date		10/16/90	10/19/90	10/17/90	10/17/90	10/17/90	10/17/90	10/17/90
Field Parameters (c)								
pH	---	6.61	7.04	6.73	6.52	6.74	6.99	6.82
Conductivity	umhos/cm	267	221	288	239	285	333	362
Temperature	°C	8.4	9.9	10.1	10.3	10.0	9.6	8.5
Inorganics								
Total Hardness	mg/l	88	79	106	76	104	141	104
Aluminum	mg/l	NA	NA	NA	NA	NA	NA	NA
Calcium	mg/l	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	--	0.02	--	0.01	--	--	--
Cobalt	mg/l	NA	NA	NA	NA	NA	NA	NA
Cyanide	mg/l	NA	NA	NA	NA	NA	NA	NA
Copper	mg/l	--	0.03	--	0.02	--	--	--
Iron	mg/l	NA	NA	NA	NA	NA	NA	NA
Lead	mg/l	--	0.004	--	--	--	--	--
Magnesium	mg/l	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/l	0.42	0.11	0.06	0.52	0.07	0.10	0.04
Potassium	mg/l	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/l	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	0.01	0.06 J	0.02	0.02	0.01	0.01	--
Volatiles								
Acetone	ug/l	23 *	19	26 *	--	--	24 *	20 *
1,1-Dichloroethane	ug/l	--	--	--	--	--	--	--
1,1-Dichloroethene	ug/l	--	--	--	--	--	--	--
1,2-Dichloroethene (total)	ug/l	--	--	--	--	--	--	--
Methylene Chloride	ug/l	--	--	--	--	--	--	--
1,1,1-Trichloroethane	ug/l	--	--	--	--	--	--	--
Trichloroethene	ug/l	--	--	--	--	--	--	--

NOTES:

- Compounds not listed were not detected in samples above quantitation limits. Refer to Appendix F for a complete listing of analytical results and quantitation limits.
- "umhos/cm" indicates micromhos per centimeter, "°C" indicates degrees centigrade, "mg/l" indicates milligrams per liter or parts per million (ppm), and "ug/l" indicates micrograms per liter or parts per billion (ppb).
- Reported values are field measurements.
- "NA" indicates the sample was not analyzed for this parameter.
- "--" indicates the parameter was analyzed but not detected in the sample above quantitation limits. Refer to Appendix F for quantitation limits.
- "**" indicates the compound was not detected substantially above the level in the laboratory or the field blanks.
- "J" indicates the value listed is estimated.

TABLE 4-12

SEDIMENT SAMPLES
SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)	SD-1	SD-2	SD-3	SD-3D	SD-4	SD-5	SD-6	SD-7
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	01/16/89	01/16/89	01/16/89	01/16/89	12/14/88	01/16/89	10/16/90	10/16/90
pH	---	NA(c)	NA	NA	NA	NA	NA	6.73	6.33
Moisture	% by weight	39.2	22.3	22.1	28.9	36.6	34.5	29.0	51.7
Total Organic Carbon	mg/kg	NA	NA	NA	NA	NA	NA	5,500	52,000
<u>Inorganics (d)</u>									
Aluminum	mg/kg	12,900	9,100	15,800	18,600	21,300	17,300	NA	NA
Antimony	mg/kg	--(e)	--	--	--	--	--	--	--
Arsenic	mg/kg	3	14	6	4	3	6	--	--
Barium	mg/kg	100	100	80	60	110	110	NA	NA
Beryllium	mg/kg	1.0	1.3	--	--	0.9	1.1	NA	NA
Cadmium	mg/kg	--	--	--	--	--	--	0.7	--
Calcium	mg/kg	2,600	2,550	2,700	2,550	1,810	2,610	NA	NA
Chromium	mg/kg	110	49	31	37	28	50	39 J	994 J (g)
Cobalt	mg/kg	10	30	9	8	--	20	NA	NA
Copper	mg/kg	160	55	12	20	14	52	13 J	426 J
Cyanide (total)	mg/kg	0.10	0.22	--	--	--	--	--	--
Iron	mg/kg	13,600	53,000	24,600	25,300	22,100	43,400	NA	NA
Lead	mg/kg	704	96.4	19.6	23.9	23.7	194	6.0	4,300
Magnesium	mg/kg	2,930	3,290	4,030	4,430	2,900	5,270	NA	NA
Manganese	mg/kg	556	1,900	582	323	375	1,100	1440 J	395 J
Mercury	mg/kg	0.07	--	--	--	--	--	NA	NA
Nickel	mg/kg	12	19	13	14	11	18	NA	NA
Potassium	mg/kg	691	566	1,050	900	1,100	947	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--	--
Silver	mg/kg	--	--	--	--	--	--	NA	NA
Sodium	mg/kg	--	140	--	--	110	--	NA	NA
Thallium	mg/kg	--	--	--	--	--	--	NA	NA
Vanadium	mg/kg	31	60	40	58	46	66	NA	NA
Zinc	mg/kg	219	138	53	48	50	261	94 J	237 J
<u>Volatiles (d)</u>									
Acetone	ug/kg	33	--	26	42	32	46	--	84 * (f)
1,1-Dichloroethane	ug/kg	--	--	--	--	--	--	--	--
1,2-Dichloroethene (total)	ug/kg	10	--	--	--	--	50	--	130
Methylene Chloride	ug/kg	13	--	10	10	--	18	--	--
Trichloroethene	ug/kg	28	--	--	--	--	81	--	42
Vinyl Chloride	ug/kg	--	--	--	--	--	--	--	96
Xylenes (total)	ug/kg	--	--	--	--	--	--	--	29
<u>Semivolatiles (d)</u>									
Bis(2-ethylhexyl) phthalate	ug/kg	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	ug/kg	--	--	3.30	0.84	--	--	NA	NA
Di-n-octyl phthalate	ug/kg	--	--	2.02	0.52	--	--	NA	NA

AR302629

TABLE 4-12
(continued)

PARAMETER (a)	UNITS (b)	SD-8	SD-9	SD-10	SD-11	SD-11D	SD-12	SD-13	SD-14
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90
pH	---	6.80	6.66	6.43	6.07	6.13	5.87	6.23	6.82
Moisture	% by weight	23.2	26.1	38.1	41.5	55.0	53.2	58.1	24.4
Total Organic Carbon	mg/kg	6,800	18,000	24,000	22,000	30,000	51,000	53,000	15,000
<u>Inorganics (d)</u>									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	--	--	--	--	--	--	--	--
Arsenic	mg/kg	7 K (h)	--	--	--	10 K	--	--	5
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	--	--	0.66	0.60	--	--	--	0.62
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	50 J	45 J	200 J	191 J	291 J	282 J	168 J	27 J
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	33 J	52 J	259 J	326 J	373 J	307 J	292 J	65 J
Cyanide (total)	mg/kg	--	--	--	--	--	--	--	--
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	341	128	987	999	1,150	1,520	146	91.6
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	1060 J	335 J	1300 J	657 J	984 J	506 J	1340 J	2290 J
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	103 J	85 J	297 J	239 J	367 J	327 J	409 J	383 J
<u>Volatiles (d)</u>									
Acetone	ug/kg	--	--	24 *	48 *	27 *	25 *	88	--
1,1-Dichloroethane	ug/kg	--	--	12	12	--	--	--	--
1,2-Dichloroethene (total)	ug/kg	20	--	15	21	--	--	--	--
Methylene Chloride	ug/kg	--	12 *	--	--	--	--	--	--
Trichloroethene	ug/kg	18	--	--	--	--	--	--	--
Vinyl Chloride	ug/kg	--	--	--	--	--	--	--	--
Xylenes (total)	ug/kg	--	--	--	--	--	--	--	--
<u>Semivolatiles (d)</u>									
Bis(2-ethylhexyl) phthalate	ug/kg	--	--	--	--	2,900	--	--	--
Butyl benzyl phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302630

TABLE 4-12
(continued)

PARAMETER (a)	UNITS (b)	SD-15	SD-16	SD-17	SD-18	SD-19	SD-20	SD-21	SD-22
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	11/21/90	10/19/90	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90	10/16/90
pH	---	6.18	5.06	6.85	6.39	6.75	6.81	5.77	6.34
Moisture	% by weight	37.6	30.1	31.4	48.2	29.7	21.1	24.3	38.3
Total Organic Carbon	mg/kg	26,000	6,400	16,000	27,000	2,600	6,400	8,000	9,600
<u>Inorganics (d)</u>									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	--	--	--	--	--	--	--	--
Arsenic	mg/kg	2	2 J	6 K	--	--	7 K	--	--
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	--	--	--	0.68	--	--	0.52	--
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	24	21 K	22 J	15 J	35 J	24 J	22 J	32 J
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	23	10 J	38 J	35 J	80 J	34 J	13 J	10 J
Cyanide (total)	mg/kg	--	--	0.2	0.2	--	--	0.2	--
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	18.6 L (i)	12.6	87.8	92.2	16.8	26.9	16.2	9.5
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	1180 J	197	925 J	809 J	211 J	704 J	2820 J	518 J
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	1.1 L	--	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	59	35 J	294 J	323 J	42 J	80 J	81 J	57 J
<u>Volatiles (d)</u>									
Acetone	ug/kg	23 *	20 *	--	--	24 *	--	20 *	43 *
1,1-Dichloroethane	ug/kg	--	--	--	--	--	--	--	--
1,2-Dichloroethene (total)	ug/kg	--	--	--	--	--	--	--	--
Methylene Chloride	ug/kg	--	--	--	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--	--	--	--
Vinyl Chloride	ug/kg	--	--	--	--	--	--	--	--
Xylenes (total)	ug/kg	--	--	--	--	--	--	--	--
<u>Semivolatiles (d)</u>									
Bis(2-ethylhexyl) phthalate	ug/kg	--	3,800 *	790	910	--	--	--	--
Butyl benzyl phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302631

TABLE 4-12
(continued)

PARAMETER (a)	UNITS (b)	SD-22D	SD-23	SD-24	SD-25	SD-26	SD-27	REF-1	HA-2
Sample Type	---	grab	grab	grab	grab	grab	grab	grab	grab
Collection Date	---	10/16/90	10/16/90	10/19/90	10/17/90	10/17/90	10/17/90	10/17/90	10/17/90
pH	---	6.31	6.21	6.35	6.65	6.53	6.85	7.42	6.66
Moisture	% by weight	30.4	33.1	36.1	31.2	21.7	26.7	25.0	28.1
Total Organic Carbon	mg/kg	6,100	11,000	7,900	7,500	5,800	10,000	7,800	12,000
<u>Inorganics (d)</u>									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	--	--	--	--	--	--	--	--
Arsenic	mg/kg	6 K	8 K	--	--	--	15 J	11 J	--
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	--	--	--	--	--	--	--	--
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	30 J	20 J	40 K	22 K	24 K	20 K	16 K	19 K
Cobalt	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	12 J	13 J	17 J	12 J	20 J	11 J	12 J	11 J
Cyanide (total)	mg/kg	--	0.17	--	--	--	--	--	--
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	21.2	11.4	21.5	15.0	15.7	22.7	23.9	18.8
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	542 J	2080 J	1,500	412	556	10,500	656	694
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	--	--	--	--	--	--	--	--
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	51 J	91 J	68 J	47 J	44 J	99 J	47 J	93 J
<u>Volatiles (d)</u>									
Acetone	ug/kg	37 *	16 *	--	20 *	--	26 *	14 *	27 *
1,1-Dichloroethane	ug/kg	--	--	--	--	--	--	--	--
1,2-Dichloroethene (total)	ug/kg	--	--	--	--	--	--	--	--
Methylene Chloride	ug/kg	--	45	9	--	--	--	--	--
Trichloroethene	ug/kg	--	--	--	--	--	--	--	--
Vinyl Chloride	ug/kg	--	--	--	--	--	--	--	--
Xylenes (total)	ug/kg	--	--	--	--	--	--	--	--
<u>Semivolatiles (d)</u>									
Bis(2-ethylhexyl) phthalate	ug/kg	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	ug/kg	NA	NA	NA	NA	NA	NA	NA	NA

AR302632

TABLE 4-12
(continued)

NOTES:

- a. Compounds not listed were not detected in the samples above quantitation limits. Refer to Appendix F for a complete listing of analytical results and quantitation limits.
- b. "mg/kg" indicates milligrams per kilogram or parts per million (ppm), and "ug/kg" refers to micrograms per kilogram or parts per billion (ppb).
- c. "NA" indicates the sample was not analyzed for this parameter.
- d. Results reported on a dry-weight basis. Dry-weight = as-received value divided by D, where $D = (100 - \text{moisture content}) / 100$.
- e. "--" indicates the parameter was analyzed but not detected in the sample above quantitation limits. Refer to Appendix F for quantitation limits.
- f. "*" indicates the compound was not detected at a concentration substantially above the level in laboratory or field blanks.
- g. "J" indicates the value listed is estimated.
- h. "K" indicates the value listed may be biased high; the actual value is expected to be lower.
- i. "L" indicates the value listed may be biased low; the actual value is expected to be higher.

AR302633

TABLE 4-13

GROUNDWATER SAMPLES
SUMMARY OF ANALYTICAL RESULTS

PARAMETER (a)	UNITS (b)	WELL HMW-1A1 grab 05/23/89	WELL HMW-1A1 grab 11/12/90	WELL HMW-1B1 grab 05/24/89	WELL HMW-1B1 grab 11/12/90	WELL HMW-2AS grab 05/24/89	WELL HMW-2AS grab 11/14/90	WELL HMW-2BL grab 05/24/89	WELL HMW-2BL grab 11/14/90	WELL HMW-3AL grab 05/24/89	WELL HMW-3AL grab 11/14/90
Sample Type	---										
Collection Date	---										
Field Parameters (c)											
pH	---	8.74	5.04	8.00	4.92	7.07	6.63	8.20	7.85	7.04	6.10
Conductivity	umhos/cm	248	160	120	120	444	642	170	142	515	506
Temperature	°C	NA	9.1	14.0	10.0	15.1	14.7	11.4	9.1	12.0	12.6
Inorganics (k)											
Aluminum	mg/l	0.8	NA (e)	--	NA	--	NA	--	NA	--	NA
Barium	mg/l	0.2	--	--	--	--	--	--	--	0.2	--
Calcium	mg/l	7.8	NA	12.2	NA	52.7	NA	17.6	NA	57.7	NA
Chromium	mg/l	0.14	--	NA	NA	--	--	NA	NA	--	NA
Copper	mg/l	--(d)	NA	NA	NA	--	NA	NA	NA	--	NA
Iron	mg/l	0.38	NA	--	NA	--	NA	--	NA	--	NA
Lead	mg/l	--	--	--	--	--	--	--	--	--	--
Magnesium	mg/l	3.14	NA	2.96	NA	13.00	NA	4.27	NA	19.8	NA
Manganese	mg/l	0.02	NA	--	NA	--	NA	--	NA	0.07	NA
Mercury	mg/l	--	--	--	--	--	--	0.0002	--	0.0002	--
Potassium	mg/l	0.8	NA	0.6	NA	1.2	NA	0.6	NA	1.5	NA
Sodium	mg/l	10.1	NA	5.3	NA	9.3	NA	6.0	NA	15.3	NA
Zinc	mg/l	0.02	NA	--	NA	--	NA	--	NA	0.04	NA
Volatiles											
Acetone	ug/l	--/NA (f)	--/NA	--/NA	16 * (i)/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Chloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	400/NA	310/NA
1,1-Dichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/1.4	--/NA	26/NA	3,300/NA	2,400/NA
1,1,2-Dichloroethane (g)	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/1.4	260/NA	400 J (h)/NA	290/NA	290/NA
1,2-Dichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	270/NA	480 J/NA	18,000/NA	9,200/NA
Methylene Chloride	ug/l	--/NA	--/NA	--/NA	--/0.5	--/NA	--/NA	--/NA	--/NA	120/NA	90/NA
Tetrachloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	60/NA	38/NA
Toluene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	60/NA	--/NA
1,1,1-Trichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	10/NA	6/7	1,200/NA	1,300/NA	1,100/NA	820 J/NA
1,1,2-Trichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	8/NA	--/NA	--/NA
Trichloroethene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	14,000/NA	21,000 */NA	96,000/NA	48,000/NA
Vinyl Chloride	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	700/NA	1,400 J/NA
Xylenes (total)	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	180/NA
Semivolatiles											
bis(2-Ethylhexyl)phthalate	ug/l	--	--	--	NA	--	NA	--	NA	80	NA
2,4-Dinitrotoluene	ug/l	--	--	--	NA	--	NA	--	NA	80	NA
2,6-Dinitrotoluene	ug/l	--	--	--	NA	--	NA	--	NA	80	NA

AR302634

TABLE 4-13
(continued)

PARAMETER (a)	UNITS (b)	WELL HMW-3BL grab 05/24/89	WELL HMW-3BL grab 11/14/90	WELL HMW-4AL grab 05/23/89	WELL HMW-4AL grab 11/12/90	WELL HMW-4BL grab 05/23/89	WELL HMW-4BL grab 11/12/90	WELL HMW-5AS grab 05/25/89	WELL HMW-5AS grab 11/13/90	WELL HMW-5BL grab 05/24/89	WELL HMW-5BL grab 11/13/90
Field Parameters (c)											
pH	---	7.95	5.24	5.28	5.86	6.52	6.01	7.00	7.15	7.77	5.45
Conductivity	umhos/cm	192	214	115	221	220	557	662	608	254	256
Temperature	°C	11.7	11.7	10.0	8.4	11.3	8.1	10.5	9.5	11.7	9.6
Inorganics (k)											
Aluminum	mg/l	--	NA	0.4	NA	0.1	NA	--	NA	0.1	NA
Barium	mg/l	--	--	0.2	--	0.2	--	0.1	--	--	--
Calcium	mg/l	21.7	NA	8.21	NA	20.4	NA	51.4	NA	29.5	NA
Chromium	mg/l	--	--	--	--	--	--	--	--	--	--
Copper	mg/l	--	NA	--	NA	--	NA	--	NA	--	NA
Iron	mg/l	0.10	NA	0.14	NA	0.07	NA	--	NA	0.07	NA
Lead	mg/l	--	--	--	--	--	--	--	--	--	0.003
Magnesium	mg/l	5.17	NA	3.60	NA	5.79	NA	14.6	NA	6.84	NA
Manganese	mg/l	--	NA	0.04	NA	0.03	NA	0.01	NA	--	NA
Mercury	mg/l	--	--	--	--	--	--	--	--	--	--
Potassium	mg/l	0.9	NA	1.2	NA	1.4	NA	1.6	NA	0.7	NA
Sodium	mg/l	11.5	NA	7.9	NA	7.1	NA	20.2	NA	7.1	NA
Zinc	mg/l	0.03	NA	0.06	NA	0.07	NA	0.04	NA	--	NA
Volatiles											
Acetone	ug/l	--/NA	11/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Chloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1-Dichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	27/NA	9/NA	8/NA	15/NA
1,1-Dichloroethene	ug/l	6/NA	--/NA	--/NA	--/NA	--/NA	--/NA	7/NA	--/NA	7/NA	10/NA
1,2-Dichloroethene (g)	ug/l	13/NA	10/NA	--/NA	--/NA	--/NA	--/NA	51/NA	15/NA	120/NA	150/NA
Methylene Chloride	ug/l	--/NA	--/NA	--/NA	--/0.6	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Tetrachloroethene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Toluene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1,1-Trichloroethane	ug/l	20/NA	6/NA	--/NA	--/NA	--/NA	--/NA	73/NA	30/NA	22/NA	30/NA
1,1,2-Trichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Trichloroethene	ug/l	100/NA	180/NA	--/NA	--/NA	--/NA	--/NA	42/NA	11/NA	180/NA	250/NA
Vinyl Chloride	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Xylenes (total)	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Semivolatiles											
bis(2-Ethylhexyl)phthalate	ug/l	--	--	--	--	--	--	--	--	30	--
2,4-Dinitrotoluene	ug/l	--	NA	--	NA	--	NA	--	NA	--	NA
2,6-Dinitrotoluene	ug/l	--	NA	--	NA	--	NA	--	NA	--	NA

AR302635

TABLE 4-13
(continued)

PARAMETER (a)	UNITS (b)	WELL HMW-5CL grab 11/14/90	WELL HMW-6AS grab 05/24/89	WELL HMW-6AS grab 11/13/90	WELL HMW-6BL grab 05/24/89	WELL HMW-6BL grab 11/14/90	WELL HMW-6BLD grab 11/14/90	WELL HMW-7AE grab 05/23/89	WELL HMW-7AE grab 11/13/90	WELL HMW-7AED grab 11/13/90
Sample Type	---									
Collection Date	---									
Field Parameters (c)										
pH	---	7.66	6.82	6.33	7.27	6.80	6.80	--	5.12	5.12
Conductivity	umhos/cm	222	297	342	252	227	227	--	260	260
Temperature	°C	13.5	11.9	10.4	12.2	12.9	12.9	--	10.3	10.3
Inorganics (k)										
Aluminum	mg/l	NA	--	NA	--	NA	NA	0.2	NA	NA
Barium	mg/l	--	--	--	--	--	--	0.2	--	--
Calcium	mg/l	NA	26.2	NA	27.8	NA	NA	13.9	NA	NA
Chromium	mg/l	--	--	--	--	--	--	--	0.01	0.01
Copper	mg/l	NA	--	NA	--	NA	NA	--	NA	NA
Iron	mg/l	NA	--	NA	0.06	NA	NA	0.08	NA	NA
Lead	mg/l	--	--	--	--	--	--	--	--	--
Magnesium	mg/l	NA	7.79	NA	6.94	NA	NA	8.78	NA	NA
Manganese	mg/l	NA	--	NA	0.01	NA	NA	0.02	NA	NA
Mercury	mg/l	--	--	--	--	--	--	--	--	--
Potassium	mg/l	NA	1.8	NA	3.1	NA	NA	1.3	NA	NA
Sodium	mg/l	NA	13.7	NA	8.5	NA	NA	10.6	NA	NA
Zinc	mg/l	NA	--	NA	0.03	NA	NA	0.03	NA	NA
Volatiles										
Acetone	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	12/NA	--/NA	11*/NA	--/NA
Chloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1-Dichloroethane	ug/l	--/NA	--/NA	--/NA	10/NA	41/NA	16/NA	--/NA	--/NA	--/NA
1,1-Dichloroethene	ug/l	100/NA	--/NA	--/1.2	10/NA	10/NA	6/NA	23/NA	25/NA	30/NA
1,2-Dichloroethane (g)	ug/l	330 J/NA	--/NA	--/1.3	52/NA	52/NA	41/NA	6/NA	6/NA	8/NA
Methylene Chloride	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Tetrachloroethene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Toluene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1,1-Trichloroethane	ug/l	310 J/NA	--/NA	7/9.1	130/NA	64/NA	37/NA	91/NA	85/NA	93/NA
1,1,2-Trichloroethane	ug/l	8/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Trichloroethene	ug/l	21,000/NA	--/NA	--/2.3	50/NA	56/NA	55/NA	17/NA	18/NA	29/NA
Vinyl Chloride	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Xylenes (total)	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Semivolatiles										
bis(2-Ethylhexyl)phthalate	ug/l	61	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/l	NA	--	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	ug/l	NA	--	NA	NA	NA	NA	NA	NA	NA

AR302636

TABLE 4-13
(continued)

PARAMETER (a)	UNITS (b)	WELL HMW-7BL grab 05/23/89	WELL HMW-7BL grab 11/13/90	WELL HMW-8AF grab 05/25/89	WELL HMW-8AF grab 11/12/90	WELL HMW-8BF grab 05/25/89	WELL HMW-8BFD grab 05/25/89	WELL HMW-8BF grab 11/12/90	WELL HMW-9AW grab 05/25/89	WELL HMW-9AW grab 11/14/90
Sample Type	--									
Collection Date	--									
Field Parameters (c)										
pH	---	9.80	7.75	6.51	6.07	7.45	8.17	7.51	6.93	6.38
Conductivity	umhos/cm	366	242	206	263	419	419	405	424	354
Temperature	°C	20.8	8.0	12.3	11.3	13.9	13.9	10.3	12.9	9.7
Inorganics (k)										
Aluminum	mg/l	--	NA	0.7	NA	--	--	NA	6.8	NA
Barium	mg/l	--	--	--	--	--	--	--	0.2	--
Calcium	mg/l	16.1	NA	12.4	NA	44.5	44.2	NA	26.8	NA
Chromium	mg/l	--	--	--	--	--	--	--	--	0.01
Copper	mg/l	--	NA	--	NA	--	--	NA	0.02	NA
Iron	mg/l	0.05	NA	0.17	NA	--	--	NA	1.60	NA
Lead	mg/l	--	--	--	NA	--	--	NA	--	NA
Magnesium	mg/l	5.89	NA	8.25	NA	15.1	15.0	NA	23.5	NA
Manganese	mg/l	--	NA	0.04	NA	0.03	0.03	NA	0.09	NA
Mercury	mg/l	--	--	--	--	--	--	--	--	--
Potassium	mg/l	18.9	NA	1.3	NA	1.4	1.5	NA	4.4	NA
Sodium	mg/l	17.5	NA	11.1	NA	11.8	12.1	NA	18.6	NA
Zinc	mg/l	--	NA	0.06	NA	--	0.02	NA	0.03	NA
Volatiles										
Acetone	ug/l	--/NA	--/NA	--/NA	17 */NA	--/NA	--/NA	15 */NA	--/NA	--/NA
Chloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1-Dichloroethane	ug/l	18/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	27/NA
1,1-Dichloroethene	ug/l	180/NA	75/NA	--/NA	--/NA	--/NA	--/NA	--/NA	45/NA	310/NA
1,2-Dichloroethene (g)	ug/l	19/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	6/NA	100/NA
Methylene Chloride	ug/l	--/NA	--/NA	--/NA	--/0.6	--/NA	--/NA	--/1.6	--/NA	--/NA
Tetrachloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Toluene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1,1-Trichloroethane	ug/l	550/NA	260/NA	--/NA	--/NA	--/NA	--/NA	--/NA	97/NA	570/NA
1,1,2-Trichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Trichloroethene	ug/l	240/NA	47/NA	--/NA	--/NA	--/NA	--/NA	--/NA	88/NA	140/NA
Vinyl Chloride	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Xylenes (total)	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Semivolatiles										
bis(2-Ethylhexyl)phthalate	ug/l	--	--	--	--	--	--	--	70	--
2,4-Dinitrotoluene	ug/l	--	NA	--	NA	--	--	NA	--	NA
2,6-Dinitrotoluene	ug/l	--	NA	--	NA	--	--	NA	--	NA

AR302637

TABLE 4-13
(continued)

PARAMETER (a)	UNITS (b)	WELL HMW-9BF grab 05/25/89	WELL HMW-9BF grab 11/14/90	WELL HMW-10AF grab 05/25/89	WELL HMW-10AF grab 11/12/90	WELL HMW-10BE grab 05/25/89	WELL HMW-10BE grab 11/12/90	WELL HMW-10CL grab 2/18/91	WELL HMW-11AL grab 11/13/90	WELL HMW-12BE grab 11/13/90	WELL HMW-12CL grab 11/13/90
Sample Type	---										
Collection Date	---										
Field Parameters (c)											
pH	---	7.67	6.97		6.30	7.60	5.88	7.10	6.34	6.25	6.96
Conductivity	umhos/cm	370	334	352	424	798	735	260	333	290	355
Temperature	°C	11.0	13.2	11.0	10.1	13.2	9.9	13.0	9.6	10.9	9.9
Inorganics (k)											
Aluminum	mg/l	--	NA	--	NA	--	NA	NA	NA	NA	NA
Barium	mg/l	--	--	--	--	--	--	--	--	--	--
Calcium	mg/l	36.2	NA	25.7	NA	94.4	NA	NA	NA	NA	NA
Chromium	mg/l	--	--	--	--	--	--	--	--	0.01	0.01
Copper	mg/l	--	NA	0.02	NA	--	NA	NA	NA	NA	NA
Iron	mg/l	--	NA	--	NA	--	NA	NA	NA	NA	NA
Lead	mg/l	--	NA	--	NA	--	NA	NA	NA	NA	NA
Magnesium	mg/l	10.3	NA	10.9	NA	30.6	NA	NA	NA	NA	NA
Manganese	mg/l	--	NA	0.10	NA	--	NA	NA	NA	NA	NA
Mercury	mg/l	--	--	--	--	--	--	--	--	--	--
Potassium	mg/l	1	NA	1.6	NA	2.4	NA	NA	NA	NA	NA
Sodium	mg/l	12.1	NA	17.1	NA	14.9	NA	NA	NA	NA	NA
Zinc	mg/l	0.03	NA	0.05	NA	0.02	NA	NA	NA	NA	NA
Volatiles											
Acetone	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	16 * /NA	--/NA	--/NA
Chloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1-Dichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1-Dichloroethene	ug/l	76/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/3.2	--/NA	--/NA
1,2-Dichloroethane (g)	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/1.7	--/NA	27/NA
Methylene Chloride	ug/l	7/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/4.5	--/NA	--/NA
Tetrachloroethene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Toluene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1,1-Trichloroethane	ug/l	370/NA	12/NA	--/NA	--/NA	--/NA	--/NA	--/NA	10/11	12/NA	100/NA
1,1,2-Trichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Trichloroethene	ug/l	930/NA	8/NA	--/NA	--/NA	--/NA	--/NA	--/NA	8/8.9	6/NA	11/NA
Vinyl Chloride	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Xylenes (total)	ug/l	--/NA	--/NA	--/NA	--/0.5	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Semivolatiles											
bis(2-Ethylhexyl)phthalate	ug/l	--	--	--	--	--	--	15	--	--	--
2,4-Dinitrotoluene	ug/l	--	NA	NA	NA	--	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	ug/l	--	NA	NA	NA	--	NA	NA	NA	NA	NA

AR302638

TABLE 4-13
(continued)

PARAMETER (a)	UNITS (b)	WELL HMW-13AE grab 11/12/90	WELL HMW-13BL grab 11/13/90	WELL HMW-14AE grab 11/12/90	WELL HMW-14BS grab 11/13/90	WELL HMW-15AW grab 11/12/90	WELL HMW-15AW grab 11/12/90	WELL HMW-16AW grab 11/13/90	WELL HMW-16BF grab 11/14/90	WELL HMW-17AW grab 11/13/90	WELL HMW-17BE grab 11/14/90
Sample Type	---										
Collection Date	---										
<u>Field Parameters (c)</u>											
pH	---	6.67	7.82	6.88	11.90	5.85	5.85	6.22	6.34	5.79	7.92
Conductivity	umhos/cm	375	234	203	3780	463	464	334	476	517	347
Temperature	°C	11.1	8.2	12.0	12.5	9.6	9.6	11.1	9.4	11.1	11.1
<u>Inorganics (k)</u>											
Aluminum	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	mg/l	--	--	--	0.2	--	--	--	--	--	--
Calcium	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/l	--	0.01	--	0.05	--	--	0.01	0.01	0.01	0.01
Copper	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/l	--	--	--	0.005	--	--	--	--	--	--
Magnesium	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/l	--	--	--	--	--	--	--	--	--	--
Potassium	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<u>Volatiles</u>											
Acetone	ug/l	13 */NA	--/NA	20 */NA	22 */NA	14 */NA	12 */NA	--/NA	--/NA	--/NA	12/NA
Chloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1-Dichloroethane	ug/l	--/1.5	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1-Dichloroethene	ug/l	--/4.8	--/2.2	--/NA	--/NA	--/NA	--/NA	57/NA	11/NA	--/NA	--/NA
1,2-Dichloroethene (g)	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	74/NA	320/NA	--/NA	--/NA
Methylene Chloride	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Tetrachloroethene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Toluene	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
1,1,1-Trichloroethane	ug/l	--/5.7	7/8.0	--/NA	--/NA	--/NA	--/NA	100/NA	23/NA	--/NA	--/NA
1,1,2-Trichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Trichloroethene	ug/l	--/NA	7/7.7	13/NA	--/NA	--/NA	--/NA	440/NA	440/NA	--/NA	--/NA
Vinyl Chloride	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
Xylenes (total)	ug/l	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA	--/NA
<u>Semivolatiles</u>											
bis(2-Ethylhexyl)phthalate	ug/l	--	--	10	75	--	--	--	61	--	--
2,4-Dinitrotoluene	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	ug/l	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

AR302639

TABLE 4-13
(continued)

PARAMETER (a)	UNITS (b)	WELL HMW-18CL grab 11/12/90	WELL HMW-19CL grab 11/14/90	WELL HMW-20AW grab 7/16/91	WELL HMW-20BF grab 7/16/91
Sample Type	---				
Collection Date	---				
Field Parameters (c)					
pH	---	6.20	5.91	8.54	6.42
Conductivity	umhos/cm	305	149	383	1103
Temperature	°C	8.9	12.2	16.1	16.7
Inorganics (k)					
Aluminum	mg/l	NA	NA	NA	NA
Barium	mg/l	--	--	--	--
Calcium	mg/l	NA	NA	NA	NA
Chromium	mg/l	--	--	NA	NA
Copper	mg/l	NA	NA	NA	NA
Iron	mg/l	NA	NA	NA	NA
Lead	mg/l	--	--	NA	NA
Magnesium	mg/l	NA	NA	NA	NA
Manganese	mg/l	NA	NA	NA	NA
Mercury	mg/l	--	--	--	--
Potassium	mg/l	NA	NA	NA	NA
Sodium	mg/l	NA	NA	NA	NA
Zinc	mg/l	NA	NA	NA	NA
Volatiles					
Acetone	ug/l	--/NA	--/NA	7J/NA	7J/NA
Chloroethane	ug/l	--/NA	--/NA	--/NA	--/NA
1,1-Dichloroethane	ug/l	--/NA	--/NA	--/NA	2J/NA
1,1-Dichloroethane (g)	ug/l	17/NA	26/NA	2J/NA	33/NA
1,2-Dichloroethane	ug/l	--/NA	51/NA	5/NA	110/NA
Methylene Chloride	ug/l	--/NA	--/NA	--/NA	1J/NA
Tetrachloroethane	ug/l	--/NA	--/NA	--/NA	--/NA
Toluene	ug/l	--/NA	--/NA	--/NA	--/NA
1,1,1-Trichloroethane	ug/l	180/NA	100/NA	4J/NA	90/NA
1,1,2-Trichloroethane	ug/l	--/NA	--/NA	--/NA	--/NA
Trichloroethane	ug/l	20/NA	4,000/NA	380/NA	1500/NA
Vinyl Chloride	ug/l	--/NA	--/NA	--/NA	--/NA
Xylenes (total)	ug/l	--/NA	--/NA	5/NA	--/NA
Semivolatiles					
bis(2-Ethylhexyl)phthalate	ug/l	--	--	--	8
2,4-Dinitrotoluene	ug/l	NA	NA	NA	NA
2,6-Dinitrotoluene	ug/l	NA	NA	NA	NA

AR302640

TABLE 4-13
(continued)

NOTES:

- a. Only parameters detected above quantitation limits are listed. Refer to Appendix F for a complete listing of the analytical results and quantitation limits.
- b. "umhos/cm" means micromhos per centimeter; "°C" means degrees centigrade; "mg/l" indicates milligrams per liter or parts per million (ppm); and "ug/l" indicates micrograms per liter or parts per billion (ppb). All values represent dissolved concentrations.
- c. Reported values are field measurements.
- d. "--" indicates the parameter was analyzed but was not present above quantitation limits. Refer to Appendix F for quantitation limits.
- e. "NA" indicates the sample was not analyzed for this parameter.
- f. "--/--", the first value of the pair indicates CLP analyses for the target compound list volatiles; the second value reflects EPA Method 524.2 volatile analyses.
- g. The value listed for 1,2-Dichloroethene represents both the cis- and trans- isomers.
- h. "J" indicates the sample value listed is estimated.
- i. "*" indicates the compound was not detected at a concentration substantially above the level in laboratory or field blanks.
- j. "L" indicates the sample value listed is biased low.
- k. Metal concentrations are dissolved.

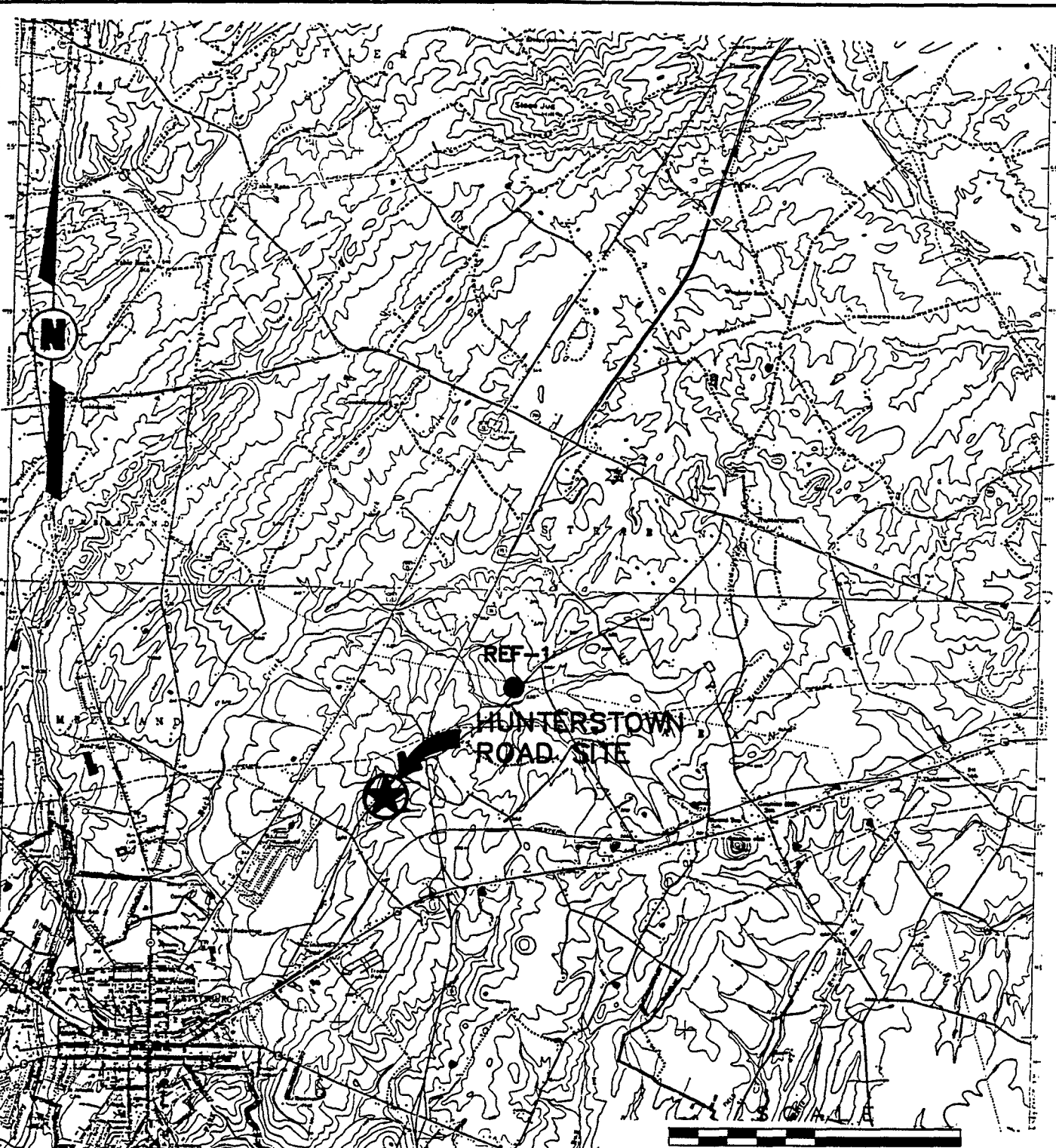
AR302641

FIGURES

AR302642

DCR

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 P.I. 6-21-89
 CHECKED BY: W.A.B. 7-9-91
 APPROVED BY: K.J.B. 7-9-91
 DRAWING NUMBER 87-376-A8 **1**



LEGEND:
 ● REF-1 - SURFACE WATER BACKGROUND (REFERENCE) SAMPLE LOCATION.

REFERENCE:
 U.S.G.S TOPOGRAPHIC MAPS OF GETTYSBURG, PA AND BIGLERVILLE, PA, BOTH PHOTOREVISED IN 1973, SCALE: 1" = 2000'.

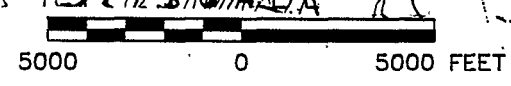


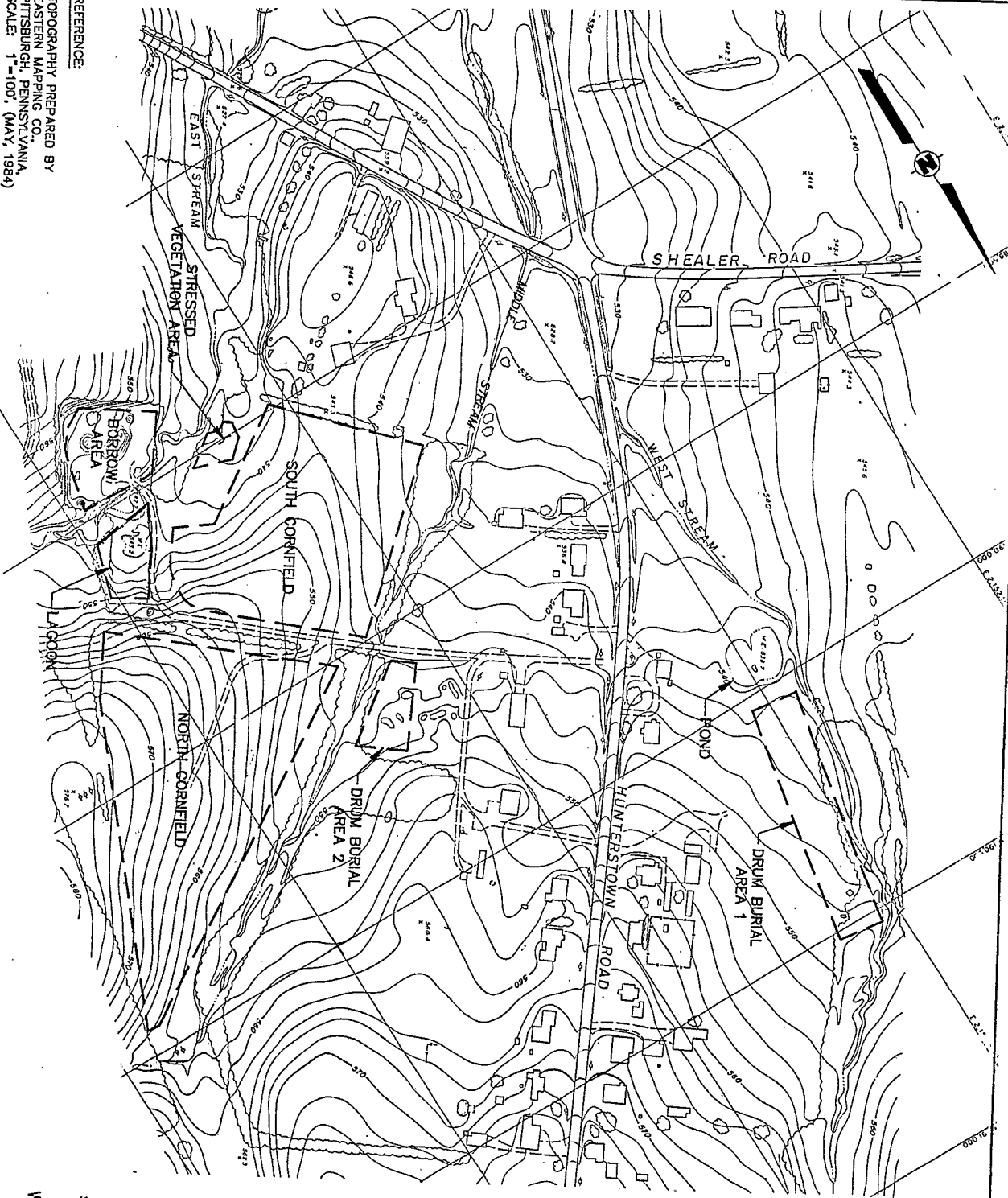
FIGURE 1-1

SITE LOCATION MAP
 HUNTERSTOWN ROAD SITE RI/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
 WESTINGHOUSE ELECTRIC CORPORATION
 PITTSBURGH, PENNSYLVANIA.

1	GENERAL REVISION
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PCRA Paul C. Rizzo Associates, Inc.
 CONSULTANTS 2643

TOPOGRAPHY PREPARED BY
 EASTERN MAPPING CO.,
 PITTSBURGH, PENNSYLVANIA,
 SCALE 1"=100', (MAY, 1984)



AR302644

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APPROVED BY: <i>KJB</i>	DATE: 7-9-71
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FIGURE 1-2

SITE PLAN
 HUNTERSTOWN ROAD SITE, R/F/S
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
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 PITTSBURGH, PENNSYLVANIA

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 CONSULTANTS

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 APPROVED BY: KJS DATE: 7/91
 REVISIONS

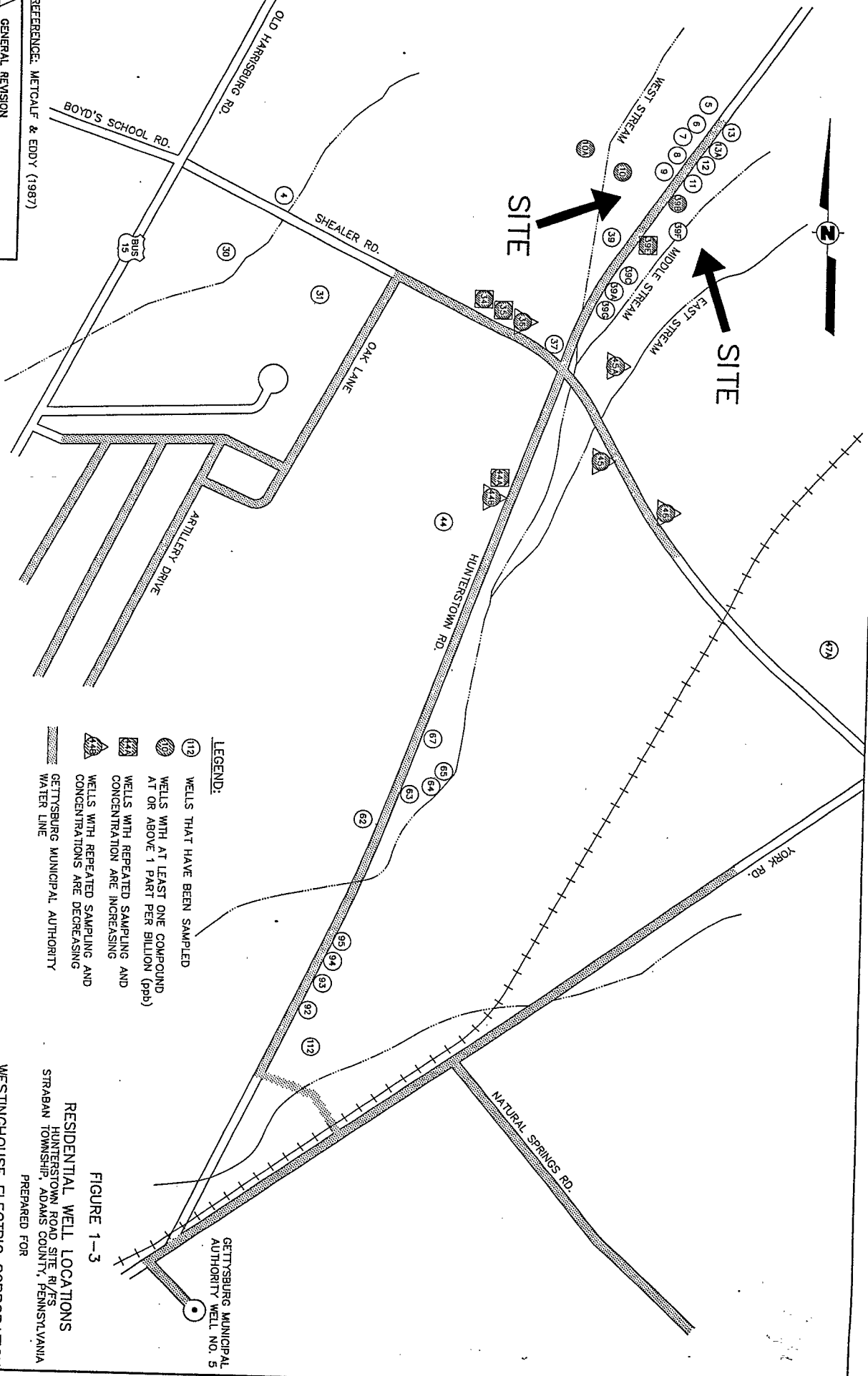
REFERENCE: METCALF & EDDY (1987)

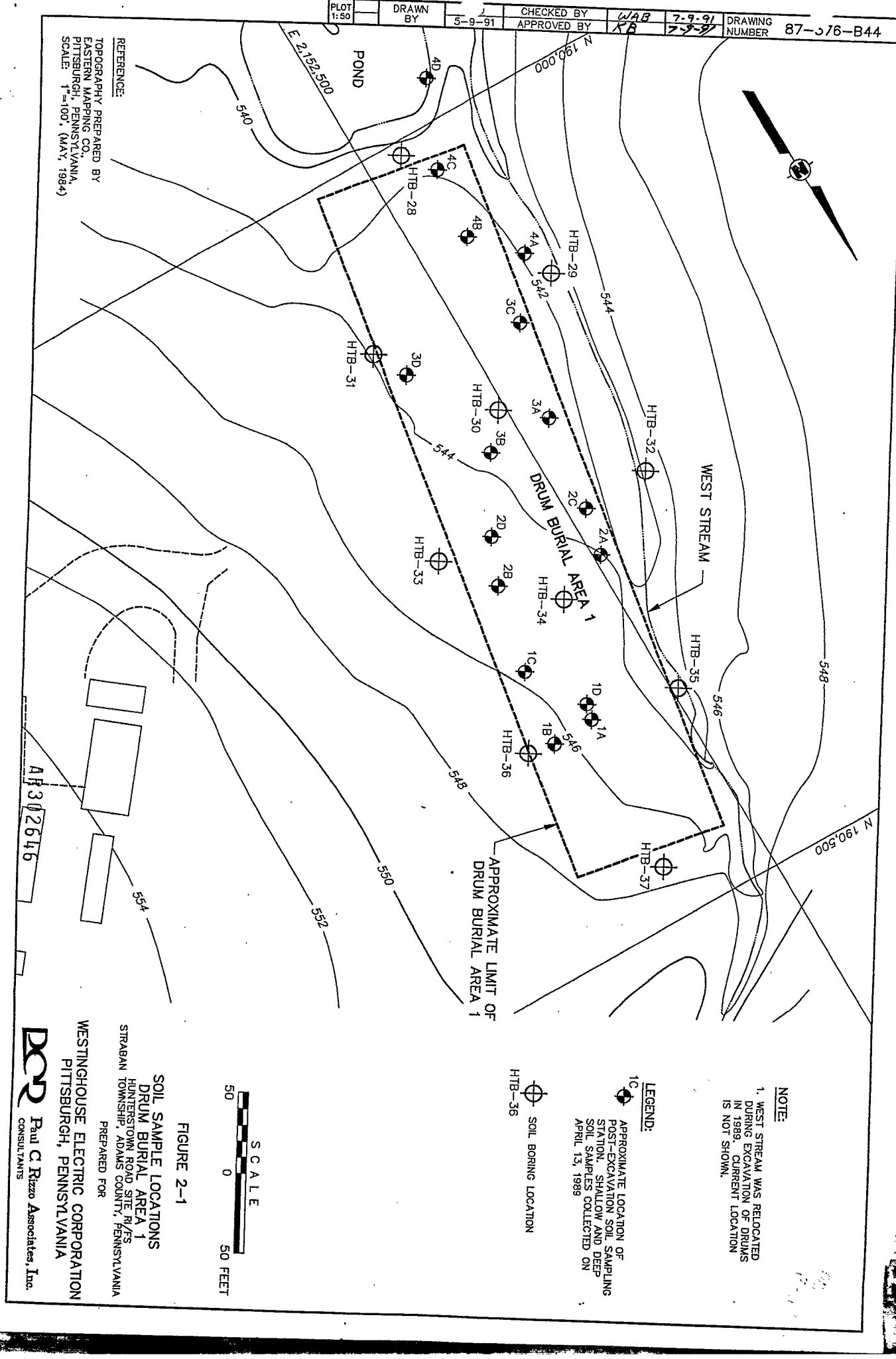
NOTE:
 REFER TO TABLE 1-5 FOR IDENTIFICATION OF
 THE WELL OWNERS.



- LEGEND:**
- (12) WELLS THAT HAVE BEEN SAMPLED
 - (12) WELLS WITH AT LEAST ONE COMPOUND AT OR ABOVE 1 PART PER BILLION (ppb)
 - (12) WELLS WITH REPEATED SAMPLING AND CONCENTRATION ARE INCREASING
 - (12) WELLS WITH REPEATED SAMPLING AND CONCENTRATIONS ARE DECREASING
 - (12) GETTYSBURG MUNICIPAL AUTHORITY WATER LINE

FIGURE 1-3
RESIDENTIAL WELL LOCATIONS
 HUNTERSTOWN ROAD SITE, RT/RS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
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NOTE:
1. WEST STREAM WAS RELOCATED DURING EXCAVATION OF DRUMS IN 1989. CURRENT LOCATION IS NOT SHOWN.

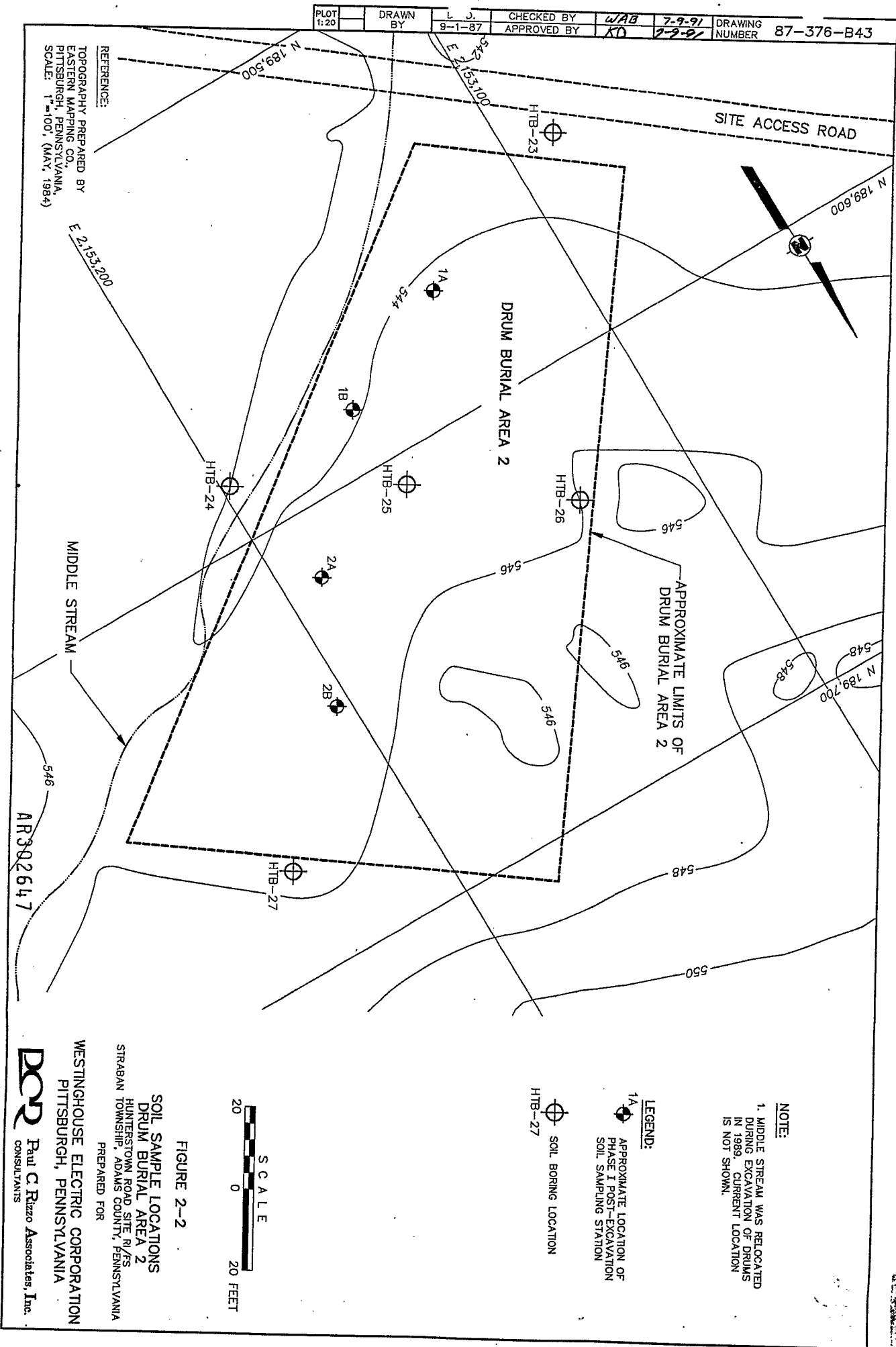
LEGEND:
1C
APPROXIMATE LOCATION OF POST-EXCAVATION SOIL SAMPLING STATION. SHALLOW AND DEEP SOIL SAMPLES COLLECTED ON APRIL 15, 1989

HTB-36
SOIL BORING LOCATION

SCALE
50 0 50 FEET

FIGURE 2-1
SOIL SAMPLE LOCATIONS
DRUM BURIAL AREA 1
HUNTERSTOWN ROAD SITE R/F'S
STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
PREPARED FOR
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PITTSBURGH, PENNSYLVANIA
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REFERENCE:
TOPOGRAPHY PREPARED BY
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SCALE: 1"=100', (MAY, 1984)



NOTE:
 1. MIDDLE STREAM WAS RELOCATED DURING EXCAVATION OF DRUMS IN 1989. CURRENT LOCATION IS NOT SHOWN.

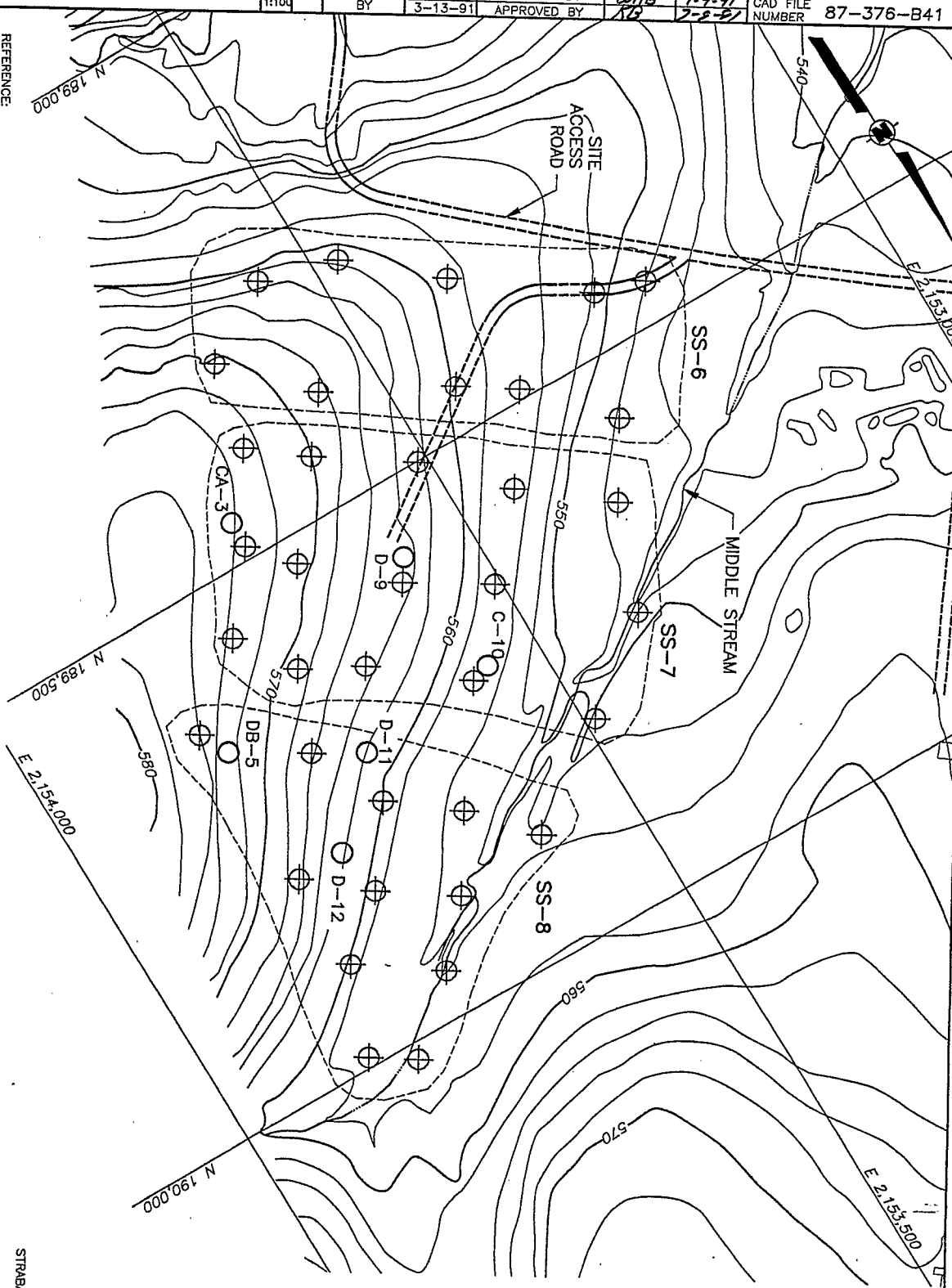
LEGEND:
 1A (Symbol) APPROXIMATE LOCATION OF PHASE I POST-EXCAVATION SOIL SAMPLING STATION
 (Symbol) SOIL BORING LOCATION

SCALE
 20
 0
 20 FEET

FIGURE 2-2
SOIL SAMPLE LOCATIONS
DRUM BURIAL AREA 2
 HUNTERSTOWN ROAD SITE R/F/S
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
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REFERENCE:
 TOPOGRAPHY PREPARED BY
 EASTERN MAPPING CO.,
 PITTSBURGH, PENNSYLVANIA,
 SCALE: 1"=100' (MAY, 1984)

TOPOGRAPHY PREPARED BY
EASTERN MAPPING CO.,
PITTSBURGH, PENNSYLVANIA,
SCALE 1"=100', (MAY, 1984)



LEGEND:
 ⊕ APPROXIMATE LOCATION OF
 PHASE I COMPOSITE SOIL
 SAMPLES
 ○ APPROXIMATE LOCATION OF
 PHASE II SOIL SAMPLES

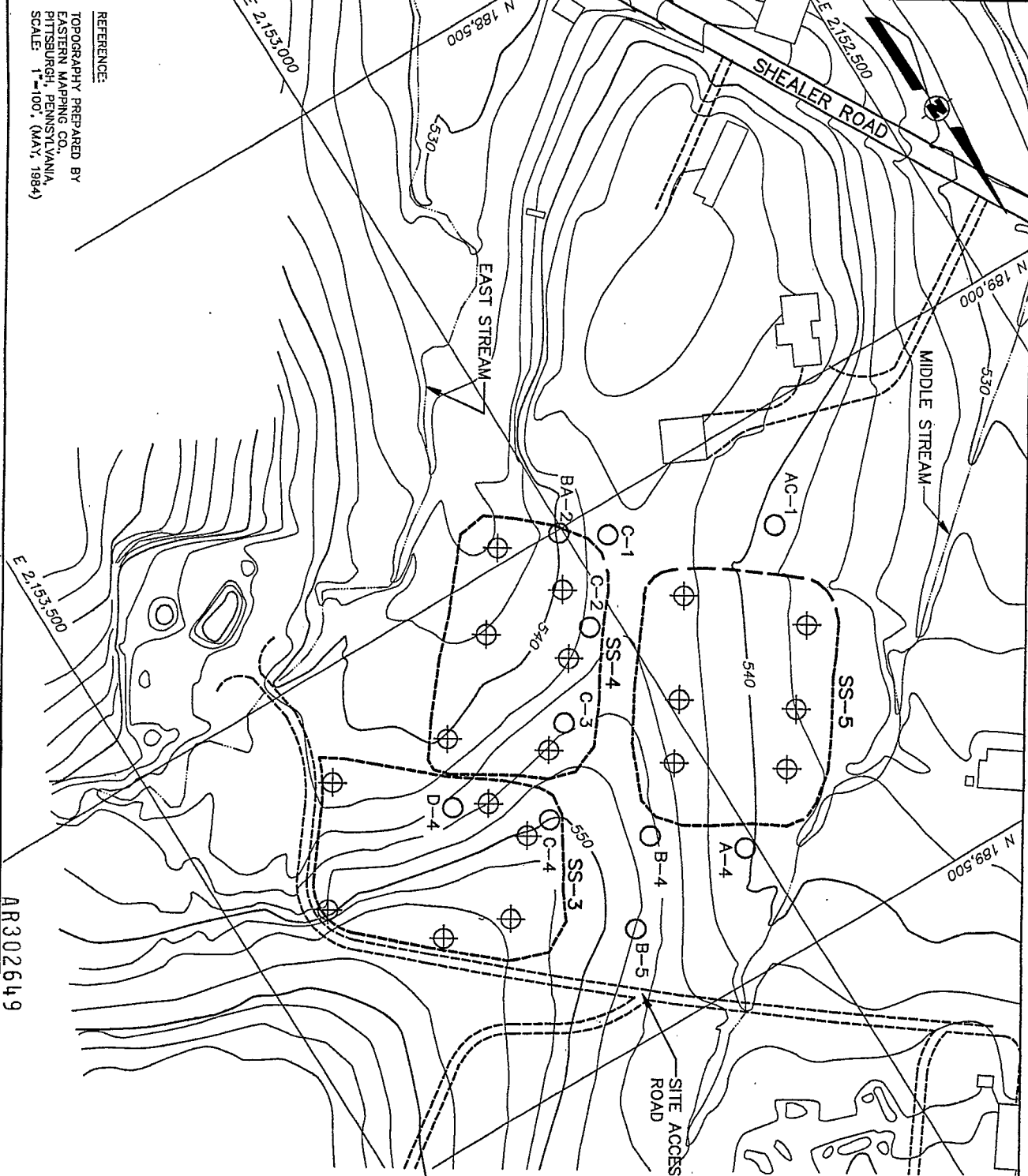


FIGURE 2-3

SOIL SAMPLE LOCATIONS
 NORTH CORNFIELD
 HUNTERSTOWN ROAD SITE R1/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
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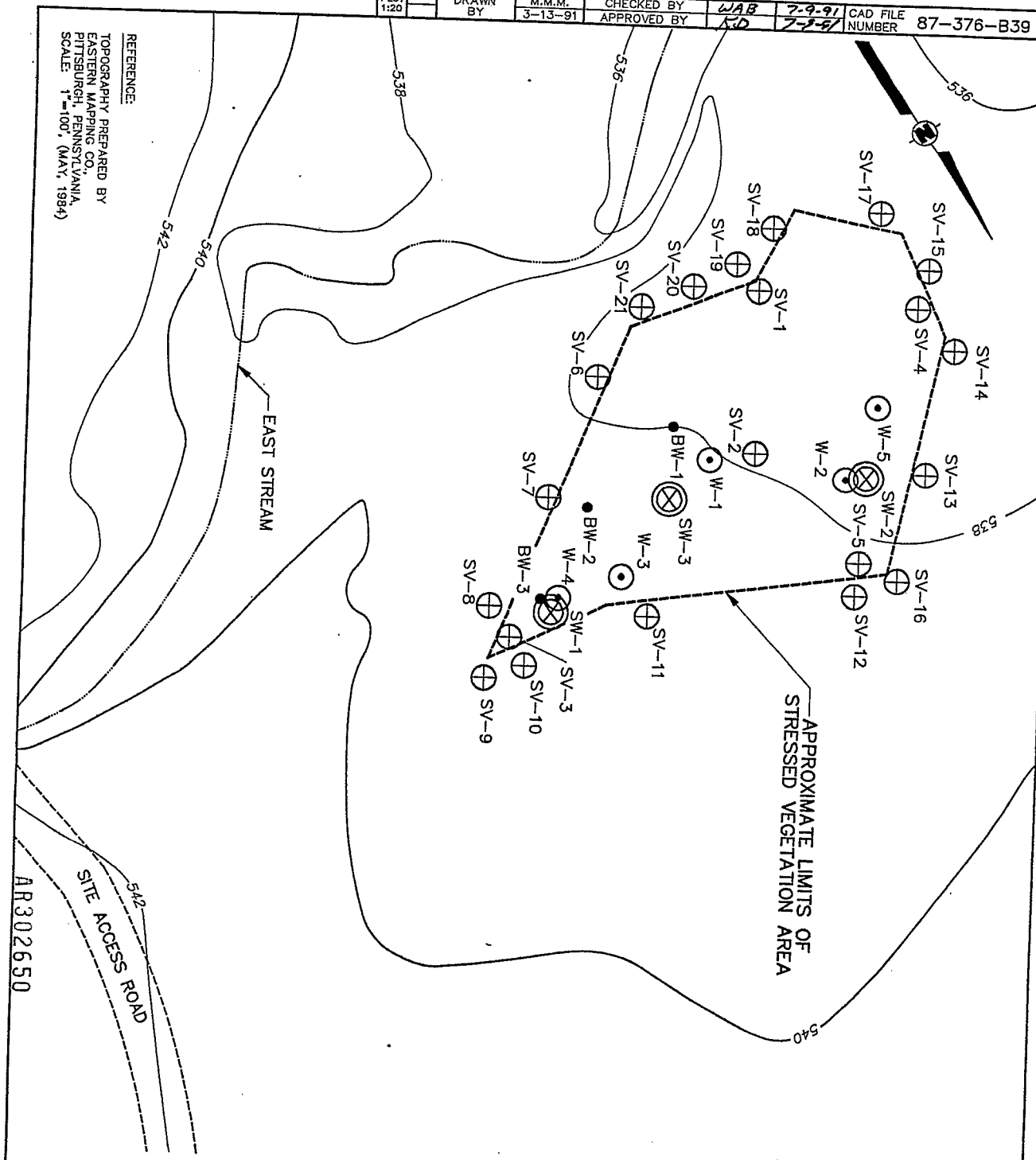
REFERENCE:
 TOPOGRAPHY PREPARED BY
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 PITTSBURGH, PENNSYLVANIA
 SCALE: 1"=100' (MAY, 1984)

AR302649

LEGEND:
 APPROXIMATE LOCATION OF
 PHASE I COMPOSITE SOIL
 SAMPLES
 APPROXIMATE LOCATION OF
 PHASE II SOIL SAMPLES

SCALE
 100 0 100 FEET

FIGURE 2-4
SOIL SAMPLE LOCATIONS
SOUTH CORNFIELD
 HUNTERSTOWN ROAD SITE R/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
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REFERENCE:
 TOPOGRAPHY PREPARED BY
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APPROXIMATE LIMITS OF
 STRESSED VEGETATION AREA

- LEGEND:
- ⊕ SV-11 APPROXIMATE LOCATION OF SOIL SAMPLE
 - ⊙ W-3 APPROXIMATE LOCATION OF COMPOSITE (WASTE) SAMPLE
 - ⊗ SW-3 APPROXIMATE LOCATION OF SURFACE WATER SAMPLE
 - BW-1 APPROXIMATE LOCATION OF SOIL SAMPLE BELOW WASTE

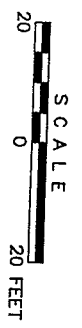
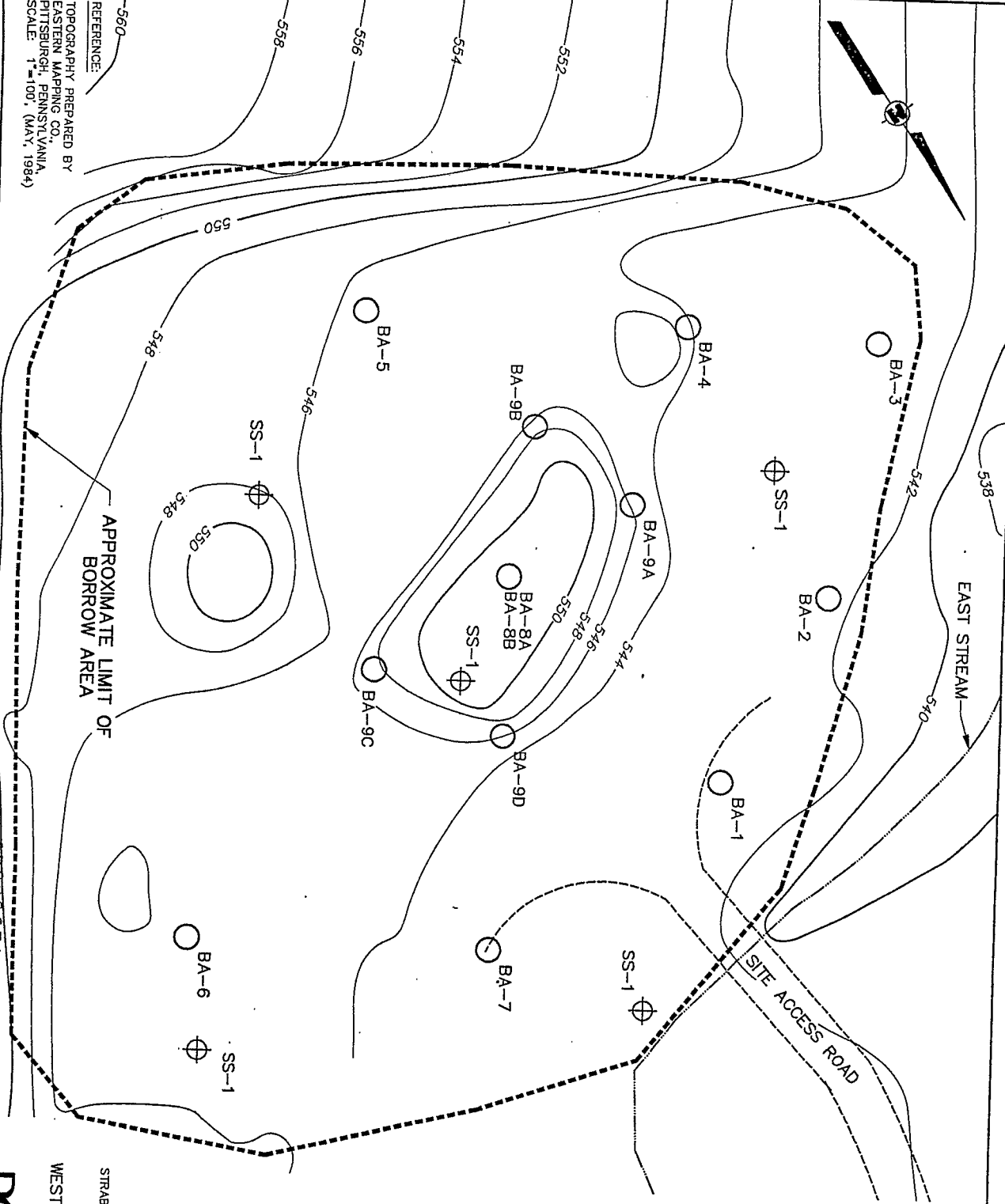


FIGURE 2-5

STRESSED VEGETATION AREA
 SAMPLE LOCATIONS
 HUNTERSTOWN ROAD SITE R/F/S
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR

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SCALE: 1"=100', (MAY, 1984)

APPROXIMATE LIMIT OF
BORROW AREA

AR302651

- LEGEND:**
- ⊕ APPROXIMATE LOCATION OF PHASE I BORROW AREA COMPOSITE SAMPLE
 - APPROXIMATE LOCATION OF PHASE II BORROW AREA SOIL SAMPLE

NOTE:

1. SAMPLES BA-9A, BA-9B, BA-9C AND BA-9D WERE COMPOSITED TO FORM SAMPLE BA-9.

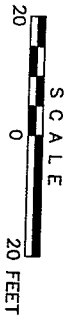
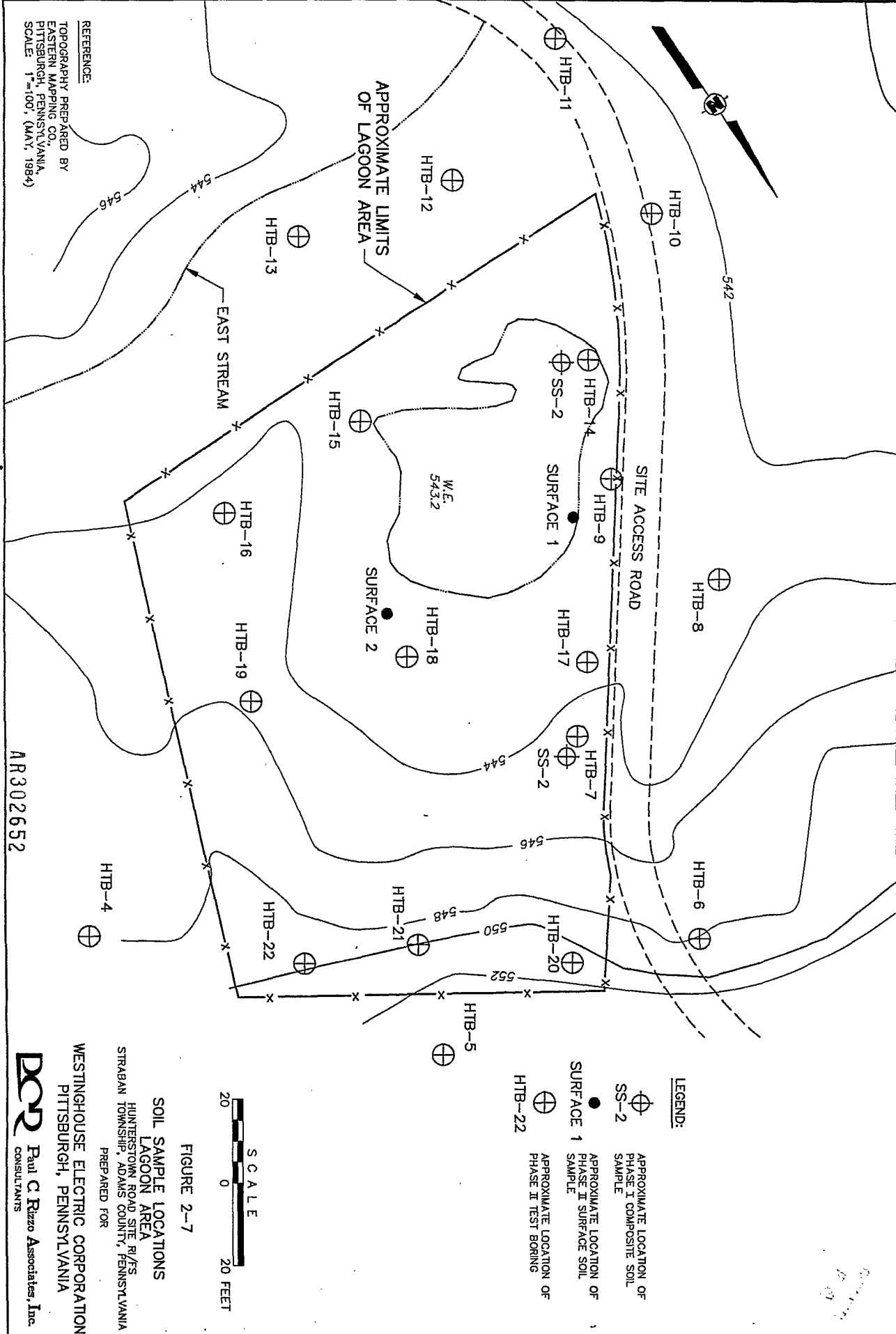


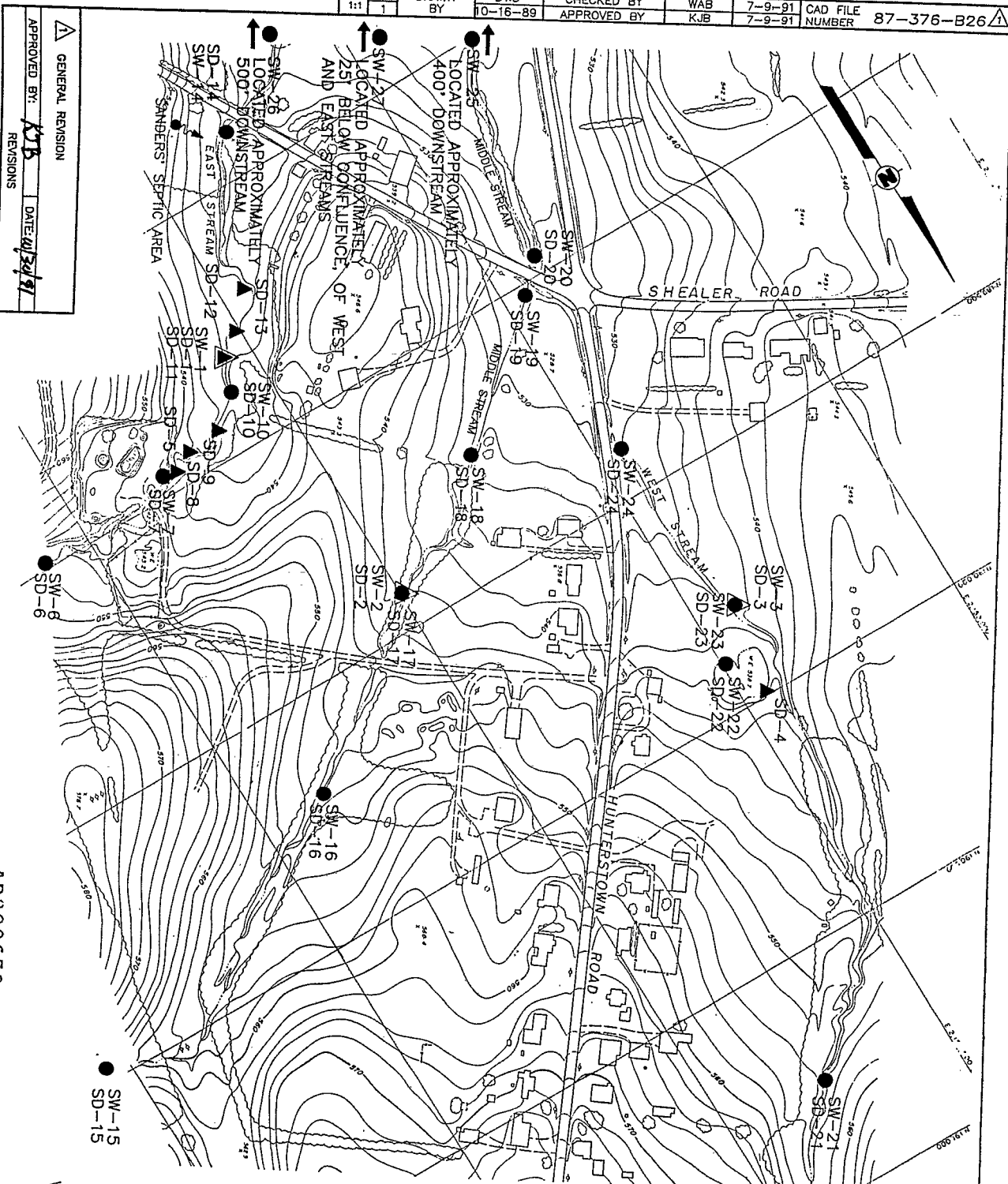
FIGURE 2-6
SOIL SAMPLE LOCATIONS
BORROW AREA

HUNTERSTOWN ROAD SITE R/F/S
STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
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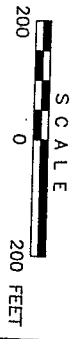
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AR302653

SW-15
 SD-15

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 PITTSBURGH, PENNSYLVANIA
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
 SURFACE WATER AND
 SEDIMENT SAMPLE LOCATIONS
 HUNTERSTOWN ROAD SITE RI/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

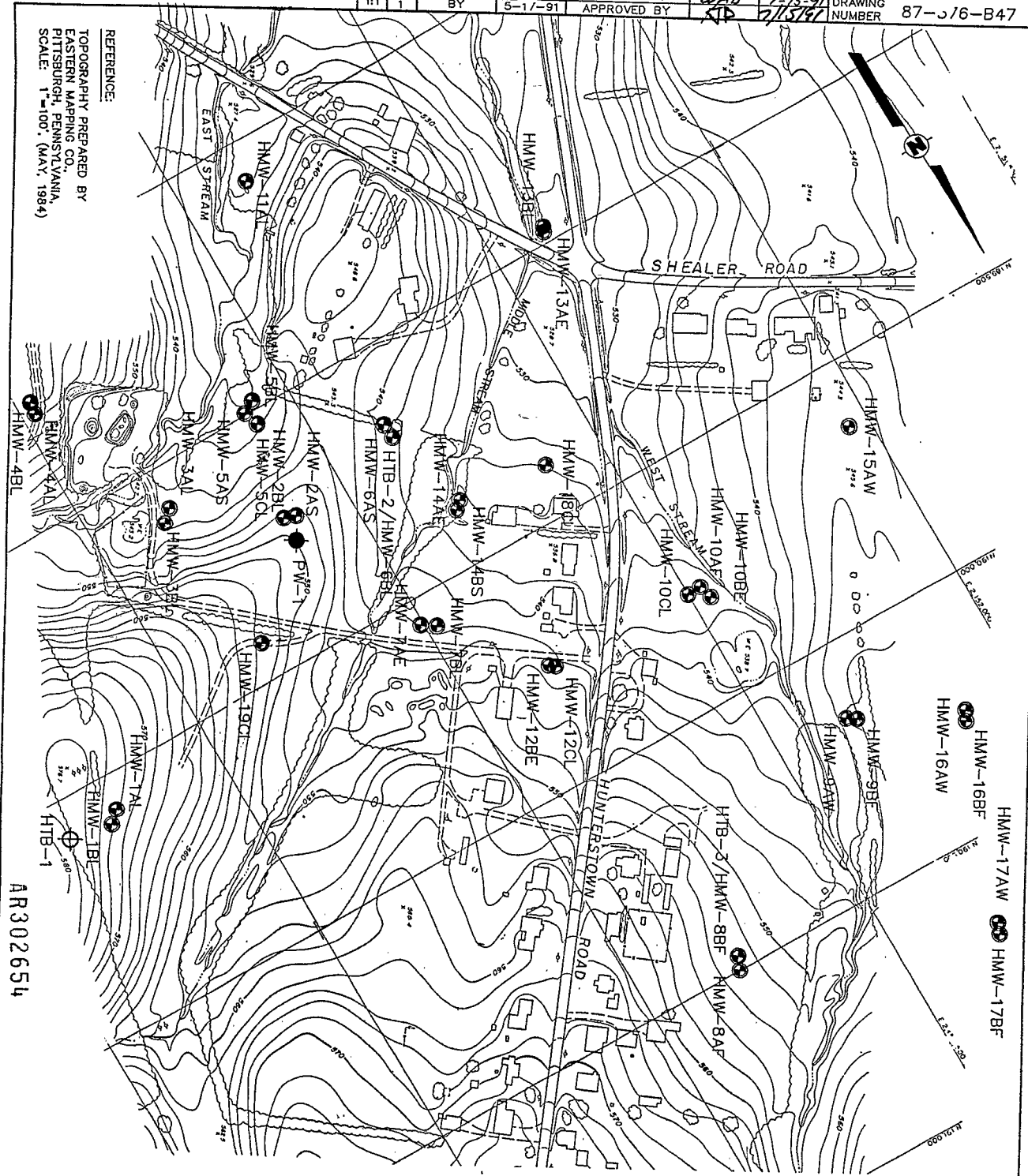
FIGURE 2-8



REFERENCE:
 TOPOGRAPHY PREPARED BY
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 SCALE: 1"=100', (MAY, 1984)

- NOTES:
1. REFERENCE SAMPLE REF-1 TAKEN APPROXIMATELY ONE MILE NORTH OF THE SITE FROM ROCK CREEK AT HUNTERSTOWN ROAD.
 2. SAMPLE HA-2 TAKEN 0.3 MILES DOWNSTREAM OF THE SITE.

- LEGEND:
- SW-1 △ PHASE I SURFACE WATER AND SEDIMENT SAMPLE LOCATION
 - SW-14 ● PHASE II SURFACE WATER AND SEDIMENT SAMPLE LOCATION
 - SD-14 ▲ SEDIMENT SAMPLE LOCATION
 - SD-6 ● SANDERS' SEPTIC AREA



AR302654

WESTINGHOUSE ELECTRIC CORPORATION
PITTSBURGH, PENNSYLVANIA

STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
PREPARED FOR

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FIGURE 2-9
MONITORING WELL
AND TEST BORING LOCATIONS

HUNTERSTOWN ROAD SITE R/F/S
ADAMS COUNTY, PENNSYLVANIA

SCALE
200 0 200 FEET

LEGEND:
 ◉ BORING FROM WHICH CONTINUOUS
 ROCK CORE WAS OBTAINED -
 GROUDED UPON COMPLETION
 ◉ HTB-1
 ◉ HMW-1AL
 ◉ PW-1
 ● PUMPING WELL LOCATION

NOTES:
 1. MONITORING HMW-68L INSTALLED
 IN TEST BORING HTB-2
 2. MONITORING WELL HMW-88F
 INSTALLED IN TEST BORING HTB-3.

TOPOGRAPHY PREPARED BY
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A9
 DRAWING NUMBER 87
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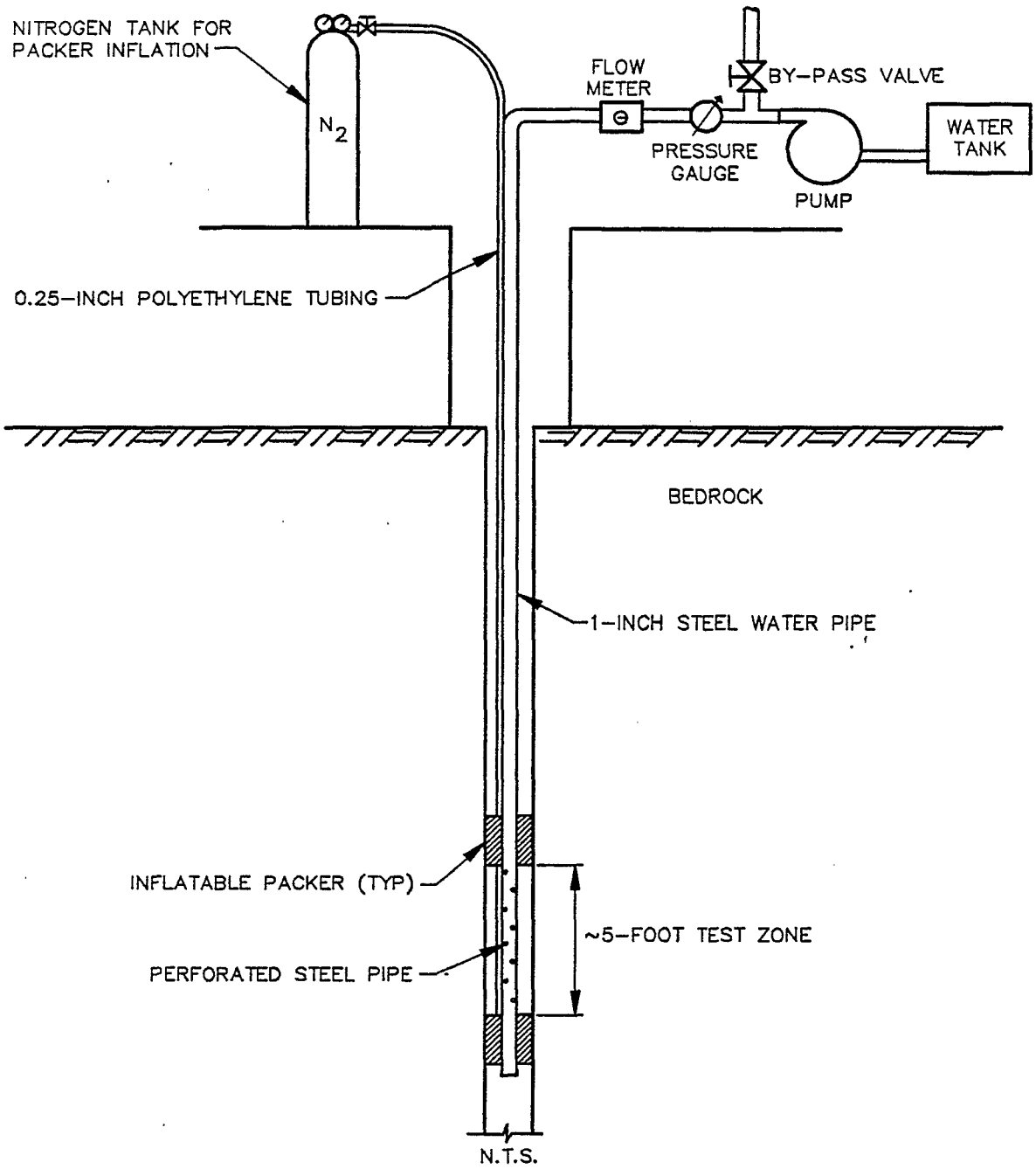
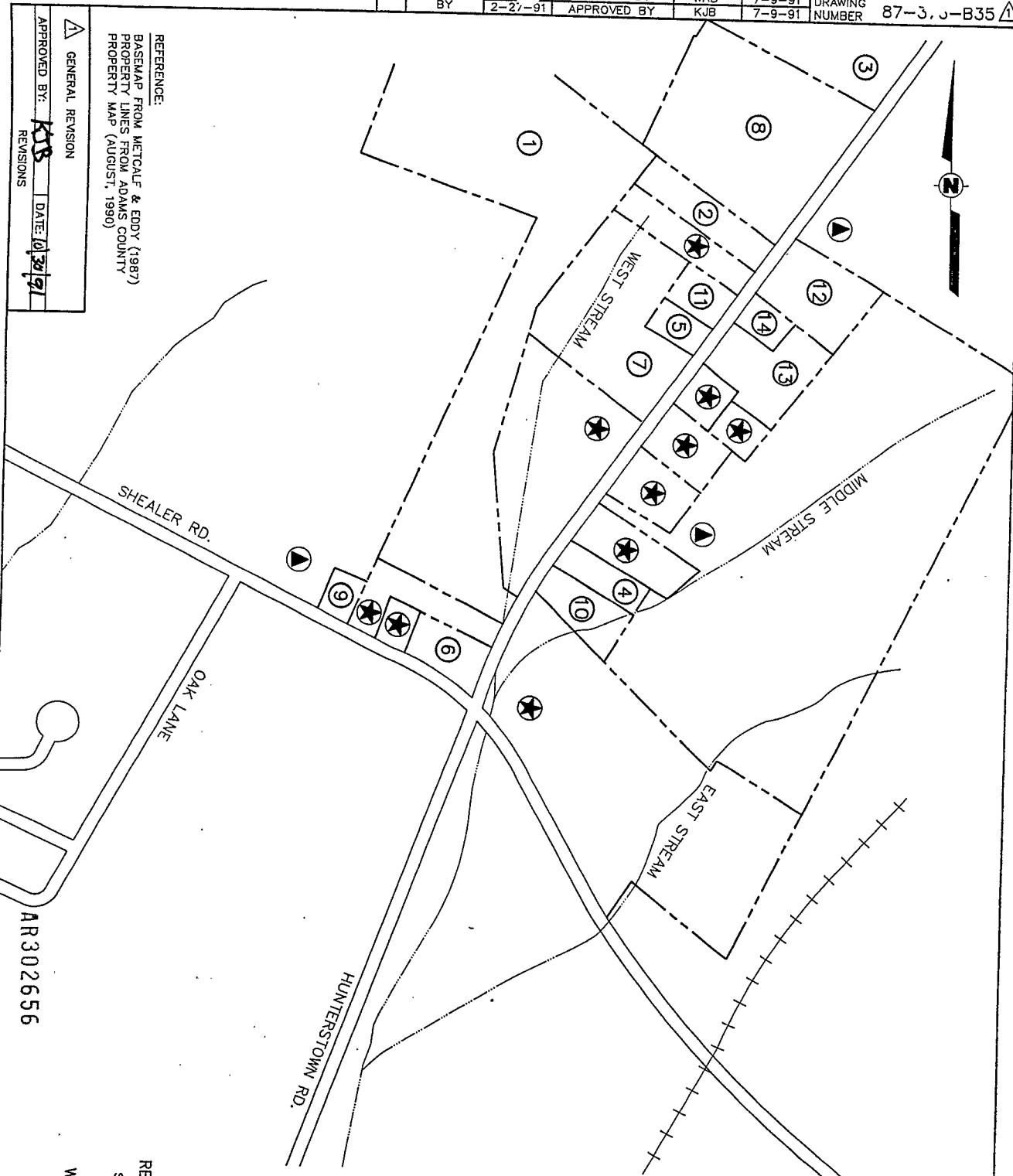


FIGURE 2-10
 SCHEMATIC HYDRAULIC
 PRESSURE TESTING IN ROCK
 HUNTERSTOWN ROAD SITE RI/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR

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 PITTSBURGH, PENNSYLVANIA

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2	CHARLES W. MORTZ
3	JOHN K. LOTT
4	DENNIS M. WEAVER
5	BARBARA KETTERMAN
6	RONALD H. SMITH
7	F. M. SHEALER
8	MELVIN E. TRESSLER
9	S. CATHERINE SHEALER
10	WILLIAM VAUGHN
11	JACK & TINA STEVENS
12	MARLIN L. PLATT
13	GERALD F. SHEALER
14	ADRIEL BOWIE

- LEGEND:
- LOTS WITH HOUSES - NO RESPONSE TO RESIDENTIAL WELL SURVEY
 - LOTS WITH NO HOUSES

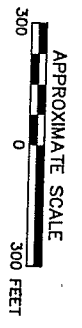


FIGURE 2-11

RESIDENTIAL WELL SURVEY RESPONDENTS
 HUNTERSTOWN ROAD SITE R/F/S
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

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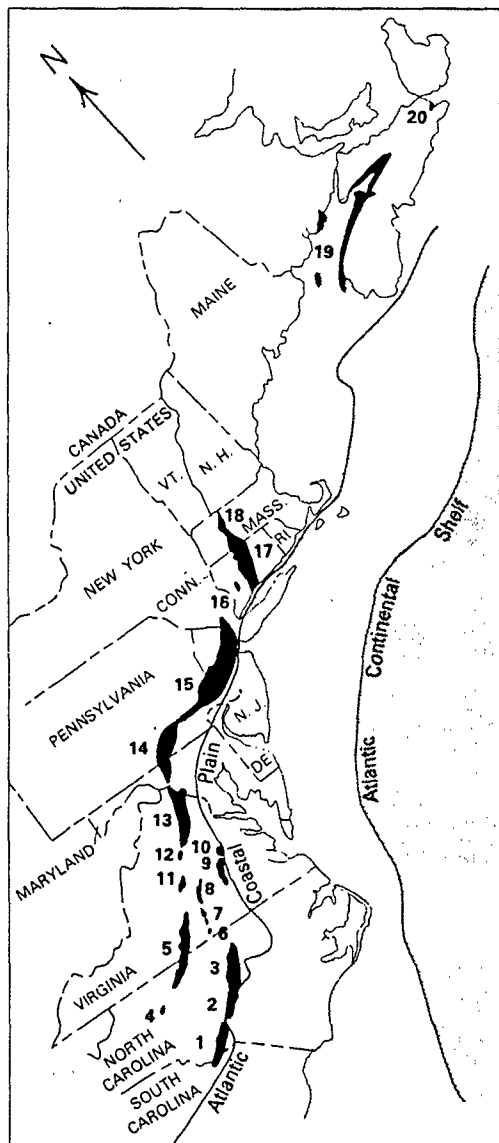
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GENERAL REVISION
 APPROVED BY: **KTS** DATE: **10/31/91**
 REVISIONS

REFERENCE:
 BASEMAP FROM METCALF & EDDY (1987)
 PROPERTY LINES FROM ADAMS COUNTY
 PROPERTY MAP (AUGUST, 1990)

AR302656

87-77b-A10
 DRAWING NUMBER
 8-3-87
 8-5-89
 DUB
 KTB
 CHECKED BY
 APPROVED BY
 PR. 6
 DRAWN BY



EXPLANATION

1. Wadesboro (N.C. - S.C.)
2. Sanford (N.C.)
3. Durham (N.C.)
4. Davie County (N.C.)
5. Dan River and Danville (N.C. - Va.)
6. Scottsburg (Va.)
7. Basins north of Scottsburg (Va.)
8. Farmville (Va.)
9. Richmond (Va.)
10. Taylorsville (Va.)
11. Scottsville (Va.)
12. Barboursville (Va.)
13. Culpeper (Va. - Md.)
14. Gettysburg (Md. - Pa.)
15. Newark (N.J. - Pa. - N.Y.)
16. Pomperaug (Conn.)
17. Hartford (Conn. - Mass.)
18. Deerfield (Mass.)
19. Fundy or Minas (Nova Scotia - Canada)
20. Chedabucto (Nova Scotia - Canada)

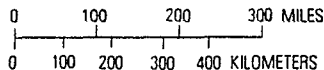


FIGURE 3-1

EXPOSED TRIASSIC-JURASSIC BASINS
 IN EASTERN NORTH AMERICA
 HUNTERSTOWN ROAD SITE RI/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

PREPARED FOR

WESTINGHOUSE ELECTRIC CORPORATION
 PITTSBURGH, PENNSYLVANIA

REFERENCE:

FRÖELICH AND OLSEN (1985)



Paul C. Rizzo Associates, Inc.
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AP302657

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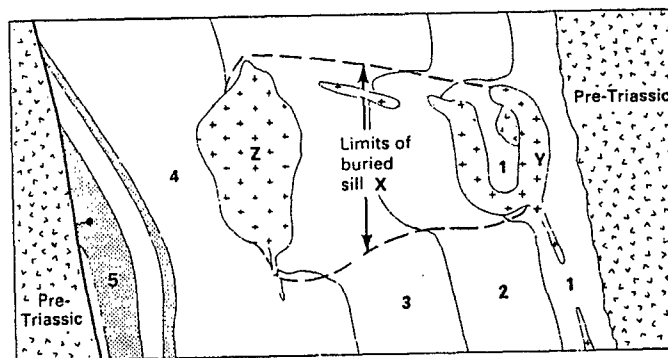
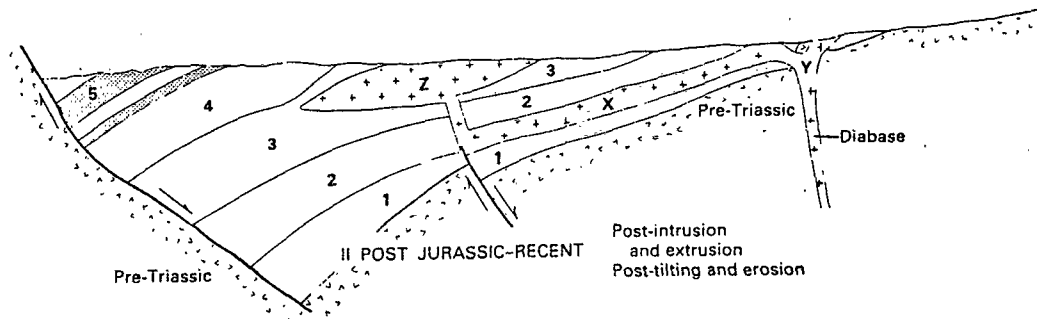
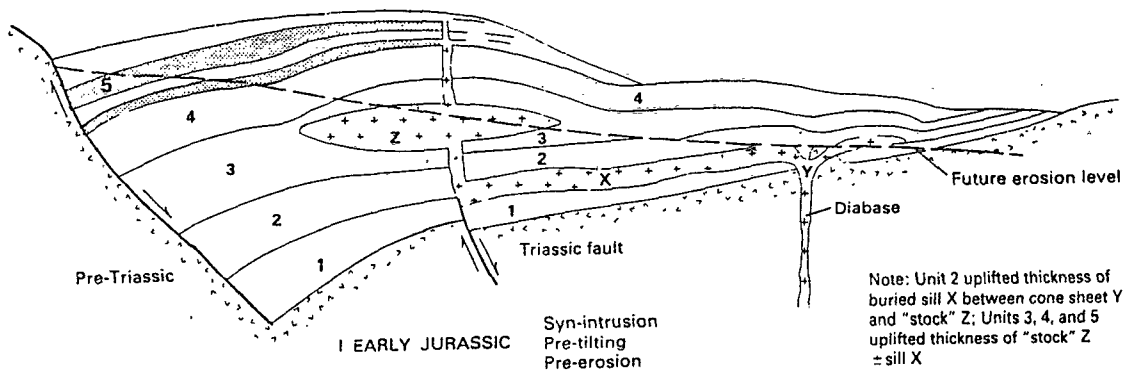


FIGURE 3-2

SCHMATIC DIAGRAMS OF THE
 TECTONIC/GEOMORPHIC EVOLUTION OF
 A TYPICAL TRIASSIC-JURASSIC BASIN
 HUNTERSTOWN ROAD SITE RI/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

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WESTINGHOUSE ELECTRIC CORPORATION
 PITTSBURGH, PENNSYLVANIA

NOTE:

IN THE GETTYSBURG BASIN, THE
 FAULTED MARGIN IS FOUND ON
 THE NORTHWEST.

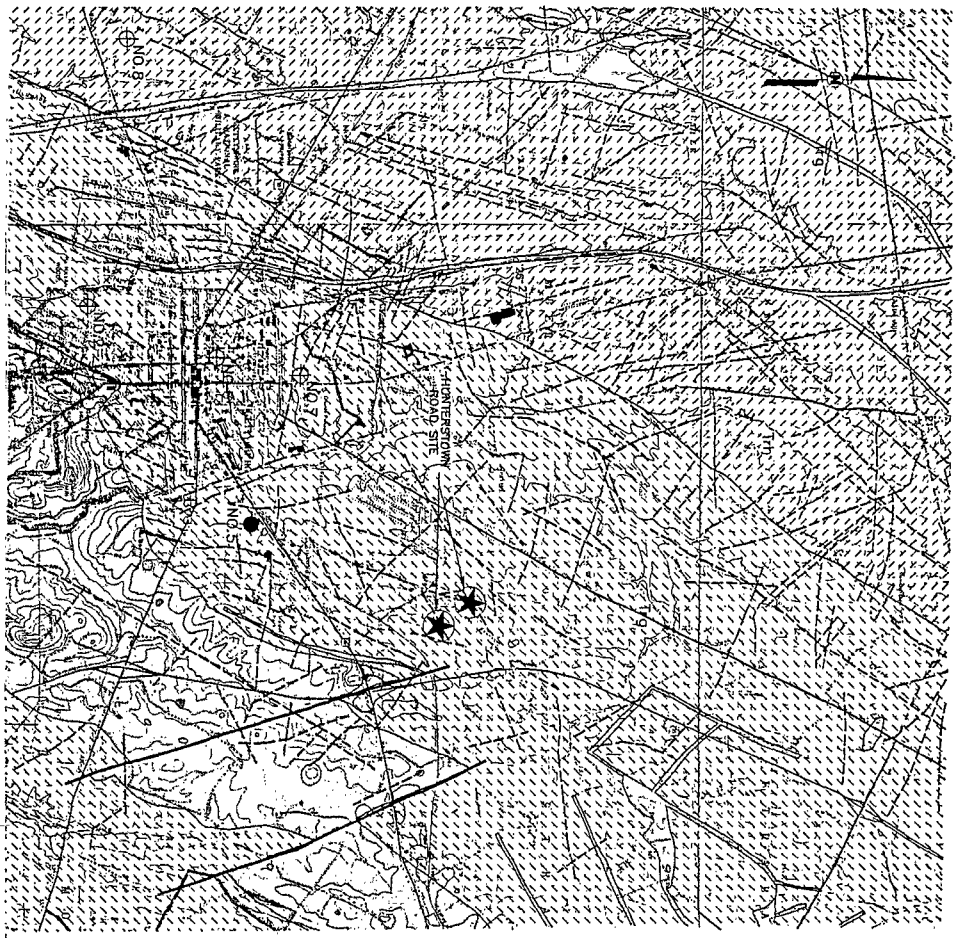
REFERENCE:

FROELICH AND GOTTFRIED (1985)



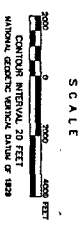
Paul C. Rizzo Associates, Inc.
 CONSULTANTS

AP 302658



AR302659

REFERENCE:
U.S.G.S. TOPOGRAPHIC MAPS OF
PITTSBURGH AND GETTYSBURG
SCALE 1:250,000 (1977 EDITION)
ON STOCK (1977)

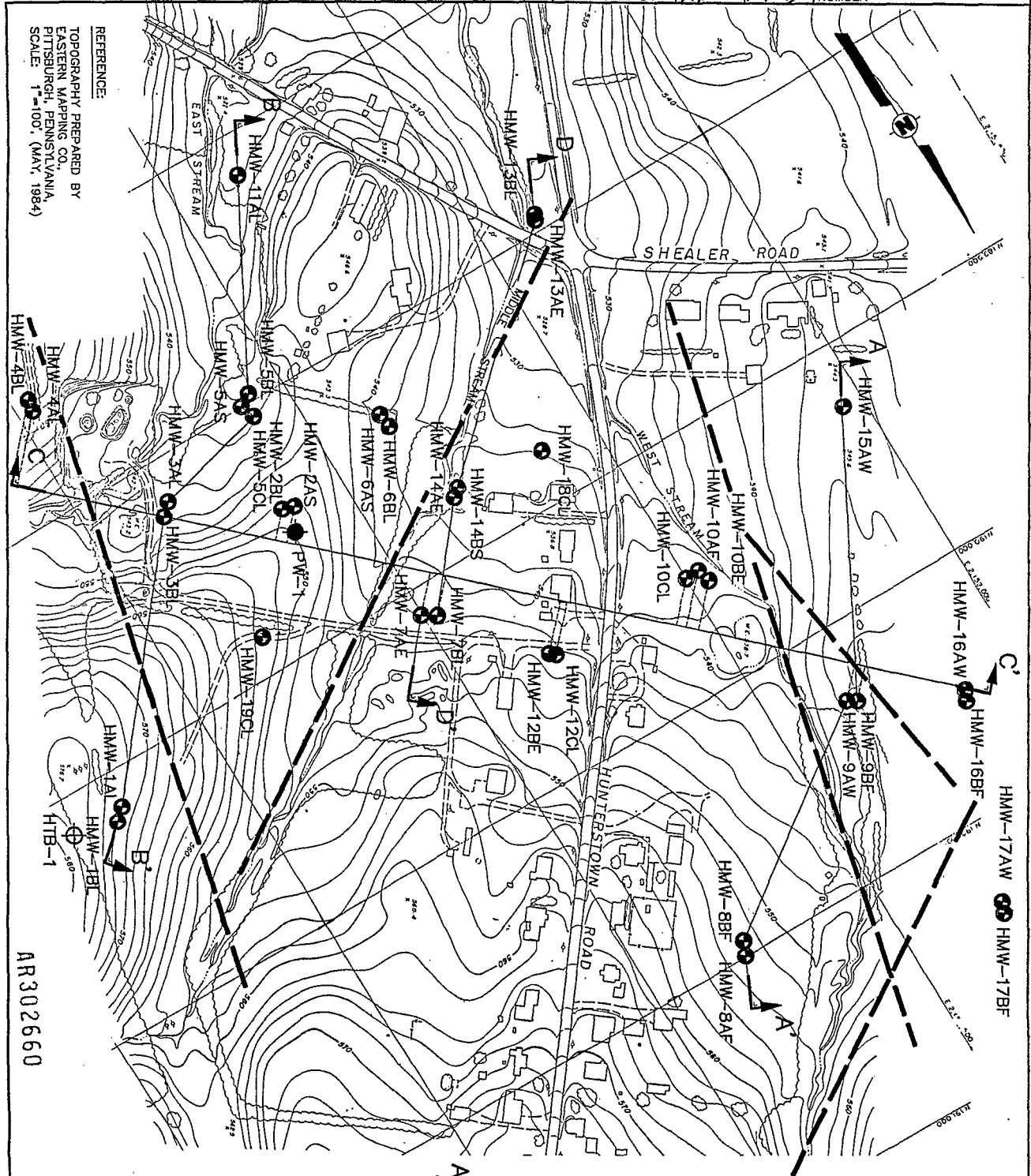


- LEGEND:**
- GETTYSBURG FORMATION
 - GETTYSBURG FORMATION, HEDERSBURG MEMBER
 - DIABASE INTRUSIVES, SILLS AND DIKES

- STRIKE AND DIP OF SEDIMENTARY HORIZON
- FAULT
- CONTACT BETWEEN UNITS
- FRACTURE TRACE OR LINEAMENT
- NO.7
ABANDONED MUNICIPAL WELL
- NO.5
ACTIVE MUNICIPAL WELL

FIGURE 3-3

LOCAL GEOLOGICAL MAP
HUNTERSTOWN ROAD SITE R/F/S
STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
PREPARED FOR
WESTINGHOUSE ELECTRIC CORPORATION
PITTSBURGH, PENNSYLVANIA
DCR Paul C. Rizzo Associates, Inc.
CONSULTANTS



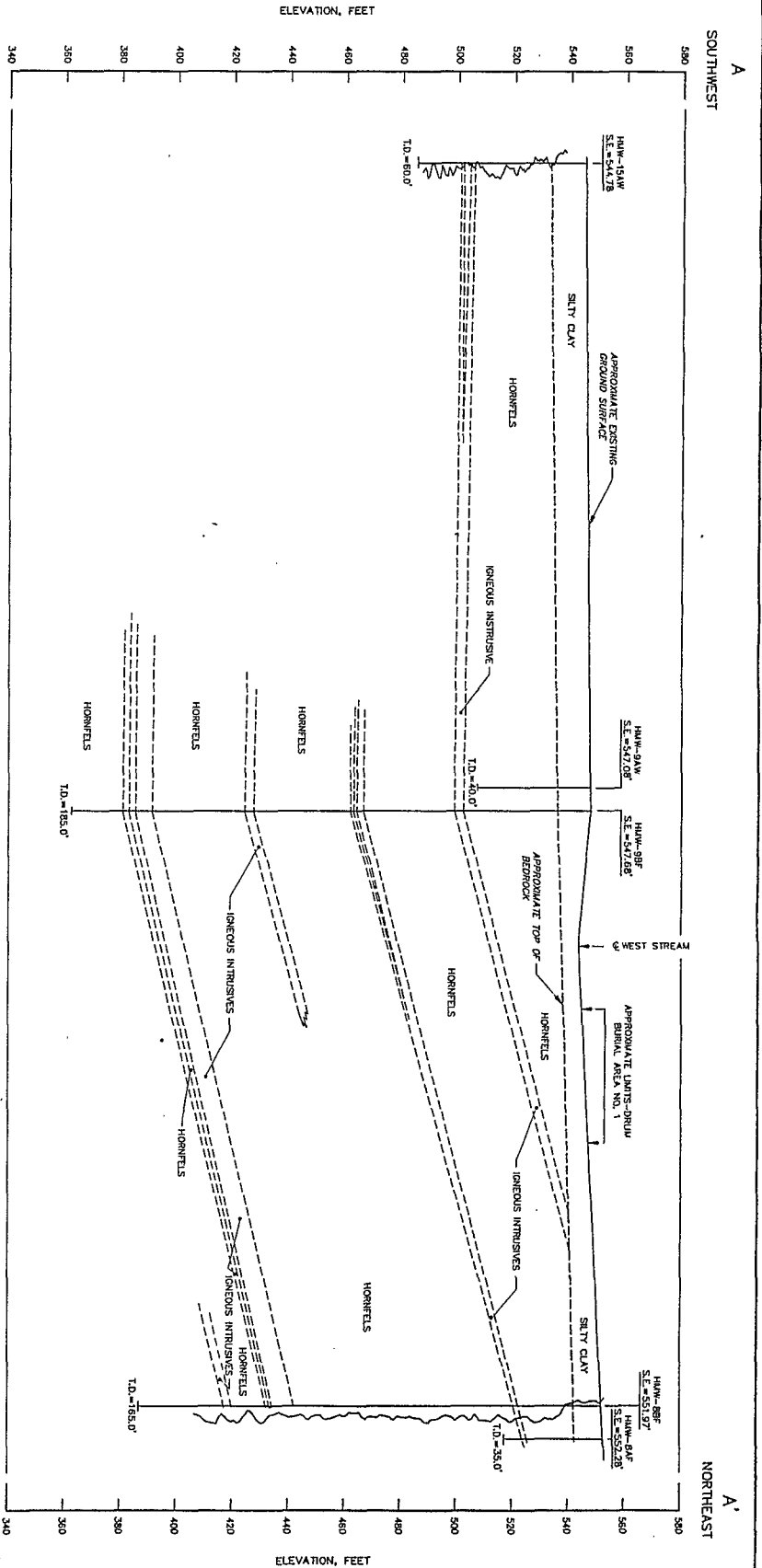
REFERENCE:
 TOPOGRAPHY PREPARED BY
 EASTERN MAPPING CO.
 PITTSBURGH, PENNSYLVANIA
 SCALE 1"=100' (MAY, 1984)

AR 302660



- LEGEND:**
- HTB-1 ⊕ BORING FROM WHICH CONTINUOUS ROCK CORE WAS OBTAINED, GROUTED UPON COMPLETION
 - HMW-1A ⊕ AIR ROTARY BORING IN WHICH MONITORING WELL WAS INSTALLED
 - PW-1 ● PUMPING WELL LOCATION
 - PROJECTION OF BORING ONTO STRIKE SECTION
 - GEOLOGIC/HYDROGEOLOGIC CROSS SECTION LOCATION
 - - - FRACTURE TRACE

FIGURE 3-4
 SITE GEOLOGIC MAP AND
 LOCATION OF GEOLOGIC SECTIONS
 HUNTERSTOWN ROAD SITE R/F/S
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
Westinghouse Electric Corporation
 PITTSBURGH, PENNSYLVANIA
DCR Paul C Rizzo Associates, Inc.
 CONSULTANTS



GEOLOGIC SECTION A-A'
(LOOKING NORTHWEST)

LEGEND:
 } NATURAL GAINA LOG
 --- STRATIGRAPHIC CORRELATION INFERRED BETWEEN BORINGS
 BASED ON LOCATION OF IGNEOUS INTRUSIVES

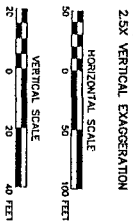


FIGURE 3-5

THE BORING LOGS AND RELATED INFORMATION, DEPICIT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. STRATIGRAPHIC CORRELATION BETWEEN OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE BORING LOCATIONS, ALSO. THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE COMPOSITION OF THESE BORING LOCATIONS.

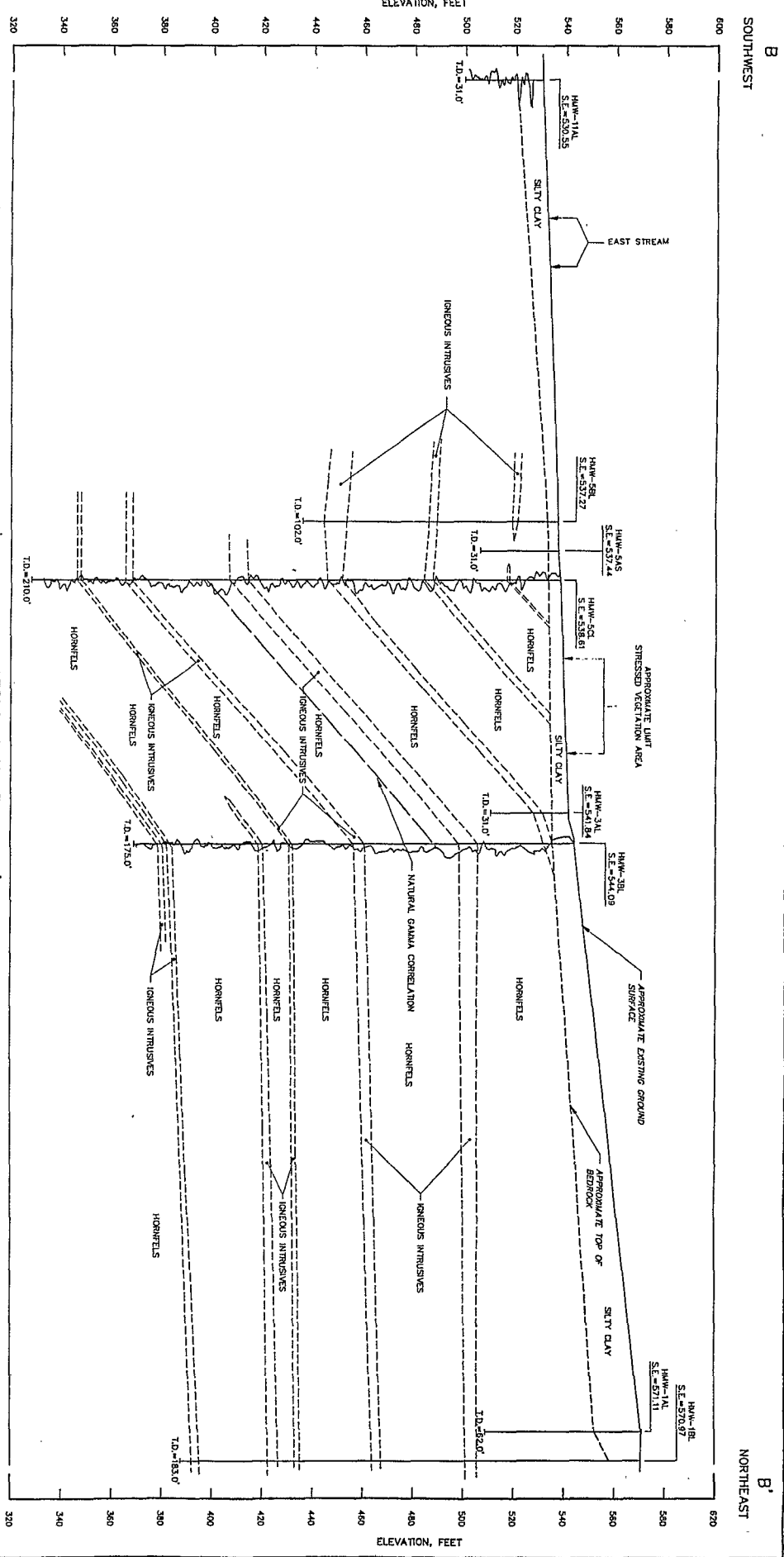
THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THIS SECTION WERE GENERALIZED FROM AND INTERPOLATED BETWEEN THE TEST BORINGS. INFORMATION ON ACTUAL LOCATION OF THE TEST BORINGS AND IT'S POSSIBLE THAT SUBSURFACE CONDITIONS BETWEEN THE TEST BORINGS MAY VARY FROM THOSE INDICATED.

- NOTES
1. SEE FIGURE 3-4 FOR PLAN LOCATION OF SECTION A-A'.
 2. LITHOLOGY IS COMPRISED OF HORNFELS AND THEN IGNEOUS INTRUSIVES.
 3. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.

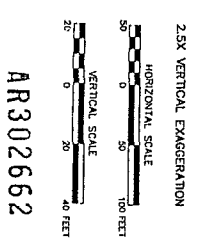
AR302661

DCR Paul C. Rizzo Associates, Inc.
CONSULTANTS

GEOLOGIC SECTION A-A'
 HUNTERSTON ROAD SITE R1/SS
 STABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
 WESTINGHOUSE ELECTRIC CORPORATION
 PITTSBURGH, PENNSYLVANIA



THE BORING LOGS AND RELATED INFORMATION REPORT SURFACE CONDITIONS ONLY AT THE SOIL CONDITIONS AND WATER TABLES AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS AT THESE BORING LOCATIONS. ALSO, THE DEPTH AND THICKNESS OF THE SURFACE STRATA INDICATED ON THE SECTIONS WERE DETERMINED FROM AND INTERPOLATED BETWEEN SURFACE CONDITIONS EXISTING ONLY AT THE LOCATION OF THE TEST BORINGS AND IT IS BELIEVED THAT SURFACE CONDITIONS AT THESE BORING LOCATIONS MAY VARY FROM THOSE INDICATED.



AR302662

FIGURE 3-6

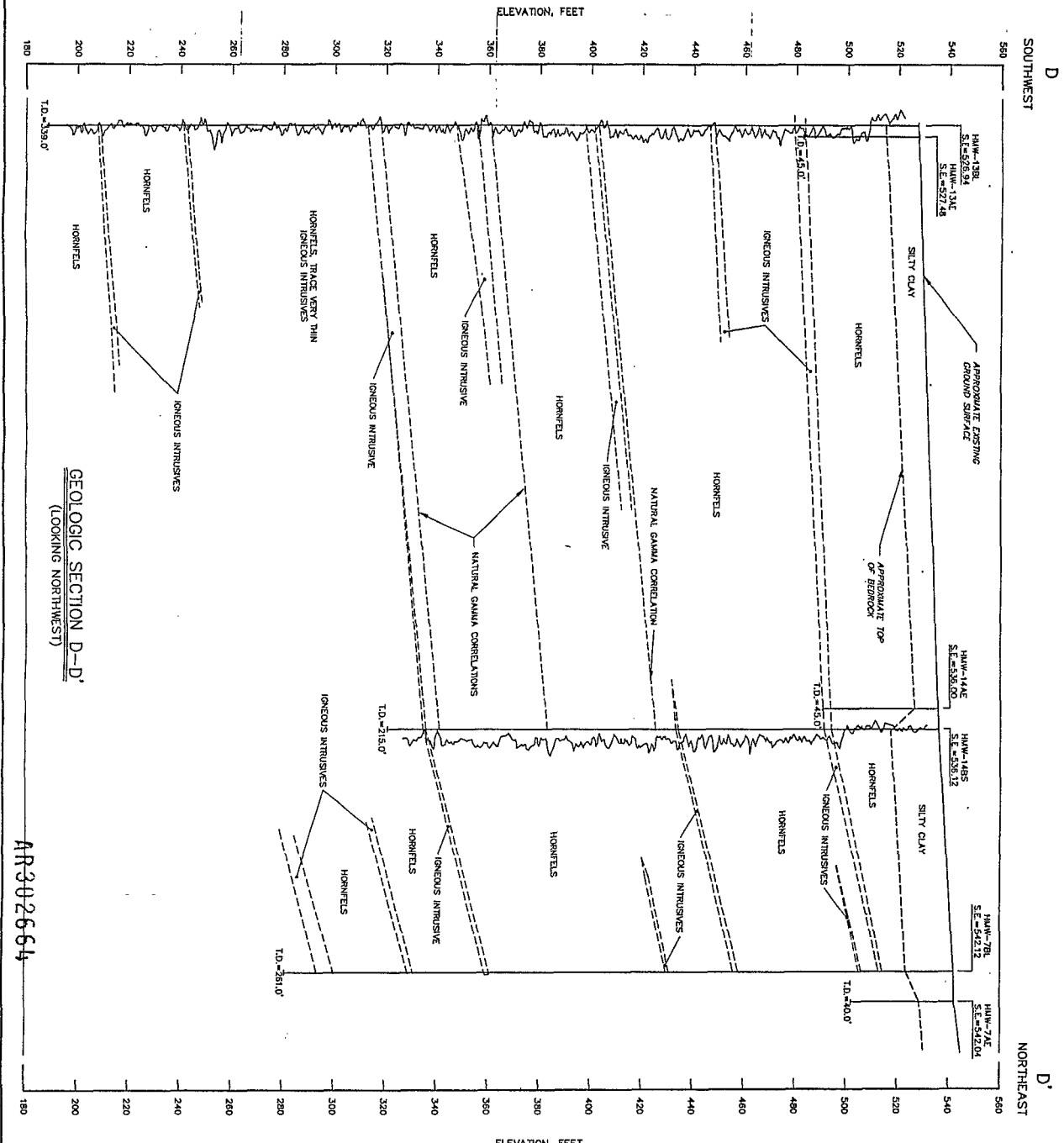
GEOLOGIC SECTION B-B'
(LOOKING NORTHWEST)

WESTINGHOUSE ELECTRIC CORPORATION
PITTSBURGH, PENNSYLVANIA

STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

PREPARED FOR

DCR Paul C. Rizzo Associates, Inc.
CONSULTANTS



- LEGEND**
- STRATIGRAPHIC CORRELATION BETWEEN BORINGS
 - - - STRATIGRAPHIC CORRELATION INFERRED BETWEEN BORINGS BASED ON LOCATION OF IGNEOUS INTRUSIVES
- NOTES**
1. SEE FIGURE 3-4 FOR PLAN LOCATION OF SECTION D-D'.
 2. LITHOLOGY IS COMPOSED OF HORNFELS AND THIN IGNEOUS INTRUSIVES OF THE BETTSBURGH FORMATION - DETAILED LITHOLOGY IS PROVIDED ON THE BORING LOGS IN APPENDIX A.
 3. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.

THE BORING LOGS AND RELATED INFORMATION CONTAINED HEREIN WERE OBTAINED FROM THE SPECIFIC LOCATIONS AND DATES INDICATED. SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS AT THE LOCATIONS INDICATED. THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE BORING LOCATIONS.

THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTIONS BETWEEN THE TEST BORINGS IS BASED ON THE CORRELATION OF THE TEST BORINGS. INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE POSSIBLE THAT SUBSURFACE CONDITIONS BETWEEN THE TEST BORINGS MAY VARY FROM THOSE INDICATED.

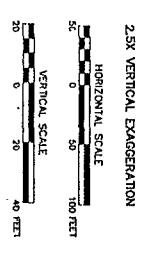
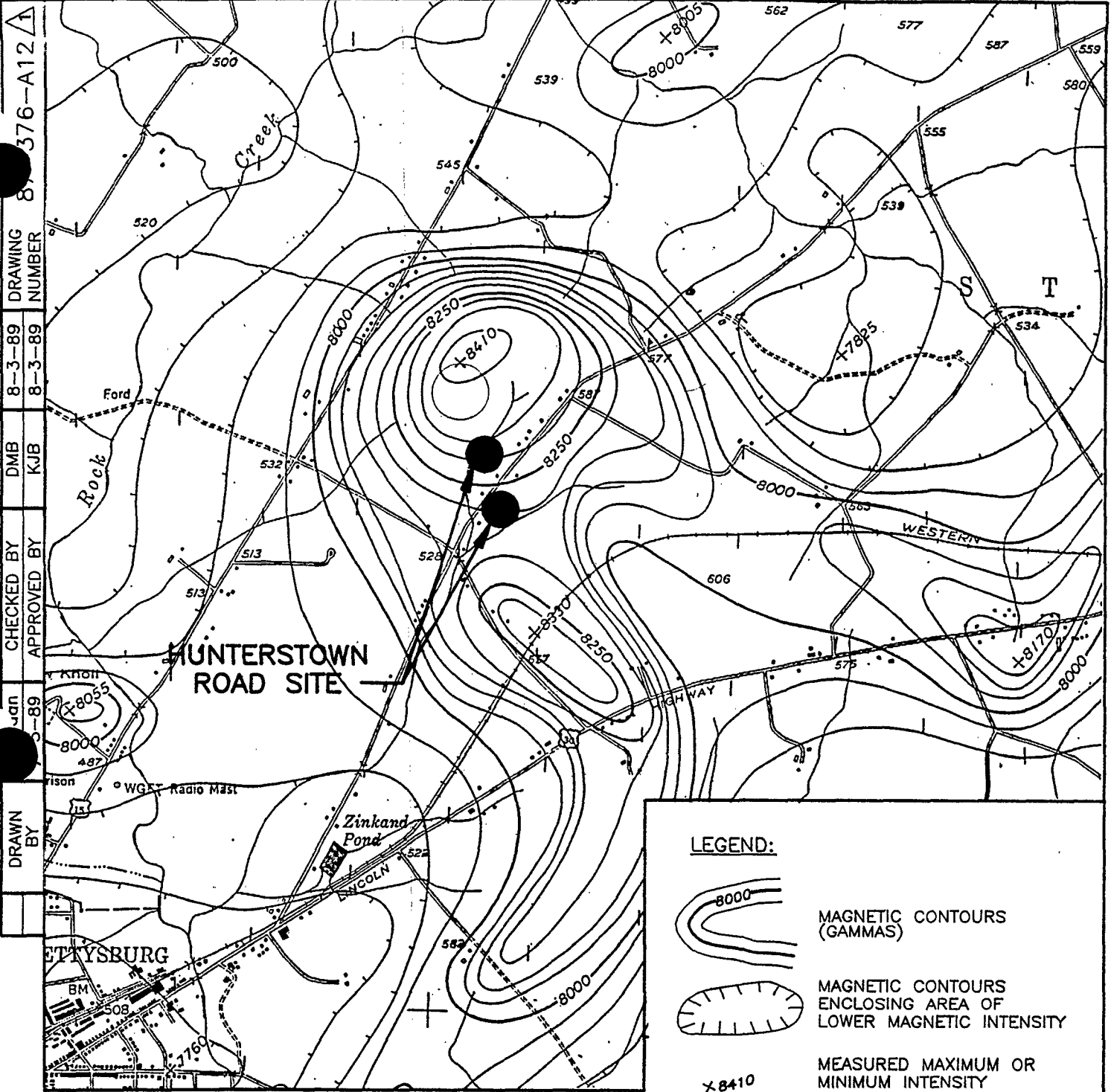


FIGURE 3-8

GEOLOGIC SECTION D-D'
HUNTERSTOWN ROAD SITE P/L/S
STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
PREPARED FOR
WESTINGHOUSE ELECTRIC CORPORATION
PITTSBURGH, PENNSYLVANIA

DCR Paul C. Rizzo Associates, Inc.
CONSULTANTS



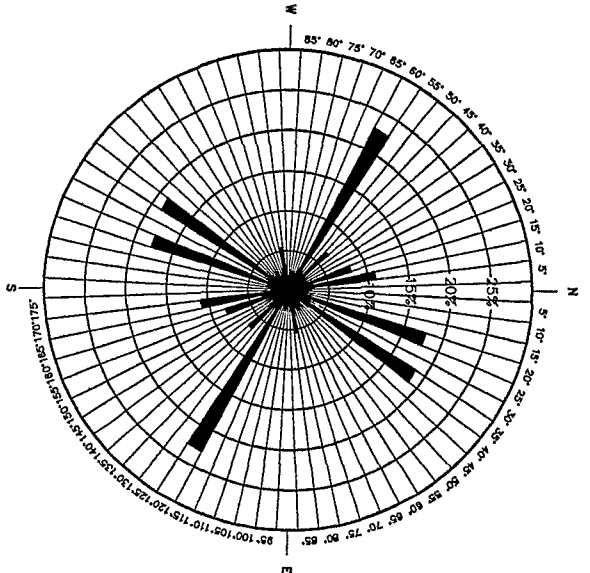
DRAWN BY: [Blank] 3-89
 CHECKED BY: DMB 8-3-89
 APPROVED BY: KJB 8-3-89
 DRAWING NUMBER: 87-376-A12

FIGURE 3-9
 AEROMAGNETIC MAP
 HUNTERSTOWN ROAD SITE RI/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
 WESTINGHOUSE ELECTRIC CORPORATION
 PITTSBURGH, PENNSYLVANIA

REFERENCE:
 BROMERY, ET. AL., 1961

	GENERAL REVISION
APPROVED BY:	DATE: 7/15/91
REVISIONS	

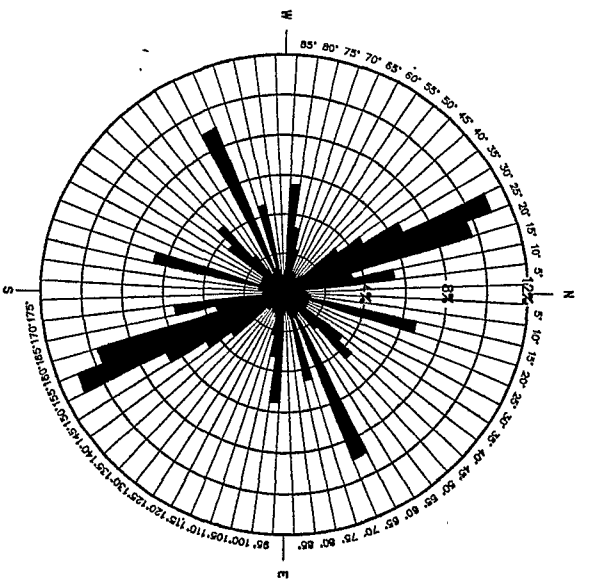
Paul C. Rizzo Associates, Inc.
 CONSULTANTS
 AR302665



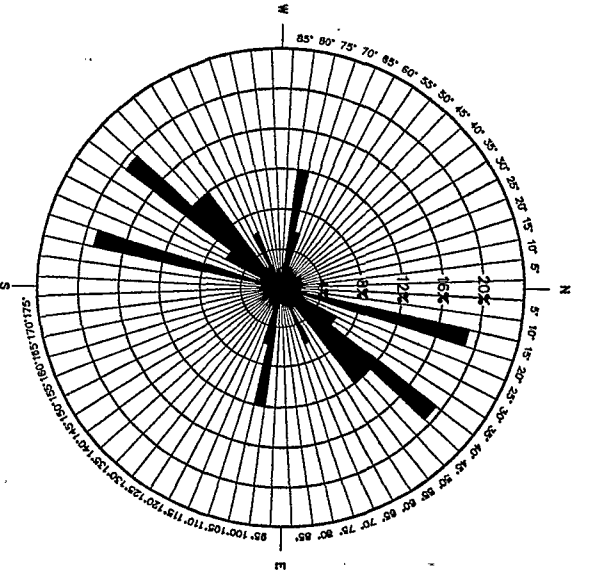
FRACTURE TRACES AND LINEAMENTS
IN THE AREA COVERED BY FIGURE 3-3

NOTE:

AZIMUTHS ARE PROVIDED WITH RESPECT TO
GEOGRAPHIC NORTH. SITE NORTH IS UTM
NORTH WHICH IS LESS THAN 1.5 DEGREES
COUNTERCLOCKWISE OF GEOGRAPHIC NORTH.



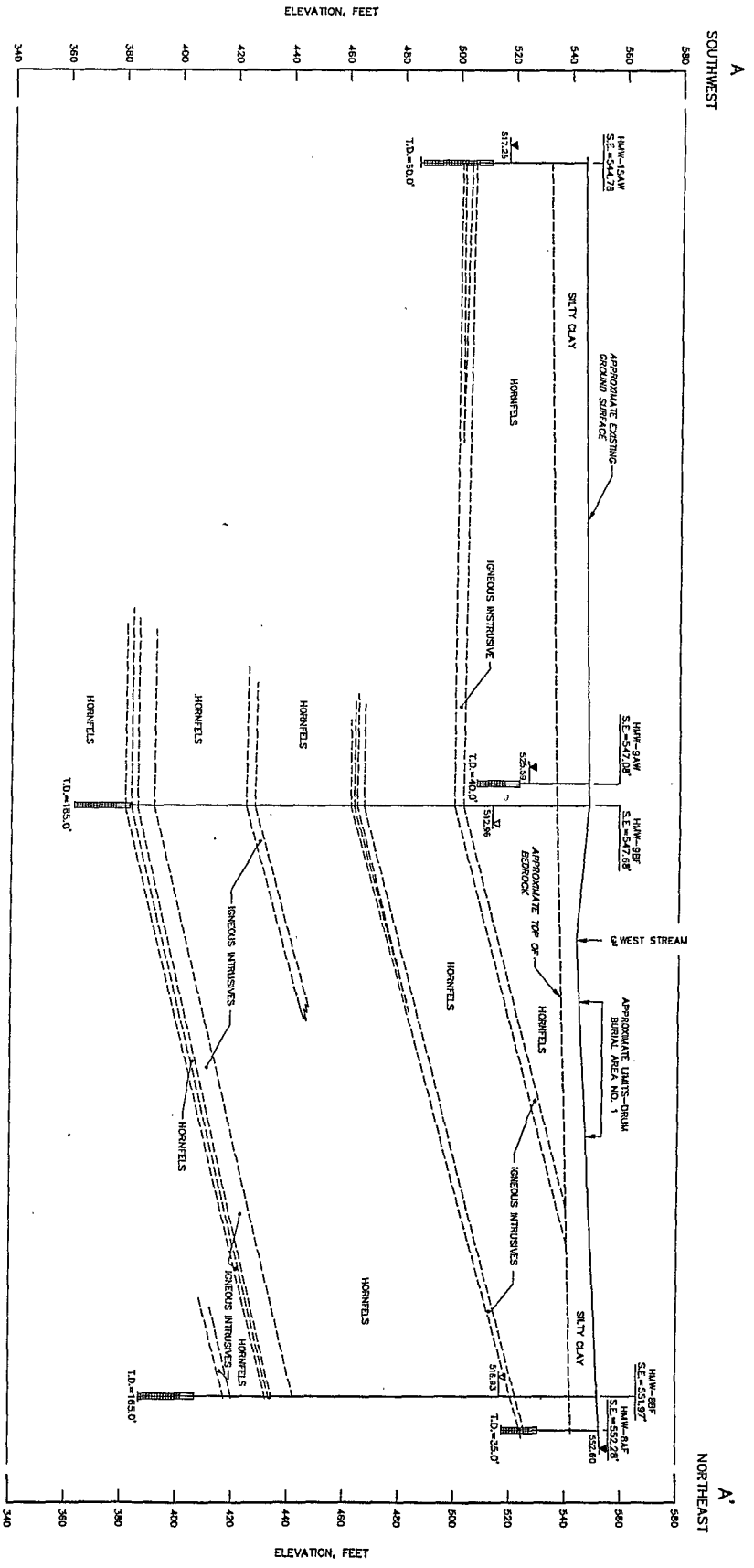
JOINTS IN THE AREA
OF FIGURE 3-3



JOINTS IN THE AREA OF THE
HUNTERSTOWN ROAD SITE
(FIGURE 3-4)

AR302666

FIGURE 3-10
AZIMUTH FREQUENCY DIAGRAMS
HUNTERSTOWN ROAD SITE R/F/S
STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
PREPARED FOR
WESTINGHOUSE ELECTRIC CORPORATION
PITTSBURGH, PENNSYLVANIA
DCR Paul C Rizzo Associates, Inc.
CONSULTANTS



THE BORE LOGS AND RELATED INFORMATION FROM THESE BOREHOLE LOGS ONLY AT THE SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS AT THESE BOREHOLE LOCATIONS. ALSO, THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE BOREHOLE LOCATIONS.

THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTIONS WERE DETERMINED FROM THE TEST BOREHOLE LOGS. THE TEST BOREHOLE LOGS SHOW ONLY AT THE LOCATION OF THE TEST BOREHOLE AND IT IS NOT NECESSARILY REPRESENTATIVE OF THE ENTIRE AREA. THE TEST BOREHOLE LOGS MAY VARY FROM THOSE INDICATED.

1. SEE FIGURE 3-4 FOR PLAN LOCATION OF SECTION A-A'.

2. LITHOLOGY IS COMPRISED OF HORNFELS AND THIN IGNEOUS INTRUSIVES OF THE GETTYSBURG FORMATION - DETWILED LITHOLOGY IS PROVIDED ON THE BORE LOGS IN APPENDIX A.

3. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.

HYDROGEOLOGIC SECTION A-A'
(LOOKING NORTHWEST)

LEGEND:

- COMMUNICATION INTERVAL
- STRATIGRAPHIC CORRELATION INTERFERED BETWEEN BOREHOLE
- BASED ON LOCATION OF IGNEOUS INTRUSIVES
- WATER LEVEL (2-4-91) - SHALLOW WELLS
- WATER LEVEL (2-4-91) - DEEP WELLS
- STATIC WATER ELEVATIONS SHOWN BELOW

2.5X VERTICAL EXAGGERATION

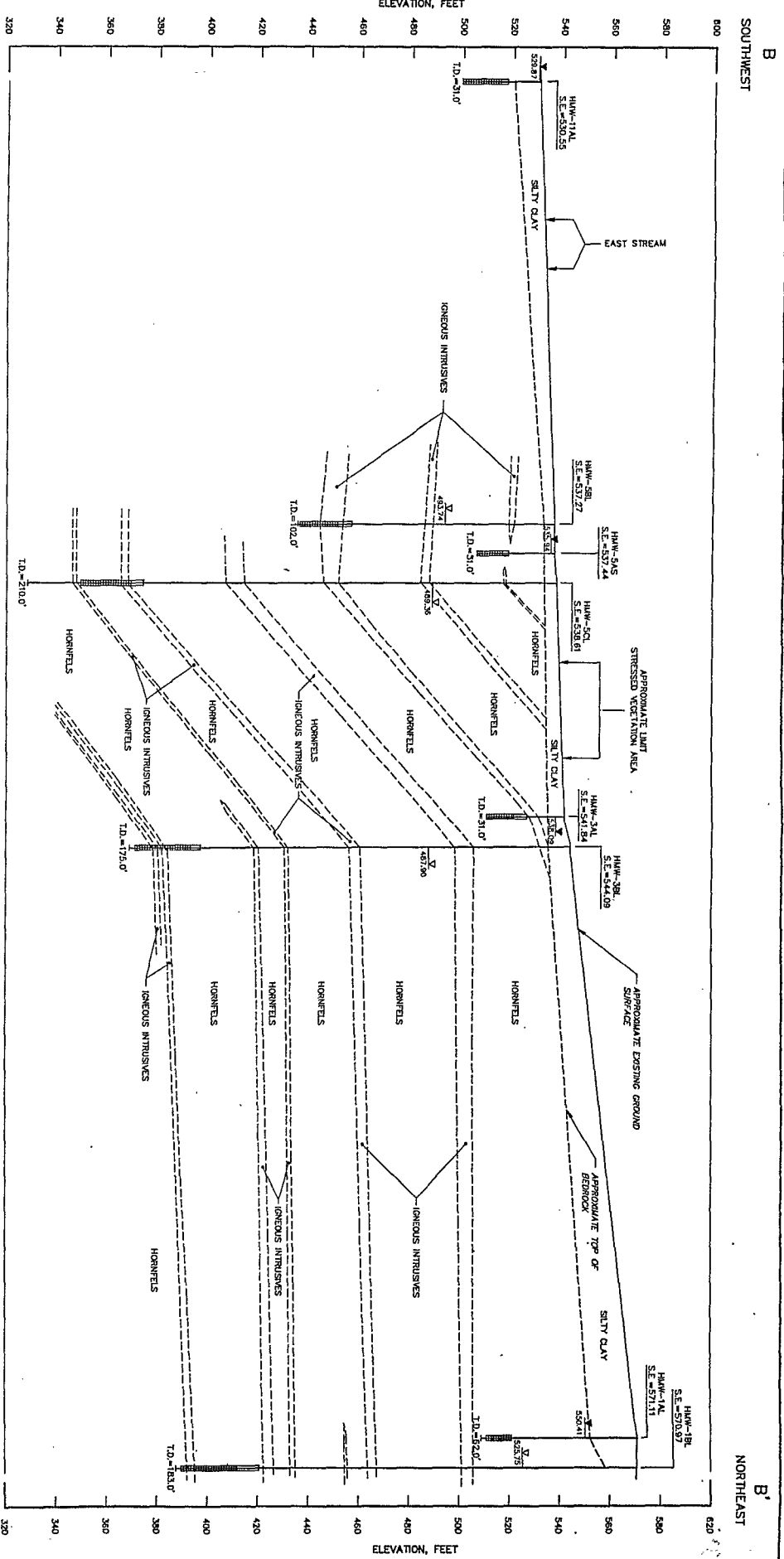
HORIZONTAL SCALE

VERTICAL SCALE

FIGURE 3-11

HYDROGEOLOGIC SECTION A-A'
HUNTERSTOWN ROAD SITE R/F/S
STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
PREPARED FOR
WESTINGHOUSE ELECTRIC CORPORATION
PITTSBURGH, PENNSYLVANIA
Paul C. Rizzo Associates, Inc.
CONSULTANTS

AR302667

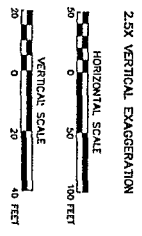


THE BORING LOGS AND RELATED INFORMATION IN THIS REPORT ARE BASED ON THE DATA FROM THE SPECIFIC LOCATIONS AND DATES INDICATED. THE SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM THOSE INDICATED. THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE BORING LOCATIONS.

THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTIONS WERE DETERMINED FROM THE DATA FROM THE BORINGS. THE TEST BORINGS, INFORMATION ON ACTUAL SUBSURFACE CONDITIONS EXISTS ONLY AT THE LOCATION OF THE TEST BORINGS AND IT IS NOT TO BE ASSUMED THAT THE CONDITIONS BETWEEN THE TEST BORINGS MAY VARY FROM THOSE INDICATED.

- LEGEND:**
- COMMUNICATION INTERVAL
 - STRATIGRAPHIC CORRELATION INTERFERED BORINGS BASED ON LOCATION OF IONICUS INTRUSIVES
 - WATER LEVEL (2-1-1-1) - SHALLOW WELLS
 - WATER LEVEL (2-1-1-1) - DEEP WELLS
 - WATER LEVEL (2-1-1-1) - DEEP WELLS
 - STAIN WATER ELEVATION SHOWN BELOW

- NOTES:**
- SEE FIGURE 3-1 FOR PLAN LOCATION OF SECTION B-B'.
 - LITHOLOGY IS COMPARED TO HORNFELS AND THIN IONICUS INTRUSIVES ON THE BORING LOGS IN APPENDIX A.
 - ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.



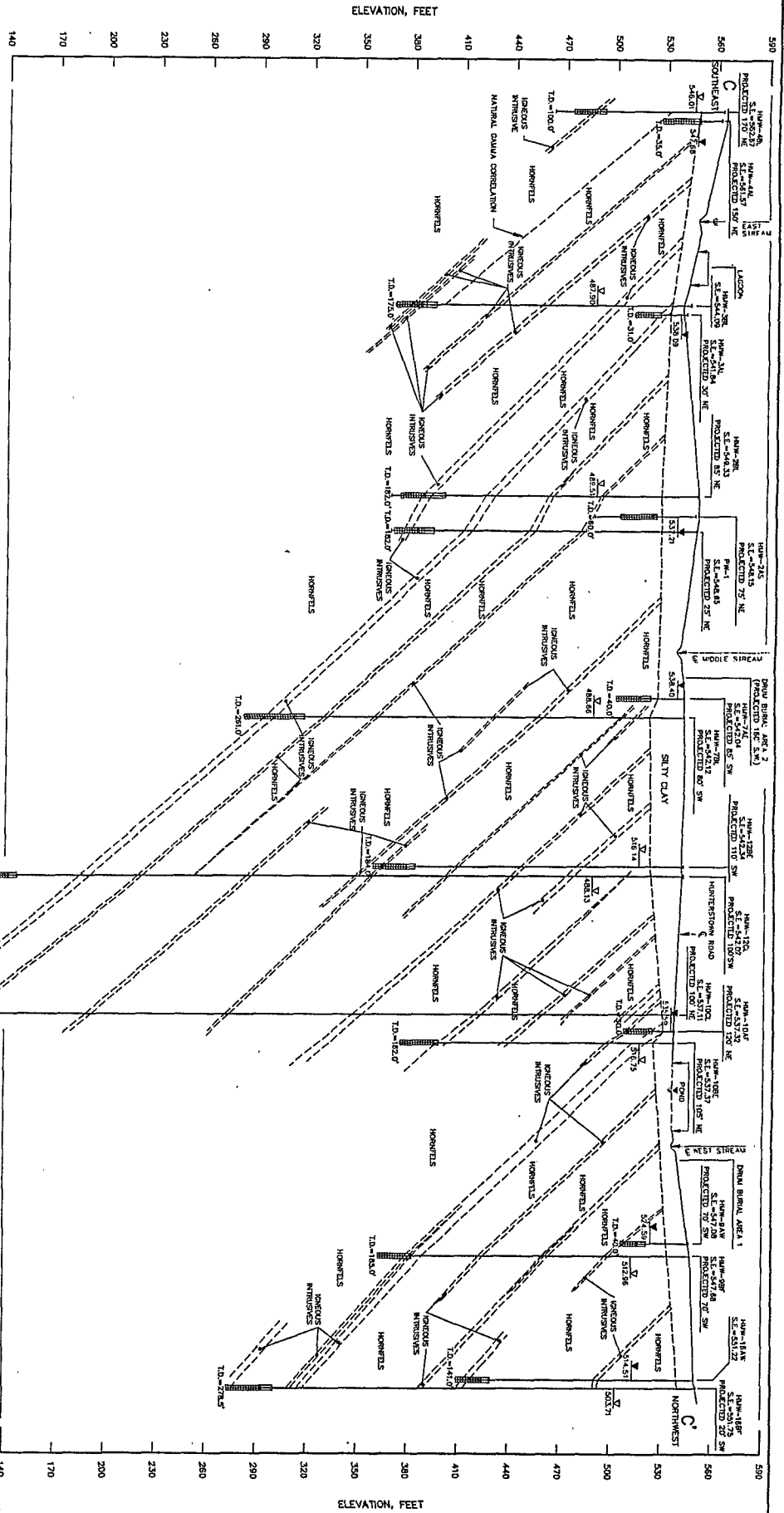
HYDROGEOLOGIC SECTION B-B'
(LOOKING NORTHWEST)

FIGURE 3-12

HYDROGEOLOGIC SECTION B-B'
HUNTERSTOWN ROAD SITE (N)/FS
STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
PREPARED FOR
WESTINGHOUSE ELECTRIC CORPORATION
PITTSBURGH, PENNSYLVANIA

DCR Paul C. Rizzo Associates, Inc.
CONSULTANTS

AR302668



THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. LOCATIONS AND DATES OF OTHER BORINGS MAY DIFFER FROM THOSE INDICATED AT THESE BORING LOCATIONS. ALSO THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE BORING LOCATIONS.

THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTIONS WERE GENERALIZED FROM AND INTERPOLATED BETWEEN THE TEST BORINGS INFORMATION ON ACTUAL LOCATIONS. THE LOCATION OF THE TEST BORINGS AND THE POSSIBLE THAT SUBSURFACE CONDITIONS IN THOSE INDICATED.

LEGEND:

- COMMUNICATION INTERVAL
- STRATIGRAPHIC CORRELATION INFERRED BETWEEN BORINGS BASED ON LOCATION OF IONOCOUS INTRUSIVES
- WATER LEVEL (2-4-89) - SHALLOW WELLS
- WATER LEVEL (2-4-89) - DEEP WELLS
- STATIC WATER ELEVATION SHOWN BELOW

NOTES:

- SEE FIGURE 3-4 FOR PLAN LOCATION OF SECTION C-C'.
- LITHOLOGY IS COMPOSED OF HORONITELS AND THALLOCOUS INTRUSIVES OF THE GETTYSBURG FORMATION - DETAILED LITHOLOGY IS PROVIDED IN APPENDIX A.
- ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.

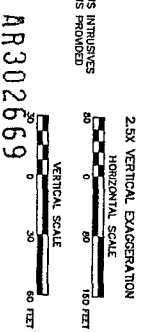


FIGURE 3-13

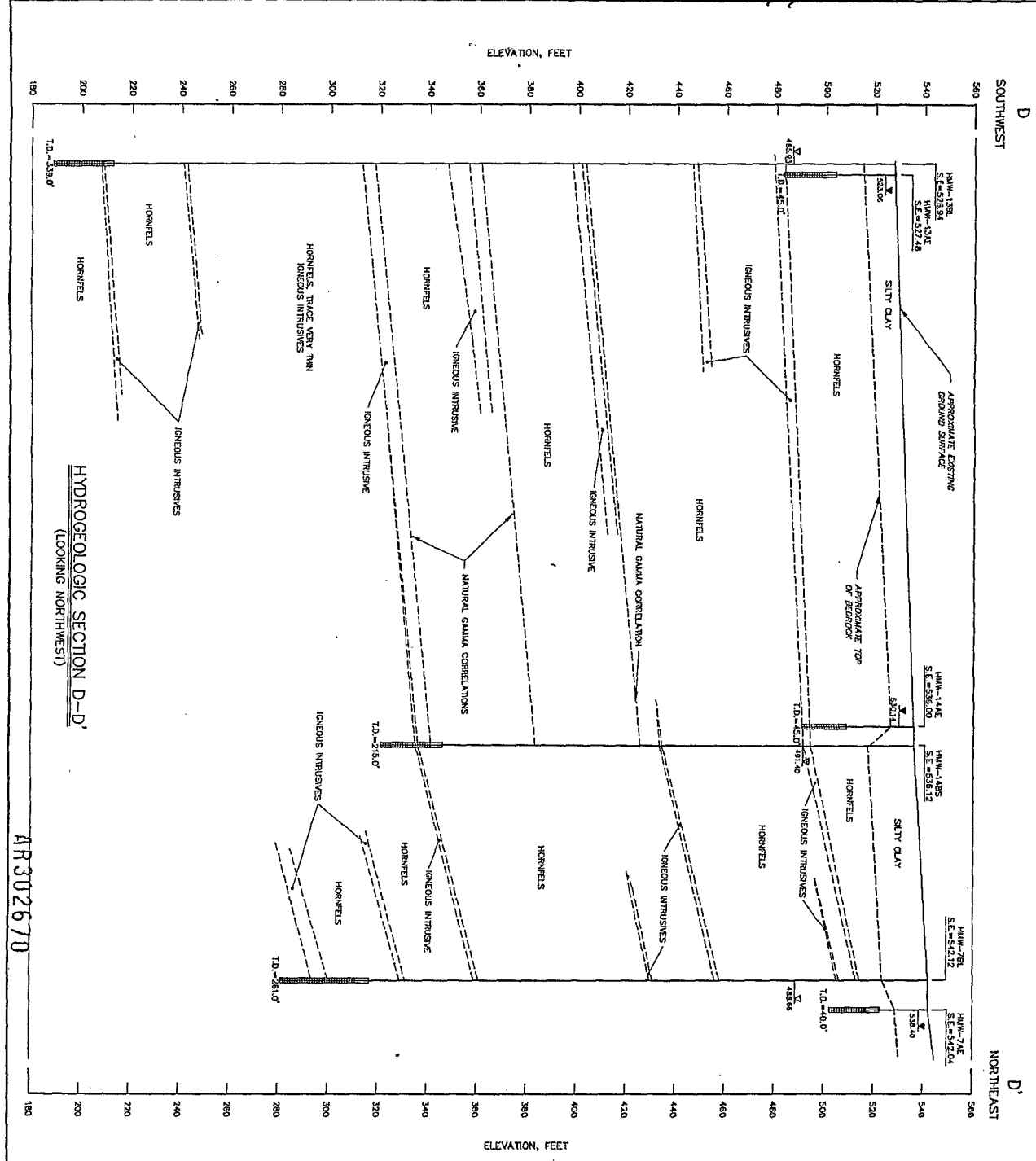
HYDROGEOLOGIC SECTION C-C'
(LOOKING SOUTHWEST)

WESTINGHOUSE ELECTRIC CORPORATION
PITTSBURGH, PENNSYLVANIA

STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

PREPARED FOR

DCR Paul C. Rizzo Associates, Inc.
CONSULTANTS



LEGEND

- Communication Interval
- Stratigraphic Correlation Inferred Between Borings Based on Location of Igneous Intrusives
- Water Level (2-4-91) - Shallow Wells
- Water Level (2-4-91) - Deep Wells
- Static Water Elevation Shown Below
- Static Water Elevation Shown Below

NOTES

- SEE FIGURE 3-4 FOR PLAN LOCATION OF SECTION D-D'.
- UNITHOLOGY IS COMPARED OF HORNFELS AND THIN BEDDED INTRUSIVES ON THE GETTYSBURG FORMATION - DETAILED UNITHOLOGY IS PROVIDED IN THE BORING LOGS IN APPENDIX A.
- ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. THE UNITHOLOGY IS BASED ON THE UNITHOLOGY LOCATIONS HAVE DIFFER FROM CONDITIONS OCCURRING AT THESE BORING LOCATIONS, ALSO OF THE UNITHOLOGY IS BASED ON THE UNITHOLOGY IN THE CONDITIONS AT THESE BORING LOCATIONS.

THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTIONS WERE DETERMINED FROM LOGS AND INTERPRETED BETWEEN THE BORING LOCATIONS. THE UNITHOLOGY IS BASED ON THE UNITHOLOGY LOCATIONS HAVE DIFFER FROM CONDITIONS OCCURRING AT THESE BORING LOCATIONS, ALSO OF THE UNITHOLOGY IS BASED ON THE UNITHOLOGY IN THE CONDITIONS AT THESE BORING LOCATIONS.

THE DEPTH AND THICKNESS OF THE SUBSURFACE STRATA INDICATED ON THE SECTIONS WERE DETERMINED FROM LOGS AND INTERPRETED BETWEEN THE BORING LOCATIONS. THE UNITHOLOGY IS BASED ON THE UNITHOLOGY LOCATIONS HAVE DIFFER FROM CONDITIONS OCCURRING AT THESE BORING LOCATIONS, ALSO OF THE UNITHOLOGY IS BASED ON THE UNITHOLOGY IN THE CONDITIONS AT THESE BORING LOCATIONS.

2.5X VERTICAL EXAGGERATION

HORIZONTAL SCALE
 0 50 100 FEET

VERTICAL SCALE
 0 20 40 FEET

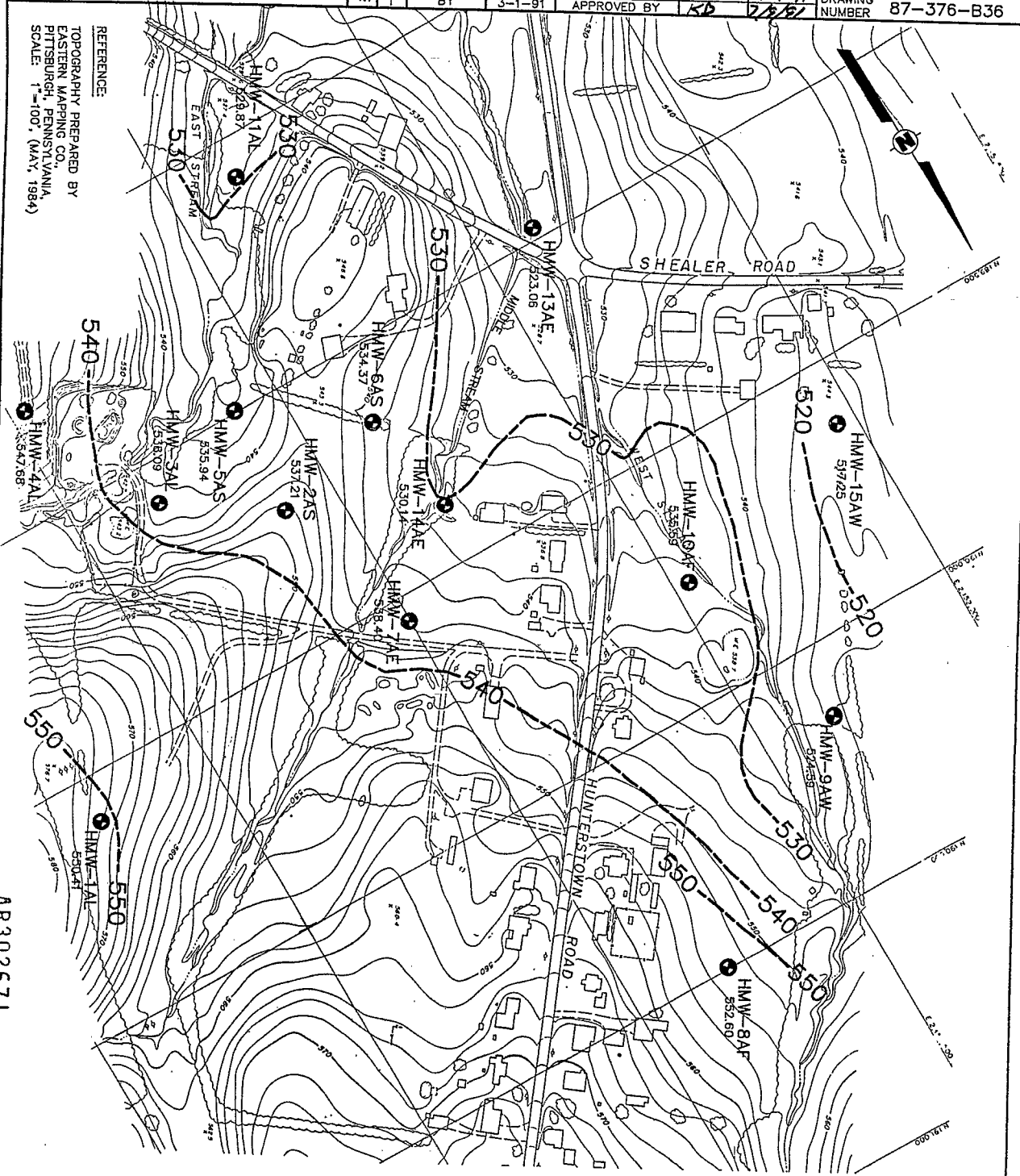
FIGURE 3-14

HYDROGEOLOGIC SECTION D-D'
 HUNTERSTOWN ROAD SITE R/F/S
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

PREPARED FOR
WESTINGHOUSE ELECTRIC CORPORATION
 PITTSBURGH, PENNSYLVANIA

DCR Paul C. Rizzo Associates, Inc.
 CONSULTANTS

<table border="1"> <tr><td>PLOT</td><td>1</td></tr> <tr><td>1:1</td><td>1</td></tr> </table>	PLOT	1	1:1	1	<table border="1"> <tr><td>DRAWN BY</td><td>M.M.M.</td></tr> <tr><td></td><td>3-1-91</td></tr> </table>	DRAWN BY	M.M.M.		3-1-91	<table border="1"> <tr><td>CHECKED BY</td><td>WAB</td></tr> <tr><td>APPROVED BY</td><td>KB</td></tr> </table>	CHECKED BY	WAB	APPROVED BY	KB	<table border="1"> <tr><td>DATE</td><td>7-9-91</td></tr> <tr><td>BY</td><td>ZB</td></tr> </table>	DATE	7-9-91	BY	ZB	<table border="1"> <tr><td>DRAWING NUMBER</td><td>87-376-B36</td></tr> </table>	DRAWING NUMBER	87-376-B36
PLOT	1																					
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CHECKED BY	WAB																					
APPROVED BY	KB																					
DATE	7-9-91																					
BY	ZB																					
DRAWING NUMBER	87-376-B36																					



AR302671

LEGEND:

HMW-8AF ● MONITORING WELL WITH PIEZOMETRIC LEVEL IN FEET ABOVE MSL ON FEBRUARY 4, 1991

---550--- ELEVATION OF POTENTIOMETRIC SURFACE IN FEET ABOVE MSL.



FIGURE 3-15

POTENTIOMETRIC LEVELS

IN THE SHALLOW BEDROCK WELLS

HUNTERSTOWN ROAD SITE R/F/S

STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

PREPARED FOR

WESTINGHOUSE ELECTRIC CORPORATION

PITTSBURGH, PENNSYLVANIA

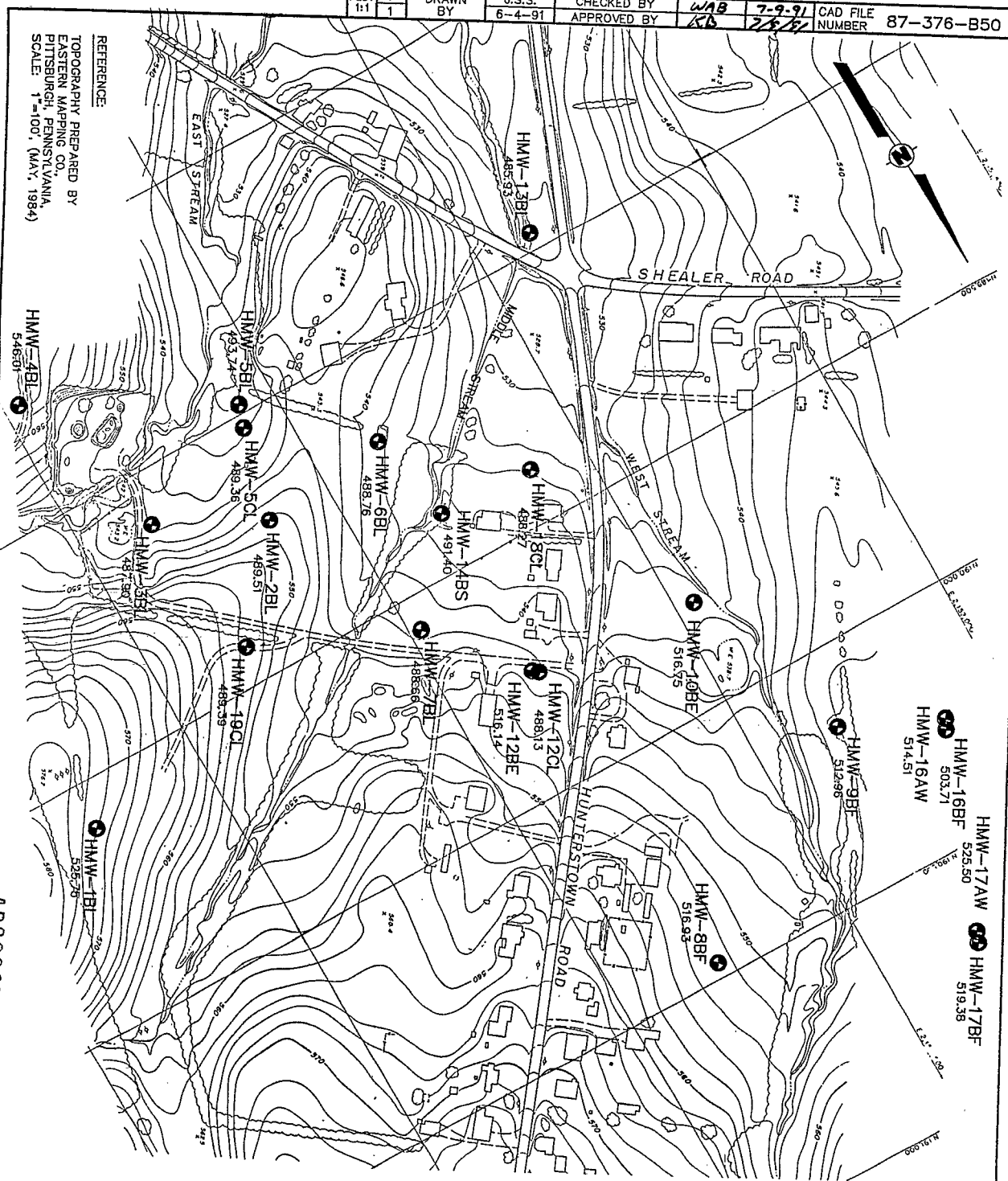
PCP Paul C. Rizzo Associates, Inc.

CONSULTANTS

REFERENCE:

TOPOGRAPHY PREPARED BY EASTERN MAPPING CO., PITTSBURGH, PENNSYLVANIA, SCALE: 1"=100', (MAY, 1984)

PLOT	1	DRAWN BY	J.S.S.	CHECKED BY	WAB	7-9-91	CAD FILE NUMBER	87-376-B50
1:1	1		6-4-91	APPROVED BY	KB	2/8/91		



REFERENCE:
 TOPOGRAPHY PREPARED BY
 EASTERN MAPPING CO.,
 PITTSBURGH, PENNSYLVANIA,
 SCALE: 1"=100' (MAY, 1984)

LEGEND:
 ● HMW-1BI MONITORING WELL WITH PIEZOMETRIC LEVEL IN FEET ABOVE MSL ON FEBRUARY 4, 1991
 ○ HMW-17AW 525.50
 ○ HMW-17BF 519.38
 ○ HMW-16BF 503.71
 ○ HMW-16AW 514.51

NOTE:
 1. PIEZOMETRIC LEVELS WERE NOT CONTOURED BECAUSE FLOW IS NOT TWO-DIMENSIONAL IN THE PLANE OF THIS DRAWING.

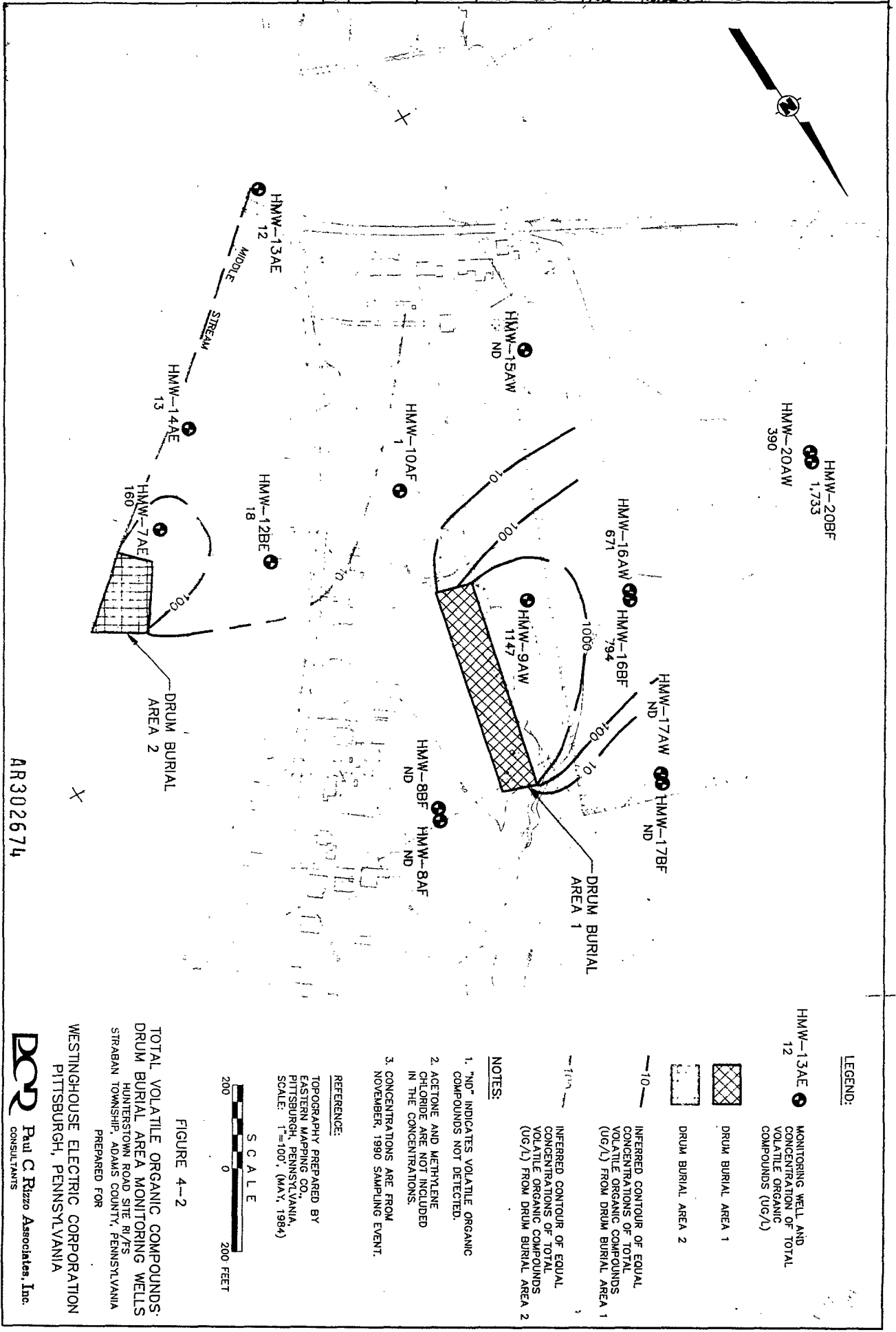


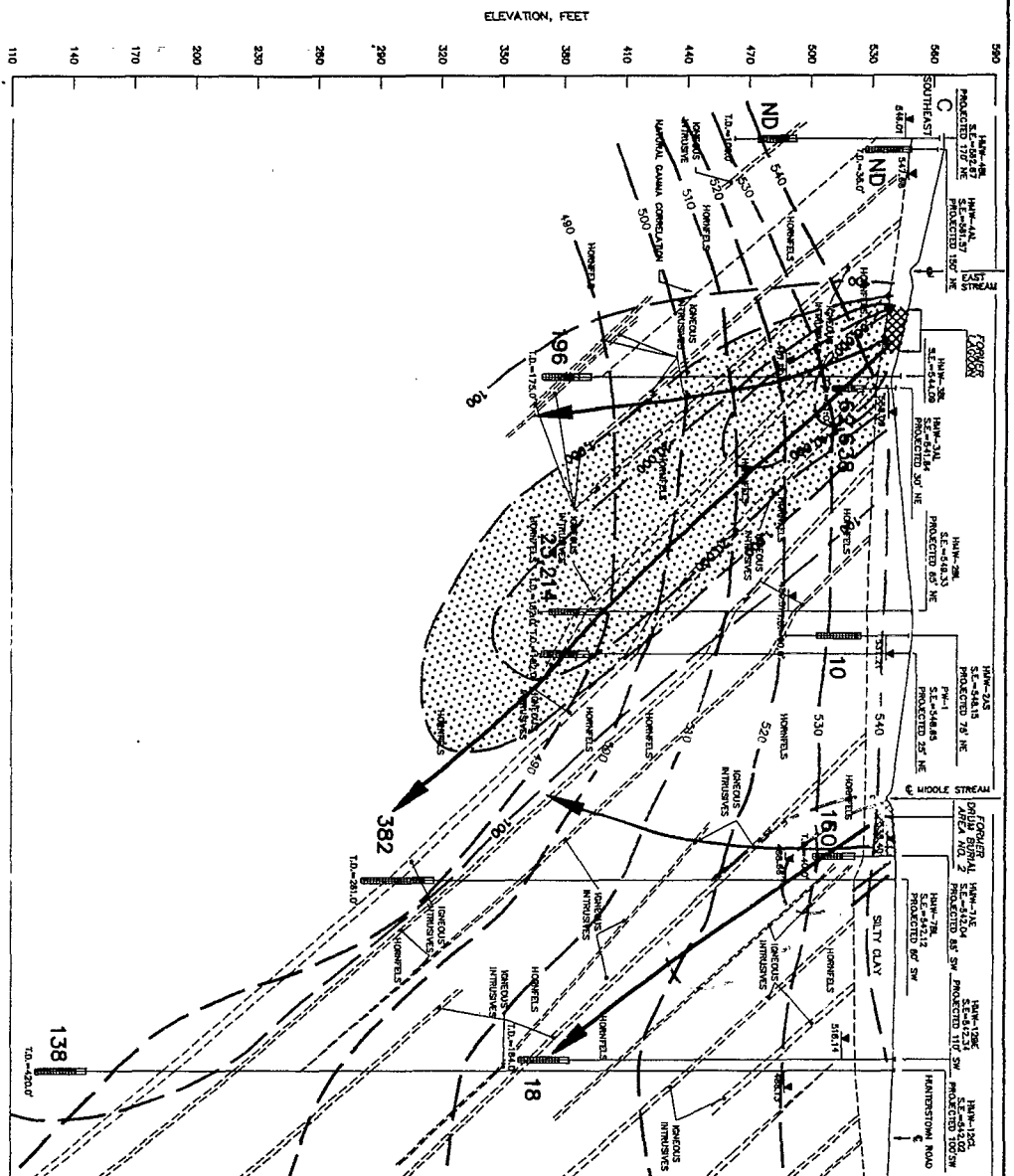
FIGURE 3-16

POTENTIOMETRIC LEVELS
 IN THE DEEP BEDROCK WELLS
 HUNTERSTOWN ROAD SITE RI/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
 WESTINGHOUSE ELECTRIC CORPORATION
 PITTSBURGH, PENNSYLVANIA

DCR Paul C. Rizzo Associates, Inc.
 CONSULTANTS

AR302672





SECTION C-C
 LOOKING SOUTHWEST

- NOTES:
1. SEE FIGURE 3-4 FOR PLAN LOCATION OF SECTION C-C.
 2. LITHOLOGY IS COMPARED TO LOGS AND TAIL LOGS IN APPENDIX A OF THE GETTING REPORT. SEE ALSO UNLATERAL APPENDIX A.
 3. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.
 4. DUE TO THE LENGTH IN BOTH THE HORIZONTAL AND VERTICAL DIRECTIONS, SECTION C-C HAS A DIFFERENT SCALE THAN SECTIONS A-A, B-B AND D-D.
 5. THE LOCATIONS OF THE FORMER DRUM BURIAL AREAS ARE PROJECTED ON TO SECTION C-C.
 6. THE WATER LEVEL DETERMINED FOR HAW-1021 WAS RECORDED ON FEBRUARY 14, 1991, AND FOR HAW-1022 ON MAY 15, 1990. HAW-2087 WAS RECORDED ON MAY 17 AND MAY 18, 1990, RESPECTIVELY.

AR302675

MATCH LINE SHEET 2 (FIGURE 4-3B)

THE BORING LOGS AND RELATED INFORMATION DERIVED FROM THESE LOGS ONLY AT THE LOCATION OF THE TEST BORINGS AND NOT THE ENTIRE LAGOON AREA AND NOT THE ENTIRE LAGOON AREA. THE TEST BORINGS WERE MADE AT THE LOCATION OF THE TEST BORINGS AND IT IS POSSIBLE THAT SUBSURFACE CONDITIONS AT THESE BORINGS MAY VARY FROM THE CONDITIONS AT THESE BORING LOCATIONS.

THE DEPTH AND THICKNESS OF THE SURFACE STRATA INDICATED ON THE SECTIONS WERE GENERALIZED FROM AND INTERPOLATED BETWEEN THE TEST BORINGS. INFORMATION ON ACTUAL SURFACE STRATA THICKNESS AND LOCATION OF THE TEST BORINGS AND IT IS POSSIBLE THAT SUBSURFACE CONDITIONS AT THESE BORINGS MAY VARY FROM THE CONDITIONS AT THESE BORING LOCATIONS.

LEGEND:

- 18 WATER LEVEL (2-4-91)
- STRATIGRAPHIC CORRELATION INTERFERED BETWEEN BORINGS BASED ON LOCATION OF LITHOLOGIC INTERFACES
- COMMUNICATION INTERVAL WITH CONCENTRATION (UV/L) OF TOTAL VOLATILE ORGANIC COMPOUNDS (NOVEMBER, 1990)
- 510 - EQUIPOTENTIAL LINE
- 100 - CONTOUR OF EQUAL CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS FROM THE LAGOON AREA
- 500 - CONTOUR OF EQUAL CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS FROM DRUM BURIAL AREA 2
- 100 - CONTOUR OF EQUAL CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS FROM DRUM BURIAL AREA 1
- DIRECTION OF HYDRAULIC GRADIENT
- DIRECTION OF GROUNDWATER FLOW DUE TO ANISOTROPIC CONDITIONS

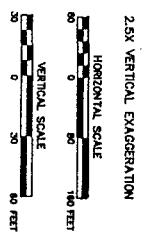
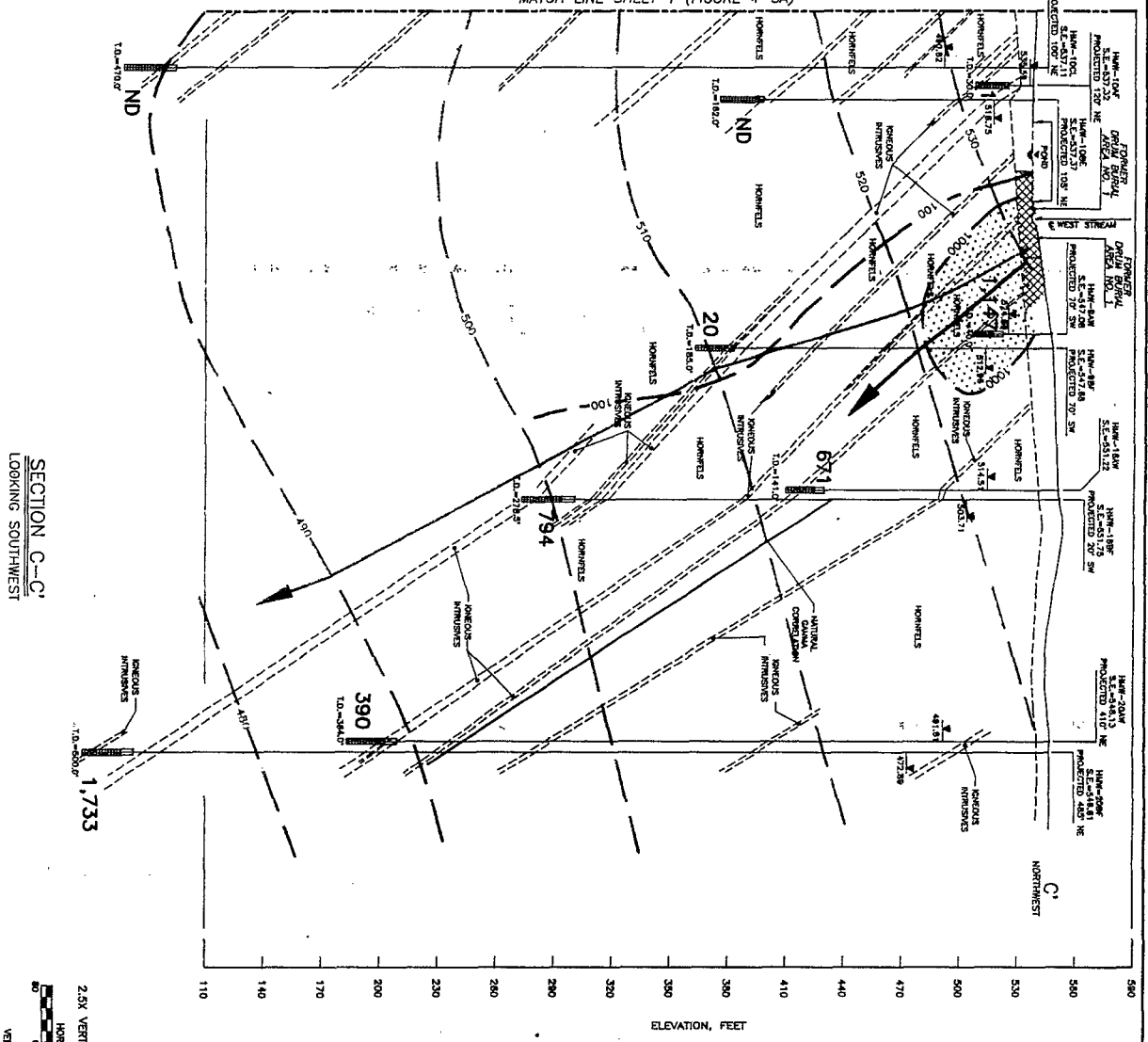


FIGURE 4-3A

VERTICAL DISTRIBUTION OF
 VOLATILE ORGANIC COMPOUNDS
 SHEET 1 OF 2
 HUNTERSTOWN ROAD SITE, RI/FS
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
 WESTINGHOUSE ELECTRIC CORPORATION
 PITTSBURGH, PENNSYLVANIA
 DCR Paul C. Rizzo Associates, Inc.
 CONSULTANTS

MATCH LINE SHEET 1 (FIGURE 4-3A)



SECTION C-C'
 LOOKING SOUTHWEST

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- NOTES:**
- SEE FIGURE 3-4 FOR PLAN LOCATION OF SECTION C-C'.
 - UNDOUBT IS COMPARED OF HONWELLS AND THEN HONWELLS INTRUSIONS ON THE BOREHOLE FORMATION DETERMINED UNDOUBT IS PROVIDED.
 - ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.
 - DUE TO THE LENGTH IN BOTH THE HORIZONTAL AND VERTICAL DIRECTIONS, SECTION C-C' HAS A DIFFERENT SCALE THAN SECTIONS A-A', B-B' AND D-D'.
 - THE LOCATIONS OF THE FORMER DRILL BOREHOLE ARE PROJECTED ON TO SECTION C-C'.
 - THE WATER LEVEL DEPICTED FROM HW-100L WAS RECORDED ON FEBRUARY 15, 1991, AND 17 AND 022, 18, 1991, RESPECTIVELY.
- LEGEND:**
- 18 COMMUNICATION INTERVAL WITH CONCENTRATION (PPB) OF TOTAL VOLATILE ORGANIC COMPOUNDS (TVOOC) BASED ON LOCATION OF BOREHOLE INTRUSIONS
 - 510 WATER LEVEL (2-4-91)
 - 510 EQUIPOTENTIAL LINE
 - 100 CONTOUR OF EQUAL CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS FROM THE LOCATION AREA
 - 100 CONTOUR OF EQUAL CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS FROM DRILL BOREHOLE AREA 2
 - 100 CONTOUR OF EQUAL CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS FROM DRILL BOREHOLE AREA 1
 - DIRECTION OF HORIZONTAL MOVEMENT
 - DIRECTION OF GROUNDWATER FLOW DUE TO ANISOTROPIC CONDITIONS

FIGURE 4-3B
 VERTICAL DISTRIBUTION OF
 VOLATILE ORGANIC COMPOUNDS
 SHEET 2 OF 2
 HUNTERSTOWN ROAD SITE R/F/S
 STRABAN TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA
 PREPARED FOR
 WESTINGHOUSE ELECTRIC CORPORATION
 PITTSBURGH, PENNSYLVANIA
DCR Paul C. Rizzo Associates, Inc.
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