SOURCE CONTROL INVESTIGATION
ADDENDUM REPORT
UPPER REACH HOUSATONIC RIVER (FIRST ½ MILE)

PITTSFIELD, MASSACHUSETTS

PREPARED FOR:
GENERAL ELECTRIC COMPANY
100 WOODLAWN AVE.
PITTSFIELD, MA 01201

HSI GEOTRANS
A TETRA TECH COMPANY
6 Lancaster County Road, Suite Four
Harvard, Massachusetts 01451

JUNE 15, 1999

Corporate Environmental Programs
General Electric Company
100 Woodlawn Ave., Pittsfield, MA 01201

June 15, 1999

Mr. Bryan Olson
Mr Dean Tagliaferro
Site Evaluation and Response Section (HBR)
U.S. Environmental Protection Agency
One Congress Street
Boston, MA 02203-2211

Mr. Alan Weinberg
Bureau of Waste Site Cleanup
Department of Environmental Protection
436 Dwight Street
Springfield, MA 01103

Re: Source Control Investigation Addendum Report,
Upper Reach of Housatonic River (First ½ Mile)

Dear Mr. Olson, Mr. Tagliaferro, Mr. Weinberg:

Enclosed please find the document entitled *Source Control Investigation Addendum Report Upper Reach of Housatonic River (First ½ Mile)*. This document has been prepared on behalf of the General Electric Company (GE) by HSI GeoTrans, Inc. It presents the results of investigations conducted for GE as proposed in the *Source Control Investigation Report Upper Reach of Housatonic River (First ½ mile)* (HSI GeoTrans, 1999) and pursuant to the EPA March 17, 1999 conditional approval letter. Also attached are responses to several EPA comments which were contained in its March 1999 letter.

Please contact me at (413) 494-3952 if you have any comments regarding the enclosed document.

Yours truly,

John D. Ciampa
Remediation Project Manager

M:\WP_DOCS\0614\1700\wpd

Corporate Environmental Programs
General Electric Company
100 Woodlawn Ave., Pittsfield, MA 01201

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D. Veilleux, Roy F. Weston*
Public Information Repositories
ECL I-P-IV(A)(1)* & (2)

EPA Comment	Response
Lyman Street Well LS-43 has no cap, either protective or internal. GE shall inspect, repair (or replace if warranted) and re-monitor this well. Repair may include redevelopment of the well. GE shall also inspect and, if necessary, repair monitoring wells LS-44 and LS-45.	GE has inspected monitoring wells LS-43, LS-44 and LS-45. Monitoring well LS-43 was redeveloped and the well cap and protective cover were replaced. Additionally, the protective cover for well LS-44 was also replaced. LS-45 required no maintenance.
Figures 3-2. 5-1 The elevation of the top of silt/till layer at location N2SC-03I may be incorrect. HSI GeoTrans identifies the top of silt/till at 947.53. Weston's boring logs identify the top of the silt at a depth of no greater than 946.53 ft, although the sample which confirms the presence of the silt was collected from 945.53 to 944.73 ft, below a 1-ft interval of no sample recovery. HSI GeoTrans appears to be identifying the top of the silt/till approximately one to two feet higher, as a silty sand with gravel underlying a dark-stained sand and gravel. A comparison of HSI GeoTrans and Weston boring logs show that non-recovery of samples is depicted as a data gap in Weston boring logs, while the data collected immediately above the data gap is extrapolated across the data gap in HSI GeoTrans boring logs. The HSI GeoTrans boring log appears to show that the silty sand extends continuously downward to the silt, which makes the higher elevation for the top of the silt/till seem reasonable. The Weston boring log, showing the data gap, indicates that a deeper top of silt/till is better supported by the data. The selection of the silt, rather than the silty sand, as the top of the silt/till is more consistent with the selection made at other locations at the Newell Street Area 2 site.	We have reviewed the N2SC-03I boring log and field notes from the drilling of that well and believe that the elevation of the top of the till, 947.53, shown on figures 3-2 and 5-1 in the Source Control Investigation Report Upper Reach of Housatonic River (First ½ Mile) (Source Control Investigation Report) is correct. The elevation of the top of the till was determined based on the deepest sample recovered from the boring. The sample, SS-21, was collected from a depth of 36 feet to38 feet. Based on a ground surface elevation of 983.53 feet the sample was collected from an elevation of 947.53 to 945.53 feet. There was one foot of sample recovered in the split spoon sampler. The sample description from the boring log is light olive brown silty sand with few gravel, well graded, sub-angular (SW) (Till). Based on the assumption that the one foot of sample that was recovered represents the depth interval of 36 to 37 feet, HSI GeoTrans made the determination that the top of this sample, 36 ft depth, represents the top of the till. Even if the top of the till occurred at a depth of 37 feet, rather than the 36 feet, this would only result in a minor modification to the till contour.

Corporate Environmental Programs
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EPA Comment	Response
Figure 5-1 Top of silt/till elevations were omitted for locations 3-6-EB-23 to -29. Addition of the top-of-till elevations at these locations would better define the topography in this area. Top of silt/till elevation for location LSSC-01 is 952.52 (noted correctly on Figures 4-2 and 4-8) not 953.52 ft. The 950-ft depression contour located in the vicinity of Newell Street Area 2 should extend farther northward, as the top of the silt/till elevation at location E2SC-15 is 950.3 ft.	Because of the regional scale of Figure 5-1 in the Source Control Report the top of till elevations from the closely spaced wells and borings 3-6-EB-23 to 3-6-EB-29 were not displayed on the figure. These data were considered, however, in the contouring. The top of till elevation at all of these locations is greater than 960 feet as indicated by the contours on the Figure 5-1. The detailed till topography for this portion of the site was shown in cross section view on Figure 5-2 of the Source Control Investigation Report. The Top of Till elevation for monitoring well LSSC-01 was incorrectly noted on Figure 5-1 of the Source Control Report. However, since this was a regional map with a 10 ft. contour interval, this did not impact the validity of the figure. The correct till elevation for LSSC-01 is included in pertinent figures of the attached report. The top of till elevation contour map for the Newell Street Area II site, shown as figure 4-2 in the attached report, has been modified based on the new data collected from the recently drilled borings and wells. We have also included the top of till elevation data from the all of the borings and wells drilled near Building 68 on the north side of the river and revised the contouring based on these data. The 950 contour shown on the updated Newell Street Area II top of till elevation contour map extends to the north side of the river closer to boring E2SC-15 than was previously shown on Figure 5-1 in the Source Control Investigation Report.

Corporate Environmental Programs
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EPA Comment	Response
Figure 5-2 A spot check of analytical results noted some errors. In soil boring E2SC-15, analytical data contained in the Proposal for Supplemental Source Control Containment/Recovery Measures, January 1999, does not agree with the posted total PCB results in Figure 5-2. Total PCB data for the zero to 1-ft interval bgs is not included in Table 2-4 (although Weston field notes confirm that a sample was collected from this interval, as does HSI GeoTrans Table 2-1). Further the total PCB concentration for the 1 to 6-ft interval bgs is reported as 8 mg/kg on Figure 5-2, but is actually 80 mg/kg in Table 2-4 in the same reference.	The PCB concentrations for the sample collected from zero to one foot in boring E2SC-15 shown on Figure 5-2 of the Source Control Investigation Report is correct. The PCB concentration data for the sample collected from zero to one foot in boring E2SC-15 was inadvertently omitted from Table 2-4 in the Proposal for Supplemental Source Control Containment / Recovery Measures. The PCB concentration for the sample collected from one to six feet in E2SC-15 is 80 mg/kg not the 8 mg/kg shown on Figure 5-2. A revised Table 2-4 and Figure 5-2 are attached.

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Table 2-4. PCB soil concentration data

Boring	Sample Number	Depth (Ft.)	Aroclor Concentration (mg/kg)							
			1016	1221	1232	1242	1248	1254	1260	Total
E2SC-01	E2SC-01-CS01	0-1	ND	ND	ND	ND	ND	ND	0.66	0.66
E2SC-01	E2SC-01-CS0106	1-6	ND	ND	ND	ND	ND	ND	0.71	0.71
E2SC-01	E2SC-01-CS0615	6-15	ND	ND	ND	ND	ND	ND	0.06	0.06
E2SC-01	E2SC-01-CS3840	38-40	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-01	E2SC-01-SS25	44-46	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-02	E2SC-02-CS01	0-1	ND	ND	ND	ND	ND	ND	49.00	49.00
E2SC-02	E2SC-02-CS0106	1-6	ND	ND	ND	ND	ND	ND	43.00	43.00
E2SC-02	E2SC-02-CS0615	6-15	ND	ND	ND	ND	ND	ND	17.00	17.00
E2SC-02	E2SC-02-CS4042	40-42	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-03	E2SC-03-CS01	0-1	ND	ND	ND	ND	ND	ND	25.00	25.00
E2SC-03	E2SC-03-CS0106	1-6	ND	ND	ND	ND	ND	ND	52.00	52.00
E2SC-03	E2SC-03-CS0615	6-15	ND	ND	ND	ND	ND	ND	22.00	22.00
E2SC-03	E2SC-03-CS4448	44-48	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-04	E2SC-04-CS01	0-1	ND	ND	ND	ND	ND	ND	0.99	0.99
E2SC-04	E2SC-04-CS0106	1-6	ND	ND	ND	ND	ND	0.17	0.19	0.36
E2SC-04	E2SC-04-CS0615	6-15	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-04	E2SC-04-CS4244	42-44	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-04	E2SC-04-GS01	0-5	ND	ND	ND	ND	ND	ND	0.12	0.12
E2SC-04	E2SC-04-GS02	5-15.4	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-04	E2SC-04-GS03	15.4-24	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-04	E2SC-04-GS04	24-39	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-04	E2SC-04-GS05	39-43	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-04	E2SC-04-GS06	43-44	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-05	E2SC-05-CS01	0-1	ND	ND	ND	ND	ND	ND	1.60	1.60
E2SC-05	E2SC-05-CS0106	1-6	ND	ND	ND	ND	ND	ND	0.29	0.29
E2SC-05	E2SC-05-CS0615	6-15	ND	ND	ND	ND	ND	ND	0.13	0.13
E2SC-05	E2SC-05-CS3840	38-40	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-05	E2SC-05-CS4042	40-42	ND	ND	ND	ND	ND	ND	ND	ND

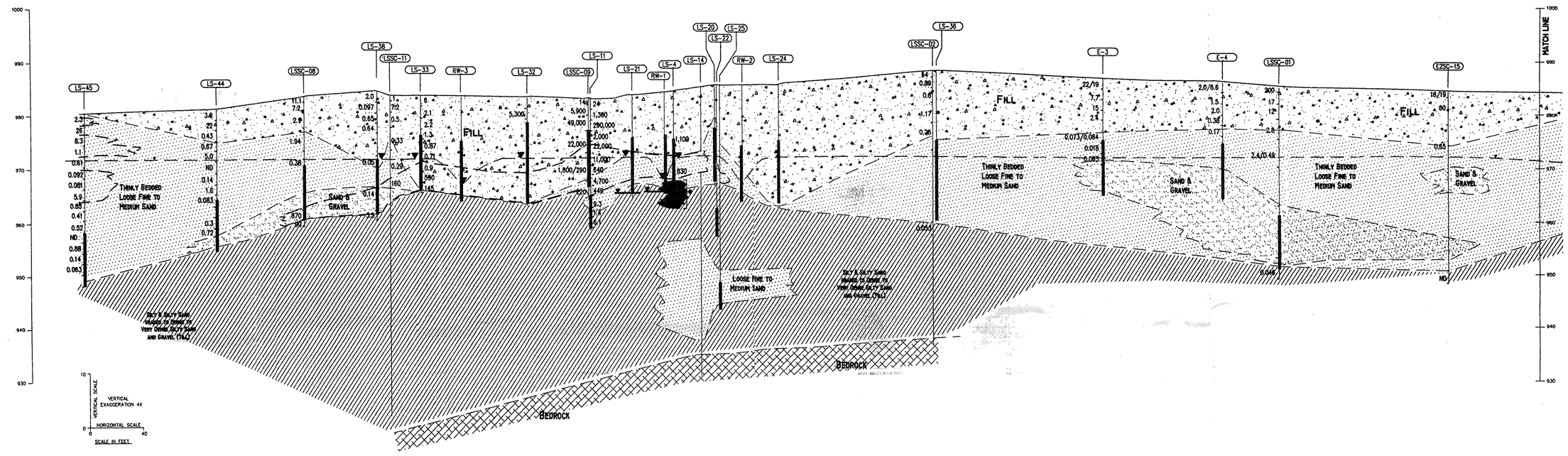
Table 2-4. Continued

Boring	Sample Number	Depth (Ft.)	Aroclor Concentration (mg/kg)							
			1016	1221	1232	1242	1248	1254	1260	Total
E2SC-06	E2SC-06-CS01	0-1	ND	ND	ND	ND	ND	ND	0.59	0.59
E2SC-06	E2SC-06-CS0106	1-6	ND	ND	ND	ND	ND	ND	0.07	0.07
E2SC-06	E2SC-06-CS0615	6-15	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-07	E2SC-07-CS01	0-1	ND	ND	ND	ND	ND	ND	0.79	0.79
E2SC-07	E2SC-07-CS0106	1-6	ND	ND	ND	ND	ND	ND	0.28	0.28
E2SC-07	E2SC-07-CS0615	6-15	ND	ND	ND	ND	ND	ND	1.40	1.40
E2SC-07	E2SC-07-CS3840	38-40	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-08	EW2SC-08-CS0106	1 - 6	ND	ND	ND	ND	ND	ND	170.00	170.00
E2SC-08	EW2SC-08-CS0615	6 - 15	ND	ND	ND	ND	ND	ND	210.00	210.00
E2SC-08	E2SC-08 CS4244	42-44	ND	ND	ND	ND	ND	ND	0.13	0.13
E2SC-09	E2SC-09-CS01	0-1	ND	ND	ND	ND	ND	ND	20.00	20.00
E2SC-09	E2SC-09-CS0106	1-6	ND	ND	ND	ND	ND	ND	3.90	3.90
E2SC-09	E2SC-09-CS0615	6-15	ND	ND	ND	ND	ND	ND	140.00	140.00
E2SC-09	E2SC-09-CS4042	40-42	ND	ND	ND	ND	ND	ND	0.11	0.11
E2SC10	E2SC-10-CS01	0-1	ND	ND	ND	ND	ND	ND	0.19	0.19
E2SC10	E2SC-10-CS0106	1-6	ND	ND	ND	ND	ND	ND	0.15	0.15
E2SC10	E2SC-10-CS0615	6-15	ND	ND	ND	ND	ND	ND	ND	ND
E2SC10	E2SC-10-CS2830	28-30	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-11	E2SC-11-CS01	0-1	ND	ND	ND	ND	ND	ND	0.10	0.10
E2SC-11	E2SC-11-CS0106	1-6	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-11	E2SC-11-CS0615	6-15	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-12	E2SC-12-CS01	0-1	ND	ND	ND	ND	ND	ND	0.19	0.19
E2SC-12	E2SC-12-CS0106	1-6	ND	ND	ND	ND	ND	83.00	91.00	91.00
E2SC-12	E2SC-12-CS0615	6-15	ND	ND	ND	ND	ND	ND	65.00	65.00
E2SC-12	E2SC-12-CS3032	30-32	ND	ND	ND	ND	ND	0.11	0.15	0.26
E2SC-13	ES2C-13-CS01	0-1	ND	ND	ND	ND	ND	ND	0.21	0.21

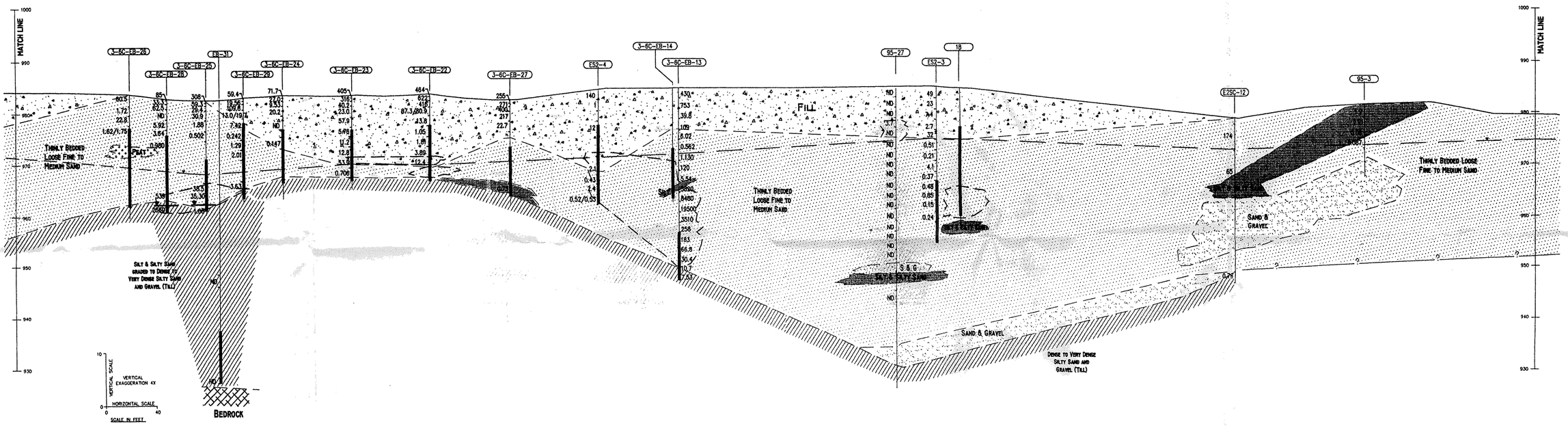
Table 2-4. Continued

Boring	Sample Number	Depth (Ft.)	Aroclor Concentration (mg/kg)							
			1016	1221	1232	1242	1248	1254	1260	Total
E2SC-13	ES2C-13-CS0106	1-6	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-13	ES2C-13-CS0615	6-15	ND	ND	ND	ND	ND	ND	0.05	0.05
E2SC-14	E2SC-14-CS01	0-1	ND	ND	ND	ND	ND	ND	0.60	0.60
E2SC-14	E2SC-14-CS0106	1-6	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-14	E2SC-14-CS0615	6-15	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-15	E2SC-15-CS01	0-1	ND	ND	ND	ND	ND	ND	18.0/19.0	
E2SC-15	E2SC-15-CS0106	1-6	ND	ND	ND	ND	ND	31.00	49.00	80.00
E2SC-15	E2SC-15-CS0615	6-15	ND	ND	ND	ND	ND	0.26	0.39	0.65
E2SC-15	E2SC-15-CS3436	34-36	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-16	E2SC-16-CS01	0-1	ND	ND	ND	ND	ND	ND	120.00	120.00
E2SC-16	E2SC-16-CS0106	1-6	ND	ND	ND	ND	ND	ND	1.50	1.50
E2SC-16	E2SC-16-CS0615	6-15	ND	ND	ND	ND	ND	ND	0.68	0.68
E2SC-16I	E2SC-16-CS4042	40-42	ND	ND	ND	ND	ND	1.50	ND	1.50
E2SC-16I	E2SC-16-CS4850	48-50	ND	ND	ND	ND	ND	1.90	1.80	3.70
E2SC-17	E2SC-17-CS01	0-1	ND	ND	ND	ND	ND	ND	2.40	2.40
E2SC-17	E2SC-17-CS0106	1-6	ND	ND	ND	ND	ND	ND	24.00	24.00
E2SC-17	E2SC-17-CS0615	6-15	ND	ND	ND	ND	ND	ND	0.37	0.37
E2SC-17	E2SC-17-CS4244	42-44	ND	ND	ND	ND	ND	ND	ND	ND
E2SC-17	E2SC-17-CS4749	47-49	ND	ND	ND	ND	ND	ND	ND	ND

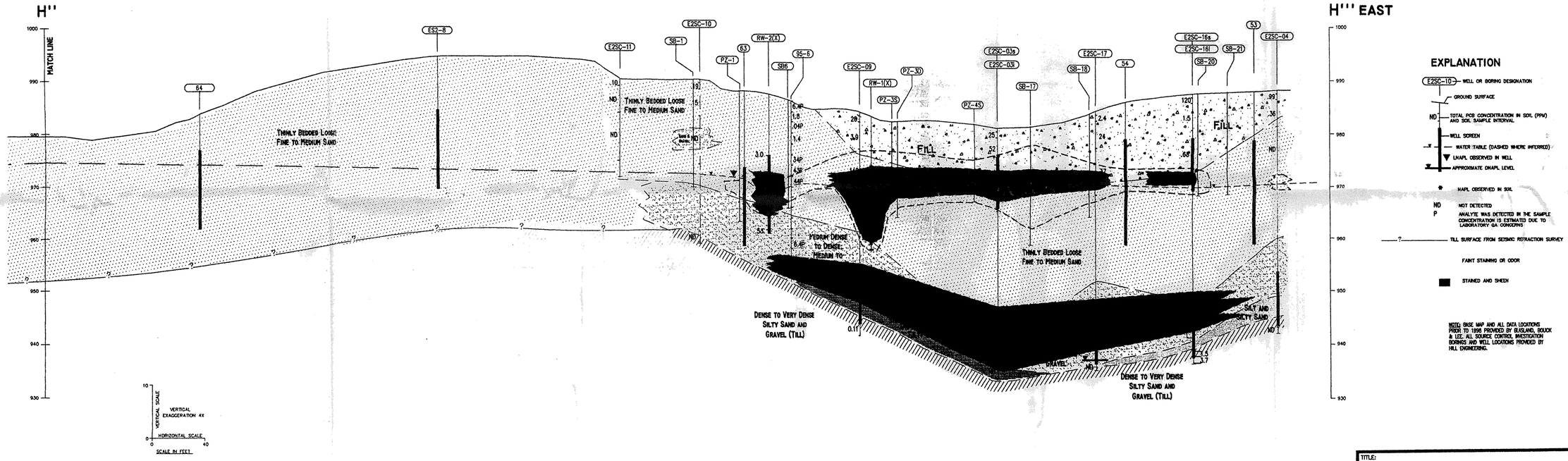
H WEST H'



H' H''



H'' H''' EAST



EXPLANATION

- E2SC-10 — WELL OR BORING DESIGNATION
- GROUND SURFACE
- ND — TOTAL PCB CONCENTRATION IN SOIL (PPM) AND SOIL SAMPLE INTERVAL
- WELL SCREEN
- WATER TABLE (DASHED WHERE INFERRED)
- LNAPL OBSERVED IN WELL
- APPROXIMATE DNAPL LEVEL
- NAPL OBSERVED IN SOIL
- ND — NOT DETECTED
- P — ANALYTE WAS DETECTED IN THE SAMPLE CONCENTRATION IS ESTIMATED DUE TO LABORATORY QA CONCERNS
- TILL SURFACE FROM SEISMIC REFRACTION SURVEY
- FAINT STAINING OR ODOR
- STAINED AND SHEEN

NOTE: BASE MAP AND ALL DATA LOCATIONS PRIOR TO 1996 PROVIDED BY ISSLAND, BOUCK & LEE. ALL SOURCE CONTROL INVESTIGATION BORINGS AND WELL LOCATIONS PROVIDED BY HLI ENGINEERING.

TITLE: Cross-Section H-H'''

LOCATION: GE Pittsfield

HSI GEOTRANS A TETRA TECH COMPANY

CHECKED:	JRB
DRAFTED:	RMK
FILE:	9901s-h-rev_6-99.dwg
DATE:	2/1/99 Revised 6/99

FIGURE: 5-2

SOURCE CONTROL INVESTIGATION
ADDENDUM REPORT
UPPER REACH HOUSATONIC RIVER (FIRST ½ MILE)

PITTSFIELD, MASSACHUSETTS

PREPARED FOR:
GENERAL ELECTRIC COMPANY
100 WOODLAWN AVE.
PITTSFIELD, MA 01201

PREPARED BY:

HSI GEOTRANS, INC.
6 LANCASTER COUNTY ROAD
HARVARD, MASSACHUSETTS 01451

HSI GEOTRANS PROJECT NO. P009-002

JUNE 15, 1999
HSI GeoTrans, inc.

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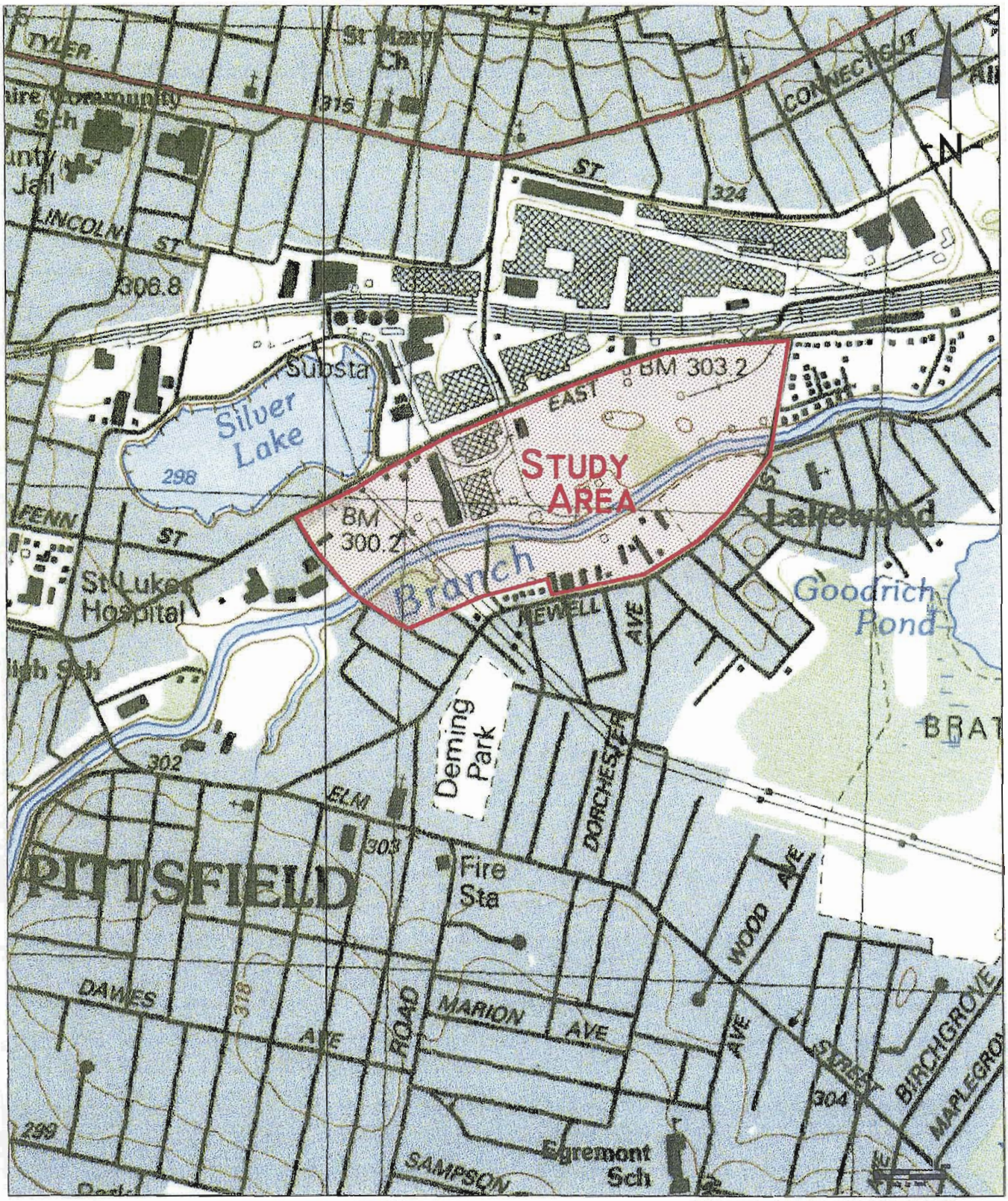
1 INTRODUCTION

This report describes additional source control investigations conducted between March 3 and April 30, 1999 at the General Electric Co. East Street Area 2, Newell Street Area II and Lyman Street sites in Pittsfield, Massachusetts. Figure 1-1 shows the general locations where these investigations were undertaken. These investigations were proposed in the February 9, 1999 Source Control Investigation Report Upper Reach of Housatonic River (First ½ Mile) (HSI GeoTrans, 1999) and the Conceptual Containment Barrier Design for the Lyman Street Site (GE, 1999) to supplement the data presented in these reports. The proposed investigations were approved by EPA in letters dated March 17, 1999 and March 23, 1999. The purposes of the additional investigations were to further evaluate the extent of dense non-aqueous phase liquids (DNAPL) and the topography of the till surface at the Newell Street Area II and Lyman Street Sites. Two monitoring wells were also installed adjacent to the Housatonic river at the east and west ends of the proposed sheet pile wall for the Lyman Street Site to monitor for the potential presence of light non-aqueous phase liquids (LNAPL) at these locations. Additionally, the extent of LNAPL in a small portion of the East Street Area 2 site near previously installed monitoring well 50 was further evaluated.

These investigations were conducted in accordance with the Source Control Work Plan-Upper Reach of Houastonic River (First ½ Mile) (BBL, 1998a) and the Sampling and Analysis Plan/Data Collection and Quality Assurance Plan (BBL, 1998b).



QUADRANGLE LOCATION

0 1000

Scale in feet

FROM U.S.G.S. QUADRANGLE
PITTSFIELD, MASSACHUSETTS

Contour Interval 3 Meters

National Geodetic Vertical Datum Of 1929

HSI GEOTRANS
A TETRA TECH COMPANY

LOCUS.DWG

Figure 1-1 Study Area Location Map

2 METHOD OF INVESTIGATION

As part of these most recent source control investigations, 14 borings were drilled to collect additional samples of the unconsolidated deposits underlying the East Street Area 2, Newell Street Area II and the Lyman Street sites. Monitoring wells were installed in 13 of the borings. Drilling methods used included hollow stem auger, drive and wash, and direct push methods. The drilling technique used at each location was selected based primarily on consideration of the planned boring depth and whether NAPL was encountered in samples collected during drilling. In some cases, the drive and wash technique was used to improve recovery of subsurface soil samples. The direct push technique was used in one area that was not accessible to a conventional drilling rig. Soil cores were collected in split spoon samplers using the standard penetration test method (ASTM D1586) and by the direct push method. Field screening of soil samples for volatile organic compounds (VOCs) was performed by the head space method using a Photo Ionization Detector (PID). Soil samples were also visually examined for the presence of NAPL. When field screening or visual observations indicated the possible presence of NAPL, water shake tests were performed. Staining, sheens and NAPL observations were noted on the boring logs. Oversight of the field activities was conducted by Roy F. Weston personnel, on behalf of EPA. The boring logs and well construction details for the newly installed wells are included in Appendix A.

A number of composite soil samples were collected for PCB analysis from the upper 15 feet in each boring. As approved by EPA, and discussed further in sections 3, 4 and 5, sample composite intervals varied by site to be consistent with the agreement in principle between GE, the U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection (Agencies). Table 2-1 lists the sample composite intervals for each site. One discrete sample for VOC analysis was also collected from the upper 15 feet of each boring. The interval sampled for VOC analysis was the one which had the highest field-screening PID reading. To be consistent with updated EPA sampling methodologies and the draft revisions of the Sampling and Analysis Plan (BBL, 1998b), all soil samples for VOC

analysis were placed directly into Encore® sample containers. This allowed the samples to be extracted and analyzed utilizing the new EPA method 5035.

In borings that extended to the till surface, one sample was collected for PCB analysis from the unconsolidated deposits directly above the till surface. A minimum of one sample from each boring was also selected for analysis of the Appendix IX +3 constituents. The sample for Appendix IX +3 analysis was collected from the interval with the highest field-screening PID reading. In addition, a soil sample was collected for Appendix IX+3 analysis when visual observations indicated the presence of DNAPL within a soil core.

Table 2-1. Composite soil sample intervals

SITE	SAMPLE INTERVAL DEPTH
EAST STREET AREA 2	0 to 1 Feet
	1 to 6 Feet
	6 to 15 Feet
NEWELL STREET AREA II	0 to 1 Feet
	1 to 3 Feet
	3 to 6 Feet
	6 to 10 Feet
	10 to 15 Feet
Lyman Street Site	0 to 1 Feet
	1 to 3 Feet
	3 to 6 Feet
	6 to 10 Feet
	10 to 15 Feet

3 EAST STREET AREA 2

As proposed in the Source Control Investigation Report (HSI GeoTrans,1999), two shallow monitoring wells were installed at the East Street Area 2 site to further evaluate the extent of a small isolated occurrence of LNAPL at existing monitoring well 50. The locations of the new wells, E2SC-21 and E2SC-22, and nearby existing monitoring wells are show on Figure 3-1. Both new wells were drilled to a depth of 15 feet. Based on the samples collected, the area is underlain by fill (consisting primarily of fine to medium sand), a thin layer of silt (1.5 to 3 feet), and coarse sand below the silt. Two-inch diameter PVC monitoring wells with ten-foot long screens, set from five to fifteen feet below ground surface, were constructed as proposed (HSI GeoTrans, 1999). After the wells were completed, they were developed using a Waterra pump.

As described in Section 2, and on Table 2-1, at least three composite samples of the unconsolidated deposits were collected from each boring for PCB analyses, and selected samples were analyzed for VOCs and Appendix IX+3 constituents. Table 3-1 lists the soil samples collected from the newly drilled wells and the analyses performed. The PCB analyses indicate that only Aroclor 1260 was detected in the samples. The PCB concentrations ranged from 0.26 mg/kg to 630 mg/kg. The only VOC detected was chlorobenzene at 0.071 mg/kg in one sample from boring E2SC-21. No SVOCs were detected in any of the samples. One sample from boring E2SC-22 contained dioxin and dibenzofuran compounds at low concentrations. Furthermore, no detected metals concentrations were greater than the Massachusetts DEP Method 1 S-1 soil standards under the Massachusetts Contingency Plan (MCP). The soil concentration data are summarized in Tables 3-2, 3-3, 3-4 and 3-5.

Water level and LNAPL observations have been made in the newly installed wells approximately weekly since the wells were completed. LNAPL has not been detected in either of the new wells. Water level measurements from the newly installed wells are

summarized in Table 3-4. LNAPL has been observed in monitoring well 50 occasionally, and 0.13 gallons of oil was removed from monitoring well 50 during weekly manual removal activities in 1998. Three monitoring wells (95-2, E2S-12 and 64), which are located downgradient of well 50, were previously installed to evaluate the extent of LNAPL observed in monitoring well 50. These three wells are included in the East Street Area 2 semi-annual monitoring program. No LNAPL has ever been detected in any of these wells since they were installed. Based on the observations in the new and previously installed monitoring wells near well 50, it appears that the LNAPL observed in monitoring well 50 is a small localized occurrence which is not migrating towards the river. With the existing and newly installed monitoring wells there is sufficient monitoring in the area near monitoring well 50 to assess any potential changes in LNAPL distribution.

Table 3-1. East Street Area 2 Soil Samples Collected and Analyses Performed, Wells E2SC-21 and E2SC-22

Location	Sample Depth	Sample Name	Type
E2SC-21			
	0-1	CS01	PCB
	1-6	CS0106	PCB
	6-15	CS0615	SVOC
	6-15	CS0615	PCB
	6-15	CS0615	Metals
	6-15	CS0615	Dioxin/Dibenzofuran
	14-15	SS09	VOC
E2SC-22			
	0-1	CS01	PCB
	1-6	CS0106	PCB
	6-15	CS0615	SVOC
	6-15	CS0615	PCB
	6-15	CS0615	Metals
	6-15	CS0615	Dioxin/Dibenzofuran
	10-12	SS08	VOC

Table 3-2. Soil PCB Concentrations, East Street Area 2, Wells E2SC-21 and E2SC-22

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
E2SC-21							
	CS01	0-1					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	78			mg/kg
			Total PCBs	**78**			
	CS0106	1-6					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	110			mg/kg
			Total PCBs	**110**			
	CS0615	6-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	31			mg/kg
			Total PCBs	**31**			

Table 3-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
E2SC-22							
	CS01	0-1					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	140			mg/kg
			Total PCBs	**140**			
	CS0106	1-6					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	630			mg/kg
			Total PCBs	**630**			
	CS0615	6-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	0.26			mg/kg
			Total PCBs	**0.26**			

Qualifier

ND *Not Detected*

J *Result is between MDL and RL.*

Table 3-3. Detected Soil VOC Concentrations, East Street Area 2, Wells E2SC-21 and E2SC-22

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
E2SC-21							
	SS09	14-15					
			Chlorobenzene	0.071			mg/kg

Qualifier

J *Result is between MDL and RL.*

E *Result exceeds calibration range.*

Table 3-4. Detected Soil Metals Concentrations, East Street Area 2, Wells E2SC-21 and E2SC-22

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
E2SC-21							
	CS0615	6-15					
			Aluminum	9720			mg/kg
			Arsenic	3.2			mg/kg
			Barium	28			mg/kg
			Calcium, Total	1540			mg/kg
			Chromium	13.6			mg/kg
			Copper	30.7			mg/kg
			Iron	17600			mg/kg
			Magnesium	5210			mg/kg
			Manganese	858			mg/kg
			Mercury	0.97			mg/kg
			Nickel	21.9			mg/kg
			Potassium, Total	279		!	mg/kg
			Sulfide	47			mg/kg
			Vanadium	64.8			mg/kg
			Zinc	82.5			mg/kg
E2SC-22							
	CS0615	6-15					
			Aluminum	6740			mg/kg
			Arsenic	3.2			mg/kg
			Barium	25.3			mg/kg
			Calcium, Total	11100			mg/kg
			Chromium	8.6			mg/kg
			Copper	14.9			mg/kg
			Iron	13800			mg/kg
			Magnesium	8760			mg/kg
			Manganese	218			mg/kg
			Nickel	14			mg/kg
			Potassium, Total	313		!	mg/kg
			Sulfide	28.9			mg/kg
			Zinc	52.6			mg/kg

Qualifier

B *Result is between MDL and RL*

! *Result is between MDL and LOQ*

Table 3-5. Detected Soil Dioxin and Dibenzofuran Concentrations, East Street Area 2, Wells E2SC-21 and E2SC-22

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
E2SC-22							
	CS0615	6-15					
			1,2,3,4,6,7,8-HpCDD	0.00875	J		µg/kg
			1,2,3,4,6,7,8-HpCDF	0.02534			µg/kg
			1,2,3,4,7,8,9-HpCDF	0.0136			µg/kg
			1,2,3,4,7,8-HxCDF	0.01837			µg/kg
			1,2,3,6,7,8-HxCDF	0.00402	J		µg/kg
			2,3,4,6,7,8-HxCDF	0.00352	J		µg/kg
			OCDD	0.07063			µg/kg
			OCDF	0.175			µg/kg
			TOTAL HpCDD	0.02001			µg/kg
			TOTAL HpCDF	0.03966			µg/kg
			TOTAL HxCDF	0.04307			µg/kg
			TOTAL PeCDF	0.08821			µg/kg
			TOTAL TCDF	0.06776			µg/kg

Qualifier

J *Result is an estimated value that is below the lower calibration limit but above the target detection level.*

g *2, 3, 7, 8, -TCDF results have been confirmed on a DB-225 column.*

E *Result exceeds calibration range.*

F *Reported value estimated due to an interference.*

a *See narrative.*

s *Result detected is below the lowest standard and above zero.*

D *Compound quantified using a secondary dilution.*

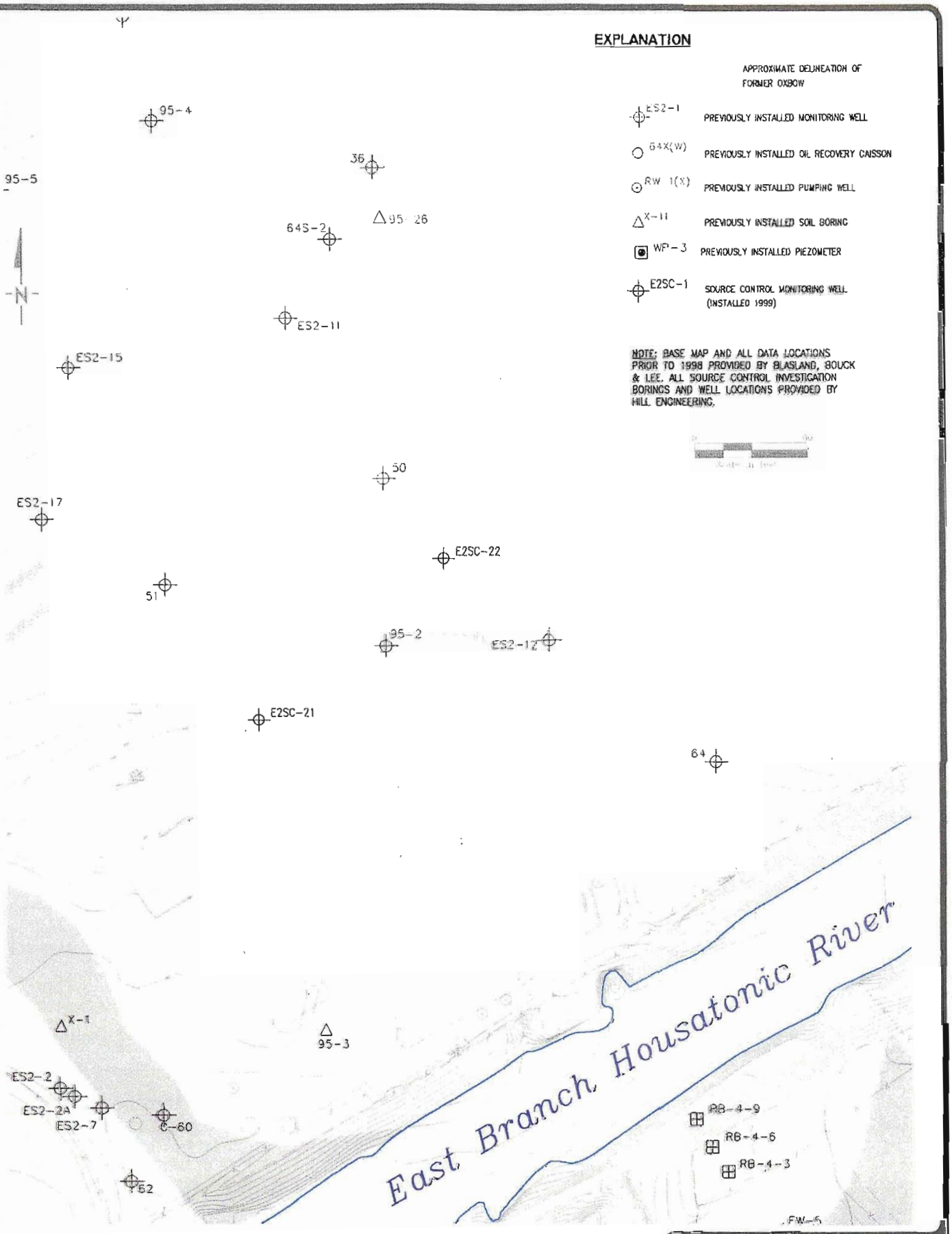


Figure 3-1 East Street Area 2 Well & Boring Location Map

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4 NEWELL STREET AREA II

Between April 1 and April 30, 1999, additional borings were drilled at the Newell Street Area II site to further evaluate the southern and western extent of DNAPL occurrence and to provide additional information regarding the top of till topography beneath the site. One of the new monitoring wells, N2SC-08, contained sufficient DNAPL to allow a recovery test to be done. Samples of DNAPL were also collected for chemical analysis and determination of physical properties. A description of the properties of the Newell Street Area II site LNAPL and DNAPL is presented in section 4.5.

4.1 BORING AND WELL INSTALLATION

Six additional borings were drilled with monitoring wells being installed in five of them. The locations of the newly drilled borings/wells and the existing borings/wells are shown on Figure 4-1. Boring logs and well construction diagrams are included in Appendix A. Well N2SC-08 was installed adjacent to previously installed shallow monitoring well NS-19. Two monitoring wells, one shallow and one deep, were installed at the N2SC-09 location. The western most boring location (N2SC-10) could not be accessed with a conventional drilling rig and was completed by the direct push method. No indication of NAPL was observed during the drilling of boring N2SC-10. Consequently, a well was not installed at this location. DNAPL was observed in the wells at N2SC-08 and N2SC-09. To locate the southern limit of the DNAPL, two additional wells were installed. Monitoring wells N2SC-11 and N2SC-12 were installed adjacent to previously installed shallow monitoring wells NS-33 and NS-20 respectively. Because soil samples from the existing shallow wells had already been chemically analyzed, only a sample from the top of till was collected from N2SC-11 and N2SC-12 for PCB analysis. No indications of DNAPL were observed in either N2SC-11 or N2SC-12.

The unconsolidated deposits penetrated by the new borings are similar to those that have been observed in prior borings at the Newell Street Area II site. The Newell Street

Area II site is underlain by a sequence of unconsolidated deposits consisting of fill (0 to 19 feet thick), interbedded fine sand and silt with peat (0 to 12 feet thick), and fine to coarse sand and gravel (5 to 24 feet thick). The fill is not present at the southernmost wells or at N2SC-10, the westernmost new boring. Recent alluvium consisting of soft silt with a small amount of sand was observed from the ground surface to a depth of three feet in boring N2SC-10.

All of the stratified unconsolidated deposits beneath the Newell Street Area II site occur above a till layer which constitutes a low permeability confining layer. The till consists of stiff to hard silt, and dense to very dense silty sand with gravel. Figure 4-2 is an elevation contour map of the till surface incorporating the data from the new broings. In accordance with the EPA March 17, 1999 letter, Figure 4-2 also includes the top of till elevation data from the borings 3-6C-EB-23 to 3-6C-EB-41, along the north bank of the Housatonic River near building 68. As illustrated, there is a northwest/southeast trending depression in the top of till surface with its lowest determined elevation being 945.2 feet at monitoring well N2SC-08. This elevation is approximately 38 feet below land surface and 22 to 24 feet below the bed of the Housatonic River. Data from the newly installed wells (N2SC-11, N2SC-12) confirm that the till surface rises from the center of the site to the south towards Newell Street, this is shown on Figure 4-2. Figures 4-3 and 4-4 are cross sections showing the stratigraphy of the unconsolidated deposits beneath the Newell Street Area II site. Soil borings/monitoring wells which contain NAPL are shown on the cross-sections. Additionally, soil zones which were observed to contain staining and sheens during drilling are also shown on the cross sections. However, it should be noted that these zones do not necessarily indicate the presence of separate phase NAPL.

4.2 RESULTS OF SOIL CHEMICAL ANALYSES

As described in section 2 of this report, samples of the unconsolidated deposits were collected for PCB analyses. Certain samples were also analyzed for VOCs and/or Appendix

IX+3 constituents. Table 4-1 lists the samples collected in the latest borings drilled at the Newell Street Area II site and the analyses performed on each sample.

The areal distribution of soil PCB concentrations, based on samples collected from the 1998 and 1999 source control borings and wells, is shown on Figure 4-5. The concentrations of detected analytes are summarized in Tables 4-2 through 4-6. Table 4-2 summarizes PCB analyses, Table 4-3 summarizes VOC analyses, Table 4-4 summarizes SVOC analyses, Table 4-5 summarizes metals analyses and Table 4-6 summarizes the dioxin and furan analyses.

4.3 EXTENT OF NAPL

The extent of the DNAPL beneath the Newell Street Area II site have been adequately defined with the data from the monitoring wells and borings that were installed in 1998 and 1999. Water level and NAPL measurements have been collected weekly from these newly installed wells at the Newell Street Area II site since development of the wells was completed. The water level and NAPL measurement data are presented in Table 4-7. These data indicate that there is separate phase DNAPL contained in unconsolidated deposits above the till layer. The DNAPL occurs primarily in deposits immediately above a depression in the till surface which exists in the central portion of the site. However, in several wells (N2SC-03S, N2SC-09S and MW-IS) DNAPL has also been observed on shallower perched layers. In addition to the wells monitored during these investigations, GE gauges 21 other wells as part of the ongoing monitoring program for the site. These wells are: NS-1, NS-10, NS-11, NS-15, NS-16, NS-17, NS-18, NS-19, NS-20, NS-21, NS-23, NS-30, NS-31, NS-32, NS-33, NS-34, NS-35, NS-36, NS-37, MW-1S and MW-1D. Data from the ongoing monitoring are submitted to the agencies in the monthly reports. Figure 4-6 shows the wells in which DNAPL and LNAPL have been observed. The DNAPL extends from the area of wells NS-15, NS-30 and NS-31, located in the northern portion of the site, to wells N2SC-08 and N2SC-9S, located to the south. The westernmost well in which DNAPL has been observed is well cluster MW-1D and 1S. The easternmost well with DNAPL is N2SC-08.

Figure 4-3 corresponds to cross section J-J' from the February 9, 1999 Source Control Investigation Report modified with the data from the new monitoring wells. Figure 4-4 is a southwest to northeast cross section through the new borings and monitoring wells N2SC-08, N2SC-09, and N2SC-10. The cross sections show the vertical distribution of staining, sheens, and DNAPL. Typically, DNAPL occurs at a depth of approximately 35 feet below the surface, which equates to a depth of approximately 20 feet below the Housatonic River bed. Localized occurrences of DNAPL have been observed in shallow wells N2SC-03S, N2SC-09S and MW-1S which are located 200 to 300 feet from the river. At these locations, it appears that a small amount of DNAPL is perched on shallower low permeability layers. Monitoring wells adjacent to the river do not contain the more shallow perched DNAPL.

4.4 NAPL PROPERTIES

In its March 17 letter, EPA requested that GE compare the chemical constituents, density and viscosity of the LNAPL and DNAPL at the Newell Street Area II site. Physical and chemical properties of one LNAPL and five DNAPL samples collected from monitoring wells at the Newell Street Area II site have been determined. The physical properties, including specific gravity, interfacial tension and viscosity, were measured at the General Electric environmental laboratory. Chemical analyses for PCBs, VOCs, SVOCs, metals dioxins and dibenzofurans were performed by various laboratories. The physical and chemical analyses have been performed as part of the ongoing investigations at the Newell Street Area II site since 1995.

LNAPL has only been observed in one well, NS-10, at the Newell Street Area II site. One suspect indication 0.01 feet of LNAPL was reported for well N2SC-01I. However, this well is screened too deep to allow LNAPL to enter the well. A shallow well, N2SC-01S, located next to N2SC-01I is screened across the water table. No indication of LNAPL has been observed in well N2SC-01S. A sample of the LNAPL from well NS-10 was collected on July 12, 1995 and analyzed for metals, VOCs, SVOCs, and PCBs. In addition, the specific gravity of the LNAPL was determined to be 0.905 (see Table 4-8). The laboratory

data reports for this sample are included in Appendix B. The PCB concentration in the LNAPL was 2.4% . The sample also contained 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Xylenes, p-Isopropyltoluene, Napthlaene, 1,3,5-Trimethylbenzene, and 1,2,4-Trimethylbenzene. Another sample of the LNAPL was collected for the determination of physical properties on April 15, 1999. However, a sufficient volume of LNAPL could not be collected at that time to make the measurements.

Five samples of DNAPL have been collected from monitoring wells at the Newell Street Area II site. The physical properties of the DNAPL samples are summarized in Table 4-8. The specific gravity of the samples was measured with an Anton Parr Density meter at a temperature of 23.5^0 C. The specific gravity of the samples ranged from 1.154 to 1.196. These specific gravity measurements, which are greater than the specific gravity of water, distinguish the DNAPL from the LNAPL observed in well NS-10 (which has a specific gravity less than water). The interfacial tension between the DNAPL and groundwater was determined using a Dunoy Tensiometer. The interfacial tension was measured by both pushing the tensiometer ring from the water into the DNAPL and pulling the ring from the DNAPL into the water. The water to oil interfacial tension of the samples ranged from 6.1 dyne/cm to 15.4 dyne/cm. Measurements of the oil to water interfacial tension are also listed in Table 4-8. The viscosity of the DNAPL samples was determined using a Cannon-Fenske viscometer at a constant temperature of 28^0 C. The viscosity of the samples ranged from 10.9 to 14.8 centistokes.

The chemical analyses of the DNAPL samples indicate that the DNAPL consists primarily of PCB Aroclor 1254, ranging from 29% in samples from monitoring wells N2SC-01I and N2SC-03S, to 32% in the sample from well N2SC-02. In addition to the PCB, the DNAPL samples contained 6.8% to 14.5% VOCs and 1.59% to 46.4% SVOCs. The SVOCs detected at the highest concentrations were chlorinated benzenes. The VOCs detected at the highest concentrations were trichloroethene, xylene, toluene and tetrachloroethene. The SVOCs detected in the highest concentration were 1, 2, 4-trichlorobenzene and 1, 4-dichlorobenzene. The results of the chemical analyses of the four recently collected DNAPL

samples are summarized in Table 4-9. The laboratory data report for the DNAPL sample from NS-15 is included in Appendix B. The SVOCs in the DNAPL sample collected from the shallow well N2SC-3S included several more PAH compounds than the other Newell Street Area II DNAPL samples. The differences in composition of the NAPL is likely a result of the spatial variability of chemical constituents which were disposed of at the Newell Street Area II site.

Based on the NS-10 NAPL sample specific gravity of 0.905, this NAPL is less dense than water and occurs at the top of the water table. This confirms that the NAPL at this location is LNAPL, not DNAPL perched on a low permeability layer. Because LNAPL is only observed in well NS-10 and has not been observed in any of the nearby monitoring wells or borings, the LNAPL in well NS-10 represents a small localized occurrence and does not appear to have mixed with the DNAPL at the site.

4.5 DNAPL PUMPING TEST

A DNAPL pumping test was conducted in monitoring well N2SC-08 on May 25 and 26, 1999 to evaluate the potential for pumping DNAPL from that well. Prior to conducting the recovery test, a DNAPL level measurement on May 21, 1999 indicated that there was 1.7 feet of DNAPL in the well. On May 25, the well was tested over a six hour period using a pneumatically operated QED pulse pump. A total of 1.95 liters of DNAPL was pumped from the well in the first 183 minutes of the test. The recovery rate declined rapidly and no DNAPL was recovered during the remainder of the test. The following day, the well was again evaluated. After an initial removal of 0.19 liters, no DNAPL recharged the well for a two hour period and the test was terminated. The DNAPL level was measured again on May 27, 1999 and only 0.03 feet of DNAPL had accumulated in the well since the testing was completed on May 26. These tests indicate that the recovery rate in monitoring well N2SC-08 is slow and does not appear to justify the installation of an automated DNAPL pumping system in this well. Table 4-10 summarizes the results of the DNAPL pumping test.

4.6 DNAPL RECOVERY

GE has operated an automated DNAPL recovery system at the Newell Street Area II Site since March 1999. The automated system pumps DNAPL from wells NS-15, NS-30 and NS-32. Prior to March 1999, DNAPL was removed from these wells manually using pumps or bailers. In addition, DNAPL is monitored and pumped daily from wells N2SC-02, N2SC-03I, N2SC-03S and N2SC-01I using manually controlled pumps. On a weekly basis, the following wells are also monitored: NS-10, NS-31, NS-33, NS-34, NS-35, NS-36, NS-37, MW-1S and MW-1D. If NAPL is present and its thickness exceeds 0.5 feet, it is manually removed from these wells. For the period January 1, 1999, through May 31, 1999, a total of 1,322 gallons of DNAPL have been recovered from the Newell Street Area II Site. Table 4-11 summarizes the DNAPL recovery for the January to May 1999 time period. An additional automated DNAPL recover system is currently being constructed for well N2SC-01I and will become operational in July 1999.

Table 4-1. Newell Street Area II Soil Samples Collected and Analyses Performed

Location	Sample Depth	Sample Name	Type
N2SC-08			
	0-1	CS01	PCB
	1-3	CS0103	PCB
	3-6	CS0306	PCB
	6-10	CS0610	Dioxin/Dibenzofuran
	6-10	CS0610	PCB
	6-10	CS0610	Metals
	10-15	CS1015	PCB
	8-10	SS06	VOC
	38-40	SS22	PCB
	38-40	SS22	SVOC
	38-40	SS22	VOC
	38-40	SS22	Metals
	38-40	SS22	Dioxin/Dibenzofuran
	40-42	SS23	PCB
N2SC-09			
	0-1	CS01	PCB
	1-3	CS0103	PCB
	3-6	CS0306	PCB
	6-10	CS0610	PCB
	10-15	CS1015	Dioxin/Dibenzofuran
	10-15	CS1015	Metals
	10-15	CS1015	PCB
	10-15	CS1015	SVOC
	36-40	CS3640	Dioxin/Dibenzofuran
	36-40	CS3640	Metals
	36-40	CS3640	PCB
	36-40	CS3640	SVOC
	8-10	SS09	VOC
	36-38	SS20	VOC
	38-40	SS22	PCB
N2SC-10			
	0-1	CS01	PCB
	1-3	CS0103	PCB
	3-6	CS0306	PCB
	6-10	CS0610	PCB

Table 4-1. (continued)

Location	Sample Depth	Sample Name	Type
	10-15	CS1015	SVOC
	10-15	CS1015	PCB
	10-15	CS1015	Metals
	10-15	CS1015	Dioxin/Dibenzofuran
	18-22	CS1822	PCB
	28-32	CS2832	PCB
	10-12	SS07	VOC
N2SC-11			
	34-36	SS11	PCB
N2SC-12			
	36-38	SS12	PCB

Table 4-2. Soil PCB Concentrations, Newell Street Area II

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
N2SC-08							
	CS01	0-1					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	780			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**780**			
	CS0103	1-3					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	140			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**140**			
	CS0306	3-6					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	570			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**570**			

Table 4-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	CS0610	6-10					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	14			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**14**			
	CS1015	10-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	3.1			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**3.1**			
	SS22	38-40					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	340			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**340**			
	SS23	40-42					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	300			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**300**			

Table 4-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
N2SC-09							
	CS01	0-1					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	27			mg/kg
			Total PCBs	**27**			
	CS0103	1-3					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	8700			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**8700**			
	CS0306	3-6					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	1300			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**1300**			
	CS0610	6-10					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	13000			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**13000**			

Table 4-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	CS1015	10-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	3500			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**3500**			
	CS3640	36-40					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	510			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**510**			
	SS22	38-40					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	5.8			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**5.8**			
N2SC-10							
	CS01	0-1					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	1.6			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**1.6**			

Table 4-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	CS0103	1-3					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.092			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.092**			
	CS0306	3-6					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.04			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.04**			
	CS0610	6-10					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.02		J	mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.02**			
	CS1015	10-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.025		J	mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.025**			

Table 4-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	CS1822	18-22					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.024		J	mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.024**			
	CS2832	28-32					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.051			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.051**			
N2SC-11							
	SS11	34-36					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.034		J	mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.034**			
N2SC-12							
	SS12	36-38					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0**			

Table 4-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	SS12D	36-38					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0**			

Qualifier

ND *Not Detected*

J *Result is between MDL and RL.*

Table 4-3. Detected Soil VOC Concentrations, Newell Street Area II

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
N2SC-08							
	SS06	8-10					
			Trichloroethene	0.013			mg/kg
	SS22	38-40					
			1,2-Dichloroethane	0.01			mg/kg
			Benzene	0.01			mg/kg
			Chlorobenzene	0.01			mg/kg
			Chloroform	0.01			mg/kg
			Ethylbenzene	0.02			mg/kg
			Tetrachloroethene	0.04			mg/kg
			Toluene	0.1			mg/kg
			Trichloroethene	3.1			mg/kg
			Xylenes (total)	0.09			mg/kg
N2SC-09							
	SS09	8-10					
			Benzene	0.2			mg/kg
			Chlorobenzene	1.3		E	mg/kg
			Ethylbenzene	0.19			mg/kg
			Toluene	0.02			mg/kg
			Xylenes (total)	1.9		E	mg/kg
	SS20	36-38					
			Chlorobenzene	0.034			mg/kg
			Ethylbenzene	0.0086			mg/kg
			Xylenes (total)	0.017			mg/kg

Qualifier

J *Result is between MDL and RL.*

E *Result exceeds calibration range.*

Table 4-4. Detected Soil SVOC Concentrations, Newell Street Area II

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
N2SC-08							
	SS22	38-40					
			1,2,4-Trichlorobenzene	3.7			mg/kg
			bis(2-Ethylhexyl) phthalate	0.48			mg/kg
N2SC-09							
	CS1015	10-15					
			1,2,4-Trichlorobenzene	3.7			mg/kg
			1,3-Dichlorobenzene	0.57			mg/kg
			1,4-Dichlorobenzene	3			mg/kg
	CS3640	36-40					
			1,2,4-Trichlorobenzene	2.6			mg/kg
			bis(2-Ethylhexyl) phthalate	0.52			mg/kg

Qualifier

J *Result is between MDL and RL.*

E *Result exceeds calibration range.*

Table 4-5. Detected Soil Metals Concentrations, Newell Street Area II

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
N2SC-08							
	CS0610	6-10					
			Aluminum	4430			mg/kg
			Arsenic	2.3			mg/kg
			Barium	15.2			mg/kg
			Calcium, Total	4510			mg/kg
			Chromium	6.8			mg/kg
			Copper	14.8			mg/kg
			Iron	12100			mg/kg
			Magnesium	4260			mg/kg
			Manganese	171			mg/kg
			Nickel	13.3			mg/kg
			Sulfide	21.5			mg/kg
			Zinc	37.2			mg/kg
	SS22	38-40					
			Aluminum	7660			mg/kg
			Arsenic	4.7			mg/kg
			Barium	18.8			mg/kg
			Calcium, Total	27200			mg/kg
			Chromium	9.8			mg/kg
			Copper	21.3			mg/kg
			Iron	18900			mg/kg
			Magnesium	17800			mg/kg
			Manganese	372			mg/kg
			Nickel	20			mg/kg
			Sulfide	49.7			mg/kg
			Zinc	56.2			mg/kg
N2SC-09							
	CS1015	10-15					
			Aluminum	5750			mg/kg
			Arsenic	2.9			mg/kg
			Barium	52.2			mg/kg
			Calcium, Total	10700			mg/kg
			Chromium	18.2			mg/kg
			Copper	65.4			mg/kg
			Iron	12400			mg/kg
			Lead	30.2			mg/kg

Table 4-5. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
			Magnesium	6040			mg/kg
			Manganese	166			mg/kg
			Mercury	0.22	!		mg/kg
			Nickel	14.7			mg/kg
			Sodium, Total	128	!		mg/kg
			Sulfide	98.2			mg/kg
			Zinc	210			mg/kg
	CS3640	36-40					
			Aluminum	6600			mg/kg
			Arsenic	6.2			mg/kg
			Barium	18.9			mg/kg
			Calcium, Total	82900			mg/kg
			Chromium	8			mg/kg
			Copper	16.1			mg/kg
			Iron	2930			mg/kg
			Magnesium	47200			mg/kg
			Manganese	454			mg/kg
			Nickel	17.5			mg/kg
			Sulfide	53.6			mg/kg
			Zinc	89			mg/kg
N2SC-10							
	CS1015	10-15					
			Aluminum	6800			mg/kg
			Aluminum	9660			mg/kg
			Arsenic	5.8			mg/kg
			Arsenic	7.8			mg/kg
			Barium	15.7			mg/kg
			Barium	28.4			mg/kg
			Calcium, Total	1700			mg/kg
			Calcium, Total	935	!		mg/kg
			Chromium	11			mg/kg
			Chromium	7.9			mg/kg
			Cobalt	11.7			mg/kg
			Copper	23.1			mg/kg
			Copper	31.5			mg/kg
			Iron	16900			mg/kg
			Iron	24800			mg/kg
			Magnesium	4390			mg/kg

Table 4-5. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
			Magnesium	3020			mg/kg
			Manganese	637			mg/kg
			Manganese	611			mg/kg
			Nickel	15.8			mg/kg
			Nickel	21.2			mg/kg
			Sulfide	15.8			mg/kg
			Sulfide	18.1			mg/kg
			Zinc	60.5			mg/kg
			Zinc	44.5			mg/kg

Qualifier

B *Result is between MDL and RL*

! *Result is between MDL and LOQ*

Table 4-6. Detected Soil Dioxin and Dibenzofuran Concentrations, Newell Street Area II

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
N2SC-08							
	CS0610	6-10					
			1,2,3,4,6,7,8-HpCDF	0.71266			µg/kg
			1,2,3,4,7,8,9-HpCDF	0.04604			µg/kg
			1,2,3,4,7,8-HxCDF	0.15655			µg/kg
			1,2,3,6,7,8-HxCDF	0.06908			µg/kg
			1,2,3,7,8-PeCDF	0.03939			µg/kg
			2,3,4,6,7,8-HxCDF	0.02199			µg/kg
			2,3,4,7,8-PeCDF	0.05302			µg/kg
			2,3,7,8-TCDF	0.06517			µg/kg
			OCDF	0.37187			µg/kg
			TOTAL HpCDF	1.25477			µg/kg
			TOTAL HxCDF	0.68652			µg/kg
			TOTAL PeCDF	0.63311			µg/kg
			TOTAL TCDF	0.55185			µg/kg
	SS22	38-40					
			1,2,3,4,6,7,8-HpCDD	0.51922			µg/kg
			1,2,3,4,6,7,8-HpCDF	0.3677			µg/kg
			1,2,3,4,7,8,9-HpCDF	0.28455			µg/kg
			1,2,3,4,7,8-HxCDD	0.06124			µg/kg
			1,2,3,4,7,8-HxCDF	0.78868			µg/kg
			1,2,3,6,7,8-HxCDD	0.20869			µg/kg
			1,2,3,6,7,8-HxCDF	0.24662			µg/kg
			1,2,3,7,8,9-HxCDD	0.13272			µg/kg
			1,2,3,7,8,9-HxCDF	0.02139			µg/kg
			1,2,3,7,8-PeCDD	0.11253			µg/kg
			1,2,3,7,8-PeCDF	0.05228			µg/kg
			2,3,4,6,7,8-HxCDF	0.18663			µg/kg
			2,3,4,7,8-PeCDF	0.1663			µg/kg
			2,3,7,8-TCDD	0.00361			µg/kg
			2,3,7,8-TCDF	0.1388			µg/kg
			OCDD	0.72647			µg/kg
			OCDF	0.48492			µg/kg
			TOTAL HpCDD	1.2293			µg/kg
			TOTAL HpCDF	1.11004			µg/kg
			TOTAL HxCDD	2.23334			µg/kg

Table 4-6. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
			TOTAL HxCDF	2.67642			µg/kg
			TOTAL PeCDD	1.05232			µg/kg
			TOTAL PeCDF	1.82667			µg/kg
			TOTAL TCDD	0.31546			µg/kg
			TOTAL TCDF	0.62475			µg/kg
N2SC-09							
	CS1015	10-15					
			1,2,3,4,6,7,8-HpCDD	0.14515			µg/kg
			1,2,3,4,6,7,8-HpCDF	3.12715			µg/kg
			1,2,3,4,7,8,9-HpCDF	2.5327			µg/kg
			1,2,3,4,7,8-HxCDD	0.02095			µg/kg
			1,2,3,4,7,8-HxCDF	7.97551		E	µg/kg
			1,2,3,6,7,8-HxCDD	0.04683			µg/kg
			1,2,3,6,7,8-HxCDF	3.47631			µg/kg
			1,2,3,7,8,9-HxCDD	0.03351			µg/kg
			1,2,3,7,8,9-HxCDF	0.19081			µg/kg
			1,2,3,7,8-PeCDD	0.0527			µg/kg
			1,2,3,7,8-PeCDF	0.52219			µg/kg
			2,3,4,6,7,8-HxCDF	1.69729			µg/kg
			2,3,4,7,8-PeCDF	1.81489			µg/kg
			2,3,7,8-TCDD	0.0017		J	µg/kg
			2,3,7,8-TCDF	1.03491		E	µg/kg
			OCDD	0.26909			µg/kg
			OCDF	3.35095			µg/kg
			TOTAL HpCDD	0.44725			µg/kg
			TOTAL HpCDF	9.06709		E	µg/kg
			TOTAL HxCDD	0.54785			µg/kg
			TOTAL HxCDF	24.6755		E	µg/kg
			TOTAL PeCDD	0.31394			µg/kg
			TOTAL PeCDF	15.5241		E	µg/kg
			TOTAL TCDD	0.23854			µg/kg
			TOTAL TCDF	6.11388		E	µg/kg
	CS3640	36-40					
			1,2,3,4,6,7,8-HpCDF	0.45983			µg/kg
			1,2,3,4,7,8,9-HpCDF	0.45495			µg/kg
			1,2,3,4,7,8-HxCDF	1.4729			µg/kg
			1,2,3,6,7,8-HxCDF	0.59902			µg/kg
			1,2,3,7,8-PeCDF	0.07124			µg/kg

Table 4-6. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
			2,3,4,6,7,8-HxCDF	0.29617			µg/kg
			2,3,4,7,8-PeCDF	0.29673			µg/kg
			2,3,7,8-TCDF	0.14295			µg/kg
			OCDF	0.50278			µg/kg
			TOTAL HpCDD	0.02174			µg/kg
			TOTAL HpCDF	1.36197			µg/kg
			TOTAL HxCDD	0.03982			µg/kg
			TOTAL HxCDF	4.17269	E		µg/kg
			TOTAL PeCDF	2.48101			µg/kg
			TOTAL TCDD	0.01896			µg/kg
			TOTAL TCDF	0.55872			µg/kg
N2SC-10							
	CS1015	10-15					
			OCDD	0.0325			µg/kg
			OCDF	0.00295	J		µg/kg

Qualifier

J *Result is an estimated value that is below the lower calibration limit but above the target detection level.*

g *2, 3, 7, 8, -TCDF results have been confirmed on a DB-225 column.*

E *Result exceeds calibration range.*

F *Reported value estimated due to an interference.*

a *See narrative.*

s *Result detected is below the lowest standard and above zero.*

D *Compound quantified using a secondary dilution.*

Table 4-7. Water Level and NAPL Measurements, Newell Street Area II

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
N2SC-01I									
	11/4/98	984.99		13.62	971.37		35.48	949.51	
	11/6/98	984.99		13.64	971.35		35.43	949.56	
	11/9/98	984.99		13.71	971.28		35.43	949.56	
	11/13/98	984.99		13.38	971.61		35.24	949.75	
	11/25/98	984.99		13.66	971.33		35.28	949.71	
	12/8/98	984.99		13.62	971.37		35.41	949.58	
	12/17/98	984.99		13.71	971.28				NAPL on bottom 5 feet of probe tape
	12/29/98	984.99	13.63	13.64	971.35	0.01	36.32	948.67	Well not screened across water table; LNAPL Measurement Suspect
	1/7/99	984.99		13.70	971.29		35.35	949.64	
N2SC-01S									
	11/4/98	985.1		10.96	974.14				
	11/6/98	985.1		11.00	974.10				
	11/9/98	985.1		11.02	974.08				Trace Sheen on probe
	11/13/98	985.1		11.11	973.99				
	11/25/98	985.1		11.12	973.98				
	12/8/98	985.1		10.87	974.23				
	12/17/98	985.1		13.91	971.19				
	12/29/98	985.1		11.02	974.08				
	1/7/99	985.1		11.13	973.97				
	1/22/99	985.1		10.72	974.38				
	1/29/99	985.1		10.69	974.41				

Table 4-7. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	2/5/99	985.1		9.91	975.19				
	3/11/99	985.1		10.16	974.94				
	3/18/99	985.1		10.34	974.76				
	3/24/99	985.1		9.65	975.45				
	4/2/99	985.1		9.42	975.68				Sheen on probe tip
	4/6/99	985.1		9.54	975.56				NAPL on tip of probe
	4/14/99	985.1		9.88	975.22				
	4/23/99	985.1		10.12	974.98				
	4/29/99	985.1		10.23	974.87				slight trace NAPL on probe
	5/7/99	985.1		10.33	974.77				trace NAPL on probe
	5/14/99	985.1		10.34	974.76				
	5/21/99	985.1		10.13	974.97				
	5/27/99	985.1		9.74	975.36				NAPL on probe
N2SC-02									
	11/6/98	985.07		13.82	971.25		34.95	950.12	
	11/9/98	985.07		13.90	971.17		34.89	950.18	
	11/13/98	985.07		13.53	971.54		34.76	950.31	
	11/25/98	985.07		13.82	971.25		34.86	950.21	
	12/8/98	985.07		13.29	971.78		34.90	950.17	
	12/17/98	985.07		13.86	971.21		35.00	950.07	
	12/29/98	985.07		13.80	971.27		35.94	949.13	
	1/7/99	985.07							Not measured, pump in well.
N2SC-031									
	11/4/98	985.33		13.88	971.45				Sheen on probe
	11/6/98	985.33		13.97	971.36				Sheen on probe
	11/9/98	985.33		13.97	971.36				Sheen on probe

Table 4-7. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	11/13/98	985.33		13.62	971.71		36.64	948.69	
	11/25/98	985.33		13.90	971.43		36.51	948.82	
	12/8/98	985.33		13.85	971.48		36.61	948.72	
	12/17/98	985.33		13.93	971.40				NAPL on last 4.0 feet of probe tape
	12/29/98	985.33							Not measured, pump in well
	1/7/99	985.33							Not measured, pump in well.
N2SC-03S									
	11/4/98	985.18		11.99	973.19				Sheen on probe
	11/6/98	985.18		11.91	973.27				
	11/9/98	985.18		11.99	973.19				Trace Sheen on probe
	11/13/98	985.18		12.30	972.88		19.91	965.27	
	11/25/98	985.18		12.74	972.44		20.70	964.48	
	12/8/98	985.18		12.25	972.93		21.38	963.80	
	12/17/98	985.18		11.19	973.99				Well recently bailed, NAPL on tape
	12/29/98	985.18		12.05	973.13				NAPL on probe
	1/7/99	985.18		12.00	973.18				Sheen on probe
	1/22/99	985.18		11.98	973.20				NAPL on probe
	1/29/99	985.18		12.01	973.17				NAPL on probe
	2/5/99	985.18		11.11	974.07				NAPL on probe
	3/11/99	985.18		11.00	974.18				
	3/18/99	985.18		8.26	976.92		21.50	963.68	
	3/24/99	985.18		10.46	974.72				NAPL on probe
	4/2/99	985.18		11.13	974.05		21.15	964.03	
	4/6/99	985.18		11.53	973.65		21.16	964.02	

Table 4-7. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	4/14/99	985.18		12.82	972.36		20.60	964.58	
	4/23/99	985.18		12.06	973.12		21.47	963.71	
	4/29/99	985.18		11.94	973.24		21.43	963.75	
	5/7/99	985.18		11.81	973.37		21.45	963.73	
	5/14/99	985.18		11.86	973.32		21.49	963.69	
	5/21/99	985.18		10.18	975.00		21.43	963.75	
	5/27/99	985.18		10.90	974.28		21.27	963.91	
N2SC-04									
	11/9/98	981.56		10.62	970.94				Sheen on probe
	11/13/98	981.56		10.19	971.37				
	11/25/98	981.56		10.47	971.09				
	12/8/98	981.56		10.41	971.15				
	12/17/98	981.56		10.50	971.06				
	12/29/98	981.56		10.44	971.12				
	1/7/99	981.56		10.47	971.09				
	1/22/99	981.56		9.34	972.22				
	1/29/99	981.56		9.28	972.28				
	2/5/99	981.56		8.56	973.00				
	2/19/99	981.56		9.37	972.19				
	3/11/99	981.56		9.34	972.22				
	3/18/99	981.56		9.30	972.26				
	3/24/99	981.56		7.94	973.62				
	4/2/99	981.56		8.36	973.20				
	4/6/99	981.56		9.00	972.56				
	4/14/99	981.56		9.77	971.79				
	4/23/99	981.56		9.81	971.75				

Table 4-7. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	4/29/99	981.56		9.96	971.60				
	5/7/99	981.56		9.70	971.86				
	5/14/99	981.56		9.75	971.81				
	5/21/99	981.56		8.83	972.73				
	5/27/99	981.56		9.01	972.55				
N2SC-05									
	11/9/98	982.54		11.57	970.97				
	11/13/98	982.54		11.27	971.27				
	11/25/98	982.54		11.46	971.08				
	12/8/98	982.54		11.41	971.13				
	12/17/98	982.54		11.52	971.02				
	12/29/98	982.54		11.43	971.11				
	1/7/99	982.54		11.45	971.09				
	1/22/99	982.54		10.37	972.17				
	1/29/99	982.54		10.11	972.43				
	2/5/99	982.54		9.64	972.90				
	2/19/99	982.54		10.42	972.12				
	3/11/99	982.54		10.39	972.15				
	3/18/99	982.54		10.34	972.20				
	3/24/99	982.54		8.90	973.64				
	4/2/99	982.54		9.35	973.19				
	4/6/99	982.54		10.03	972.51				
	4/14/99	982.54		10.77	971.77				
	4/23/99	982.54		10.82	971.72				
	4/29/99	982.54		10.97	971.57				
	5/7/99	982.54		10.73	971.81				

Table 4-7. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	5/14/99	982.54		10.64	971.90				
	5/21/99	982.54		9.92	972.62				
	5/27/99	982.54		10.02	972.52				
N2SC-06									
	11/6/98	985.27		14.10	971.17				
	11/9/98	985.27		14.14	971.13				
	11/13/98	985.27		13.81	971.46				
	11/25/98	985.27		14.08	971.19				
	12/8/98	985.27		14.03	971.24				
	12/17/98	985.27		14.14	971.13				
	12/29/98	985.27		14.06	971.21				
	1/7/99	985.27		14.10	971.17				
	1/22/99	985.27		12.93	972.34				
	1/29/99	985.27		12.64	972.63				
	2/5/99	985.27		12.06	973.21				
	2/19/99	985.27		12.93	972.34				
	3/11/99	985.27		12.86	972.41				
	3/18/99	985.27		9.00	976.27				
	3/24/99	985.27		11.25	974.02				
	4/2/99	985.27		11.87	973.40				
	4/6/99	985.27		12.48	972.79				
	4/14/99	985.27		13.26	972.01				
	4/23/99	985.27		13.40	971.87				
	4/29/99	985.27		13.51	971.76				
	5/7/99	985.27		13.24	972.03				
	5/14/99	985.27		13.28	971.99				

Table 4-7. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	5/21/99	985.27		11.38	973.89				
	5/27/99	985.27		12.51	972.76				
N2SC-07									
	11/13/98	984.61		13.24	971.37				
	11/25/98	984.61		13.52	971.09				
	12/8/98	984.61		13.48	971.13				
	12/17/98	984.61		13.55	971.06				
	12/29/98	984.61		13.52	971.09				
	1/7/99	984.61		13.53	971.08				
	1/22/99	984.61		12.42	972.19		31.80	952.81	Well pumping indicates apparent DNAPL measurements due to sediment in well
	1/29/99	984.61		12.21	972.40		32.45	952.16	Well pumping indicates apparent DNAPL measurements due to sediment in well
	2/5/99	984.61		11.57	973.04		33.70	950.91	Well pumping indicates apparent DNAPL measurements due to sediment in well
	2/19/99	984.61		12.47	972.14				
	3/11/99	984.61		12.43	972.18				
	3/18/99	984.61		12.41	972.20				
	3/24/99	984.61		10.91	973.70				
	4/2/99	984.61		11.37	973.24				
	4/6/99	984.61		9.05	975.56				
	4/14/99	984.61		12.80	971.81				
	4/23/99	984.61		12.86	971.75				
	4/29/99	984.61		13.00	971.61				

Table 4-7. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	5/7/99	984.61		12.76	971.85				
	5/14/99	984.61		12.80	971.81				
	5/21/99	984.61		10.93	973.68				
	5/27/99	984.61		12.05	972.56				
N2SC-08									
	4/6/99	986.07		12.00	974.07				Not developed
	4/14/99	986.07		12.71	973.36		39.45	946.62	
	4/23/99	986.07		13.04	973.03		41.29	944.78	
	4/29/99	986.07		13.11	972.96		37.35	948.72	
	5/7/99	986.07		13.80	972.27		40.84	945.23	
	5/14/99	986.07		13.75	972.32		40.82	945.25	
	5/21/99	986.07		11.54	974.53		40.67	945.40	
	5/27/99	986.07		12.15	973.92		42.40	943.67	
N2SC-09I									
	4/5/99	987.77		13.67	974.10				Not developed
	4/6/99	987.77		12.67	975.10				Not developed
	4/14/99	987.77		14.42	973.35				
	4/23/99	987.77		14.73	973.04				
	4/29/99	987.77		14.81	972.96				trace NAPL on probe
	5/7/99	987.77		14.49	973.28				
	5/14/99	987.77		14.52	973.25				
	5/21/99	987.77		13.26	974.51				trace NAPL on tip of probe
	5/27/99	987.77		14.84	972.93				
N2SC-09S									
	4/2/99	987.84		11.44	976.40				Not developed, slight sheen
	4/5/99	987.84		12.31	975.53				Not developed, heavy sheen

Table 4-7. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	4/6/99	987.84		12.53	975.31				
	4/14/99	987.84		13.35	974.49		19.31	968.53	
	4/23/99	987.84		13.90	973.94		18.31	969.53	
	4/29/99	987.84		13.79	974.05		18.30	969.54	
	5/7/99	987.84		13.03	974.81				trace NAPL on probe
	5/14/99	987.84		13.00	974.84				
	5/21/99	987.84		11.16	976.68				
	5/27/99	987.84		11.42	976.42				slight sheen
N2SC-11									
	5/7/99	988.05		13.20	974.85				
	5/14/99	988.05		13.25	974.80				
	5/21/99	988.05		12.75	975.30				
	5/27/99	988.05		12.76	975.29				
N2SC-12									
	5/7/99	987.26		11.55	975.71				rusty water
	5/14/99	987.26		11.57	975.69				
	5/21/99	987.26		11.39	975.87				
	5/27/99	987.26		11.21	976.05				

Table 4-8. NAPL physical properties, Newell Street Area II

WELL	SPECIFIC GRAVITY	INTERFACIAL TENSION (DYNE/CM)	VISCOSITY (CENTISTOKES)
NS-10	0.905	NM	NM
NS-15	1.196	water to oil 9.1 water to oil 13.0 oil to water 10.8 oil to water 11.2	12.3
N2SC-01I	1.185	water to oil 13.3 water to oil 13.4 oil to water 9.1 oil to water 9.2	10.9
N2SC-02	1.174	water to oil 6.9 water to oil 7.5 oil to water 8.4 oil to water 8.4	12.2
N2SC-3S	1.154	water to oil 13.8 water to oil 15.4 oil to water 9.5 oil to water 7.3	14.8
N2SC-3I	1.168	water to oil 6.1 water to oil 6.7 oil to water 9.1 oil to water 9.9	14.4
NM Not Measured			

Table 4-9. Summary of NAPL Chemical Analyses, Newell Street Area II

Type	Compound	N2SC-01I (13771):		N2SC-02 (A0257):		N2SC-03I (13773):		N2SC-03S (13772):	
VOC									
	Carbon tetrachloride (mg/kg)	ND		ND		ND		ND	
	cis-1,2-Dichloroethene (mg/kg)	1100	J	ND		ND		4800	
	Methylene chloride (mg/kg)	ND		ND		ND		ND	
	Tetrachloroethene (mg/kg)	2800		2100	J	ND		ND	
	Toluene (mg/kg)	2700		2400	J	1600	J	1600	J
	Trichloroethene (mg/kg)	56000		66000		62000		69000	
	Xylenes (total) (mg/kg)	5500		6900		6300		ND	
	Total VOC (mg/kg)	**68100**		**77400**		**69900**		**75400**	

Table 4-9. (continued)

Type	Compound	N2SC-01I (13771):		N2SC-02 (A0257):		N2SC-03I (13773):		N2SC-03S (13772):	
SVOC									
	1,2,4,5-Tetrachlorobenzene (mg/kg)	970	J	670	J	360	J	250	J
	1,2,4-Trichlorobenzene (mg/kg)	31000		24000		16000		13000	
	1,2-Dichlorobenzene (mg/kg)	600	J	470	J	280	J	170	J
	1,4-Dichlorobenzene (mg/kg)	1200	J	1100	J	650	J	140	J
	2-Methylnaphthalene (mg/kg)	110	J	100	J	110	J	110	J
	Acenaphthene (mg/kg)	ND		ND		ND		83	J
	Anthracene (mg/kg)	ND		ND		ND		59	J
	Benzo(a)anthracene (mg/kg)	ND		ND		ND		100	J
	Benzo(a)pyrene (mg/kg)	ND		ND		ND		61	J
	Benzo(b)fluoranthene (mg/kg)	ND		ND		ND		120	J
	Benzo(k)fluoranthene (mg/kg)	ND		ND		ND		60	J
	Chrysene (mg/kg)	ND		ND		ND		97	J
	Dibenzofuran (mg/kg)	ND		ND		ND		53	J
	Fluoranthene (mg/kg)	ND		ND		55	J	320	J
	Fluorene (mg/kg)	ND		ND		ND		87	J
	Naphthalene (mg/kg)	230	J	200	J	260	J	670	J
	Pentachlorobenzene (mg/kg)	260	J	59	J	ND		ND	
	Phenanthrene (mg/kg)	ND		ND		79	J	360	J
	Pyrene (mg/kg)	ND		ND		ND		180	J
	Total SVOC (mg/kg)	**34370**		**26599**		**17794**		**15920**	
PCB									
	Aroclor 1254 (mg/kg)	290000		320000		300000		290000	
	Total PCB (mg/kg)	**290000**		**320000**		**300000**		**290000**	

Table 4-9. (continued)

Type	Compound	N2SC-011 (13771):		N2SC-02 (A0257):		N2SC-031 (13773):		N2SC-03S (13772):	
Miscellaneous									
	Dieldrin (mg/kg)			ND		ND		ND	
	Endosulfan II (mg/kg)	2700		3500		ND		ND	
Metals									
	Antimony (mg/kg)	0	B	ND		-	B	-	B
	Arsenic (mg/kg)	0	B	ND		ND		1	
	Barium (mg/kg)	1	B	-	B	1	B	1	B
	Chromium (mg/kg)	0	B	-	B	-	B	1	B
	Copper (mg/kg)	0	B	1	B	2	B	6	
	Lead (mg/kg)	1		1		2		6	
	Mercury (mg/kg)	0	B	-	B	-	B	-	B
	Nickel (mg/kg)			ND		ND		3	B
	Selenium (mg/kg)			ND		ND		ND	
	Silver (mg/kg)			ND		ND		-	B
	Tin (mg/kg)	10		2	B	6	B	7	B
	Vanadium (mg/kg)	0	B	ND		-	B	1	B
	Zinc (mg/kg)			1	B	ND		2	B

Table 4-9. (continued)

Type	Compound	N2SC-01I (13771):		N2SC-02 (A0257):		N2SC-03I (13773):		N2SC-03S (13772):	
Dioxin									
	1,2,3,4,6,7,8-HpCDD (µg/kg)	210		170		88		66	
	1,2,3,4,6,7,8-HpCDF (µg/kg)	300	E	240	E	290	E	520	E
	1,2,3,4,7,8,9-HpCDF (µg/kg)	220		190		220	E	320	E
	1,2,3,4,7,8-HxCDD (µg/kg)	50		35		16		15	
	1,2,3,4,7,8-HxCDF (µg/kg)	840	D	840	E	1000	E	1200	D
	1,2,3,6,7,8-HxCDD (µg/kg)	210		150		50		6.9	
	1,2,3,6,7,8-HxCDF (µg/kg)	340	E	250	E	340	E	520	E
	1,2,3,7,8,9-HxCDD (µg/kg)	100		72		29		8.3	
	1,2,3,7,8,9-HxCDF (µg/kg)	290	E	210	E	210	E	240	E
	1,2,3,7,8-PeCDD (µg/kg)	48		38		19	a	7.4	
	1,2,3,7,8-PeCDF (µg/kg)	51		37		55		68	
	2,3,4,6,7,8-HxCDF (µg/kg)	240	E	180		200	E	350	E
	2,3,4,7,8-PeCDF (µg/kg)	160		120		110		140	
	2,3,7,8-TCDD (µg/kg)	7.5		3.8		1	a	ND	
	2,3,7,8-TCDF (µg/kg)	140	E	100	E	69		67	
	HpCDDs (total) (µg/kg)	490		390		190		130	
	HpCDFs (total) (µg/kg)	950		770		920		1600	
	HxCDDs (total) (µg/kg)	1900		1300		490		110	
	HxCDFs (total) (µg/kg)	2800		2400		3100		4500	
	OCDD (µg/kg)	230		180		180		400	
	OCDF (µg/kg)	230		200		220		340	
	PeCDDs (total) (µg/kg)	260		310		77	a	15	
	PeCDFs (total) (µg/kg)	970		780		810		670	
	TCDDs (total) (µg/kg)	82		120		31	a	7.7	
	TCDFs (total) (µg/kg)	310		260		200		230	

Table 4-9. (continued)

Type	Compound	N2SC-01I (13771):	N2SC-02 (A0257):	N2SC-03I (13773):	N2SC-03S (13772):

Qualifier

J	*For organics, result is between MDL and RL.*
B	*Result is between MDL and RL*
g	*2, 3, 7, 8, -TCDF results have been confirmed on a DB-225 column.*
E	*Result exceeds calibration range.*
F	*Reported value estimated due to an interference.*
a	*See narrative.*
s	*Result detected is below the lowest standard and above zero.*
D	*Compound quantified using a secondary dilution.*
j	*Result is an estimated value that is below the lower calibration limit but above the target detection level.*
ND	*Not detected.*

Table 4-10. Summary of May 25 and 26, 1999 DNAPL pumping test, monitoring well N2SC-08

May 25, 1999

TIME	ELAPSE TIME (MIN)	DNAPL RECOVERED (ML)	WATER RECOVERED (ML)
1012	0		
1015	3	800	0
1016	4	450	100
1026	22	100	705
1046	54	110	620
1215	123	405	1910
1315	183	90	1890
1415	243	0	2060
1515	303	0	1990
1615	363	0	1870

May 26, 1999

TIME	ELAPSE TIME (MIN)	DNAPL RECOVERED (ML)	WATER RECOVERED (ML)
0930	.75	190	3810
1030	60	0	2000
1130	120	0	2000

Table 4-11 Summary of 1999 DNAPL Recovery, Newell Street Area II Site.

Month	DNAPL Recovery, in Gallons								
Well	NS-15	NS-30	NS-32	N2SC-02	N2SC-03I	N2SC-03S	N2SC-01I	MW-1S	System 1 [1]
Jan	13.93	9.99	11.88	12.80	9.72	0.45	123.4	0.11	
Feb	7.12 [2]	4.46 [2]	5.74 [2]	14.05	5.40	0.5	194.3	0.37	
March	[3]	[3]	[3]	16.75	11.69	0.46	179.36	.09	120
April	[3]	[3]	[3]	16.64	11.72	0.07	217.82	.05	90
May	[3]	[3]	[3]	14.76	10.93	0.0	160.43	0.0	58
Total	21.05	14.45	17.62	75.00	49.46	1.48	875.31	0.62	268

Notes:

[1] System 1 includes wells NS-15, NS-30 and NS-32 System 1 started pumping in March

[2] Wells pumped February 1 through February 12

[3] DNAPL pumpage totaled in System 1

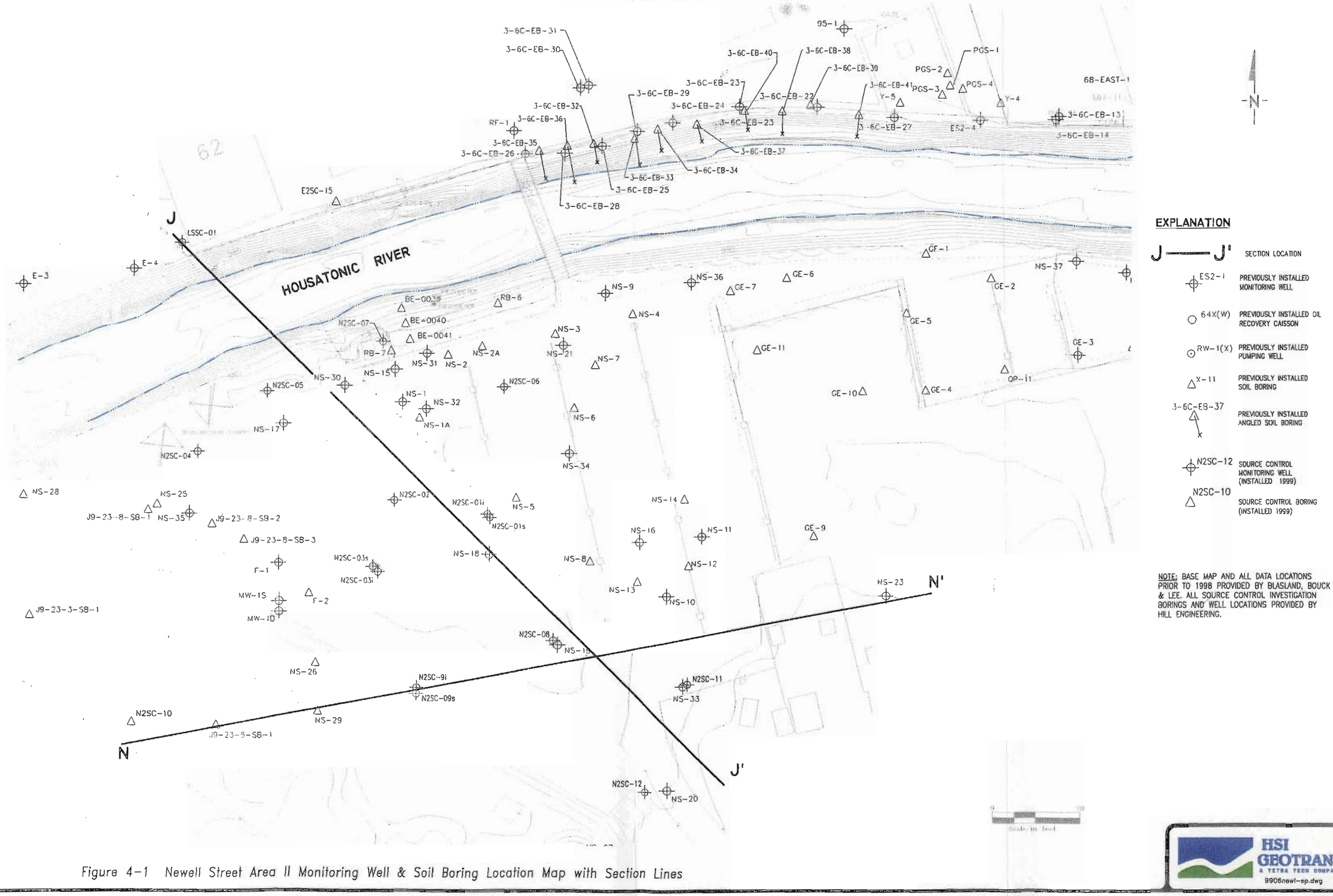


Figure 4-1 Newell Street Area II Monitoring Well & Soil Boring Location Map with Section Lines

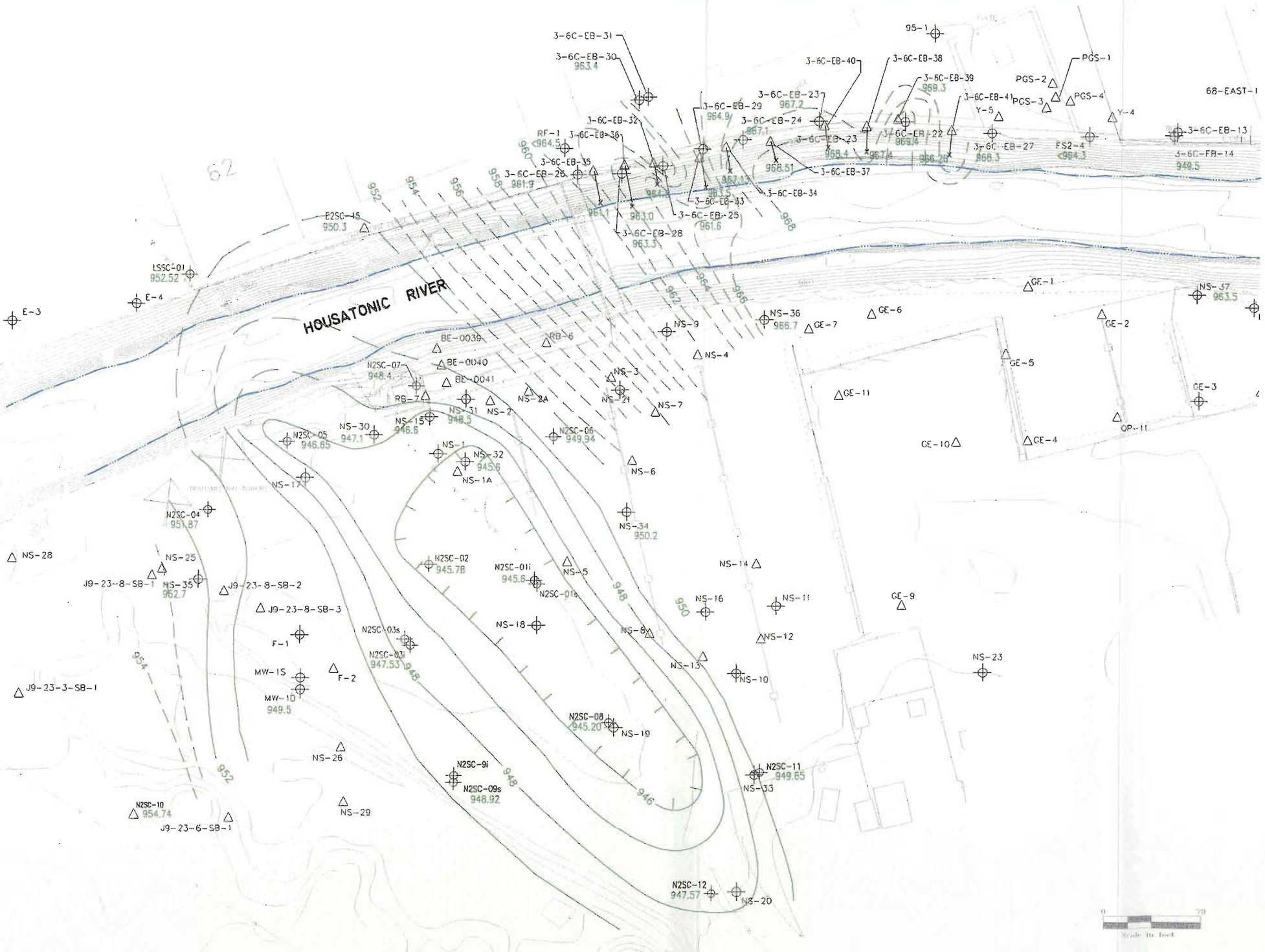


Figure 4-2 Newell Street Area II Top of Till Elevation Contour Map

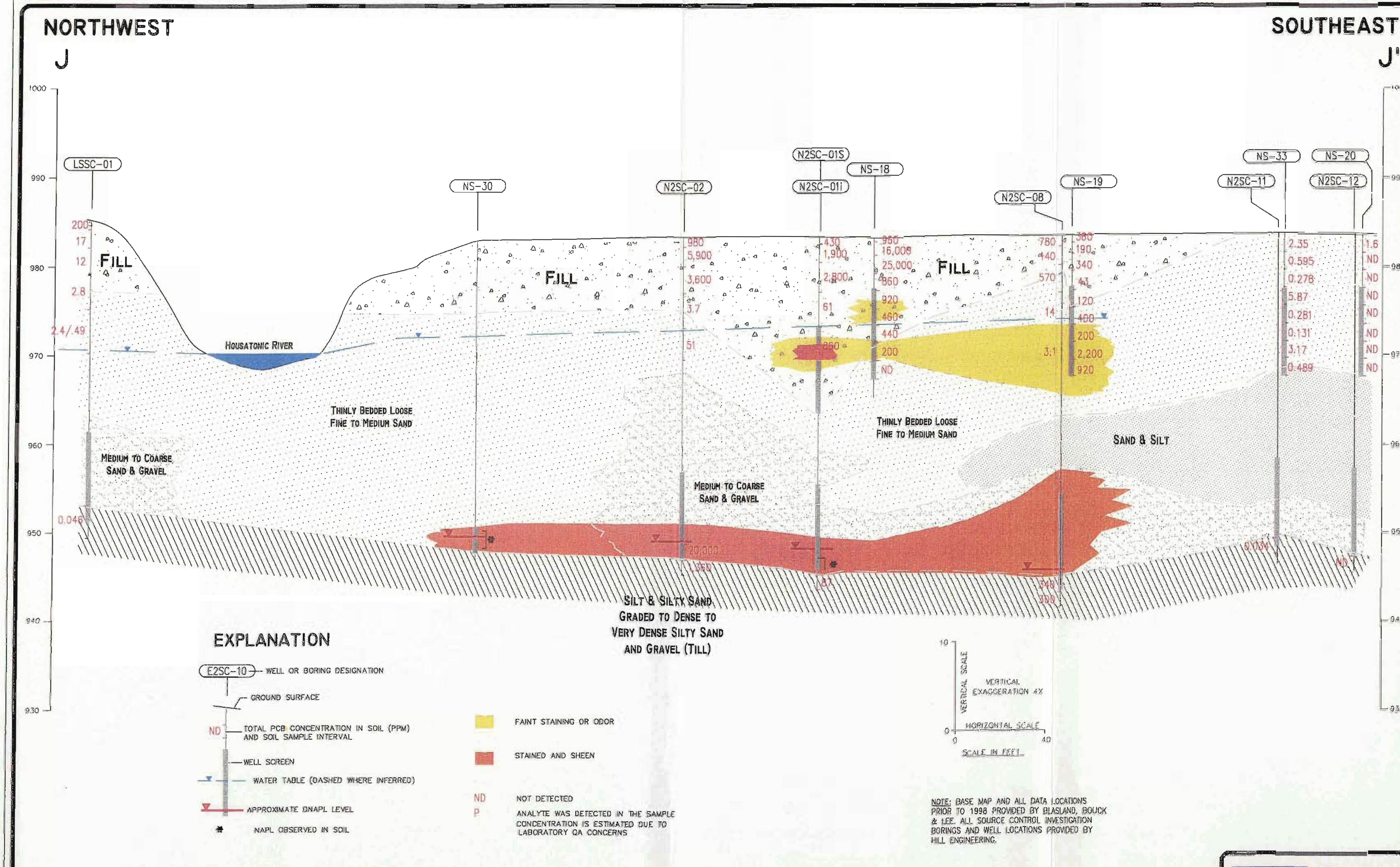


Figure 4-3 Newell Street Area II Cross-Section J-J'

SOUTHWEST

N

NORTHEAST

N

N2SC-10 | NS-29 | N2SC-09i | N2SC-09s | N2SC-08 | NS-19 | NS-33 | N2SC-11 | NS-23

1000
990
980
970
960
950
940
930

1.6
0.092
0.04
0.02
0.025
0.024**
0.051

630
12
6.1

27
8,700
1,300
13,000
3,500

780
140
570
14
3.1

360
190
340
43
120
400
200
2,200
978

2.35
0.595
0.278
5.87
0.281
0.131
3.17
0.489
0.634

4.9
0.44
ND
ND
ND
ND
ND
ND
ND
0.43
2.0
ND

5.8
910**
340
998

SILT & SAND

FILL

THINLY BEDDED LOOSE FINE TO MEDIUM SAND

MEDIUM TO COARSE SAND & GRAVEL

SILTY GRAVEL

SAND SILT & CLAY

MEDIUM TO COARSE SAND & GRAVEL

SILT & SILTY SAND GRADED TO DENSE TO VERY DENSE SILTY SAND AND GRAVEL (TILL)

EXPLANATION

E2SC-10 — WELL OR BORING DESIGNATION

GROUND SURFACE

ND — TOTAL PCB CONCENTRATION IN SOIL (PPM) AND SOIL SAMPLE INTERVAL

WELL SCREEN

WATER TABLE (DASHED WHERE INFERRED)

APPROXIMATE DNAPL LEVEL

NAPL OBSERVED IN SOIL

** COMPOSITE SAMPLE

ND NOT DETECTED

P ANALYTE WAS DETECTED IN THE SAMPLE CONCENTRATION IS ESTIMATED DUE TO LABORATORY QA CONCERNS

FAINT STAINING OR ODOR

STAINED AND SHEEN

VERTICAL SCALE

10

0

VERTICAL EXAGGERATION 4X

HORIZONTAL SCALE

0 40

SCALE IN FEET

NOTE: BASE MAP AND ALL DATA LOCATIONS PRIOR TO 1998 PROVIDED BY BLASLAND, BOUCK & LEE. ALL SOURCE CONTROL INVESTIGATION BORINGS AND WELL LOCATIONS PROVIDED BY HILL ENGINEERING.

HSI GEOTRANS
A TETRA TECH COMPANY

9906-s-N.dwg

Figure 4-4 Newell Street Area II Section F-F'

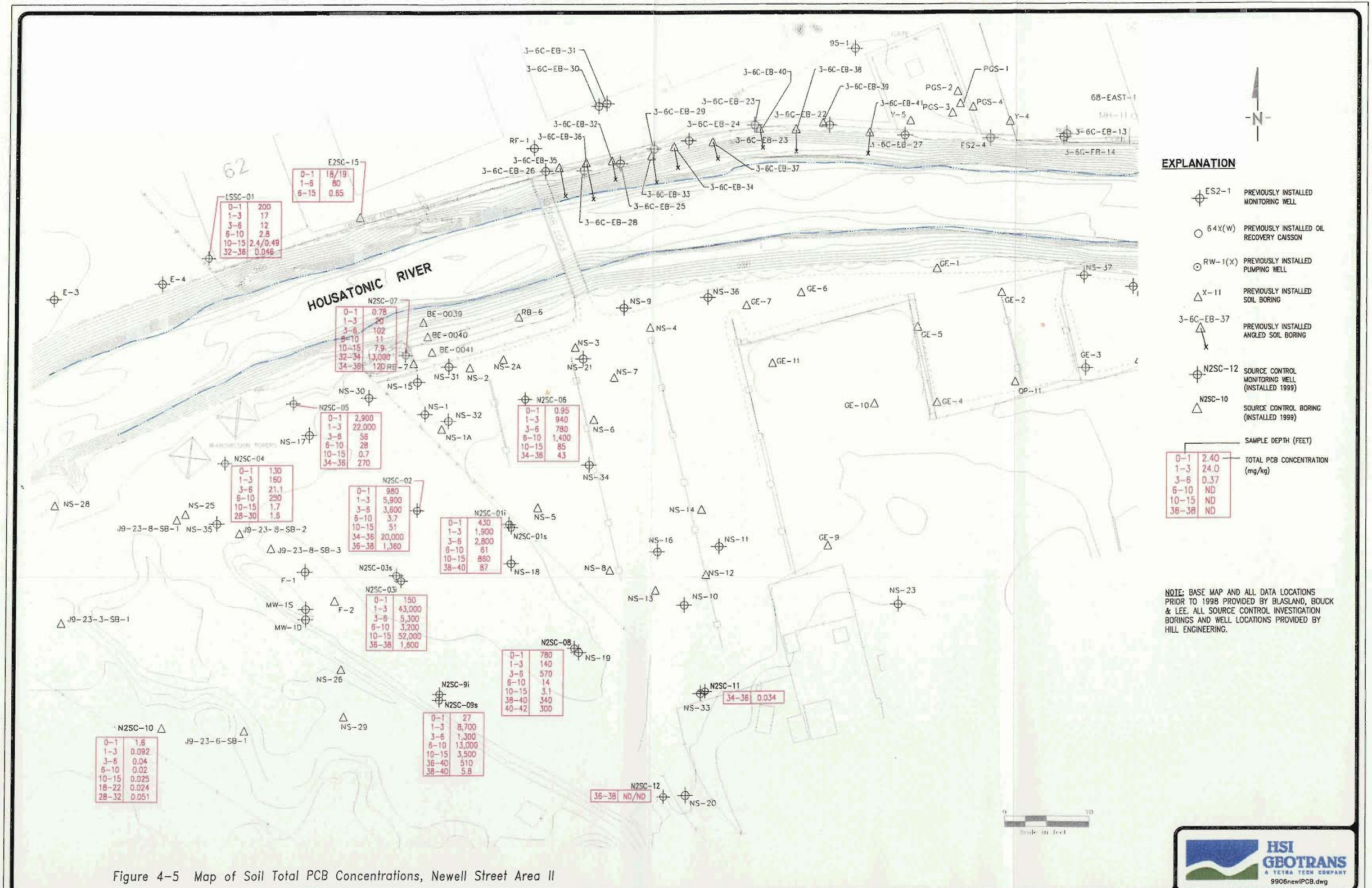
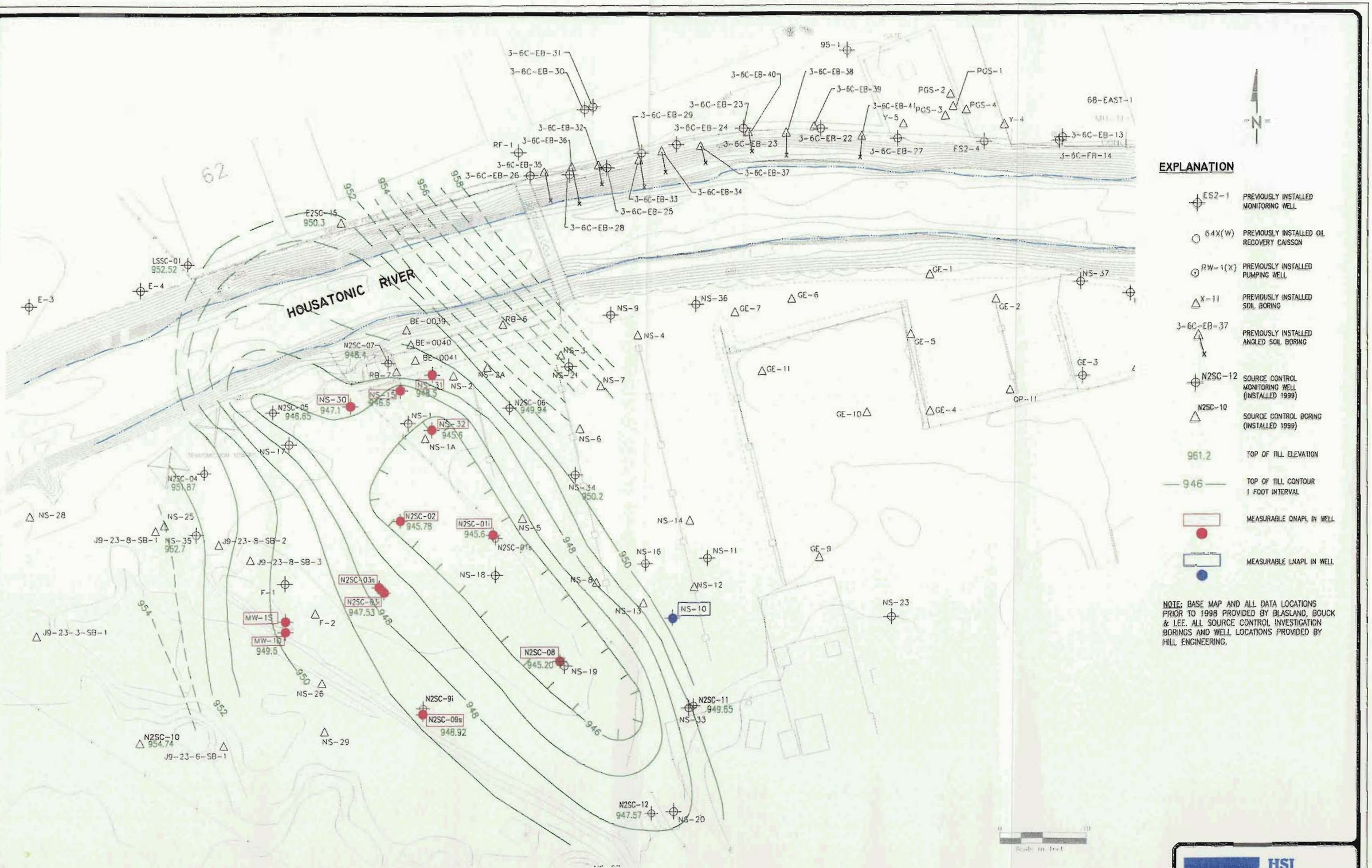


Figure 4-5 Map of Soil Total PCB Concentrations, Newell Street Area II



EXPLANATION

- ES2-1 — PREVIOUSLY INSTALLED MONITORING WELL
- 64X(W) — PREVIOUSLY INSTALLED OIL RECOVERY CAISSON
- RW-1(X) — PREVIOUSLY INSTALLED PUMPING WELL
- X-11 — PREVIOUSLY INSTALLED SOIL BORING
- 3-6C-EB-37 — PREVIOUSLY INSTALLED ANGLED SOIL BORING
- N2SC-12 — SOURCE CONTROL MONITORING WELL (INSTALLED 1999)
- N2SC-10 — SOURCE CONTROL BORING (INSTALLED 1999)
- 961.2 — TOP OF TILL ELEVATION
- 946 — TOP OF TILL CONTOUR 1 FOOT INTERVAL
- MEASURABLE DNAPL IN WELL
- MEASURABLE LNAPL IN WELL

NOTE: BASE MAP AND ALL DATA LOCATIONS PRIOR TO 1998 PROVIDED BY BLASLAND, BOUCK & LEE. ALL SOURCE CONTROL INVESTIGATION BORINGS AND WELL LOCATIONS PROVIDED BY HILL ENGINEERING.

HSI GEOTRANS
A TETRA TECH COMPANY
990snewllDNAPL.dwg

Figure 4-6 Extent of DNAPL and LNAPL, Newell Street Area II

5 LYMAN STREET

Borings and monitoring wells installed at and adjacent to the Lyman Street Site in 1998, as part of the source control investigations, identified DNAPL at the 10 Lyman Street property. This property is located to the west of the Lyman Street site across the street from the General Electric parking lot. Six additional monitoring wells were installed at the Lyman Street site and on the adjacent Lyman Street property between March 4, 1999 and April 2, 1999, to further evaluate the extent of DNAPL, refine the interpretation of the till topography and evaluate the potential presence of LNAPL near the ends of the proposed sheet pile wall near the Housatonic River.

5.1 BORING AND MONITORING WELL INSTALLATION

Six additional monitoring wells were installed at five locations at the Lyman Street site and on the adjacent parcel. Three of the locations were selected to further evaluate the extent of the DNAPL previously identified. The locations of the new wells and the previously installed wells are shown on Figure 5-1. Boring logs and well construction diagrams are included in Appendix A. Two wells were installed at the LSSC-16 location on the 10 Lyman Street property adjacent to the Lyman Street Parking Lot. Monitoring well LSSC-16I was drilled west of existing well LSSC-07, as close as possible to the building on the property. This well was installed to evaluate the western extent of the DNAPL. Shallow monitoring well LSSC-16S was installed adjacent to LSSC-16I to collect a groundwater sample from the top of the water table to evaluate the potential for VOCs to be present in the groundwater in this area. Monitoring well LSSC-17 was installed to evaluate the southern extent of the DNAPL found in monitoring well LSSC-07. Monitoring well LSSC-19 was installed to evaluate the northern extent of the DNAPL found in the central portion of the parking lot. Monitoring wells LSSC-8S and LSSC-18 were installed near the western and eastern end, respectively, of the proposed sheet pile wall to determine if LNAPL is present at these locations and to provide for future monitoring following the installation of that wall.

The unconsolidated deposits encountered in the newly installed wells are similar to those previously observed beneath the Lyman Street site. The Lyman Street site is underlain by fill and fluvial deposits overlying a basal till. The fill ranges in thickness from 0 to 20 feet. The underlying fluvial deposits consist of thinly bedded, fine to medium sand with lenses of coarse sand and sandy gravel. The fluvial deposits range in thickness from less than a foot to more than 30 feet. These fluvial deposits overlie a relatively dense silt and silty sand deposit which is interpreted to be till. The till layer has a maximum thickness of at least 41 feet.

Based on the observations from numerous borings, the relatively dense till is continuous beneath the site. Figure 5-2 is a revised contour map of the top of the till elevation based on data from the existing borings/wells and the newly installed wells. It also incorporates data from soil borings recently installed along the base of the river bank in connection with the preliminary design of the proposed containment barrier (GE, 1999). The top of till is highest in the north central portion of the site and slopes to the northeast and southwest. There appears to be a trough in the top of till surface that begins near borings LS-8 and SB-7 and slopes southwesterly towards monitoring well LS-45. Figure 5-3 (cross section F-F') illustrates the stratigraphy beneath the site. The presence of NAPL, staining, and sheens in the borings and wells is depicted on the cross-section. It should be noted that soil zones which contain staining and/or sheens do not necessarily indicate the presence of separate phase NAPL.

5.2 RESULTS OF CHEMICAL ANALYSES

As described in section 2 of this report, samples of the subsurface soil were collected for PCB and for VOC and/or Appendix IX+3 analyses. Table 5-1 lists the samples collected at the Lyman Street site and the analyses performed on each sample.

The areal distribution of soil PCB concentrations based on the 1998 and 1999 Source Control borings and monitoring wells is shown on Figure 5-4. The soil PCB concentration

data are shown in section view on Figure 5-3. The concentrations of detected analytes are summarized in Tables 5-2 through 5-6.

A groundwater sample was collected, by the low-flow method, from monitoring well LSSC-16S. The sample was analyzed for the Appendix IX+3 constituents. The sample contained Aroclor 1254 at a concentration of .0012 mg/l. The only VOC detected was acetone at a concentration of .0046 mg/l. No SVOCs were detected in the sample. One Dioxin compound (1,2,3,4,6,7,8,9-Octachlorodibenzo [1,4] dioxin) was detected in the sample at a concentration of 0.000012 μg/l. The concentrations of detected analytes in the groundwater sample from LSSC-16S are summarized in Table 5-7.

5.3 EXTENT OF NAPL

LNAPL at the site is currently subject to ongoing remediation by three groundwater/NAPL recovery systems. Since well development was completed, water level and NAPL measurements have been collected approximately weekly from the wells installed at the site in 1998 and 1999. Table 4-8 summarizes these measurements. In addition, GE regularly monitors 37 other wells at the site as part of ongoing monitoring activities. These data have been previously reported in monthly reports for the site and the annual Short-Term Measure Effectiveness Report (Golder Associates, 1998). Based on these combined data, the following evaluation of the extent of NAPL at the site has been made.

With the exception of one suspect measurement (of the twelve made) in well LSSC-17, LNAPL was not observed in any of the six new wells recently drilled. On March 24, 1999, an apparent LNAPL thickness of 0.01 feet was detected in monitoring well LSSC-17 using an oil/water interface probe. It is unlikely that this reading actually represents the presence of LNAPL at this location since the screen in this well does not cross the water table and there were no indications, neither visual or analytical, of LNAPL in the soil samples collected from the boring. Based on the 1998 and 1999 monitoring performed at this site, the extent of LNAPL is shown on Figure 5-5. It is noted that the LNAPL generally occurs within

the limits of the former oxbow D. The western extent of the LNAPL is conservatively shown to include well LS-38, which is monitored weekly and only detected very small quantities of LNAPL (.01 feet) on two occasions in 1998 and once in 1999. These were the only occasions that LNAPL was detected in this well since monitoring was initiated in late 1995. Available data indicate that LNAPL does not extend west of Lyman Street. In addition to the one suspect indication of LNAPL in monitoring well LSSC-17 discussed above, a suspect measurement was also obtained in well LSSC-07 on May 7, 1999. Although 0.01 feet of LNAPL was apparently detected with the oil/water interface probe, well LSSC-07 is screened too deep to allow LNAPL to enter the well. Furthermore, no indication of LNAPL was observed in the soil samples collected near the water table from the boring. DNAPL is currently being monitored and removed from this well on a weekly basis. It is likely that the one apparent LNAPL measurement in this well was actually a small amount of DNAPL held on the water surface by surface tension. The DNAPL may have came off of an oil/water interface probe or a bailer as it was being removed from the well.

The extent of the DNAPL at the site, based on the monitoring conducted in 1998 and 1999, is shown on Figure 5-6. A measurable thickness of DNAPL was observed in one of the six newly installed monitoring wells, LSSC-16I. This monitoring well is located west of Lyman Street directly adjacent to the building on the property at 10 Lyman Street and approximately 30 feet west of monitoring well LSSC-07 where DNAPL was previously observed. The presence of DNAPL in monitoring wells LSSC-07 and LSSC-16I appears related to a trough in the till surface. DNAPL has not been observed in monitoring wells LS-43, LS-44 and LS-45 which are located in the trough downslope from wells LSSC-07 and LSSC-16I, nor in newly installed monitoring well LSSC-17 located approximately 40 feet southeast of well LSSC-07. No DNAPL has been observed in monitoring well LSSC-19 located approximately 120 feet north of well LS-12. Based on these observations, DNAPL is found primarily in an L-shaped area which extends eastward from well LSSC-16I to well LS-31, and then southward to the vicinity of well RW-1. The western limit of the DNAPL, based on the available data, is located between monitoring wells LSSC-16I and LS-45. It should be noted that a small amount of DNAPL was recently detected in LS-38.

Although measurements indicate an approximate DNAPL thickness of 0.25 feet, well pumping indicated that the material consisted primarily of silt, settled to the well bottom, which contained a small amount of DNAPL. In this area the till confining layer slopes northwest towards the trough where monitoring well LSSC-16I and LSSC-17 are located.

5.4 NAPL PROPERTIES

In accordance with the EPA March 17, 1999 conditional approval letter, several samples of LNAPL and DNAPL have been collected for analysis of physical and chemical properties from wells at the Lyman Street site during the ongoing investigations of the site. Additionally, physical and chemical NAPL properties have been previously reported in the Additional Hydrogeologic Assessment and Short-Term Measure Evaluation and Proposal, Lyman Street Parking Lot (Oxbow Area D) (Golder, 1992), MCP Phase I Report for Lyman Street Parking Lot (Oxbow Area D) and Current Assessment Summary for USEPA Area 5A (BBL, 1994), the Addendum to MCP Supplemental Phase II/RCRA Facility Investigation Proposal for Lyman Street/USEPA Area 5A Site (BBL,1997) and in the Source Control Investigation Report (HSI GeoTrans, 1999). Additional samples of DNAPL were collected from monitoring wells LSSC-07 and LSSC-16I for the determination of physical properties during this investigation. The measurements of the physical properties were made by the methods described in section 4.5.

The specific gravity and viscosity of LNAPL samples collected from monitoring wells LS-2 and LS-21 were measured in 1991. The specific gravity ranged from 0.92 to 0.93 g/ml and the viscosity ranged from 65 to 67 centistokes (Golder, 1992) (see Table 5-9). A composite LNAPL sample was collected from wells LS-4, LS-23 and RW-1 for chemical analysis in April 1992. The sample was analyzed for the Appendix IX +3 constituents. The results of the analysis, which are shown in Table 12-1 of Appendix B, indicate that the sample contained 2.7% Aroclor 1254, 4.2 % total SVOC and 0.11% total VOC. In addition, metals, dioxins and dibenzofurans were detected. The SVOCs detected included PAHs, chlorinated benzenes and phtalates. The VOCs detected included chlorinated and non-

chlorinated compounds (BBL, 1997). LNAPL samples collected from recovery wells RW-1(R) and RW-3 in January 1999 were analyzed for total petroleum hydrocarbons (TPH). These analyses indicated that the LNAPL is made up of approximately 66% petroleum hydrocarbons (BBL, 1999). The results of the analyses are summarized in Table 1 in Appendix B.

Several DNAPL samples have been collected for physical property and chemical analyses. The physical properties of the DNAPL are summarized in Table 5-9. The specific gravity of DNAPL samples collected from wells LS-4, LS-12 and RW-1 ranged from 1.076 to 1.165. Viscosity of the samples ranged from 32.95 to 44.35 centistokes (Golder, 1992). DNAPL samples from monitoring wells LSSC-07 and LSSC-16I were collected for physical property analyses in January and April 1999. The specific gravities of these samples were 1.073 and 1.078, respectively. The viscosities of the samples were 8.6 and 13.6 centistokes. Interfacial tension was also determined for these samples. The water to oil interfacial tension ranged from 5.4 to 9.9 dynes/cm, the oil to water interfacial tension ranged from 6.4 to 11.4 dynes/cm. Interfacial tension measurements are also summarized in Table 5-9.

Chemical analyses of DNAPL samples from the Lyman Street site indicate that the DNAPL samples contained Aroclor 1254 ranging from 9.8% to 66%, total SVOCs ranging from 0.4% to 15%, and VOCs from .02% to 11%. In addition, metals, dioxins and dibenzofurans were detected in the samples. The results of the DNAPL chemical analyses from previous reports are summarized in Appendix B. Table 5-10 summarizes the result of the chemical analyses of the DNAPL sample from monitoring well LSSC-07.

The results of the NAPL analyses indicate that although the LNAPL and DNAPL occur as separate plumes with distinct chemical and physical properties, there is some spatial overlap in their distribution and some mixing may have occurred. The principal difference between the DNAPL and LNAPL is the percentage of petroleum hydrocarbons and PCBs. The high percentage of petroleum hydrocarbons and the lower amount of PCBs in the LNAPL, compared to the DNAPL, cause its specific gravity to be less than that of water.

Other organic compounds such as SVOCs and VOCs are present in both the DNAPL and LNAPL. The only PCB detected in the NAPL samples from Lyman Street was Aroclor 1254. Observations of staining and sheens in the soil samples collected from borings and wells indicate that in some areas of the Lyman Street site, such as the area of LS-30 and LS-31 (shown in Figure 5-3) there is a continuous zone of stains and sheens between areas of LNAPL and DNAPL. This indicates that there has likely been some mixing of the LNAPL and DNAPL constituents.

Table 5-1. Lyman Street Site Soil Samples Collected and Analyses Performed

Location	Sample Depth	Sample Name	Type
LSSC-16			
	0-1	CS01	PCB
	1-3	CS0103	PCB
	3-6	CS0306	PCB
	6-10	CS0610	PCB
	10-15	CS1015	Dioxin/Dibenzofuran
	10-15	CS1015	Metals
	10-15	CS1015	PCB
	10-15	CS1015	SVOC
	10-15	CS1015	VOC
	25-27	CS2527	VOC
	25-27	CS2527	SVOC
	25-27	CS2527	PCB
	25-27	CS2527	Metals
	25-27	CS2527	Dioxin/Dibenzofuran
	27-29	CS2729	PCB
	12-14	SS08	VOC
LSSC-17			
	0-1	CS01	PCB
	1-3	CS0103	PCB
	3-6	CS0306	PCB
	6-10	CS0610	PCB
	10-15	CS1015	Dioxin/Dibenzofuran
	10-15	CS1015	Metals
	10-15	CS1015	PCB
	10-15	CS1015	SVOC
	10-15	CS1015	VOC
	23-25	CS2325	PCB
	23-25	CS2325	SVOC
	23-25	CS2325	VOC
	23-25	CS2325	Dioxin/Dibenzofuran
	23-25	CS2325	Metals
	25-27	CS25227	PCB
	10-12	SS07	VOC
	23-25	SS14	VOC

Table 5-1. (continued)

Location	Sample Depth	Sample Name	Type
LSSC-18			
	0-1	CS01	PCB
	1-3	CS0103	PCB
	3-6	CS0306	PCB
	6-10	CS0610	PCB
	10-15	CS1015	SVOC
	10-15	CS1015	PCB
	10-15	CS1015	Metals
	10-15	CS1015	Dioxin/Dibenzofuran
	12-14	SS08	VOC
LSSC-19			
	0-1	CS01	PCB
	1-3	CS0103	PCB
	3-6	CS0306	PCB
	6-10	CS0610	PCB
	10-15	CS1015	Dioxin/Dibenzofuran
	10-15	CS1015	Metals
	10-15	CS1015	PCB
	10-15	CS1015	SVOC
	20-22	CS2022	PCB
	10-12	SS07	VOC

Table 5-2. Soil PCB Concentrations, Lyman Street Site

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
LSSC-16							
	CS01	0-1					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.43			mg/kg
			Aroclor 1260	0.57			mg/kg
			Total PCBs	**1**			
	CS0103	1-3					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.3			mg/kg
			Aroclor 1260	0.36			mg/kg
			Total PCBs	**0.66**			
	CS0306	3-6					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0**			

Table 5-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	CS0610	6-10					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0**			
	CS0610 DUP	6-10					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0**			
	CS1015	10-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	ND			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0**			
	CS2527	25-27					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	2900			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**2900**			

Table 5-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	CS2729	27-29					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	1.9			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**1.9**			
LSSC-17							
	CS01	0-1					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.44			mg/kg
			Aroclor 1260	0.48			mg/kg
			Total PCBs	**0.92**			
	CS0103	1-3					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	43			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**43**			
	CS0306	3-6					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	8.6			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**8.6**			

Table 5-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	CS0610	6-10					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	2.3			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**2.3**			
	CS1015	10-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.49			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.49**			
	CS2325	23-25					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	220			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**220**			
	CS25227	25-27					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	4.3			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**4.3**			

Table 5-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
LSSC-18							
	CS01	0-1					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.24			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.24**			
	CS0103	1-3					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	7.3			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**7.3**			
	CS0306	3-6					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.53			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.53**			
	CS0610	6-10					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.14			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.14**			

Table 5-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	CS1015	10-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.2			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.2**			
LSSC-19							
	CS01	0-1					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.43			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.43**			
	CS0103	1-3					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	16000			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**16000**			
	CS0306	3-6					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	1600			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**1600**			

Table 5-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
	CS0610	6-10					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	270			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**270**			
	CS1015	10-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	810			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**810**			
	CS1015DUP	10-15					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	600			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**600**			
	CS2022	20-22					
			Aroclor 1016	ND			mg/kg
			Aroclor 1221	ND			mg/kg
			Aroclor 1232	ND			mg/kg
			Aroclor 1242	ND			mg/kg
			Aroclor 1248	ND			mg/kg
			Aroclor 1254	0.18			mg/kg
			Aroclor 1260	ND			mg/kg
			Total PCBs	**0.18**			

Table 5-2. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units

Qualifier

ND *Not Detected*

J *Result is between MDL and RL.*

Table 5-3. Detected Soil VOC Concentrations, Lyman Street Site

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
LSSC-16							
	CS1015	10-15					
			Acetone	0.0075	J		mg/kg
	CS2527	25-27					
			Carbon tetrachloride	0.057			mg/kg
			Ethylbenzene	0.0021	J		mg/kg
			Tetrachloroethene	0.0042	J		mg/kg
			Trichloroethene	0.006			mg/kg
			Xylenes (total)	0.077			mg/kg
LSSC-19							
	SS07	10-12					
			Tetrachloroethene	0.013			mg/kg
			Trichloroethene	0.19			mg/kg

Qualifier

J *Result is between MDL and RL.*

E *Result exceeds calibration range.*

Table 5-4. Detected Soil SVOC Concentrations, Lyman Street Site

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
LSSC-16							
	CS2527	25-27					
			1,2,4-Trichlorobenzene	150			mg/kg
LSSC-17							
	CS1015	10-15					
			Benzo(a)pyrene	0.39	J		mg/kg
	CS1015 DUP	10-15					
			Benzo(a)pyrene	0.44	J		mg/kg
	CS2325	23-25					
			1,2,4-Trichlorobenzene	8.6			mg/kg

Qualifier

J *Result is between MDL and RL.*

E *Result exceeds calibration range.*

Table 5-5. Detected Soil Metals Concentrations, Lyman Street Site

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
LSSC-16							
	CS1015	10-15					
			Arsenic	2			mg/kg
			Barium	11.1	B		mg/kg
			Beryllium	0.14	B		mg/kg
			Cadmium	0.077	B		mg/kg
			Chromium	7.4			mg/kg
			Cobalt	6.1			mg/kg
			Copper	6.9			mg/kg
			Lead	4.5			mg/kg
			Nickel	9.8			mg/kg
			Selenium	0.41	B		mg/kg
			Thallium	0.84	B		mg/kg
			Tin	3.4	B		mg/kg
			Vanadium	5.9	B		mg/kg
			Zinc	34.6			mg/kg
	CS1015 DUP	10-15					
			Antimony	0.19			mg/kg
			Arsenic	2.9			mg/kg
			Barium	11.1			mg/kg
			Beryllium	0.2			mg/kg
			Cadmium	0.043			mg/kg
			Chromium	8			mg/kg
			Cobalt	8.3			mg/kg
			Copper	17.5			mg/kg
			Lead	6.7			mg/kg
			Nickel	21.1			mg/kg
			Selenium	0.43			mg/kg
			Vanadium	8			mg/kg
			Zinc	51.6			mg/kg
	CS2527	25-27					
			Arsenic	8.1			mg/kg
			Barium	17.7	B		mg/kg
			Beryllium	0.13	B		mg/kg
			Cadmium	0.48	B		mg/kg
			Chromium	12.2			mg/kg

Table 5-5. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
			Cobalt	15.3			mg/kg
			Copper	34			mg/kg
			Lead	14.2			mg/kg
			Mercury	0.031	B		mg/kg
			Nickel	22.6			mg/kg
			Thallium	0.58	B		mg/kg
			Vanadium	9.4			mg/kg
			Zinc	69.5			mg/kg
LSSC-17							
	CS1015	10-15					
			Arsenic	2.2			mg/kg
			Barium	28.9			mg/kg
			Beryllium	0.25	B		mg/kg
			Cadmium	0.17	B		mg/kg
			Chromium	9.3			mg/kg
			Cobalt	7.3			mg/kg
			Copper	10.1			mg/kg
			Lead	7.7			mg/kg
			Mercury	0.016	B		mg/kg
			Nickel	12.3			mg/kg
			Selenium	0.33	B		mg/kg
			Thallium	0.74	B		mg/kg
			Vanadium	8.1			mg/kg
			Zinc	47.7			mg/kg
	CS1015 DUP	10-15					
			Antimony	0.18			mg/kg
			Arsenic	1.9			mg/kg
			Arsenic	2.3			mg/kg
			Barium	31.5			mg/kg
			Barium	25.5			mg/kg
			Beryllium	0.24			mg/kg
			Beryllium	0.27	B		mg/kg
			Cadmium	0.18	B		mg/kg
			Cadmium	0.13			mg/kg
			Chromium	8.2			mg/kg
			Chromium	8.2			mg/kg
			Cobalt	7.8			mg/kg
			Cobalt	7			mg/kg

Table 5-5. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
			Copper	10.6			mg/kg
			Copper	9			mg/kg
			Lead	4.8			mg/kg
			Lead	4.5			mg/kg
			Mercury	0.015		B	mg/kg
			Nickel	11.3			mg/kg
			Nickel	13.7			mg/kg
			Thallium	0.87		B	mg/kg
			Tin	5.9			mg/kg
			Vanadium	8.2			mg/kg
			Vanadium	8.2			mg/kg
			Zinc	44.2			mg/kg
			Zinc	47.2			mg/kg
	CS2325	23-25					
			Arsenic	7.1			mg/kg
			Barium	13		B	mg/kg
			Beryllium	0.11		B	mg/kg
			Cadmium	0.41		B	mg/kg
			Chromium	10.3			mg/kg
			Cobalt	11.6			mg/kg
			Copper	23.6			mg/kg
			Lead	8.5			mg/kg
			Nickel	19.1			mg/kg
			Silver	0.084		B	mg/kg
			Vanadium	6.9			mg/kg
			Zinc	50.9			mg/kg
LSSC-18							
	CS1015	10-15					
			Aluminum	6600			mg/kg
			Arsenic	25.4			mg/kg
			Barium	88.3			mg/kg
			Calcium, Total	5940			mg/kg
			Chromium	18.6			mg/kg
			Copper	72.5			mg/kg
			Iron	25600			mg/kg
			Magnesium	3590			mg/kg
			Manganese	245			mg/kg
			Mercury	0.17		!	mg/kg

Table 5-5. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
			Nickel	17.3			mg/kg
			Potassium, Total	841		!	mg/kg
			Sulfide	298			mg/kg
			Vanadium	20			mg/kg
			Zinc	42.1			mg/kg
LSSC-19							
	CS1015	10-15					
			Aluminum	8750			mg/kg
			Arsenic	3.4			mg/kg
			Barium	4.3			mg/kg
			Calcium, Total	1510			mg/kg
			Chromium	9.9			mg/kg
			Copper	28.2			mg/kg
			Iron	21000			mg/kg
			Magnesium	4260			mg/kg
			Manganese	540			mg/kg
			Nickel	18.5			mg/kg
			Potassium, Total	136		!	mg/kg
			Sulfide	144			mg/kg
			Zinc	74.3			mg/kg

Qualifier

B *Result is between MDL and RL*

! *Result is between MDL and LOQ*

Table 5-6. Detected Soil Dioxin and Dibenzofuran Concentrations, Lyman Street Site

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
LSSC-16							
	CS1015	10-15					
			1,2,3,4,6,7,8-HpCDD	0.01841	J		µg/kg
			1,2,3,4,6,7,8-HpCDF	0.01017	J		µg/kg
			OCDD	0.12572			µg/kg
			OCDF	0.01525	J		µg/kg
			TOTAL HpCDD	0.03083			µg/kg
			TOTAL HpCDF	0.01585	J		µg/kg
	CS2527	25-27					
			1,2,3,4,6,7,8-HpCDD	2.13501	E		µg/kg
			1,2,3,4,6,7,8-HpCDF	2.56241	E		µg/kg
			1,2,3,4,7,8,9-HpCDF	1.57278			µg/kg
			1,2,3,4,7,8-HxCDD	0.10386			µg/kg
			1,2,3,4,7,8-HxCDF	4.26784	E		µg/kg
			1,2,3,6,7,8-HxCDD	0.08888			µg/kg
			1,2,3,6,7,8-HxCDF	1.72669			µg/kg
			1,2,3,7,8,9-HxCDD	0.08315			µg/kg
			1,2,3,7,8-PeCDD	0.04061			µg/kg
			1,2,3,7,8-PeCDF	0.1878			µg/kg
			2,3,4,6,7,8-HxCDF	0.17033			µg/kg
			2,3,4,7,8-PeCDF	0.68308			µg/kg
			2,3,7,8-TCDF	0.44785	E		µg/kg
			OCDD	16.496	E		µg/kg
			OCDF	7.07344			µg/kg
			TOTAL HpCDD	3.667	E		µg/kg
			TOTAL HpCDF	7.62763	E		µg/kg
			TOTAL HxCDD	2.13289	E		µg/kg
			TOTAL HxCDF	13.2839	E		µg/kg
			TOTAL PeCDD	0.32742			µg/kg
			TOTAL PeCDF	6.76195	E		µg/kg
			TOTAL TCDD	0.39254			µg/kg
			TOTAL TCDF	2.65886	E		µg/kg
LSSC-17							
	CS1015	10-15					
			OCDD	0.00598	J		µg/kg
	CS1015 DUP	10-15					
			1,2,3,4,6,7,8-HpCDD	0.00294	J		µg/kg

Table 5-6. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
			OCDD	0.01599	J		µg/kg
			OCDF	0.00384	J		µg/kg
			TOTAL HpCDD	0.00678	J		µg/kg
	CS2325	23-25					
			1,2,3,4,6,7,8-HpCDD	0.38188			µg/kg
			1,2,3,4,6,7,8-HpCDF	0.36497			µg/kg
			1,2,3,4,7,8,9-HpCDF	0.25533			µg/kg
			1,2,3,4,7,8-HxCDD	0.01747			µg/kg
			1,2,3,4,7,8-HxCDF	0.50795			µg/kg
			1,2,3,6,7,8-HxCDD	0.01527			µg/kg
			1,2,3,6,7,8-HxCDF	0.18806			µg/kg
			1,2,3,7,8,9-HxCDD	0.01590			µg/kg
			1,2,3,7,8,9-HxCDF	0.01459			µg/kg
			1,2,3,7,8-PeCDD	0.00808			µg/kg
			1,2,3,7,8-PeCDF	0.01700			µg/kg
			2,3,4,6,7,8-HxCDF	0.02659			µg/kg
			2,3,4,7,8-PeCDF	0.08416			µg/kg
			2,3,7,8-TCDF	0.04121			µg/kg
			OCDD	2.88819			µg/kg
			OCDF	1.17960			µg/kg
			TOTAL HpCDD	0.63770			µg/kg
			TOTAL HpCDF	1.14921			µg/kg
			TOTAL HxCDD	0.24762			µg/kg
			TOTAL HxCDF	1.40507			µg/kg
			TOTAL PeCDD	0.04813			µg/kg
			TOTAL PeCDF	0.68267			µg/kg
			TOTAL TCDD	0.07216			µg/kg
			TOTAL TCDF	0.17943			µg/kg
LSSC-18							
	CS1015	10-15					
			2,3,7,8-TCDF	0.00434			µg/kg
			TOTAL TCDF	0.00715			µg/kg
LSSC-19							
	CS1015	10-15					
			1,2,3,4,6,7,8-HpCDD	0.04162			µg/kg
			1,2,3,4,6,7,8-HpCDF	0.54708			µg/kg
			1,2,3,4,7,8,9-HpCDF	0.43004			µg/kg
			1,2,3,4,7,8-HxCDD	0.00706	J		µg/kg

Table 5-6. (continued)

Location	Sample Name	Sample Depth (feet)	Compound	Result	Qualifier	Modifier	Units
			1,2,3,4,7,8-HxCDF	1.35815			µg/kg
			1,2,3,6,7,8-HxCDD	0.01327			µg/kg
			1,2,3,6,7,8-HxCDF	0.50428			µg/kg
			1,2,3,7,8,9-HxCDD	0.01095			µg/kg
			1,2,3,7,8-PeCDF	0.05479			µg/kg
			2,3,4,6,7,8-HxCDF	0.32648			µg/kg
			2,3,4,7,8-PeCDF	0.20862			µg/kg
			2,3,7,8-TCDF	0.06378			µg/kg
			OCDD	0.10117			µg/kg
			OCDF	0.67235			µg/kg
			TOTAL HpCDD	0.11309			µg/kg
			TOTAL HpCDF	1.5546			µg/kg
			TOTAL HxCDD	0.13931			µg/kg
			TOTAL HxCDF	4.07838		E	µg/kg
			TOTAL PeCDD	0.06057			µg/kg
			TOTAL PeCDF	2.43457			µg/kg
			TOTAL TCDD	0.09649			µg/kg
			TOTAL TCDF	0.66038			µg/kg

Qualifier

J *Result is an estimated value that is below the lower calibration limit but above the target detection level.*

g *2, 3, 7, 8, -TCDF results have been confirmed on a DB-225 column.*

E *Result exceeds calibration range.*

F *Reported value estimated due to an interference.*

a *See narrative.*

s *Result detected is below the lowest standard and above zero.*

D *Compound quantified using a secondary dilution.*

Table 5-7. Groundwater Sample Analyses Summary, Well LSSC-16I

Location	Sample Name	Compound	Result	Qualifier	Units
VOC					
LSSC-16S					
	GW0315				
		Acetone	0.004600	J	mg/L
PCB					
LSSC-16S					
	GW0315				
		Aroclor 1016	ND		mg/L
		Aroclor 1221	ND		mg/L
		Aroclor 1232	ND		mg/L
		Aroclor 1242	ND		mg/L
		Aroclor 1248	ND		mg/L
		Aroclor 1254	0.001200		mg/L
		Aroclor 1260	ND		mg/L
		Total PCBs	**0.001200**		**mg/L**
Metals					
LSSC-16S					
	GW0315				
		Barium	0.029800	B	mg/L
		Chromium	0.000970	B	mg/L
		Copper	0.001400	B	mg/L
		Selenium	0.004100	B	mg/L
		Thallium	0.004200	B	mg/L
		Zinc	0.052800		mg/L
Dioxin					
LSSC-16S					
	GW0315				
		OCDD	0.000012	J	µg/L

Qualifier

B *For Metals, Result is between MDL and RL*

J *For Organics, Result is between MDL and RL*

ND *Not Detected*

Table 5-8. Water Level and NAPL Measurements, Lyman Street Site

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
LSSC-01									
	1/7/99	986.95		15.81	971.14				
	1/22/99	986.95		14.80	972.15				
	1/29/99	986.95		14.69	972.26				
	2/5/99	986.95		14.17	972.78				
	2/19/99	986.95		14.84	972.11				
	3/11/99	986.95		14.88	972.07				
	3/18/99	986.95		14.73	972.22				
	4/2/99	986.95		13.74	973.21				
	4/6/99	986.95		14.43	972.52				
	4/14/99	986.95		15.12	971.83				
	4/23/99	986.95		15.14	971.81				
	4/30/99	986.95		15.52	971.43				
	5/7/99	986.95		15.10	971.85				
	5/14/99	986.95		15.48	971.47				
	5/27/99	986.95		14.42	972.53				
LSSC-03									
	12/21/98	988.96		17.23	971.73				
	12/28/98	988.96		17.16	971.80				
	1/7/99	988.96		17.25	971.71				
	1/22/99	988.96		16.45	972.51				
	1/29/99	988.96		16.22	972.74				
	2/5/99	988.96		15.82	973.14				
	2/19/99	988.96		16.35	972.61				

Table 5-8. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	3/5/99	988.96		15.51	973.45				
	3/11/99	988.96		16.31	972.65				
	3/17/99	988.96		16.40	972.56				
	3/24/99	988.96		15.07	973.89				
	4/2/99	988.96		15.39	973.57				
	4/6/99	988.96		15.80	973.16				
	4/14/99	988.96		16.42	972.54				
	4/23/99	988.96		16.52	972.44				
	4/30/99	988.96		16.63	972.33				
	5/7/99	988.96		16.45	972.51				
	5/14/99	988.96		16.68	972.28				
	5/21/99	988.96		15.20	973.76				
	5/27/99	988.96		15.87	973.09				
LSSC-04									
	12/17/98	988.9		17.21	971.69				
	12/21/98	988.9		17.21	971.69				
	12/28/98	988.9		17.15	971.75				
	1/7/99	988.9		17.22	971.68				
	1/22/99	988.9		16.42	972.48				
	1/29/99	988.9		16.20	972.70				
	2/5/99	988.9		15.80	973.10				
	2/19/99	988.9		16.32	972.58				
	3/5/99	988.9		15.47	973.43				
	3/11/99	988.9		16.26	972.64				
	3/17/99	988.9		16.39	972.51				
	3/24/99	988.9		15.05	973.85				

Table 5-8. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	4/2/99	988.9		15.35	973.55				
	4/6/99	988.9		15.79	973.11				
	4/14/99	988.9		16.40	972.50				
	4/23/99	988.9		16.52	972.38				
	4/30/99	988.9		16.61	972.29				
	5/7/99	988.9		16.42	972.48				
	5/14/99	988.9		16.63	972.27				
	5/21/99	988.9		15.17	973.73				
	5/27/99	988.9		15.86	973.04				
LSSC-05									
	12/17/98	984.87		13.61	971.26				Trace NAPL on probe
	12/21/98	984.87		13.60	971.27				Sheen on probe
	12/28/98	984.87		13.55	971.32				
	1/7/99	984.87		13.62	971.25				
	1/22/99	984.87		12.79	972.08				
	1/29/99	984.87		12.62	972.25				
	2/5/99	984.87		12.22	972.65				
	2/19/99	984.87		12.79	972.08				
	3/5/99	984.87		11.90	972.97				
	3/11/99	984.87		12.74	972.13				
	3/17/99	984.87		12.84	972.03				
	3/24/99	984.87		11.46	973.41				
	4/2/99	984.87		11.76	973.11				
	4/6/99	984.87		12.23	972.64				
	4/14/99	984.87		12.86	972.01				
	4/23/99	984.87		12.94	971.93				

Table 5-8. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	4/30/99	984.87		13.05	971.82				
	5/7/99	984.87		12.86	972.01				NAPL on probe
	5/14/99	984.87		12.90	971.97				
	5/21/99	984.87		11.54	973.33				
	5/27/99	984.87	12.25	12.30	972.57	0.05			
LSSC-06									
	12/17/98	985.04		13.82	971.22				
	12/21/98	985.04		13.00	972.04				
	12/28/98	985.04		13.75	971.29				
	1/7/99	985.04		13.82	971.22				
	1/22/99	985.04		13.98	971.06				NAPL on probe
	1/29/99	985.04		12.83	972.21				
	2/5/99	985.04		12.43	972.61				1.5' NAPL on probe
	2/19/99	985.04	12.95	13.37	971.67	0.42			
	3/5/99	985.04	12.11	12.20	972.84	0.09			
	3/11/99	985.04	12.91	13.15	971.89	0.24			
	3/17/99	985.04	13.00	13.81	971.23	0.81			
	3/24/99	985.04	11.65	11.91	973.13	0.26			
	4/2/99	985.04	11.91	12.29	972.75	0.38			
	4/6/99	985.04	12.41	12.90	972.14	0.49			
	4/14/99	985.04	13.01	13.77	971.27	0.76			
	4/23/99	985.04	13.08	13.85	971.19	0.77			
	4/30/99	985.04	13.19	14.04	971.00	0.85			
	5/7/99	985.04	13.01	13.50	971.54	0.49			
	5/14/99	985.04	13.05	13.51	971.53	0.46			
	5/21/99	985.04	11.78	11.91	973.13	0.13			

Table 5-8. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	5/27/99	985.04	12.41	13.05	971.99	0.64			
LSSC-07									
	1/7/99	982.61		11.07	971.54		23.36	959.25	
	1/22/99	982.61		10.31	972.30				2' NAPL on probe
	1/29/99	982.61		10.13	972.48		23.22	959.39	
	2/5/99	982.61		9.74	972.87		22.98	959.63	
	2/19/99	982.61		10.31	972.30		22.27	960.34	Flush mount full of ice
	3/5/99	982.61		9.42	973.19		23.79	958.82	NAPL pumped 3/4/99
	3/11/99	982.61		10.26	972.35		22.41	960.20	
	3/17/99	982.61		10.33	972.28		23.45	959.16	
	3/24/99	982.61		9.02	973.59		22.43	960.18	
	4/2/99	982.61		9.30	973.31		23.46	959.15	
	4/6/99	982.61		9.79	972.82		23.50	959.11	
	4/30/99	982.61		10.65	971.96		23.55	959.06	
	5/7/99	982.61	10.41	10.42	972.19	0.01	23.58	959.03	LNAPL measurement suspect; well screen does not cross water table
	5/14/99	982.61		10.71	971.90		23.96	958.65	
	5/21/99	982.61		8.74	973.87		24.01	958.60	
	5/27/99	982.61		9.86	972.75		24.75	957.86	
LSSC-08									
	12/21/98	983.26		12.41	970.85				
	12/28/98	983.26		12.40	970.86				
	1/7/99	983.26		12.41	970.85				
	1/22/99	983.26		11.46	971.80				
	1/29/99	983.26		11.43	971.83				

Table 5-8. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	2/5/99	983.26		10.96	972.30				
	2/19/99	983.26		11.59	971.67				
	3/5/99	983.26		10.41	972.85				
	3/11/99	983.26		11.62	971.64				
	3/17/99	983.26		11.69	971.57				
	3/24/99	983.26		10.29	972.97				
	4/2/99	983.26		10.52	972.74				
	4/6/99	983.26		11.20	972.06				
	4/14/99	983.26		11.85	971.41				
	4/23/99	983.26		11.84	971.42				
	4/30/99	983.26		11.98	971.28				
	5/7/99	983.26		11.77	971.49				
	5/14/99	983.26		12.09	971.17				
	5/21/99	983.26		10.24	973.02				
	5/27/99	983.26		11.18	972.08				
LSSC-08S									
	4/2/99	983.24		10.49	972.75				Not developed
	4/5/99	983.24		10.92	972.32				Not developed
	4/6/99	983.24		11.12	972.12				Not developed
	4/14/99	983.24		11.83	971.41				
	4/23/99	983.24		11.81	971.43				
	4/30/99	983.24		11.97	971.27				rusty water
	5/7/99	983.24		11.75	971.49				
	5/14/99	983.24		12.08	971.16				
	5/21/99	983.24		10.19	973.05				
	5/27/99	983.24		11.15	972.09				

Table 5-8. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
LSSC-09									
	12/17/98	985.19		14.16	971.03				
	12/21/98	985.19		14.20	970.99				
	12/28/98	985.19		14.11	971.08				
	1/7/99	985.19		14.22	970.97				
	1/22/99	985.19		13.58	971.61				
	1/29/99	985.19		13.33	971.86				
	2/5/99	985.19		13.08	972.11				
	2/19/99	985.19		13.51	971.68				
	3/5/99	985.19		13.08	972.11				
	3/11/99	985.19		13.46	971.73				
	3/17/99	985.19		13.58	971.61				
	3/24/99	985.19		12.39	972.80				
	4/2/99	985.19		12.69	972.50				
	4/6/99	985.19		12.97	972.22				
	4/14/99	985.19		13.52	971.67				
	4/23/99	985.19		13.65	971.54				
	4/30/99	985.19		13.69	971.50				
	5/7/99	985.19		13.51	971.68				rusty water
	5/14/99	985.19		13.85	971.34				
	5/21/99	985.19		12.53	972.66				
	5/27/99	985.19		12.88	972.31				rusty water
LSSC-10									
	1/7/99	987.18		9.73	977.45				
	1/22/99	987.18		9.26	977.92				
	1/29/99	987.18		8.57	978.61				

Table 5-8. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	2/5/99	987.18		8.26	978.92				
	2/19/99	987.18		8.36	978.82				
	3/5/99	987.18		8.20	978.98				sheen on probe
	3/11/99	987.18		7.99	979.19				
	3/17/99	987.18		8.04	979.14				
	3/24/99	987.18		7.38	979.80				
	4/2/99	987.18		7.42	979.76				
	4/6/99	987.18		7.49	979.69				
	4/14/99	987.18		6.70	980.48				
	4/23/99	987.18		7.99	979.19				
	4/30/99	987.18		8.16	979.02				
	5/7/99	987.18		8.21	978.97				
	5/14/99	987.18		8.29	978.89				
	5/21/99	987.18		8.18	979.00				
	5/27/99	987.18		7.81	979.37				
LSSC-161									
	3/5/99	981.01		7.80	973.21				odor
	3/11/99	981.01		8.56	972.45		28.51	952.50	
	3/17/99	981.01		8.71	972.30		28.39	952.62	
	3/24/99	981.01		6.38	974.63		28.10	952.91	
	4/2/99	981.01		7.65	973.36		27.68	953.33	
	4/6/99	981.01		8.22	972.79		27.92	953.09	
	4/14/99	981.01		8.76	972.25		27.60	953.41	
	4/23/99	981.01		8.84	972.17		28.12	952.89	
	4/30/99	981.01		7.98	973.03		27.84	953.17	
	5/7/99	981.01		8.78	972.23		27.59	953.42	

Table 5-8. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	5/14/99	981.01		9.04	971.97		27.63	953.38	
	5/21/99	981.01		7.10	973.91		27.67	953.34	
	5/27/99	981.01		8.24	972.77		28.48	952.53	
LSSC-16S									
	3/5/99	981.41		8.21	973.20				
	3/11/99	981.41		9.00	972.41				sheen
	3/15/99	981.41		8.97	972.44				
	3/17/99	981.41		9.08	972.33				
	3/24/99	981.41		6.77	974.64				
	4/2/99	981.41		8.04	973.37				
	4/6/99	981.41		8.50	972.91				
	4/14/99	981.41		9.15	972.26				
	4/23/99	981.41		8.82	972.59				
	5/7/99	981.41		9.16	972.25				
	5/14/99	981.41		9.41	972.00				
	5/21/99	981.41		7.56	973.85				
	5/27/99	981.41		8.59	972.82				
LSSC-17									
	3/11/99	982.53		10.37	972.16				
	3/17/99	982.53		10.46	972.07				
	3/24/99	982.53	9.09	9.10	973.43	0.01			LNAPL measurement suspect; well screen does not cross water table
	4/2/99	982.53		9.38	973.15				Very slight sheen
	4/6/99	982.53		9.89	972.64				
	4/14/99	982.53		10.52	972.01				

Table 5-8. (continued)

Boring	Date Measured	Measuring Point Elevation	Depth to LNAPL	Depth to Water	Groundwater Elevation	LNAPL Thickness	Depth to DNAPL	DNAPL Elevation	*Notes*
	4/23/99	982.53		10.61	971.92				
	4/30/99	982.53		10.74	971.79				slight sheen on probe
	5/7/99	982.53		10.52	972.01				
	5/14/99	982.53		10.82	971.71				
	5/21/99	982.53		8.98	973.55				
	5/27/99	982.53		9.96	972.57				sheen on probe tip
LSSC-18									
	4/2/99	987.45		14.34	973.11				Not developed
	4/5/99	987.45		14.76	972.69				Not developed
	4/14/99	987.45		15.66	971.79				
	4/23/99	987.45		15.69	971.76				
	4/30/99	987.45		15.83	971.62				
	5/7/99	987.45		15.60	971.85				
	5/14/99	987.45		15.91	971.54				
	5/21/99	987.45		13.85	973.60				
	5/27/99	987.45		14.96	972.49				
LSSC-19									
	4/2/99	987.16		12.21	974.95				Not developed
	4/5/99	987.16		12.36	974.80				Not developed
	4/14/99	987.16		12.88	974.28				
	4/23/99	987.16		13.17	973.99				
	4/30/99	987.16		13.24	973.92				
	5/7/99	987.16		13.19	973.97				
	5/14/99	987.16		13.25	973.91				
	5/21/99	987.16		12.71	974.45				
	5/27/99	987.16		12.63	974.53				

Table 5-9. NAPL physical properties, Lyman Street site

WELL	SPECIFIC GRAVITY	INTERFACIAL TENSION (DYNE/CM)	VISCOSITY (CENTISTOKES)
LSSC-07	1.073	water to oil 5.4 water to oil 9.6 oil to water 11.4 oil to water 6.4	8.6
LSSC-16I	1.078	water to oil 7.7 water to oil 9.9 oil to water 11.0 oil to water 10.7	13.6
LS-12	1.165	NM	44.35
LS-4	1.091	NM	32.95
RW-1	1.076	NM	42.43
LS-2	0.9205	NM	65.68
LS-21	0.9333	NM	67.16

Table 5-10. Summary of NAPL Chemical Analyses, Well LSSC-07

Type	Compound	LSSC-07 (#A0260)	
VOC			
	Carbon tetrachloride (mg/kg)	78000	
	cis-1,2-Dichloroethene (mg/kg)	ND	
	Methylene chloride (mg/kg)	3400	
	Tetrachloroethene (mg/kg)	ND	
	Toluene (mg/kg)	ND	
	Trichloroethene (mg/kg)	20000	
	Xylenes (total) (mg/kg)	10000	
	Total VOC (mg/kg)	**111400**	
SVOC			
	1,2,4,5-Tetrachlorobenzene (mg/kg)	570	J
	1,2,4-Trichlorobenzene (mg/kg)	30000	
	1,2-Dichlorobenzene (mg/kg)	490	J
	1,4-Dichlorobenzene (mg/kg)	640	J
	2-Methylnaphthalene (mg/kg)	150	J
	Acenaphthene (mg/kg)	ND	
	Anthracene (mg/kg)	ND	
	Benzo(a)anthracene (mg/kg)	ND	
	Benzo(a)pyrene (mg/kg)	ND	
	Benzo(b)fluoranthene (mg/kg)	ND	
	Benzo(k)fluoranthene (mg/kg)	ND	
	Chrysene (mg/kg)	ND	
	Dibenzofuran (mg/kg)	ND	
	Fluoranthene (mg/kg)	ND	
	Fluorene (mg/kg)	ND	
	Naphthalene (mg/kg)	ND	
	Pentachlorobenzene (mg/kg)	ND	
	Phenanthrene (mg/kg)	ND	
	Pyrene (mg/kg)	ND	
	Total SVOC (mg/kg)	**31850**	
PCB			
	Aroclor 1254 (mg/kg)	260000	
	Total PCB (mg/kg)	**260000**	
Miscellaneous			
	Dieldrin (mg/kg)	1300	
	Endosulfan II (mg/kg)	ND	

Table 5-10. (continued)

Type	Compound	LSSC-07 (#A0260)	
Metals			
	Antimony (mg/kg)	ND	
	Arsenic (mg/kg)	ND	
	Barium (mg/kg)	3.3	B
	Chromium (mg/kg)	0.52	B
	Copper (mg/kg)	1.3	B
	Lead (mg/kg)	7	
	Mercury (mg/kg)	0.74	
	Nickel (mg/kg)	ND	
	Selenium (mg/kg)	0.23	B
	Silver (mg/kg)	0.051	B
	Tin (mg/kg)	2.6	B
	Vanadium (mg/kg)	ND	
	Zinc (mg/kg)	0.96	B

Table 5-10. (continued)

Type	Compound	LSSC-07 (#A0260)	
Dioxin			
	1,2,3,4,6,7,8-HpCDD (µg/kg)	180	
	1,2,3,4,6,7,8-HpCDF (µg/kg)	340	E
	1,2,3,4,7,8,9-HpCDF (µg/kg)	260	E
	1,2,3,4,7,8-HxCDD (µg/kg)	12	
	1,2,3,4,7,8-HxCDF (µg/kg)	770	E
	1,2,3,6,7,8-HxCDD (µg/kg)	11	s
	1,2,3,6,7,8-HxCDF (µg/kg)	310	E
	1,2,3,7,8,9-HxCDD (µg/kg)	9.8	s
	1,2,3,7,8,9-HxCDF (µg/kg)	170	
	1,2,3,7,8-PeCDD (µg/kg)	ND	
	1,2,3,7,8-PeCDF (µg/kg)	24	
	2,3,4,6,7,8-HxCDF (µg/kg)	150	
	2,3,4,7,8-PeCDF (µg/kg)	86	
	2,3,7,8-TCDD (µg/kg)	ND	
	2,3,7,8-TCDF (µg/kg)	ND	
	HpCDDs (total) (µg/kg)	280	
	HpCDFs (total) (µg/kg)	1100	
	HxCDDs (total) (µg/kg)	150	
	HxCDFs (total) (µg/kg)	2300	
	OCDD (µg/kg)	1500	E
	OCDF (µg/kg)	660	E
	PeCDDs (total) (µg/kg)	72	a
	PeCDFs (total) (µg/kg)	700	
	TCDDs (total) (µg/kg)	47	a
	TCDFs (total) (µg/kg)	260	

Qualifier

- J *For organics, result is between MDL and RL.*
- *B* *Result is between MDL and RL*
- *g* *2, 3, 7, 8, -TCDF results have been confirmed on a DB-225 column.*
- *E* *Result exceeds calibration range.*
- *F* *Reported value estimated due to an interference.*
- *a* *See narrative.*
- *s* *Result detected is below the lowest standard and above zero.*
- *D* *Compound quantified using a secondary dilution.*
- j *Result is an estimated value that is below the lower calibration limit but above the target detection level.*

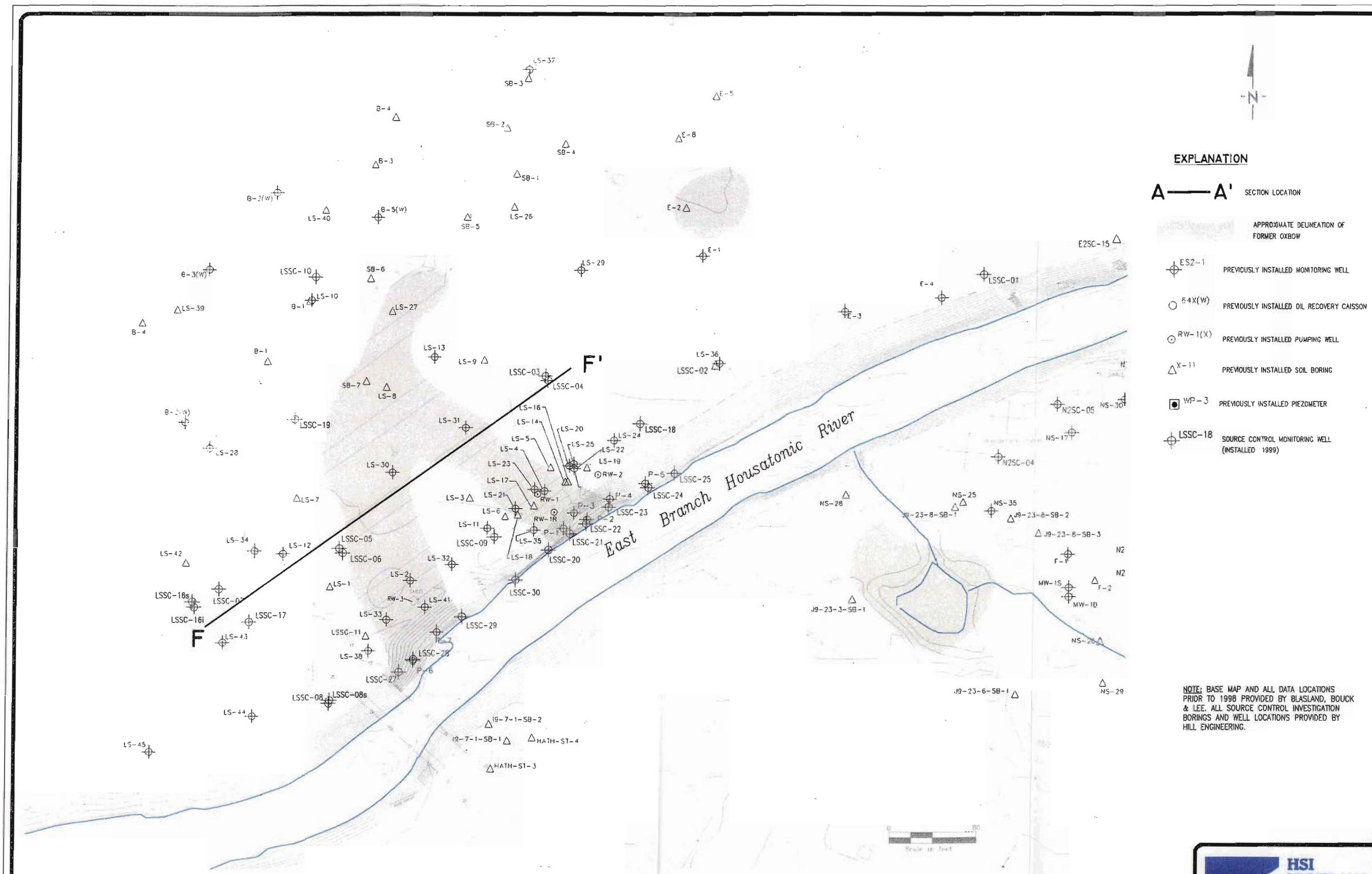


Figure 5-1 Lyman Street Site, Well & Boring Location Map Showing Section Locations

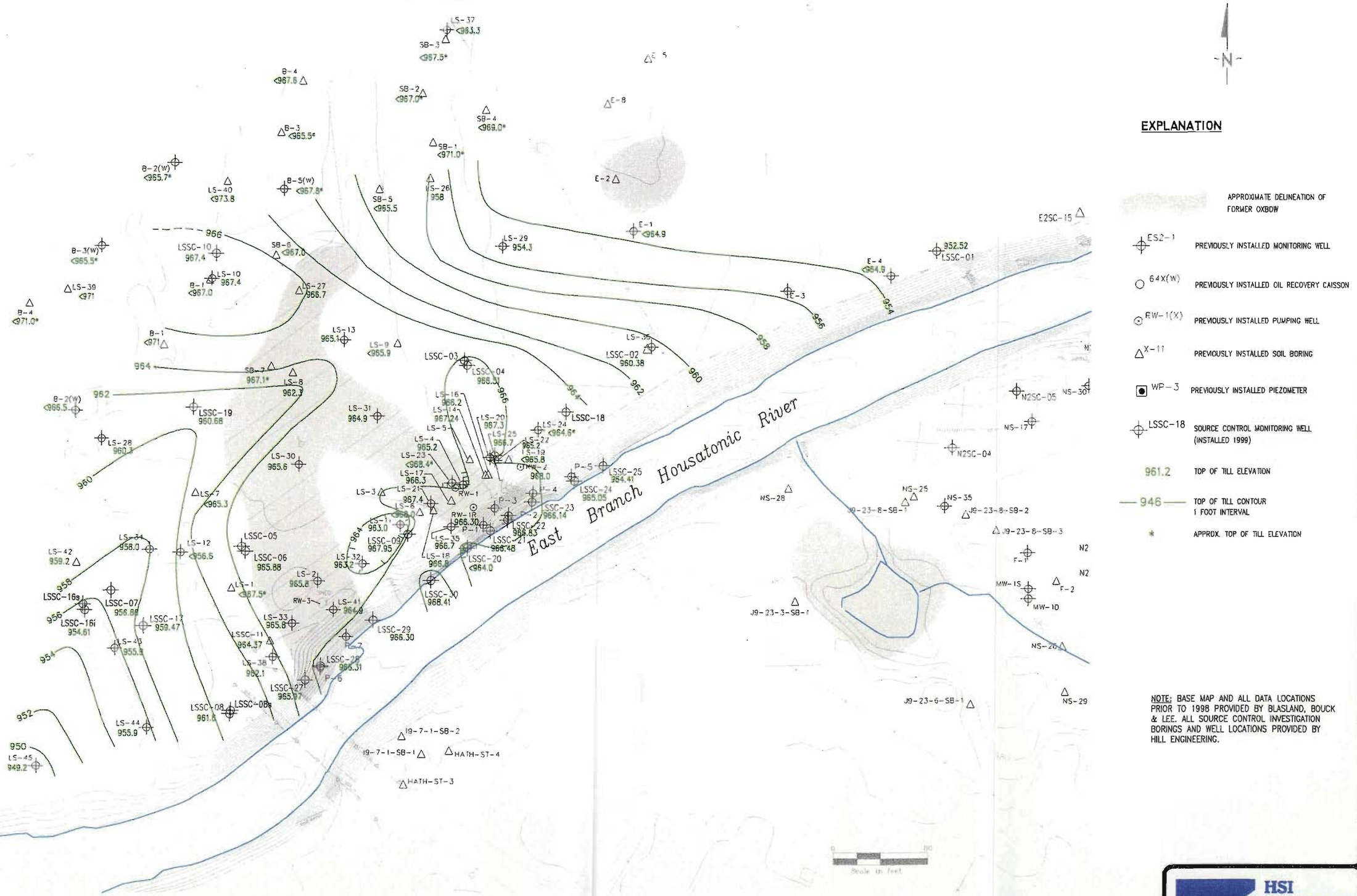


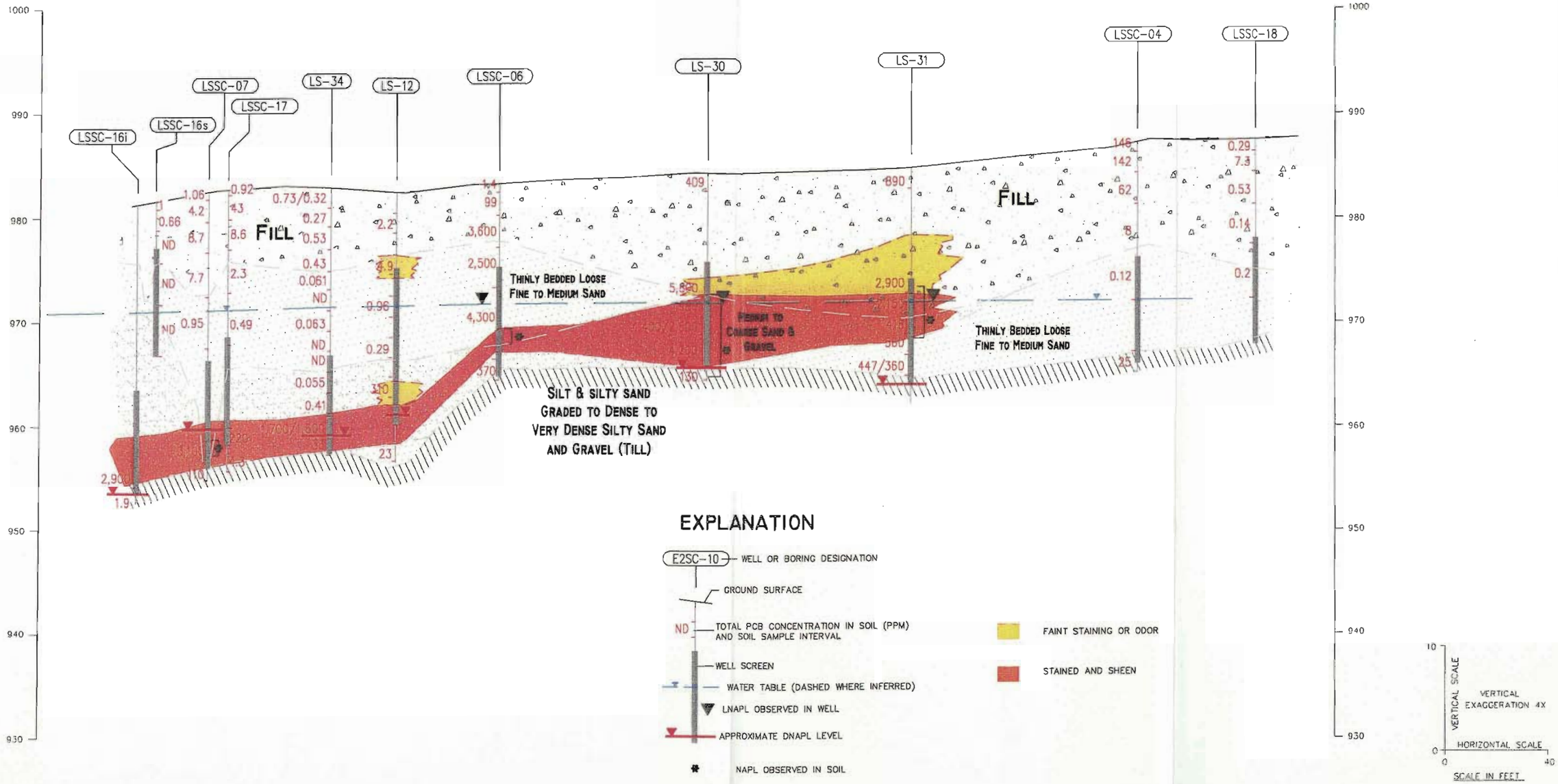
Figure 5-2 Lyman Street Site Top of Till Elevation Contour Map

SOUTHWEST

F

NORTHEAST

F



EXPLANATION

- E2SC-10 — WELL OR BORING DESIGNATION
- GROUND SURFACE
- ND — TOTAL PCB CONCENTRATION IN SOIL (PPM) AND SOIL SAMPLE INTERVAL
- WELL SCREEN
- WATER TABLE (DASHED WHERE INFERRED)
- LNAPL OBSERVED IN WELL
- APPROXIMATE DNAPL LEVEL
- * — NAPL OBSERVED IN SOIL
- ND — NOT DETECTED
- P — ANALYTE WAS DETECTED IN THE SAMPLE CONCENTRATION IS ESTIMATED DUE TO LABORATORY QA CONCERNS

- FAINT STAINING OR ODOR
- STAINED AND SHEEN

VERTICAL SCALE: 10 — VERTICAL EXAGGERATION 4X

HORIZONTAL SCALE: 0 — 40

SCALE IN FEET

NOTE: BASE MAP AND ALL DATA LOCATIONS PRIOR TO 1998 PROVIDED BY BLASLAND, BOUCK & LEE. ALL SOURCE CONTROL INVESTIGATION BORINGS AND WELL LOCATIONS PROVIDED BY HILL ENGINEERING.

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9906-s-F.dwg

Figure 5-3 Lyman Street Cross-Section F-F'

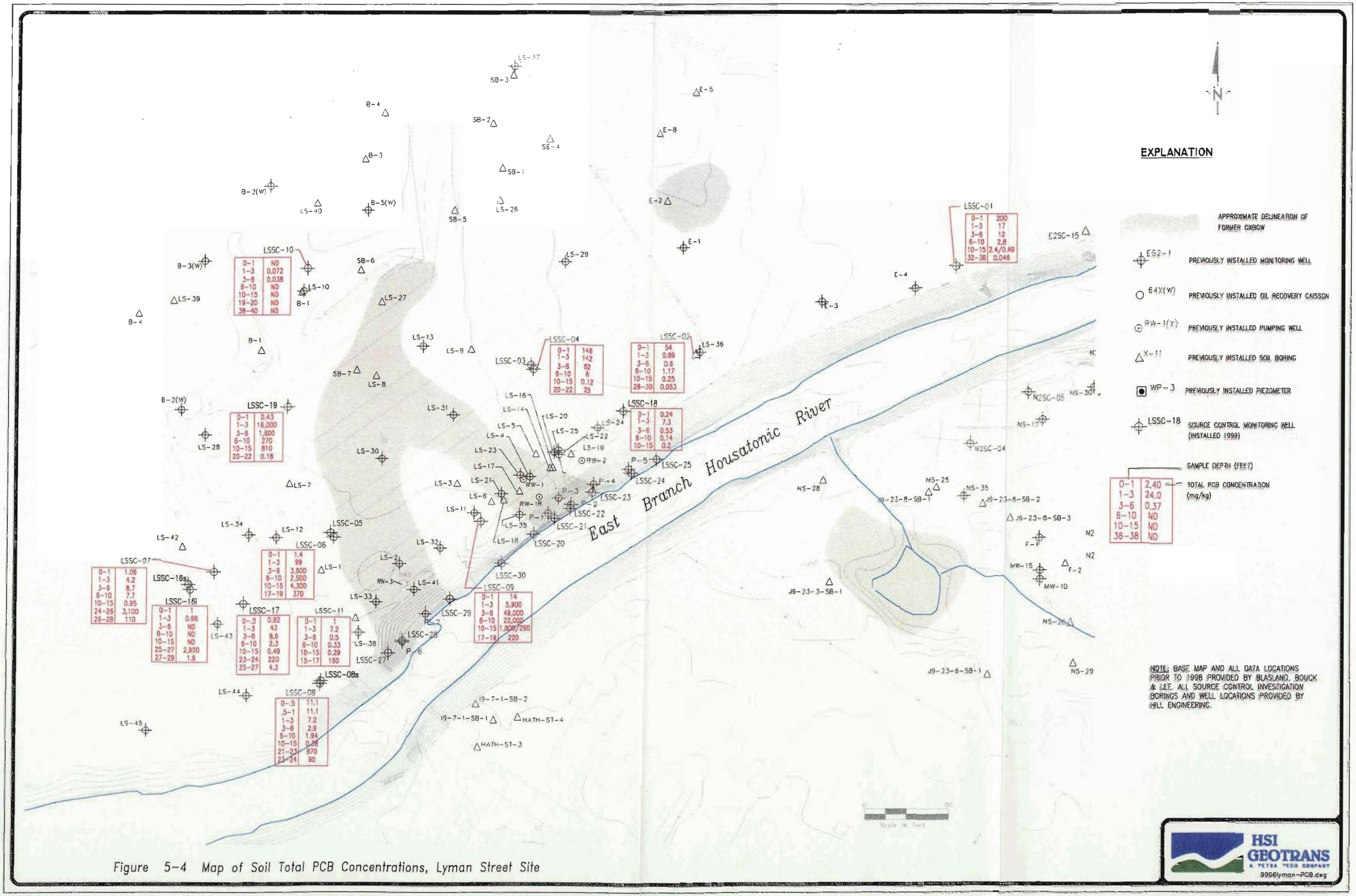

Figure 5-4 Map of Soil Total PCB Concentrations, Lyman Street Site

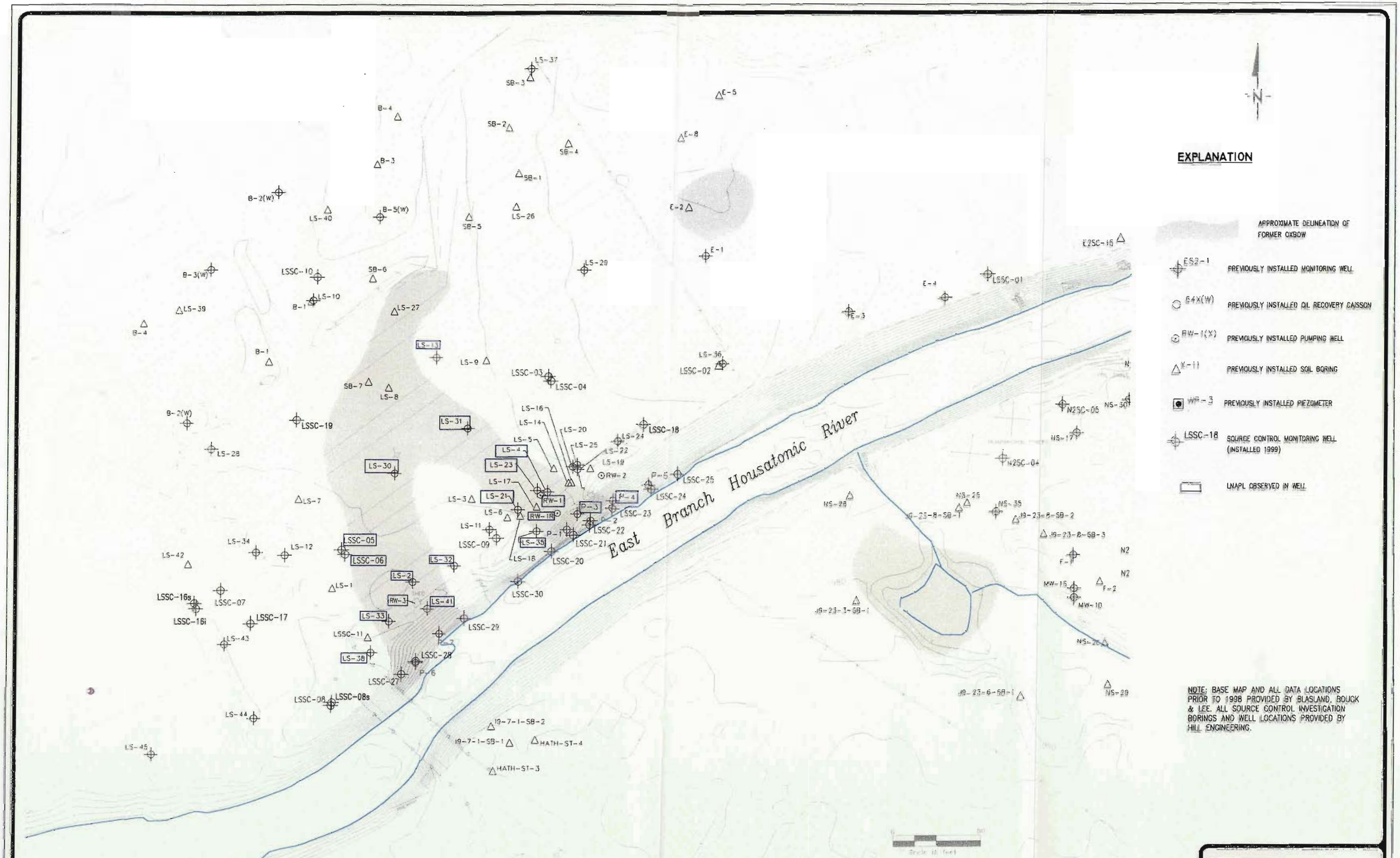

Figure 5-5 Extent of LNAPL, Lyman Street Site

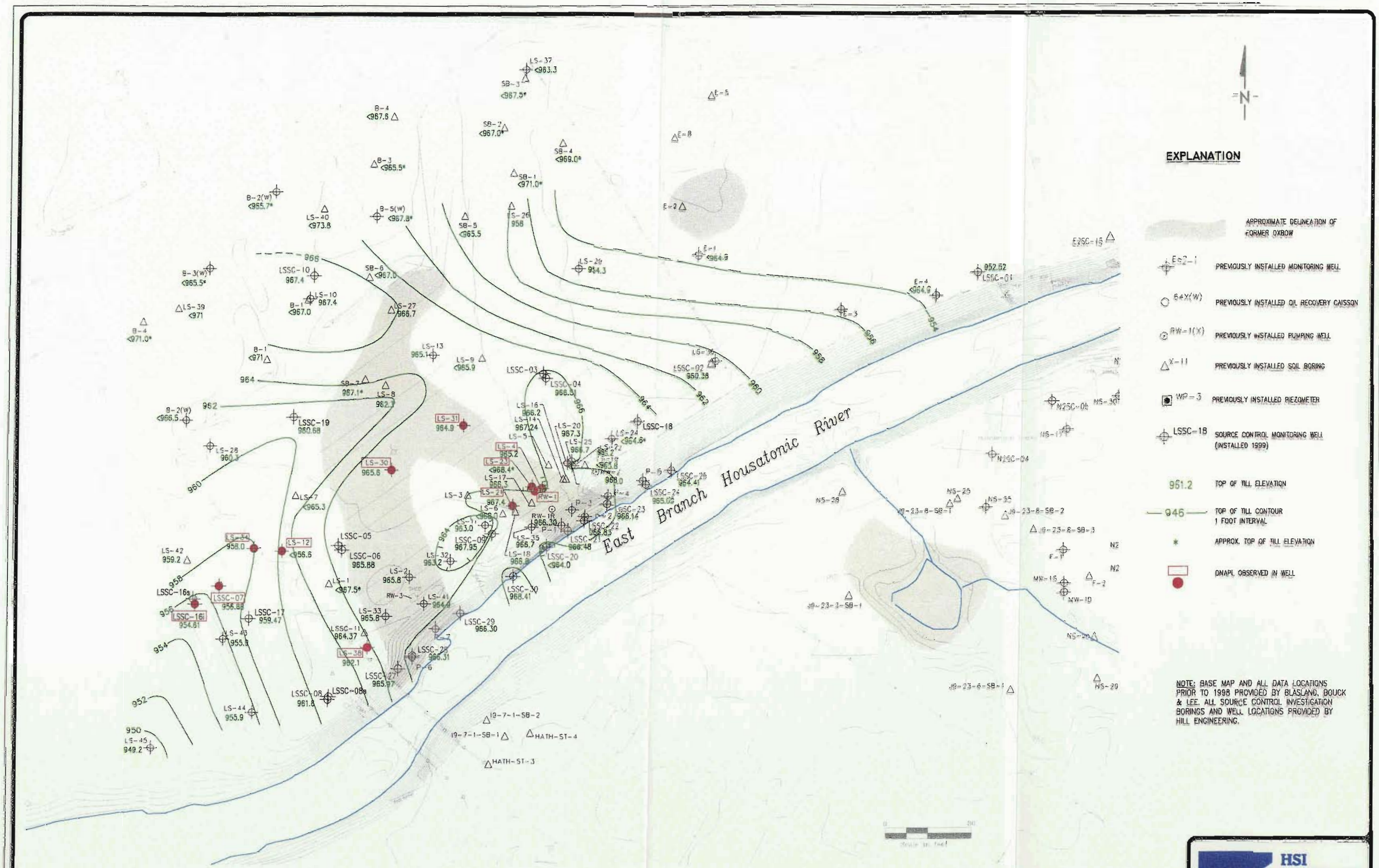

Figure 5-6 Extent of DNAPL, Lyman Street Site

6 PROPOSED ADDITIONAL INVESTIGATIONS AND SCHEDULE

To further evaluate the extent of DNAPL beneath the 10 Lyman Street property and to further monitor potential changes in the LNAPL distribution in the Lyman Street parking lot, three additional monitoring wells are proposed. Additions to the well-monitoring program at the East Street Area 2, Lyman Street and Newell Street Area II sites are also proposed.

6.1 PROPOSED ADDITIONAL MONITORING WELLS-LYMAN STREET SITE

Additional information is necessary to more fully evaluate the extent of the NAPL found at the 10 Lyman Street property. Two additional borings/monitoring wells are proposed to be drilled to the till surface on the south-side of the property, between the existing building and the Housatonic River. Data from these borings/wells will be used to further assess the interpretation of the top of till topography and the extent of DNAPL. One additional shallow monitoring well to monitor for the potential presence of LNAPL will also be drilled adjacent to existing boring LS-1. The proposed locations of the wells are shown on Figure 6-1. The wells will be drilled and installed following the procedures described in the Work Plan (BBL, 1998) and the Sampling and Analysis Plan/Data Collection and Quality Assurance Plan (BBL, 1998b). Installation of the wells will begin within 14 days following EPA approval. A letter report presenting the data collected from the new borings will be submitted to the agencies within 45 days after completion of the drilling.

6.2 PROPOSED ADDITIONS TO MONITORING PLAN

Select newly installed monitoring wells will be added to the current well-monitoring program. To assess any potential changes to the LNAPL distribution near monitoring well 50 on the East Street Area 2 site, the newly installed monitoring wells E2SC-21 and E2SC-22 will be added to the semi-annual monitoring program.

At the Newell Street Area II site, newly installed monitoring wells N2SC-02, N2SC-03S, N2SC-03I, N2SC-08, N2SC-09S and N2SC-09I will be added to the weekly

DNAPL monitoring. To monitor north and south of the known DNAPL area, monitoring wells N2SC-07, N2SC-11 and N2SC-12 will be added to the monthly monitoring program.

To monitor for the potential presence of LNAPL at the east and west ends of the proposed sheet pile wall at the Lyman Street site, newly installed wells LSSC-18 and LSSC-08S will be added to the weekly monitoring program. Because of its location on the western edge of the LNAPL area at Lyman Street, well LSSC-06 will also be added to the monthly LNAPL monitoring. GE has already added wells LSSC-16I and LSSC-07 to the weekly DNAPL monitoring schedule and will continue this effort. These proposed additions to the ongoing monitoring will take effect immediately.

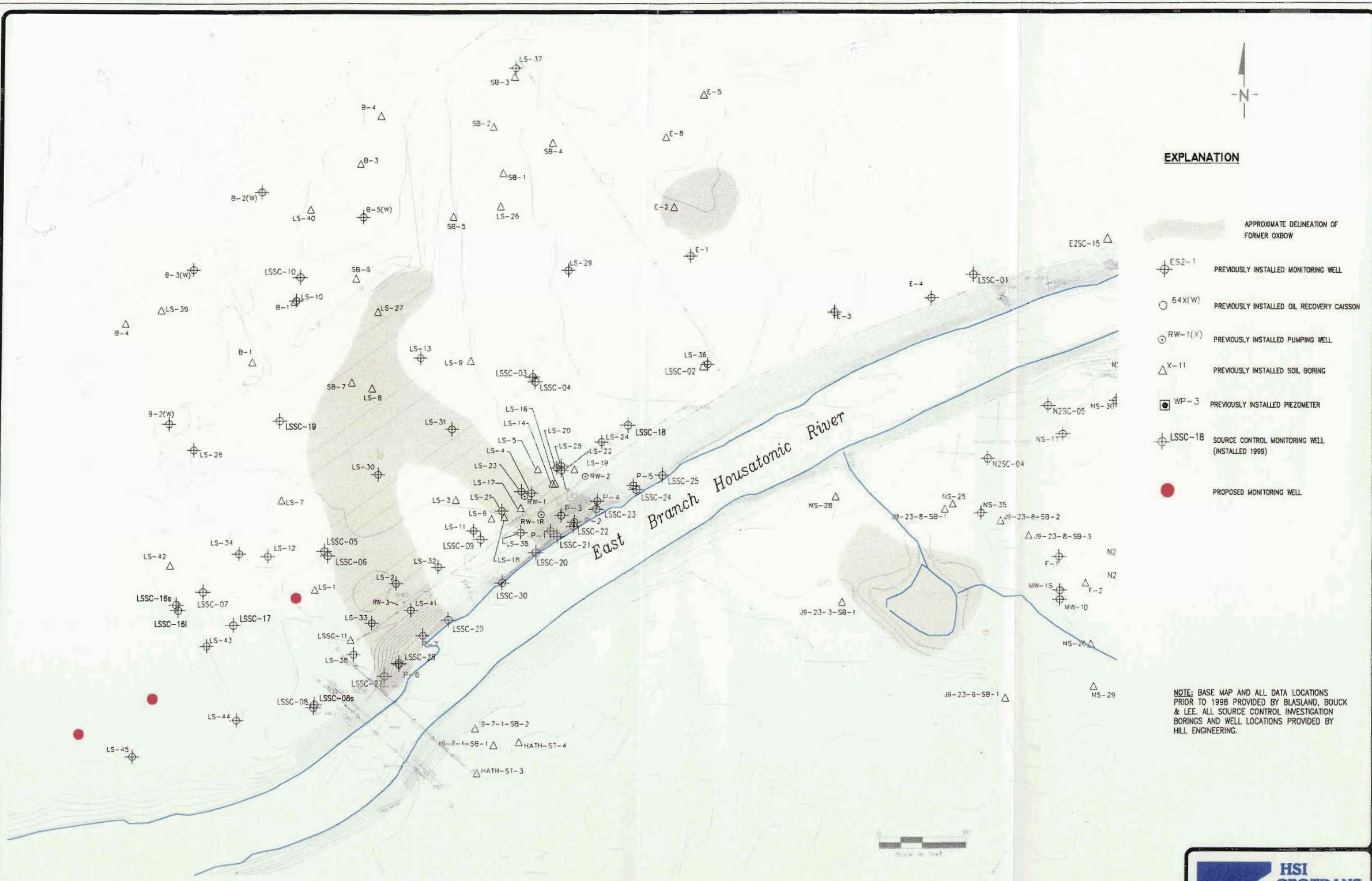

Figure 6-1 Proposed Monitoring Well Locations, Lyman Street Site

7 REFERENCES

BBL 1994, MCP Phase I Report for Lyman Street Parking Lot (Oxbow Area D) and Current Assessment Summary for USEPA Area 5A, February, 1994.

BBL 1997, Addendum to MCP Supplemental Phase II/RCRA Facility Investigation Proposal for Lyman Street/USEPA Area 5A site, October, 1997.

BBL 1998a, Source Control Work Plan-Upper Reach of Housatonic River (First ½ Mile), September, 1998.

BBL 1998b, Revised Sampling and Analysis Plan/Data Collection and Quality Assurance Plan, October, 1998.

GE 1999, Conceptual Containment Barrier Design for Lyman Street Site, February 16, 1999.

Golden 1992, Additional Hydrogeologic Assessment and Short Term Measure Evaluation and Proposal, Lyman Street Parking Lot (Oxbow Area D), Pittsfield, Massachusetts, January, 1992.

HSI GeoTrans 1999, Source Control Investigation Report Upper Reach of Housatonic River (First ½ mile), February 9, 1999.

APPENDIX A

BORING LOGS

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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	P009-001	**BORING/WELL NUMBER**	E2SC-21
PROJECT NAME	Source Control Upper Reach Housatonic River	**DATE DRILLED**	3/31/99
LOCATION	Pittsfield, Massachusetts	**CASING TYPE/DIAMETER**	2" PVC
DRILLING METHOD	HSA	**SCREEN TYPE/SLOT**	.010 Slot 2" PVC
SAMPLING METHOD	SS	**GRAVEL PACK TYPE**	#0 Silica Sand
GROUND ELEVATION	982.29	**GROUT TYPE/QUANTITY**	Bentonite
TOP OF CASING	981.7	**DEPTH TO WATER**	8.39 (5/27/1999)
LOGGED BY	NSB	**GROUND WATER ELEVATION**	973.31 (5/27/1999)
NORTHING	533227.1867	**EASTING**	132595.201

FID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
0		SS01					Auger sample through asphalt, Dark yellowish Brown, SAND w/ few gravel, dry, well graded, sub round, (SW).	1.0
35	12 12 18 7	SS02					Medium dense, Dark olive Gray, SAND w/ few fill (plastic, ceramic, cardboard, fibers), dry, well graded, (FILL).	3.0
35	4 3 3 3	SS03					Same as above.	5.0
9.2	3 4	SS04		5			Loose, Light to Olive Gray, SAND, dry, poorly graded, (SP).	6.0
34.8	4 2 2 2	SS05					Top 0.9 same as above. Bottom 0.7 very soft, Olive Gray, SILT w/ little sand and clay, trace organics, moist, well graded, slight odor (OL).	8.0
32	1 2 3 4	SS06					Top 0.7 same as above (bottom). Middle 0.4 soft, Grayish Brown, PEAT, moist, well graded, laminated, (PT).	9.1
4	2 2 2 2	SS07		10			Bottom 0.6 loose, Olive Gray, coarse SAND, wet, well graded, (SW). Slight odor (whole spoon). Similar to above (Bottom).	10.0
3.6	1 2 1 1	SS08					Similar to above except no odor.	12.0
49.3	3 4	SS09					Same as above.	14.0
				15				15.0

WELL DIAGRAM

- Portland / Volclay Grout
- Bentonite Seal
- #0 Filter Sand
- .010 Slot 2" PVC Schd 40 Screen

BORING_WELL_P J HSI_MA.GDT 6/2/99

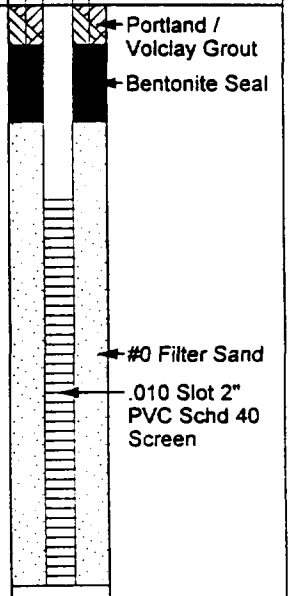
HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	P009-001	**BORING/WELL NUMBER**	E2SC-22
PROJECT NAME	Source Control Upper Reach Housatonic River	**DATE DRILLED**	3/31/99
LOCATION	Pittsfield, Massachusetts	**CASING TYPE/DIAMETER**	2" PVC
DRILLING METHOD	HSA	**SCREEN TYPE/SLOT**	.010 Slot 2" PVC
SAMPLING METHOD	SS	**GRAVEL PACK TYPE**	#0 Silica Sand
GROUND ELEVATION	981.40	**GROUT TYPE/QUANTITY**	Portland/Volclay
TOP OF CASING	986.51	**DEPTH TO WATER**	11.77 (5/27/1999)
LOGGED BY	NSB	**GROUND WATER ELEVATION**	974.74 (5/27/1999)
NORTHING	533312.8143	**EASTING**	132693.7089

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
	4 7	SS01					Top 0.4 loose, Dark yellowish Brown, SAND w/ little organics, dry, well graded (soil horizon). Bottom 0.4 loose, Moderate olive Brown, SAND w/ little gravel (limestone), dry, well graded, (SW).	1.0
	5 11 12	SS02					Similar to above except Medium dense, little Fe staining.	3.0
	8 8 7	SS03					Same as above.	5.0
	4 3	SS04		5			Same as above.	6.0
	2 2 1	SS05					Very loose, Moderate olive Brown, medium to fine SAND w/ little gravel, moist, well graded, subround, (SW).	8.0
	1 2 3	SS06					Top 1.3 loose, Light olive Gray, SAND, wet, poorly graded, (SP).	9.3
	2 2 2	SS07		10			Bottom 0.4 soft, Olive Gray, SILT w/ little clay, trace organics, moist, well graded, (OL).	10.0
	3 4 7	SS08					Top 0.6 same as above, Middle 0.2 grayish Brown, PEAT, dry, well graded (PT).	10.8
	3 4 4	SS09					Bottom 0.2 loose, Moderate dark Gray, coarse SAND, wet, well graded, (SW).	12.0
							Medium dense, Light olive Brown, medium SAND, wet, well graded, Fe staining, (SW).	14.0
				15			Similar to above with trace gravel.	15.0

WELL DIAGRAM



BORING_WELL PO HSI_MA.GDT 6/2/99

HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER P009-001
PROJECT NAME Source Control Upper Reach Housatonic River
LOCATION Pittsfield, Massachusetts
DRILLING METHOD HSA
SAMPLING METHOD SS
GROUND ELEVATION 983.70
TOP OF CASING 986.07
LOGGED BY MJJ
NORTHING 532481.4212

BORING/WELL NUMBER N2SC-08
DATE DRILLED 4/2/99
CASING TYPE/DIAMETER 2" PVC
SCREEN TYPE/SLOT .010 Slot 2" PVC
GRAVEL PACK TYPE #0 Silica Sand
GROUT TYPE/QUANTITY Portland/Volclay
DEPTH TO WATER 12.15 (5/27/1999)
GROUND WATER ELEVATION 973.92 (5/27/1999)
EASTING 131722.497

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
0	3 3	SS01					Loose, Moderate Brown, ORGANICS and fine SAND (soil horizon), (SW).	1.0
1.7	7 8 8	SS02					Medium dense, Grayish Brown w/ orange mottling, SAND w/ few fines and few gravels, dry, poorly sorted, (FILL)	3.0
0	4 3 5	SS03					Loose, SAND, dry, (SW).	5.0
0.8		SS04		5			Moderate to Dusky Yellow, fine SAND, dry, poorly graded, (SP).	6.0
1.5		SS05					Same as above.	8.0
13.2		SS06					Top 1.0 similar to above. Bottom 0.3 medium dense, Moderate dark Gray, SAND w/ trace gravel, wet, (SP).	10.0
12.2		SS07		10			Medium dense, Moderate dark Gray, SAND w/ trace gravel and trace fines, wet, well graded, staining and sheen observed, (SW).	12.0
10.7		SS08					Top 0.4 same as above. Bottom 0.9 olive Gray, coarse to medium SAND w/ trace gravel, wet, sorted, angular, staining observed, (SP).	14.0
9.9		SS09					Same as above (Bottom).	15.0
75	2 3 2	SS10		15			Loose, Light olive Gray to Olive Gray, SAND, wet, well graded, angular, (SW).	17.0
14.6	3 4 4	SS11					Same as above with more silt in spoon tip.	19.0
615	3 4	SS12					Top 0.5 loose, Olive Gray, SAND w/ few fines, wet, well graded, sheen and odor observed, (SW). Middle 0.4 light olive Gray, laminated CLAY and SILT, wet, (CL). Bottom 0.1, olive Gray fine SAND, wet, well graded, (SW).	20.0
1575	2 2 4	SS13		20			Top 0.9 loose, Light olive Gray to Olive Gray, laminated SAND interbedded w/ 1" clay layers, wet, poorly graded, sheen and odor observed, (SP). Bottom 0.5 very loose, Olive Gray, coarse SAND w/ little gravel, wet, well graded, (SW).	22.0
647	3 3 4	SS14					Loose, Light olive Gray to Olive Gray, SAND w/ interbedded clay and silt layers and few gravel, wet, poorly graded. sheen and odor throughout, (SP, SM).	24.0
1003	3 5 5	SS15		25			Loose, Light olive Gray to Olive Gray, fine SAND and SILT w/ gravel, wet, poorly graded, sub-round, odor and slight sheen with gravel staining, (GM, SM).	26.0
784	3 2 3	SS16					Very loose, Olive Gray, GRAVEL w/ few silt and sand, wet, graded. sub-angular, heavy sheen and odor. (GM).	28.0
762	2 2 3	SS17					Loose, Light olive Gray to Olive Gray, SAND w/ few gravel and fines, wet, graded, angular, sheen and odor observed, (GM, SM).	30.0
1492	3 3 4	SS18		30			Loose, Olive Gray, GRAVEL w/ some sand and fines, wet, well graded. subangular, sheen and odor observed, (GM).	32.0
391	4 5 5	SS19					Same as above w/ fewer fines.	34.0
1225	1 3	SS20		35			Loose, Olive Gray, GRAVEL w/ some coarse sand, wet,	

Continued Next Page

WELL DIAGRAM

- Portland / Volclay Grout
- Bentonite Seal
- #0 Filter Sand
- .010 Slot 2" PVC Schd 40

BORING_WELL_P009_rISI_MA.GDT 6/2/99

HSI GEOTRANS
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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER P009-001 **BORING/WELL NUMBER** N2SC-08

PROJECT NAME Source Control Upper Reach Housatonic River **DATE DRILLED** 4/2/99

Continued from Previous Page

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH	WELL DIAGRAM
							well graded, angular, sheen and odor observed, (GW, SW).	36.0	Screen
1823	6 8 7 5	SS21					Same as above.	38.0	
1521	4 5 4 6	SS22					Top 0.5, loose, Olive Gray, SAND w/ some gravel, wet, well graded, sheen and odor observed, (SW). Bottom 0.5, light olive Gray to Dusky Yellow, SILT and CLAY w/ some gravel, laminated, very moist, sub-angular, (GM, GC).	38.5	
1186	7 12 17	SS23		40			Bottom 0.5, light olive Gray to Dusky Yellow, SILT and CLAY w/ some gravel, laminated, very moist, sub-angular, (GM, GC). Confining Layer (TILL).	40.0	1' 2" PVC Schd 40 Sump
							Same as above (bottom), but less moist.	42.0	

BORING_WELL POOL HSI_MA.GDT 6/2/99

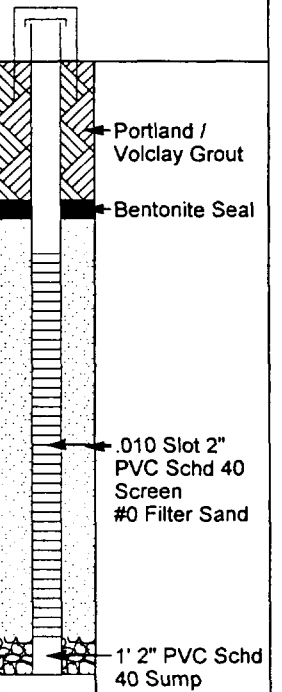
HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	P009-001	**BORING/WELL NUMBER**	N2SC-09S
PROJECT NAME	Source Control Upper Reach Housatonic River	**DATE DRILLED**	4/1/99
LOCATION	Pittsfield, Massachusetts	**CASING TYPE/DIAMETER**	2" PVC
DRILLING METHOD	HSA	**SCREEN TYPE/SLOT**	.010 Slot 2" PVC
SAMPLING METHOD	SS	**GRAVEL PACK TYPE**	#0 Silica Sand
GROUND ELEVATION	985.37	**GROUT TYPE/QUANTITY**	Portland/Volclay
TOP OF CASING	987.84	**DEPTH TO WATER**	11.42 (5/27/1999)
LOGGED BY	SKC	**GROUND WATER ELEVATION**	976.42 (5/27/1999)
NORTHING	532438.6418	**EASTING**	131611.7213

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
0	3 6	SS01					Loose, Moderate Brown, ORGANICS w/ fine sand and gravel and some fill (cement), moist, well graded (TOPSOIL)	1.0
1	6 10 8 9	SS02					Medium dense, Moderate Brown, ORGANICS and FILL (brick and cement fragments, nails, glass, coal ash), (FILL).	3.0
11.7	23 4 6 4	SS03					Medium dense, Moderate Brown, SAND w/ some gravel and wood and fill fragments, moist, well graded, (FILL).	5.0
28	2 2	SS04		5			Very loose, Moderate Brown to Olive Brown, FILL (brick and insulation fragments) w/ sand and silt, moist, well graded, (FILL).	6.0
47.6	2 3 3 8	SS05					Top 0.3 same as above. Bottom 1.0 loose, Brownish Gray, SILT and find SAND (diatomaceous earth), moist, poorly graded, petroleum odor, (FILL).	8.0
46	17 30 20 16	SS06					Top 0.5 very dense, Moderate grayish Brown, sandy GRAVEL w/ few fines, moist, well graded, staining and petroleum odor, (SW-GW). Bottom 0.5, light to Moderate olive Brown, fine silty SAND w/ few gravel and broken up limestone cobbles, dry, well graded, angular, (FILL).	8.5 10.0
63.2	250/0.5	SS07		10			Bottom 0.5, light to Moderate olive Brown, fine silty SAND w/ few gravel and broken up limestone cobbles, dry, well graded, angular, (FILL).	12.0
89.7	5 6 3 3	SS08					Same as above (bottom).	14.0
108	4 4	SS09					No Recovery.	15.0
				15			Top 0.2 olive Gray, fine laminated SAND, wet, odor and sheen observed, (SW). Bottom 0.5 loose, Dark yellowish Brown, SILT and ORGANICS, moist, no visible product, (OL).	

WELL DIAGRAM



BORING_WELL P00> ...J HSI_MA.GDT 6/15/99

HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER P009-001
PROJECT NAME Source Control Upper Reach Housatonic River
LOCATION Pittsfield, Massachusetts
DRILLING METHOD HSA
SAMPLING METHOD SS
GROUND ELEVATION 985.22
TOP OF CASING 987.77
LOGGED BY MJJ
NORTHING 532443.7495

BORING/WELL NUMBER N2SC-09I
DATE DRILLED 4/1/99
CASING TYPE/DIAMETER 2" PVC
SCREEN TYPE/SLOT .010 Slot 2" PVC
GRAVEL PACK TYPE #0 Silica Sand
GROUT TYPE/QUANTITY Portland/Volclay
DEPTH TO WATER 14.84 (5/27/1999)
GROUND WATER ELEVATION 972.93 (5/27/1999)
EASTING 131612.075

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
							See Boring Log N2SC-09S	
205		SS10					Loose, Olive Gray to Olive Black, laminated SAND w/ trace gravel interbedded with peat layers and wood, wet, well graded, angular, sheen and odor observed, (SW).	16.0
122		SS11					Similar to above w/ coarser sand.	18.0
163		SS12					Loose, Olive Gray to Olive Black, GRAVEL w/ sand and some fines and trace organics (wood), wet, well graded, sub-angular, sheen observed, (GW).	20.0
121		SS13					Medium dense, Dark Gray to Medium dark Gray, GRAVEL w/ some sand and few fines, wet, well graded, sub-angular, sheen observed, (GW).	22.0
40		SS14					Medium dense, Dark Gray, medium to coarse SAND w/ some gravel and few fines, wet, well graded, subangular, stained, (SW).	24.0
106		SS15					Top 0.1 medium dense, Dark Gray, GRAVEL and SAND w/ few fines, wet, well graded, sub-angular, stained, (GW). Bottom 0.7 dark Gray, SAND w/ some fines, wet, stained, (SW). Tip of spoon Light olive Gray, coarse SAND w/ some fines, wet, well graded, sub-angular, (SW).	26.0
170		SS16					Top 0.7 medium dense, Light olive Gray, fine SAND w/ some gravel, wet, well graded, sub-round, slight sheen observed, (GW, SW). Bottom 0.1 light olive Gray, fine SAND and SILT w/ trace clay, wet, sheen and some staining observed, (ML).	28.0
N/A		SS17					No Recovery (cobble in spoon).	30.0
4		SS18					Top 0.3 medium dense, Light olive Gray, coarse SAND w. some gravel and fines, wet, well graded, sub-angular, no sheen or staining, (GM). Bottom 0.1 dusky Yellow to	32.0
1		SS19						34.0

Continued Next Page

WELL DIAGRAM

Portland / Volclay Grout

Bentonite Seal

BORING_WELL P009-... HSI_MA.GDT 6/2/99

HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER P009-001 **BORING/WELL NUMBER** N2SC-09I

PROJECT NAME Source Control Upper Reach Housatonic River **DATE DRILLED** 4/1/99

Continued from Previous Page

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH	WELL DIAGRAM
							Moderate olive Brown, GRAVEL w/ few fines, wet, well graded, sub-angular, (GW).	36.0	#0 Filter Sand .010 Slot 2" PVC Schd 40 Screen
22		SS20					Medium dense, Dusky Yellow to Light olive Brown, GRAVEL w/ *some sand and little silt*, wet, well graded, sub-angular, (GW).	36.3	
0		SS21					Top 0.3 medium dense, Dusky Yellow to Light olive Brown, GRAVEL w/ some sand and few fines, wet, well graded, stained, (GW). Bottom 0.2 dusky Yellow, SILT and CLAY, wet, (ML).	38.0	
0		SS22		40			Dusky Yellow, SILT and CLAY, wet, (ML).	40.0	1' 2" PVC Schd 40 Sump
							Dense, Dusky Yellow to Light olive Gray, fine SAND and SILT w/ few gravel and few clay, wet, laminated, well graded, angular, (ML).	42.0	
							Medium dense, Light olive Gray, SILT w/ some coarse gravel and clay, moist, well graded, sub-round, no sheens/odors observed, (TILL).		

BORING_WELL POOL rISI_MA GDT 6/2/99

HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	P009-001	**BORING/WELL NUMBER**	N2SC-10
PROJECT NAME	Source Control Upper Reach Housatonic River	**DATE DRILLED**	4/14/99
LOCATION	Pittsfield, Massachusetts	**CASING TYPE/DIAMETER**	None
DRILLING METHOD	Direct Push	**SCREEN TYPE/SLOT**	None
SAMPLING METHOD	SS	**GRAVEL PACK TYPE**	None
GROUND ELEVATION	982.74	**GROUT TYPE/QUANTITY**	Bentonite
TOP OF CASING	None	**DEPTH TO WATER**	N/A
LOGGED BY	NSB	**GROUND WATER ELEVATION**	
NORTHING	532415.62	**EASTING**	131383.46

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG		CONTACT DEPTH
0		SS01					Easy driving, Olive Grey to Moderate olive Brown, SILT w/ little sand, gravel and organics, moist, well graded, (OL).	1.0
0		SS02					Easy driving, Olive Grey, SILT w/ few coarse sand,trace organics, moist, well graded, (ML).	3.0
0		SS03					Similar to above except few gravel, sub-round.	4.0
0.4		SS04		5			Easy driving, Dark yellowish Brown, SAND w/ some gravel, dry, well graded, sub-round, (SW).	6.0
0		SS05					Same as above.	8.0
0		SS06					Similar to above except moist for last 0.4.	10.0
0		SS07		10			Similar to above except trace silt, wet.	12.0
0		SS08					Easy driving, Dark yellowish Gray, medium to coarse SAND w/ trace silt, wet, well graded, (SW).	15.0
0		SS09		15			Same as above.	16.0
0		SS10					Top 0.4 same as above.	16.4
							Middle 1.5 easy driving, Light olive Brown, SILT, moist, well graded, (MH).	17.9
							Bottom 1.2 easy driving, Olive Gray, medium to coarse SAND w/ little gravel, wet, well graded, sub-round, (SW).	20.0
0		SS11		20			No Recovery. In tip of casing: hard driving, Moderate olive Brown, SILT and GRAVEL, sub-angular to angular.	24.0
0		SS12		25			No Recovery. In tip of casing: hard driving, Moderate olive Brown, SILT and GRAVEL, sub-angular to angular.	28.0
0		SS13		30			Hard driving, Moderate olive Brown, SILT w/ few gravel, dry, well graded, sub-angular to angular, (TILL).	32.0

BORING_WELL P009-_-_ HSI_MA.GDT 6/2/99

HSI GEOTRANS
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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER P009-001
PROJECT NAME Source Control Upper Reach Housatonic River
LOCATION Pittsfield, Massachusetts
DRILLING METHOD HSA
SAMPLING METHOD SS
GROUND ELEVATION 985.65
TOP OF CASING 988.05
LOGGED BY SKC
NORTHING 532446.0874

BORING/WELL NUMBER N2SC-11
DATE DRILLED 4/29/99
CASING TYPE/DIAMETER 2" PVC
SCREEN TYPE/SLOT .010 Slot 2" PVC
GRAVEL PACK TYPE #0 Silica Sand
GROUT TYPE/QUANTITY Portland/Volclay
DEPTH TO WATER 12.76 (5/27/1999)
GROUND WATER ELEVATION 975.29 (5/27/1999)
EASTING 131830.9582

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
							See boring log for NS-33.	14.0
0	WOR WOR 1 2	SS01		15			Loose, Moderate yellowish Brown coarse SAND and SILT, grades into Light olive Gray SILT, wet, poorly graded (SP, ML).	16.0
0	3 4 4 4	SS02					Loose, Light olive Gray, laminated SILT, wet, (ML).	18.0
0	5 7 8 10	SS03					Medium dense, Light olive Gray, laminated SILT w/ few clay, wet, (ML).	20.0
0	3 6 6 8	SS04		20			Same as above with bed of coarse sand and gravel in top 0.4, wet, well graded within bed, subround (ML, SW).	22.0
0	5 7 12 18	SS05					Medium dense, Light olive Gray, laminated SILT w/ fine SAND and few clay, moist, with interbedded 4" layer of coarse SAND and GRAVEL, well graded, wet, subround, (SW, ML).	24.0
0	WOR WOR 4 3	SS06		25			Very loose, similar to above with more fine sand in the SILT layers, not laminated, (ML, SW).	26.0
0	3 7 10 14	SS07					Medium dense, Light olive Gray, laminated SILT and CLAY, interbedded with coarse SAND layer, well graded, wet, subangular (ML, SW).	28.0
0	5 8 8 9	SS08					Top 0.3 medium dense, Light olive Gray, fine SAND w/ layer of laminated SILT, wet, (ML). Bottom 0.5 Dark olive Gray GRAVEL and coarse SAND w/ few fines, wet, well graded, subround (SW-GW).	30.0
N/A	5 8 8 9	SS09		30			Same as above (bottom).	32.0
0	6 10 12 14	SS10					Medium dense, Light olive Gray, coarse SAND and GRAVEL w/ few fines, wet, well graded, subangular (SW-GW).	34.0
0	6 12 14	SS11		35			Medium dense, Light olive Gray to Dusky Yellow,	

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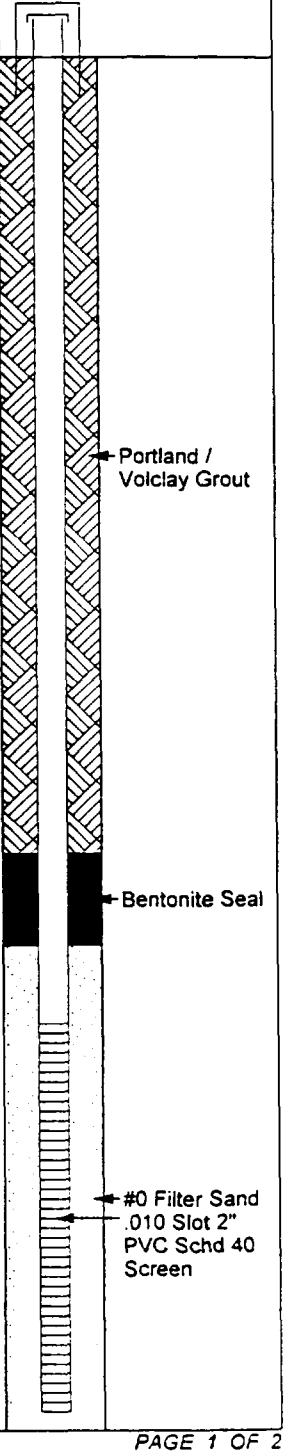
WELL DIAGRAM



BORING_WELL P009-L ..HSI_MA.GDT 6/2/99

HSI GEOTRANS
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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER P009-001 **BORING/WELL NUMBER** N2SC-11

PROJECT NAME Source Control Upper Reach Housatonic River **DATE DRILLED** 4/29/99

Continued from Previous Page

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH	WELL DIAGRAM
0		SS12					laminated SILT and CLAY w/ some gravel, wet, subround, (GC).	36.0	1' 2" PVC Schd 40 Sump
							Same as above but moist.	37.4	

HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	P009-001	**BORING/WELL NUMBER**	N2SC-12
PROJECT NAME	Source Control Upper Reach Housatonic River	**DATE DRILLED**	4/30/99
LOCATION	Pittsfield, Massachusetts	**CASING TYPE/DIAMETER**	2" PVC
DRILLING METHOD	HSA	**SCREEN TYPE/SLOT**	.010 Slot 2" PVC
SAMPLING METHOD	SS	**GRAVEL PACK TYPE**	#0 Silica Sand
GROUND ELEVATION	985.57	**GROUT TYPE/QUANTITY**	Portland/Volclay
TOP OF CASING	987.26	**DEPTH TO WATER**	11.21 (5/27/1999)
LOGGED BY	SKC	**GROUND WATER ELEVATION**	976.05 (5/27/1999)
NORTHING	532360.0609	**EASTING**	131797.4655

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH	WELL DIAGRAM
							See boring log for NS-20		
0	2 2 2 2	SS01		15			Very loose, Light olive Gray, coarse SAND with few gravel, wet, well graded, subround, (SW-GW).	14.0	
0	3 2 3 3	SS02					Top 0.2 same as above. Bottom 0.3 loose, Olive Gray, interbedded layers of fine SAND and PEAT, wet, well graded, (SW, PT).	16.0	
4	4 2 3 4	SS03					Same as above (bottom).	18.0	
10	WOH WOH 2 3	SS04		20			Top 0.3 Dark to Moderate yellowish Brown, SAND, wet, well graded, (SW). Bottom 0.3 Light olive Gray, laminated SILT w/ trace clay and fine sand, wet, (ML).	20.0 22.0	
0	3 7 8 8	SS05					Same as above (bottom).	24.0	
0	3 7 8 8	SS06		25			Same as above.	26.0	
0	8 8 8 10	SS07					Same as above (ML), grading to Light olive Gray (5Y 6/1) fine SAND and GRAVEL w/ some fines and rock fragments, Fe staining, wet, angular (GM).	28.0	
0	8 8 8 8	SS08					Medium dense, Light Gray, laminated fine SAND and SILT interbedded with Olive Gray (5Y 4/1) coarse SAND and GRAVEL w/ few fines, wet, subround, (ML, SW-GW).	30.0	
14	WOH WOH 6 8	SS09		30			Medium dense, Olive Gray, coarse SAND and GRAVEL interbedded with fine SAND and SILT, wet, well graded, subangular to round, (ML, GM).	32.0	
N/A	4 7 8 7	SS10					Medium dense, Olive Gray (5Y 4/1), GRAVEL w/ SAND and some fines, wet, well graded, subround, (GM).	34.0	
0	15 17	SS11		35			Same as above.		

Continued Next Page

Portland / Volclay Grout

Bentonite Seal

#0 Filter Sand .010 Slot 2" PVC Schd 40

BORING WELL PDF HSI MA GDT 6/2/99

HSI GEOTRANS
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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER P009-001 **BORING/WELL NUMBER** N2SC-12

PROJECT NAME Source Control Upper Reach Housatonic River **DATE DRILLED** 4/30/99

Continued from Previous Page

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								36.0	Screen
0		SS12					Top 0.3 same as above (GM). Bottom 0.3 Light olive Gray, laminated CLAY w/ some SILT and trace fine sand, wet, some Fe staining, (CL).	38.0	
0		SS13					Light olive Gray to Moderate yellowish Brown, SILT and CLAY with few sand and gravel, wet on top 0.4 and moist on bottom 0.6, well graded, subangular, (TILL).	40.0	1' 2" PVC Schd 40 Sump
				40					

BORING_WELL P009 rlSI_MA.GDT 6/2/99

HSI GEOTRANS
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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER P009-001
PROJECT NAME Source Control Upper Reach Housatonic River
LOCATION Pittsfield, Massachusetts
DRILLING METHOD HSA
SAMPLING METHOD SS
GROUND ELEVATION 983.64
TOP OF CASING 983.24
LOGGED BY NSB
NORTHING 532408.89

BORING/WELL NUMBER LSSC-08S
DATE DRILLED 3/29/99
CASING TYPE/DIAMETER 2" PVC
SCREEN TYPE/SLOT .010 Slot 2" PVC
GRAVEL PACK TYPE #0 Silica Sand
GROUT TYPE/QUANTITY None
DEPTH TO WATER 11.15 (5/27/1999)
GROUND WATER ELEVATION 972.09 (5/27/1999)
EASTING 130817.23

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH	WELL DIAGRAM
				5			See Log for LSSC-08.	15.0	Portland / Volclay Grout; Bentonite Seal; #0 Filter Sand; .010 Slot 2" PVC Schd 40 Screen
				10					
				15					

BORING_WELL P00... HSI_MA GDT 6/2/99

HSI GEOTRANS
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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	P009-001	**BORING/WELL NUMBER**	LSSC-16S
PROJECT NAME	Source Control Upper Reach Housatonic River	**DATE DRILLED**	3/4/99
LOCATION	Pittsfield, Massachusetts	**CASING TYPE/DIAMETER**	2" PVC
DRILLING METHOD	HSA	**SCREEN TYPE/SLOT**	.010 Slot 2" PVC
SAMPLING METHOD	SS	**GRAVEL PACK TYPE**	#6.0 Silica Sand
GROUND ELEVATION	981.71	**GROUT TYPE/QUANTITY**	Portland/Volclay
TOP OF CASING	981.41	**DEPTH TO WATER**	8.59 (5/27/1999)
LOGGED BY	NSB	**GROUND WATER ELEVATION**	972.82 (5/27/1999)
NORTHING	532500.9211	**EASTING**	130690.1662

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH	WELL DIAGRAM
				5			See Log for LSSC-16I.	15.0	Portland / Volclay Grout; Bentonite Seal; #0 Filter Sand; .010 Slot 2" PVC Schd 40 Screen
				10					
				15					

BORING_WELL P009 L .SI_MA GDT 6/2/99

HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	P009-001	**BORING/WELL NUMBER**	LSSC-16I
PROJECT NAME	Source Control Upper Reach Housatonic River	**DATE DRILLED**	3/3/99
LOCATION	Pittsfield, Massachusetts	**CASING TYPE/DIAMETER**	2" PVC
DRILLING METHOD	HSA	**SCREEN TYPE/SLOT**	.010 Slot 2" PVC
SAMPLING METHOD	SS	**GRAVEL PACK TYPE**	#6.0 Silica Sand
GROUND ELEVATION	981.61	**GROUT TYPE/QUANTITY**	Portland/Volclay
TOP OF CASING	981.01	**DEPTH TO WATER**	8.24 (5/27/1999)
LOGGED BY	NSB	**GROUND WATER ELEVATION**	972.77 (5/27/1999)
NORTHING	532495.8889	**EASTING**	130691.8686

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
N/A		SS01					Auger sample through asphalt. Loose, Dark yellowish Brown, SAND w/ some gravel, dry, well graded, (SW).	1.0
0		SS02					Dense, Pale greenish Yellow to Moderate yellowish Brown, coal ash and coal, dry, well graded, (FILL).	3.0
0		SS03					Similar to above except very loose w/ little glass.	5.0
2.5		SS04		5			Top 0.2 same as above. Bottom 0.5 loose, Light olive Brown, fine SAND, moist, well graded, Fe staining, (SM).	6.0
2.5		SS05					Very loose, Light olive Brown, fine to medium SAND, moist, Fe staining, well graded, (SM).	
1		SS06					Very loose, Light olive Brown, medium to coarse SAND, wet (WT @ 8.5' bgs), well graded, (SW).	8.0
1		SS07		10			Top 0.8 similar to above except loose. Bottom 0.4 loose, Light olive Brown, GRAVEL and SAND, wet, well graded, (GW-SW).	10.0
9		SS08					Similar to above (Bottom) excpet medium dense.	12.0
4		SS09					Similar to above except loose.	14.0
1		SS10		15			Loose, Light olive Brown, GRAVEL w/ few sand, wet, well graded, (GW-SW).	15.0
0.5		SS11					Loose, Light olive Gray, medium SAND, wet, well graded, (SW).	17.0
1		SS12		20			Loose, Light olive Gray, SAND w/ trace silt, wet, well graded, Fe staining, (SW).	19.0
1		SS13					Top 0.8 similar to above except medium dense. Bottom 0.3 medium dense, Olive Gray to Dark greenish Gray, GRAVEL and SAND, wet, well graded, (SW).	21.0
0.5		SS14					Similar to above (Bottom) except dense.	23.0
150		SS15		25			Dense, Olive Gray, GRAVEL w/ little sand and silt, wet, well graded, sheen and odor, (GW).	25.0
7		SS16					Hard, Moderate olive Brown, SILT w/ some gravel, moist, well graded, sub-angular to angular, (TILL).	27.0
								29.0

WELL DIAGRAM

HSI_MA.GDT 6/2/99

BORING_WELL P00

HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	P009-001	**BORING/WELL NUMBER**	LSSC-17
PROJECT NAME	Source Control Upper Reach Housatonic River	**DATE DRILLED**	3/5/99
LOCATION	Pittsfield, Massachusetts	**CASING TYPE/DIAMETER**	2" PVC
DRILLING METHOD	HSA	**SCREEN TYPE/SLOT**	.010 Slot 2" PVC
SAMPLING METHOD	SS	**GRAVEL PACK TYPE**	#6.0 Silica Sand
GROUND ELEVATION	982.97	**GROUT TYPE/QUANTITY**	Portland/Volclay
TOP OF CASING	982.53	**DEPTH TO WATER**	9.96 (5/27/1999)
LOGGED BY	NSB	**GROUND WATER ELEVATION**	972.57 (5/27/1999)
NORTHING	532481.9262	**EASTING**	130742.2545

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
0		SS01					Auger sample through asphalt. Loose, Dark yellowish Brown, SAND w/ little fine gravel, dry, well graded, (SW).	1.0
0.5	11 16 15 4	SS02					Dense, pale greenish Yellow to Moderate yellowish Brown, coal and gravel, dry, well graded, (FILL).	3.0
0.5	1 2 1 1	SS03					Very loose, pale greenish Yellow, coal ash, dry, well graded, (FILL).	5.0
45	50	SS04		5			Concrete, (FILL).	7.0
11	3 5	SS05					Loose, Light olive Brown to Grayish Olive, SAND w/ trace silt, moist, well graded, (SW).	8.0
9	2 2 3 5	SS06					Loose, Olive Gray, SAND w/ some silt and organics, moist, well graded (sand lenses), (SP). ▼	10.0
60	2 2 3 5	SS07		10			Top 1.2 same as above, Bottom 0.2 Loose, Olive Gray, SAND, wet, well graded, (SW).	12.0
25	1 1 1	SS08					Similar to above (Top) except Very Loose, wet, (SM).	14.0
13	1 2	SS09					Very Loose, Olive Gray, SAND, wet, well graded, (SW).	15.0
1	1 3 10 8	SS10		15			Top 0.8 same as above, Bottom 0.2 Medium Dense, Olive Gray, sandy GRAVEL, Fe staining, wet, well graded, (GW-SW).	17.0
13	3 5 8 11	SS11					Similar to above (Bottom) except Loose.	19.0
N/A	4 4 4 8	SS12		20			No Recovery.	21.0
300	16 22 28	SS13					Dense, Olive Gray, GRAVEL w/ little sand and silt, wet, well graded, odor, (GW).	23.0
450	17 18 50/0.2	SS14					Top 0.5 Medium Dense, Olive Gray, GRAVEL w/ coarse sand, wet, well graded, stained, odor and sheen, round to subround, (GW-SW). Bottom 0.3 Hard, Moderate olive Brown, SILT, wet, well graded. (ML).	25.0
35	7 8 7 7	SS15		25			Very Stiff, Moderate olive Brown, SILT w/ little gravel, moist, well graded, angular to subangular, (TILL).	27.0

WELL DIAGRAM

BORING_WELL P009_HSI_MA.GDT 6/2/99

HSI GEOTRANS
A TETRA TECH COMPANY

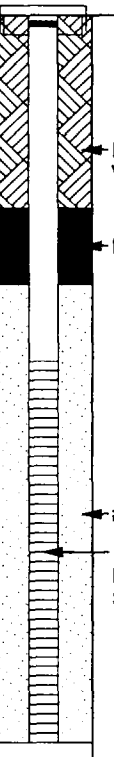
BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER P009-001
PROJECT NAME Source Control Upper Reach Housatonic River
LOCATION Pittsfield, Massachusetts
DRILLING METHOD HSA
SAMPLING METHOD SS
GROUND ELEVATION 987.66
TOP OF CASING 987.45
LOGGED BY SKC
NORTHING 532664.56

BORING/WELL NUMBER LSSC-18
DATE DRILLED 3/29/99
CASING TYPE/DIAMETER 2" PVC
SCREEN TYPE/SLOT .010 Slot 2" PVC
GRAVEL PACK TYPE #0 Silica Sand
GROUT TYPE/QUANTITY Portland/Volclay
DEPTH TO WATER 14.96 (5/27/1999)
GROUND WATER ELEVATION 972.49 (5/27/1999)
EASTING 131102.78

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
NM		SS01					Auger sample through asphalt. Moderate Yellow, SAND w/ asphalt fill, dry (FILL).	1.0
NM	5 7 4 1	SS02					Medium dense, Black to Dark yellowish Brown, FILL (coal ash), dry, well graded, (FILL).	3.0
NM	3 2 2 1	SS03					Similar to above with some red brick fragments and some glass.	5.0
NM	4 2	SS04		5			Same as above, with more brick fragments.	6.0
NM	4 30 13 6	SS05					Dense, Pale yellowish Orange to Dark yellowish Brown to White to Black, COAL ASH, dry, well graded, (FILL).	8.0
NM	3 4 12 5	SS06					Same as above.	10.0
NM	2 1 3 2	SS07		10			Loose, Moderate reddish Brown to Greyish Red, COAL ASH, moist, well gradded, (FILL).	12.0
0.3	2 2 1 2	SS08					Top 0.6 same as above. Bottom 0.7 loose, Olive Black to Black, fine SAND and SILT w/ organics, moist, laminated, poorly graded, (SM, OL).	14.0
0.0	1 3	SS09					Top 0.9 same as above. Bottom 0.1 Loose, Olive Gray, SAND, wet, well graded, (SW).	15.0
0.0	3 5 4	SS10		15			Top 0.5 same as above (Top). Bottom 1.0 loose, Olive Gray, SAND, few organics, laminated, wet, poorly graded, (SP).	17.0
0.0	2 3 11 14	SS11					Top 1.8 similar to above, well graded, few organics, (SW), Bottom 0.3 dense, Light olive Gray, GRAVEL w/ some silt and fine sand, wet, well graded, sub-angular, (GW).	19.0

WELL DIAGRAM



BORING_WELL P00[illegible] HSI_MA GDT 6/15/99

HSI GEOTRANS
A TETRA TECH COMPANY

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	P009-001	**BORING/WELL NUMBER**	LSSC-19
PROJECT NAME	Source Control Upper Reach Housatonic River	**DATE DRILLED**	3/30/99
LOCATION	Pittsfield, Massachusetts	**CASING TYPE/DIAMETER**	2" PVC
DRILLING METHOD	HSA	**SCREEN TYPE/SLOT**	.010 Slot 2" PVC
SAMPLING METHOD	SS	**GRAVEL PACK TYPE**	#0 Silica Sand
GROUND ELEVATION	984.68	**GROUT TYPE/QUANTITY**	Portland/Volclay
TOP OF CASING	987.16	**DEPTH TO WATER**	12.63 (5/27/1999)
LOGGED BY	NSB	**GROUND WATER ELEVATION**	974.53 (5/27/1999)
NORTHING	532668.5226	**EASTING**	130783.2422

FID (ppm)	BLOW COUNTS	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DISCRIPTION	CONTACT DEPTH
1		SS01					Auger sample through asphalt. Dark yellowish Brown, SAND w/ little gravel, dry, well graded, sub-round, (SW).	1.0
1		SS02					Medium dense, Light olive Gray to Olive Black, fine SAND w/ few fill (coal ash) and few gravel, dry, poorly graded, (FILL).	3.0
0.4		SS03					Top 0.8 similar to above w/ little brick fragments. Bottom 0.3 loose, Moderate olive Brown, SAND, dry, graded, (SW).	5.0
0.1		SS04		5			Similar to above with trace gravel, sub-round.	6.0
0		SS05					Top 0.6 same as above. Bottom 0.6 loose, Light grayish Olive, medium to coarse SAND w/ little gravel, dry, well graded, sub-round, (SW).	8.0
0.3		SS06					Same as above (Bottom).	10.0
3.2		SS07		10			Loose, Light grayish Olive, SAND w/ little gravel, wet, well graded, subround, free product w/ staining and odor, (SW).	12.0
19.2		SS08					Top 0.7 same as above. Bottom 0.3 similar to above w/ little silt, no staining or product, (SW). ▼	14.0
0.1		SS09					Medium dense, Light olive Gray to olive Gray, coarse SAND w/ little silt, wet, well graded, product not observed, (SW).	15.0
0.5		SS10		15			Medium dense, Brownish Gray, coarse SAND w/ some gravel and few fines, wet, poorly graded (Top 0.2) to well graded (Bottom 0.8), sub-round. (SW, SP).	17.0
N/A		SS11					No Recovery.	19.0
0		SS12					Medium dense, Light olive Gray, SILT w/ some gravel, wet, well graded, sub-angular, (GM).	20.0
0		SS13		20			Similar to above except Moderate olive Gray, moist.	22.0
1.5		SS14					Same as above.	24.0
0		SS15					Top 0.6 medium dense, Light olive Gray, fine SAND and SILT w/ some gravel, moist, well graded, sub-angular, (TILL). Bottom 0.6 same as above except Moderate to Dark yellowish Brown.	26.0
0		SS16		25			Top 0.7 dense, Light olive Gray, SILT w/ some gravel, moist, well graded, sub-angular, (TILL). Middle 0.2 moderate yellowish Brown GRAVEL w/ few fines, wet, well graded, subangular, (GW). Bottom 1.1 similar to Top 0.7 except Moderate yellowish Brown.	28.0
0		SS17					Same as above (Bottom).	30.0
0		SS18		30			Same as above.	32.0

WELL DIAGRAM

- Portland / Volclay Grout
- Bentonite Seal
- #0 Filter Sand
- .010 Slot 2" PVC Schd 40 Screen
- 1' 2" PVC Schd 40 Sump
- Bentonite Seal

BORING_WELL P009 L... rHSI_MA.GDT 6/2/99

APPENDIX B

NAPL CHEMICAL ANALYSES FROM PREVIOUS REPORTS

GENERAL ELECTRIC
ENVIRONMENTAL LABORATORY
Test Report

LOG NUMBER: P6173 DATE: 7-12-95

REQUESTED BY: G Bowman

SAMPLE IDENTIFICATION	Specific Gravity	Total Chlorine %	PCB Concentration
NS-10 (LNAPL) 7/12/95	.905	N/A	24,000 ppm

COMMENTS: NEWELL ST. PARKING LOT LNAPL OIL

REPORT BY: JS Vicchiarelli DATE: _____ APPROVED: _____

DISTRIBUTION: Requestor
Laboratory File

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

CERTIFICATE OF ANALYSIS

Client:	GE Company	**Laboratory Job Number:**	L9505214
Address:	100 Woodlawn Avenue	**Invoice Number:**	75449
	Pittsfield, MA 01201	**Date Received:**	13-JUL-95
Attn:	William Fessler	**Date Reported:**	20-JUL-95
Project Number:	EL95449V	**Delivery Method:**	Alpha
Site:	Newell St.		

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9505214-01	NS-10 (LNAPL)	

Authorized by: James R. Roth

James R. Roth, PhD - Laboratory Manager

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9505214-01
NS-10 (LNAPL)
Sample Matrix: OIL

Date Collected: 12-JUL-95
Date Received : 13-JUL-95
Date Reported : 20-JUL-95

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Misc.

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	I
Total Metals				1	3005/3050			
Arsenic, Total	ND	mg/kg	5.0	1	6010	17-Jul	18-Jul	G
Barium, Total	ND	mg/kg	50.	1	6010	17-Jul	18-Jul	G
Cadmium, Total	ND	mg/kg	10.	1	6010	17-Jul	18-Jul	G
Chromium, Total	ND	mg/kg	20.	1	6010	17-Jul	18-Jul	G
Lead, Total	ND	mg/kg	50.	1	6010	17-Jul	18-Jul	G
Mercury, Total	ND	mg/kg	0.25	1	7470/7471	18-Jul	19-Jul	D
Selenium, Total	ND	mg/kg	5.0	1	6010	17-Jul	18-Jul	G
Silver, Total	ND	mg/kg	10.	1	6010	17-Jul	18-Jul	G

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9505214-01
NS-10 (LNAPL)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	II
Volatile Organics by GC/MS				1	8260		19-Jul	DE
Methylene chloride	ND	ug/kg	25000					
1,1-Dichloroethane	ND	ug/kg	7500					
Chloroform	ND	ug/kg	7500					
Carbon tetrachloride	ND	ug/kg	5000					
1,2-Dichloropropane	ND	ug/kg	18000					
Dibromochloromethane	ND	ug/kg	5000					
1,1,2-Trichloroethane	ND	ug/kg	7500					
2-Chloroethylvinyl ether	ND	ug/kg	50000					
Tetrachloroethene	ND	ug/kg	7500					
Chlorobenzene	ND	ug/kg	18000					
Trichlorofluoromethane	ND	ug/kg	25000					
1,2-Dichloroethane	ND	ug/kg	7500					
1,1,1-Trichloroethane	ND	ug/kg	5000					
Bromodichloromethane	ND	ug/kg	5000					
trans-1,3-Dichloropropene	ND	ug/kg	7500					
cis-1,3-Dichloropropene	ND	ug/kg	5000					
Bromoform	ND	ug/kg	5000					
1,1,2,2-Tetrachloroethane	ND	ug/kg	5000					
Benzene	ND	ug/kg	5000					
Toluene	ND	ug/kg	7500					
Ethylbenzene	ND	ug/kg	5000					
Chloromethane	ND	ug/kg	50000					
Bromomethane	ND	ug/kg	10000					
Vinyl chloride	ND	ug/kg	18000					
Chloroethane	ND	ug/kg	10000					
1,1-Dichloroethene	ND	ug/kg	7500					
trans-1,2-Dichloroethene	ND	ug/kg	7500					
Trichloroethene	ND	ug/kg	5000					
1,2-Dichlorobenzene	ND	ug/kg	50000					
1,3-Dichlorobenzene	59000	ug/kg	50000					
1,4-Dichlorobenzene	300000	ug/kg	50000					
Methyl tert butyl ether	ND	ug/kg	50000					
Xylenes	63000	ug/kg	5000					
cis-1,2-Dichloroethene	ND	ug/kg	5000					
Dibromomethane	ND	ug/kg	50000					
1,4-Dichlorobutane	ND	ug/kg	50000					
Iodomethane	ND	ug/kg	50000					
1,2,3-Trichloropropane	ND	ug/kg	50000					
Styrene	ND	ug/kg	5000					
Dichlorodifluoromethane	ND	ug/kg	50000					
Acetone	ND	ug/kg	50000					
Carbon Disulfide	ND	ug/kg	50000					
2-Butanone	ND	ug/kg	23000					
Vinyl Acetate	ND	ug/kg	50000					
4-Methyl-2-pentanone	ND	ug/kg	50000					
2-Hexanone	ND	ug/kg	50000					
Ethyl methacrylate	ND	ug/kg	50000					
Acrolein	ND	ug/kg	130000					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9505214-01
NS-10 (LNAPL)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	I
Volatile Organics by GC/MS continued				1	8260		19-Jul	D
Acrylonitrile	ND	ug/kg	50000					
Bromochloromethane	ND	ug/kg	25000					
2,2-Dichloropropane	ND	ug/kg	25000					
1,2-Dibromoethane	ND	ug/kg	25000					
1,3-Dichloropropane	ND	ug/kg	25000					
1,1,1,2-Tetrachloroethane	ND	ug/kg	25000					
Bromobenzene	ND	ug/kg	25000					
n-Butylbenzene	ND	ug/kg	25000					
sec-Butylbenzene	ND	ug/kg	25000					
tert-Butylbenzene	ND	ug/kg	25000					
o-Chlorotoluene	ND	ug/kg	25000					
p-Chlorotoluene	ND	ug/kg	25000					
1,2-Dibromo-3-chloropropane	ND	ug/kg	25000					
Hexachlorobutadiene	ND	ug/kg	25000					
Isopropylbenzene	ND	ug/kg	25000					
p-Isopropyltoluene	34000	ug/kg	25000					
Naphthalene	33000	ug/kg	25000					
n-Propylbenzene	ND	ug/kg	25000					
1,2,3-Trichlorobenzene	ND	ug/kg	25000					
1,2,4-Trichlorobenzene	ND	ug/kg	25000					
1,3,5-Trimethylbenzene	120000	ug/kg	25000					
1,2,4-Trimethylbenzene	310000	ug/kg	25000					
trans-1,4-Dichloro-2-butene	ND	ug/kg	25000					
Ethyl ether	ND	ug/kg	130000					
SURROGATE RECOVERY								
Toluene-d8	116.	%						
4-Bromofluorobenzene	133.	%						
Dibromofluoromethane	99.0	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9505214-01
NS-10 (LNAPL)

PARAMETER	RESULT	UNITS	RDL	REP	METHOD	DATES PREP	DATES ANALYSIS	I
Semi-volatile Organics by GC/MS				1	8270	14-Jul	15-Jul	I
Acenaphthene	ND	mg/kg	140					
Benzidine	ND	mg/kg	1200					
1,2,4-Trichlorobenzene	ND	mg/kg	180					
Hexachlorobenzene	ND	mg/kg	140					
Bis(2-chloroethyl)ether	ND	mg/kg	150					
2-Chloronaphthalene	ND	mg/kg	150					
1,2-Dichlorobenzene	ND	mg/kg	140					
1,3-Dichlorobenzene	1500	mg/kg	160					
1,4-Dichlorobenzene	7300	mg/kg	120					
3,3'-Dichlorobenzidine	ND	mg/kg	320					
2,4-Dinitrotoluene	ND	mg/kg	180					
2,6-Dinitrotoluene	ND	mg/kg	140					
Azobenzene	ND	mg/kg	140					
Fluoranthene	ND	mg/kg	140					
4-Chlorophenyl phenyl ether	ND	mg/kg	150					
4-Bromophenyl phenyl ether	ND	mg/kg	140					
Bis(2-chloroisopropyl)ether	ND	mg/kg	100					
Bis(2-chloroethoxy)methane	ND	mg/kg	110					
Hexachlorobutadiene	ND	mg/kg	400					
exachlorocyclopentadiene	ND	mg/kg	380					
Hexachloroethane	ND	mg/kg	250					
Isophorone	ND	mg/kg	120					
Naphthalene	ND	mg/kg	110					
Nitrobenzene	ND	mg/kg	95.					
NitrosoDiphenylAmine(NDPA)/DPA	ND	mg/kg	120					
n-Nitrosodi-n-propylamine	ND	mg/kg	130					
Bis(2-ethylhexyl)phthalate	ND	mg/kg	460					
Butyl benzyl phthalate	ND	mg/kg	100					
Di-n-butylphthalate	ND	mg/kg	140					
Di-n-octylphthalate	ND	mg/kg	120					
Diethyl phthalate	ND	mg/kg	250					
Dimethyl phthalate	ND	mg/kg	250					
Benzo(a)anthracene	ND	mg/kg	160					
Benzo(a)pyrene	ND	mg/kg	190					
Benzo(b)fluoranthene	ND	mg/kg	180					
Benzo(k)fluoranthene	ND	mg/kg	180					
Chrysene	ND	mg/kg	160					
Acenaphthylene	ND	mg/kg	130					
Anthracene	ND	mg/kg	120					
Benzo(ghi)perylene	ND	mg/kg	250					
Fluorene	ND	mg/kg	140					
Phenanthrene	ND	mg/kg	130					
Dibenzo(a,h)anthracene	ND	mg/kg	240					
Indeno(1,2,3-cd)pyrene	ND	mg/kg	240					
Pyrene	ND	mg/kg	140					
Aniline	ND	mg/kg	500					
4-Chloroaniline	ND	mg/kg	200					
-Methylnaphthalene	ND	mg/kg	350					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9505214-01
NS-10 (LNAPL)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS
Semi-volatile Organics by GC/MS continued				1	8270	14-Jul	15-Jul
2-Nitroaniline	ND	mg/kg	160				
3-Nitroaniline	ND	mg/kg	300				
4-Nitroaniline	ND	mg/kg	290				
Dibenzofuran	ND	mg/kg	100				
a,a-Dimethylphenethylamine	ND	mg/kg	2300				
Hexachloropropene	ND	mg/kg	1000				
Nitrosodi-n-butylamine	ND	mg/kg	240				
2-Methylnaphthalene	ND	mg/kg	90.				
Tetrachlorobenzene	ND	mg/kg	620				
Pentachlorobenzene	ND	mg/kg	640				
a-Naphthalamine	ND	mg/kg	1000				
b-Naphthalamine	ND	mg/kg	460				
Acetophenetidide	ND	mg/kg	500				
Dimethoate	ND	mg/kg	1000				
4-Aminobiphenyl	ND	mg/kg	520				
Pentachloronitrobenzene	ND	mg/kg	200				
Isodrin	ND	mg/kg	190				
p-Dimethylaminoazobenzene	ND	mg/kg	360				
Chlorobenzilate	ND	mg/kg	800				
Bis(2-ethylhexyl)adipate	ND	mg/kg	160				
3-Methylcholanthrene	ND	mg/kg	1000				
Ethylmethanesulfonate	ND	mg/kg	730				
Acetophenone	ND	mg/kg	240				
Nitrosodipiperidine	ND	mg/kg	1000				
7,12-Dimethylbenz(a)anthracene	ND	mg/kg	1200				
n-Nitrosodimethylamine	ND	mg/kg	2000				
2,4,6-Trichlorophenol	ND	mg/kg	100				
p-Chloro-m-cresol	ND	mg/kg	150				
2-Chlorophenol	ND	mg/kg	160				
2,4-Dichlorophenol	ND	mg/kg	500				
2,4-Dimethylphenol	ND	mg/kg	120				
2-Nitrophenol	ND	mg/kg	160				
4-Nitrophenol	ND	mg/kg	600				
2,4-Dinitrophenol	ND	mg/kg	750				
4,6-Dinitro-o-cresol	ND	mg/kg	870				
Pentachlorophenol	ND	mg/kg	350				
Phenol	ND	mg/kg	420				
Cresol, Total	ND	mg/kg	360				
2,4,5-Trichlorophenol	ND	mg/kg	140				
2,6-Dichlorophenol	ND	mg/kg	240				
Benzoic Acid	ND	mg/kg	2000				
Benzyl Alcohol	ND	mg/kg	290				
SURROGATE RECOVERY							
2-Fluorophenol	96.0	%					
Phenol-d6	86.0	%					
Nitrobenzene-d5	131.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

Laboratory Sample Number: L9505214-01
NS-10 (LNAPL)

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Semi-volatile Organics by GC/MS continued				1	8270	14-Jul	15-Jul	I3
2-Fluorobiphenyl	133.	%						
2,4,6-Tribromophenol	84.0	%						
4-Terphenyl-d14	139.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L9505214

Parameter	Value 1	Value 2	RPD	Units
Total Metals	DUPLICATE for sample(s) 01			
Arsenic, Total	ND	ND	NC	mg/kg
Barium, Total	ND	ND	NC	mg/kg
Cadmium, Total	ND	ND	NC	mg/kg
Chromium, Total	ND	ND	NC	mg/kg
Lead, Total	ND	ND	NC	mg/kg
Selenium, Total	ND	ND	NC	mg/kg
Silver, Total	ND	ND	NC	mg/kg

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L9505214

Parameter	% Recovery
Total Metals	SPIKE for sample(s) 01
Mercury, Total	96

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L9505214

Parameter	MS %	MSD %	RPD
Volatile Organics by GC/MS Spike Recovery MS/MSD for sample(s) 01			
1,1-Dichloroethene	83	96	15
Trichloroethene	89	100	12
Benzene	88	97	10
Toluene	99	106	7
Chlorobenzene	94	104	10

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

GENERAL ELECTRIC
ENVIRONMENTAL LABORATORY
Test Report

LOG NUMBER: P-6167 DATE: 7-7-95

REQUESTED BY: G. Bowman

SAMPLE IDENTIFICATION	Specific Gravity	Total Chlorine	PCB Concentration
NS-15 DNAPL 7-7-95	1.184	N/A	388,500 ug/g

COMMENTS: oil sample from Newell Street well

REPORT BY: JS Nicholson DATE: _____ APPROVED: JSN

DISTRIBUTION: Requestor
Laboratory File

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

CERTIFICATE OF ANALYSIS

Client: GE Company	Laboratory Job Number: L9505089
Address: 100 Woodlawn Avenue	Invoice Number: 75331
Pittsfield, MA 01201	Date Received: 10-JUL-95
Attn: W.A. Fessler	Date Reported: 03-MAR-99
Project Number:	Delivery Method: Alpha
Site: Newell Street	

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9505089-01	NS-15	

Authorized by: James R. Roth

James R. Roth, PhD - Laboratory Manager

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 RI:65

Laboratory Sample Number: L9505089-01
NS-15
Sample Matrix: OIL

Date Collected: 07-JUL-95
Date Received : 10-JUL-95
Date Reported : 03-MAR-99

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Misc.

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	I
Total Metals				1	3005/3050			
Arsenic, Total	ND	mg/kg	5.0	1	6010	17-Jul	17-Jul	G
Barium, Total	ND	mg/kg	50.	1	6010	17-Jul	17-Jul	G
Cadmium, Total	ND	mg/kg	10.	1	6010	17-Jul	17-Jul	G
Chromium, Total	ND	mg/kg	20.	1	6010	17-Jul	17-Jul	G
Lead, Total	ND	mg/kg	50.	1	6010	17-Jul	17-Jul	G
Mercury, Total	ND	mg/kg	0.25	1	7470/7471	11-Jul	12-Jul	I
Selenium, Total	ND	mg/kg	5.0	1	6010	17-Jul	17-Jul	G
Silver, Total	ND	mg/kg	10.	1	6010	17-Jul	17-Jul	G

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9505089-01
NS-15

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	II
Volatile Organics by GC/MS				1	8260		17-JUL	DI
Methylene chloride	ND	mg/kg	6300					
1,1-Dichloroethane	ND	mg/kg	1900					
Chloroform	ND	mg/kg	1900					
Carbon tetrachloride	ND	mg/kg	1300					
1,2-Dichloropropane	ND	mg/kg	4400					
Dibromochloromethane	ND	mg/kg	1300					
1,1,2-Trichloroethane	ND	mg/kg	1900					
2-Chloroethylvinyl ether	ND	mg/kg	13000					
Tetrachloroethene	ND	mg/kg	1900					
Chlorobenzene	ND	mg/kg	4400					
Trichlorofluoromethane	ND	mg/kg	6300					
1,2-Dichloroethane	ND	mg/kg	1900					
1,1,1-Trichloroethane	ND	mg/kg	1300					
Bromodichloromethane	ND	mg/kg	1300					
trans-1,3-Dichloropropene	ND	mg/kg	1900					
cis-1,3-Dichloropropene	ND	mg/kg	1300					
Bromoform	ND	mg/kg	1300					
1,1,2,2-Tetrachloroethane	ND	mg/kg	1300					
Benzene	ND	mg/kg	1300					
Toluene	3300	mg/kg	1900					
Ethylbenzene	ND	mg/kg	1300					
Chloromethane	ND	mg/kg	13000					
Bromomethane	ND	mg/kg	2500					
Vinyl chloride	ND	mg/kg	4400					
Chloroethane	ND	mg/kg	2500					
1,1-Dichloroethene	ND	mg/kg	1900					
trans-1,2-Dichloroethene	ND	mg/kg	1900					
Trichloroethene	87000	mg/kg	1300					
1,2-Dichlorobenzene	ND	mg/kg	13000					
1,3-Dichlorobenzene	ND	mg/kg	13000					
1,4-Dichlorobenzene	ND	mg/kg	13000					
Methyl tert butyl ether	ND	mg/kg	13000					
Xylenes	9200	mg/kg	1300					
cis-1,2-Dichloroethene	ND	mg/kg	1300					
Dibromomethane	ND	mg/kg	13000					
1,4-Dichlorobutane	ND	mg/kg	13000					
Iodomethane	ND	mg/kg	13000					
1,2,3-Trichloropropane	ND	mg/kg	13000					
Styrene	ND	mg/kg	1300					
Dichlorodifluoromethane	ND	mg/kg	13000					
Acetone	ND	mg/kg	13000					
Carbon Disulfide	ND	mg/kg	13000					
2-Butanone	ND	mg/kg	5600					
Vinyl Acetate	ND	mg/kg	13000					
4-Methyl-2-pentanone	ND	mg/kg	13000					
2-Hexanone	ND	mg/kg	13000					
Ethyl methacrylate	ND	mg/kg	13000					
Acrolein	ND	mg/kg	31000					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9505089-01
NS-15

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	II
Volatile Organics by GC/MS continued				1	8260		17-Jul	DI
Acrylonitrile	ND	mg/kg	13000					
Bromochloromethane	ND	mg/kg	1300					
2,2-Dichloropropane	ND	mg/kg	1300					
1,2-Dibromoethane	ND	mg/kg	1300					
1,3-Dichloropropane	ND	mg/kg	1300					
1,1,1,2-Tetrachloroethane	ND	mg/kg	1300					
Bromobenzene	ND	mg/kg	1300					
n-Butylbenzene	ND	mg/kg	1300					
sec-Butylbenzene	ND	mg/kg	1300					
tert-Butylbenzene	ND	mg/kg	1300					
o-Chlorotoluene	ND	mg/kg	1300					
p-Chlorotoluene	ND	mg/kg	1300					
1,2-Dibromo-3-chloropropane	ND	mg/kg	1300					
Hexachlorobutadiene	ND	mg/kg	1300					
Isopropylbenzene	ND	mg/kg	1300					
p-Isopropyltoluene	ND	mg/kg	1300					
Naphthalene	ND	mg/kg	1300					
n-Propylbenzene	ND	mg/kg	1300					
1,2,3-Trichlorobenzene	39000	mg/kg	1300					
1,2,4-Trichlorobenzene	6200	mg/kg	1300					
1,3,5-Trimethylbenzene	ND	mg/kg	1300					
1,2,4-Trimethylbenzene	ND	mg/kg	1300					
trans-1,4-Dichloro-2-butene	ND	mg/kg	1300					
Ethyl ether	ND	mg/kg	31000					
SURROGATE RECOVERY								
Toluene-d8	98.0	%						
4-Bromofluorobenzene	97.0	%						
Dibromofluoromethane	95.0	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9505089-01
NS-1S

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Semi-volatile Organics by GC/MS				1	8270	14-Jul	15-Jul	IG
Acenaphthene	ND	mg/kg	700					
Benzidine	ND	mg/kg	6000					
1,2,4-Trichlorobenzene	430000	mg/kg	900					
Hexachlorobenzene	ND	mg/kg	700					
Bis(2-chloroethyl)ether	ND	mg/kg	750					
2-Chloronaphthalene	ND	mg/kg	750					
1,2-Dichlorobenzene	7900	mg/kg	700					
1,3-Dichlorobenzene	ND	mg/kg	800					
1,4-Dichlorobenzene	23000	mg/kg	600					
3,3'-Dichlorobenzidine	2800	mg/kg	1600					
2,4-Dinitrotoluene	ND	mg/kg	900					
2,6-Dinitrotoluene	ND	mg/kg	700					
Azobenzene	ND	mg/kg	700					
Fluoranthene	ND	mg/kg	700					
4-Chlorophenyl phenyl ether	ND	mg/kg	750					
4-Bromophenyl phenyl ether	ND	mg/kg	700					
Bis(2-chloroisopropyl)ether	ND	mg/kg	500					
Bis(2-chloroethoxy)methane	ND	mg/kg	550					
Hexachlorobutadiene	ND	mg/kg	2000					
Hexachlorocyclopentadiene	ND	mg/kg	1900					
Hexachloroethane	ND	mg/kg	1300					
Isophorone	ND	mg/kg	600					
Naphthalene	ND	mg/kg	550					
Nitrobenzene	ND	mg/kg	480					
NitrosoDiphenylAmine(NDPA)/DPA	ND	mg/kg	600					
n-Nitrosodi-n-propylamine	ND	mg/kg	650					
Bis(2-ethylhexyl)phthalate	ND	mg/kg	2300					
Butyl benzyl phthalate	ND	mg/kg	500					
Di-n-butylphthalate	ND	mg/kg	700					
Di-n-octylphthalate	ND	mg/kg	600					
Diethyl phthalate	ND	mg/kg	1300					
Dimethyl phthalate	ND	mg/kg	1300					
Benzo(a)anthracene	ND	mg/kg	800					
Benzo(a)pyrene	ND	mg/kg	950					
Benzo(b)fluoranthene	ND	mg/kg	900					
Benzo(k)fluoranthene	ND	mg/kg	900					
Chrysene	ND	mg/kg	800					
Acenaphthylene	ND	mg/kg	650					
Anthracene	ND	mg/kg	600					
Benzo(ghi)perylene	ND	mg/kg	1300					
Fluorene	ND	mg/kg	700					
Phenanthrene	ND	mg/kg	650					
Dibenzo(a,h)anthracene	ND	mg/kg	1200					
Indeno(1,2,3-cd)pyrene	ND	mg/kg	1200					
Pyrene	ND	mg/kg	700					
Aniline	ND	mg/kg	2500					
4-Chloroaniline	ND	mg/kg	1000					
1-Methylnaphthalene	ND	mg/kg	1800					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9505089-01
NS-15

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Semi-volatile Organics by GC/MS, continued					1	8270	14-Jul	15-Jul IC
2-Nitroaniline	ND	mg/kg	800					
3-Nitroaniline	ND	mg/kg	1500					
4-Nitroaniline	ND	mg/kg	1500					
Dibenzofuran	ND	mg/kg	500					
a,a-Dimethylphenethylamine	ND	mg/kg	12000					
Hexachloropropene	ND	mg/kg	5000					
Nitrosodi-n-butylamine	ND	mg/kg	1200					
2-Methylnaphthalene	ND	mg/kg	450					
Tetrachlorobenzene	ND	mg/kg	3100					
Pentachlorobenzene	ND	mg/kg	3200					
a-Naphthalamine	ND	mg/kg	5000					
b-Naphthalamine	ND	mg/kg	2300					
Acetophenetidide	ND	mg/kg	2500					
Dimethoate	ND	mg/kg	5000					
4-Aminobiphenyl	ND	mg/kg	2600					
Pentachloronitrobenzene	ND	mg/kg	1000					
Isodrin	ND	mg/kg	950					
p-Dimethylaminoazobenzene	ND	mg/kg	1800					
Chlorobenzilate	ND	mg/kg	4000					
Bis(2-ethylhexyl)adipate	ND	mg/kg	800					
3-Methylcholanthrene	ND	mg/kg	5000					
Ethylmethanesulfonate	ND	mg/kg	3700					
Acetophenone	ND	mg/kg	1200					
Nitrosodipiperidine	ND	mg/kg	5000					
7,12-Dimethylbenz(a)anthracene	ND	mg/kg	6000					
n-Nitrosodimethylamine	ND	mg/kg	10000					
2,4,6-Trichlorophenol	ND	mg/kg	500					
p-Chloro-m-cresol	ND	mg/kg	750					
2-Chlorophenol	ND	mg/kg	800					
2,4-Dichlorophenol	ND	mg/kg	2500					
2,4-Dimethylphenol	ND	mg/kg	600					
2-Nitrophenol	ND	mg/kg	800					
4-Nitrophenol	ND	mg/kg	3000					
2,4-Dinitrophenol	ND	mg/kg	3800					
4,6-Dinitro-o-cresol	ND	mg/kg	4400					
Pentachlorophenol	ND	mg/kg	1800					
Phenol	ND	mg/kg	2100					
Cresol, Total	ND	mg/kg	1800					
2,4,5-Trichlorophenol	ND	mg/kg	700					
2,6-Dichlorophenol	ND	mg/kg	1200					
Benzoic Acid	ND	mg/kg	10000					
Benzyl Alcohol	ND	mg/kg	1500					
SURROGATE RECOVERY								
2-Fluorophenol	136.	mg/kg						
Phenol-d6	114.	mg/kg						
Nitrobenzene-d5	117.	mg/kg						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9505089-01
NS-15

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	II
Semi-volatile Organics by GC/MS - continued				1	8270	14-Jul	15-Jul	IC
2-Fluorobiphenyl	128.	mg/kg						
2,4,6-Tribromophenol	55.0	mg/kg						
4-Terphenyl-d14	124.	mg/kg						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L9505089

Parameter	Value 1	Value 2	RPD	Units
Total Metals -	DUPLICATE for sample(s) 01			
Arsenic, Total	ND	ND	NC	mg/kg
Barium, Total	ND	ND	NC	mg/kg
Cadmium, Total	ND	ND	NC	mg/kg
Chromium, Total	ND	ND	NC	mg/kg
Lead, Total	ND	ND	NC	mg/kg
Selenium, Total	ND	ND	NC	mg/kg
Silver, Total	ND	ND	NC	mg/kg

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L9505089

Parameter	% Recovery
Total Metals	SPIKE for sample(s): 01-
Mercury, Total	96

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L9505089

Parameter	MS %	MSD %	RPD
Volatile Organics by GC/MS Spike Recovery MS/MSD for Sample(s): 01-			
1,1-Dichloroethene	72	109	41
Trichloroethene	78	75	4
Benzene	96	92	4
Toluene	102	101	1
Chlorobenzene	101	98	3

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

TABLE 13

GE, LYMAN STREET SITE

SUMMARY OF CHEMISTRY DATA - ANALYTES DETECTED

WELL ID: LS-04
EPA SAMPLE NO.: RL04F1819
DATE: SEPTEMBER 4 & 5, 1991
MATRIX: NON-AQUEOUS LIQUID

SEMIVOLATILE ORGANIC COMPOUND	CONCENTRATION (UNITS: ug/kg)	QUALIFIER
1,2,3,5-TETRACHLOROBENZENE & 1,2,4,5-TETRACHLOROBENZENE	290000	J
1,2,3-TRICHLOROBENZENE	1400000	A
1,2,4-TRICHLOROBENZENE	8600000	A
1,4-DICHLOROBENZENE	650000	J
1-METHYLNAPHTHALENE	18000000	A (1)
2-METHYLNAPHTHALENE	14000000	A (1)
ACENAPHTHENE	1000000	J
ACENAPHTHYLENE	1200000	A
ANTHRACENE	3400000	A
BENZO(a)ANTHRACENE	2900000	A
BENZO(a)PYRENE	2700000	A
BENZO(b)FLUORANTHENE & BENZO(k)FLUORANTHENE	3100000	A
BENZO(g,h,i)PERYLENE	1500000	A
CHRYSENE	2600000	A
DIBENZOFURAN	300000	J
FLUORANTHENE	5500000	A
FLUORENE	4500000	A
INDENO(1,2,3-cd)PYRENE	1100000	J
NAPHTHALENE	47000000	A (1)
PHENANTHRENE	17000000	A (1)
PYRENE	9100000	A (1)
TOTAL	145840000	

NOTES:

A - Acceptable Quantitative Data

J - Concentration is an estimated value.

(1) - Concentration was determined from the reanalysis of the sample at a secondary dilution.

TABLE 13

GE, LYMAN STREET SITE

SUMMARY OF CHEMISTRY DATA - ANALYTES DETECTED

WELL ID: LS-04
EPA SAMPLE NO.: RL04F1819
DATE: SEPTEMBER 4 & 5, 1991
MATRIX: NON-AQUEOUS LIQUID

VOLATILE ORGANIC COMPOUND	CONCENTRATION (UNITS: ug/kg)	QUALIFIER
2-HEXANONE	250000	J
ACETONE	20000	J
BENZENE	3600	J
CARBON TETRACHLORIDE	530000	J
CHLOROBENZENE	20000	J
CHLOROFORM	13000	J
ETHYLBENZENE	34000	J
METHYLENE CHLORIDE	4700	J
TOLUENE	16000	J
TOTAL XYLENES	300000	J
TRICHLOROETHENE	61000	J
TOTAL	1252300	

PCB'S	CONCENTRATION (UNITS: mg/kg)	QUALIFIER
AROCLOR-1254	450000	A

NOTES:

A - Acceptable Quantitative Data

J - Concentration is an estimated value.

(1) - Concentration was determined from the reanalysis of the sample at a secondary dilution.

TABLE 13 913-6743

GE, LYMAN STREET SITE

SUMMARY OF CHEMISTRY DATA - ANALYTES DETECTED

WELL ID: LS-12
EPA SAMPLE NO.: RL12FDNAP
DATE: SEPTEMBER 6, 1991
MATRIX: NON-AQUEOUS LIQUID

SEMIVOLATILE ORGANIC COMPOUND	CONCENTRATION (UNITS: ug/kg)	QUALIFIER
1,2,3,4-TETRACHLOROBENZENE	190000	J
1,2,3,5-TETRACHLOROBENZENE & 1,2,4,5-TETRACHLOROBENZENE	200000	J
1,2,3-TRICHLOROBENZENE	1200000	A
1,2,4-TRICHLOROBENZENE	7200000	A
1,4-DICHLOROBENZENE	100000	J
TOTAL	8890000	

VOLATILE ORGANIC COMPOUND	CONCENTRATION (UNITS: ug/kg)	QUALIFIER
BENZENE	870	J
CARBON TETRACHLORIDE	130000	J
CHLOROFORM	3400	J
ETHYLBENZENE	3800	J
TETRACHLOROETHENE	8700	J
TOLUENE	1100	J
TOTAL XYLENES	92000	J
TRICHLOROETHENE	89000	J
TOTAL	328870	

PCB'S	CONCENTRATION (UNITS: mg/kg)	QUALIFIER
AROCLOR-1254	660000	A

NOTES:
A - Acceptable Quantitative Data
J - Concentration is an estimated value.
(1) - Concentration was determined from the reanalysis of the sample at a secondary dilution.

TABLE 13

GE, LYMAN STREET SITE

SUMMARY OF CHEMISTRY DATA - ANALYTES DETECTED

WELL ID: LS-21
EPA SAMPLE NO.: RL21FDNAP
DATE: SEPTEMBER 5, 1991
MATRIX: NON-AQUEOUS LIQUID

SEMIVOLATILE ORGANIC COMPOUND	CONCENTRATION (UNITS: ug/kg)	QUALIFIER
1,2,3-TRICHLOROBENZENE	110000	J
1,2,4-TRICHLOROBENZENE	56000	J
1,2-DICHLOROBENZENE	53000	J
1,3-DICHLOROBENZENE	380000	A
1,4-DICHLOROBENZENE	1700000	A
1-METHYLNAPHTHALENE	190000	J
2-METHYLNAPHTHALENE	130000	J
ACENAPHTHENE	92000	J
ANTHRACENE	41000	J
bis(2-ETHYLHEXYL)PHTHALATE	47000	J
DIBENZOFURAN	68000	J
FLUORANTHRENE	150000	J
FLUORENE	120000	J
NAPHTHALENE	430000	A
PHENANTHRENE	270000	J
PYRENE	110000	J
TOTAL	3947000	

NOTES:

A - Acceptable Quantitative Data

J - Concentration is an estimated value.

(1) - Concentration was determined from the reanalysis of the sample at a secondary dilution.

FILE: LS21DATA.WK1

TABLE 13 913-6743

GE, LYMAN STREET SITE

SUMMARY OF CHEMISTRY DATA - ANALYTES DETECTED

WELL ID: LS-21
EPA SAMPLE NO.: RL21FDNAP
DATE: SEPTEMBER 5, 1991
MATRIX: NON-AQUEOUS LIQUID

VOLATILE ORGANIC COMPOUND	CONCENTRATION (UNITS: ug/kg)	QUALIFIER
BENZENE	1000	J
CHLOROBENZENE	49000	J
ETHYLBENZENE	6200	J
TOLUENE	4600	J
TOTAL XYLENES	120000	J
TOTAL	180800	

PCB'S	CONCENTRATION (UNITS: mg/kg)	QUALIFIER
AROCLOR-1254	98000	A

NOTES:
A - Acceptable Quantitative Data
J - Concentration is an estimated value.
(1) - Concentration was determined from the reanalysis of the sample at a secondary dilution.

TABLE 13

GE, LYMAN STREET SITE

SUMMARY OF CHEMISTRY DATA - ANALYTES DETECTED

WELL ID: RW-01
EPA SAMPLE NO.: RLR1F2121
DATE: SEPTEMBER 4 & 5, 1991
MATRIX: NON-AQUEOUS LIQUID

SEMIVOLATILE ORGANIC COMPOUND	CONCENTRATION (UNITS: ug/kg)	QUALIFIER
1,2,3,5-TETRACHLOROBENZENE & 1,2,4,5-TETRACHLOROBENZENE	90000	J
1,2,3-TRICHLOROBENZENE	470000	A
1,2,4-TRICHLOROBENZENE	2200000	A
1,2-DICHLOROBENZENE	47000	J
1,3-DICHLOROBENZENE	150000	J
1,4-DICHLOROBENZENE	1100000	A
1-METHYLNAPHTHALENE	1800000	A
2-METHYLNAPHTHALENE	1400000	A
ACENAPHTHENE	300000	J
ACENAPHTHYLENE	120000	J
ANTHRACENE	440000	A
BENZO(a)ANTHRACENE	330000	J
BENZO(a)PYRENE	250000	J
CHRYSENE	320000	J
DIBENZOFURAN	110000	J
FLUORANTHENE	650000	A
FLUORENE	680000	A
NAPHTHALENE	2800000	A
PHENANTHRENE	1800000	A
PYRENE	820000	A
TOTAL	15877000	

NOTES:

A - Acceptable Quantitative Data

J - Concentration is an estimated value.

(1) - Concentration was determined from the reanalysis of the sample at a secondary dilution.

TABLE 13

GE, LYMAN STREET SITE

SUMMARY OF CHEMISTRY DATA - ANALYTES DETECTED

WELL ID: RW-01
EPA SAMPLE NO.: RLR1F2121
DATE: SEPTEMBER 4 & 5, 1991
MATRIX: NON-AQUEOUS LIQUID

VOLATILE ORGANIC COMPOUND	CONCENTRATION (UNITS: ug/kg)	QUALIFIER
1,2-DICHLOROETHENE (total)	770	J
BENZENE	670	J
CARBON TETRACHLORIDE	3900	A
CHLOROBENZENE	23000	A
CHLOROFORM	910	J
ETHYLBENZENE	6300	A
TETRACHLOROETHENE	440	J
TOLUENE	2700	A
TOTAL XYLENES	82000	J
TRICHLOROETHENE	3700	A
TOTAL	124390	

PCB'S	CONCENTRATION (UNITS: mg/kg)	QUALIFIER
AROCLOR-1254	490000	A

NOTES:

A - Acceptable Quantitative Data

J - Concentration is an estimated value.

(1) - Concentration was determined from the reanalysis of the sample at a secondary dilution.

FILE: RW01DATA.WK1

TABLE 14

GE, LYMAN STREET SITE

DNAPL COMPOSITION

CLASS OF ORGANIC COMPOUNDS	RW-01	LS-04	LS-12	LS-21
Polychlorinated biphenyls (PCBs)	49 %	45 %	66 %	9.8 %
Polynuclear aromatic hydrocarbons (PAHs)	1.2 %	13.4 %	-*	0.15 %
Polychlorinated benzenes	0.41 %	1.1 %	0.00 %	0.23 %
Volatile Aromatics	0.01 %	0.04 %	0.01 %	0.02 %
Volatile Halocarbons	0.001 %	0.06 %	0.02 %	-*
Volatile Solvents	-*	0.03 %	-*	-*

NOTE:

* - This class of compounds was not detected in the DNAPL sample from this well.

FILE: DNAPL.WK1

TABLE 2-1

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

LYMAN STREET

SUMMARY OF APPENDIX IX+3 DATA FOR SAMPLE LS423R1C1
(Collected April 30, 1992)
(Results are presented in parts per million, ppm)

Analysis:	LS423R1C1
VOCs	
Carbon tetrachloride	180
Chlorobenzene	630
1,4-Dichlorobenzene	140
Ethylbenzene	11
Trichloroethene	15
Total Xylenes	160
SVOCs	
Acenaphthene	1800
1,2,4-Trichlorobenzene	1280
1,4-Dichlorobenzene	1200
Fluoranthene	6200
Di-n-butylphthalate	3180
Benzo(a)anthracene	1700
Benzo(b)fluoranthene	1600
Chrysene	1600
Anthracene	1250
Fluorene	2300
Phenanthrene	6000
Pyrene	6600
1-Methyl naphthalene	3800
2-Methyl naphthalene	2300
Dibenzofuran	1000
Pesticides/Herbicides	
None detected	–
Inorganics	
Arsenic	6.9
Barium	8.9
Chromium	9.4
Copper	19.2
Lead	10.6
Tin	36
Vanadium	2.9
PCBs	
PCB-1254	27000
PCDDs/PCDFs	
2,3,7,8-TCDD	ND(0.043) [ND(0.0048)]
TCDD (total)	ND(0.043) [ND(0.0048)]
PeCDD (total)	ND(0.0091) [ND(0.0048)]
HxCDD (total)	0.0346 [0.0408]
HpCDD (total)	0.0848 [0.103]
OCDD	0.619 [0.712]
2,3,7,8-TCDF	ND(0.0346) [ND(0.0047)]
TCDF (total)	ND(0.0414) [ND(0.0067)]
PeCDF (total)	ND(0.0274) [0.163]
HxCDF (total)	0.0727 [0.466]
HpCDF (total)	0.0885 [0.272]
OCDF	0.120 [0.213]

TABLE 1

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

LYMAN STREET PARKING LOT / USEPA AREA 5A

RIVERBANK SUBSURFACE SOIL AND LNAPL SAMPLING SUMMARY - JANUARY 1999

SAMPLE LOCATION	SAMPLE DATE	SAMPLE TYPE	SAMPLE DEPTH (feet below grade)	SAMPLE ELEVATION (feet above MSL)	SAMPLE PID READING (instrument units)	STAINING OBSERVED	SHAKE TEST	TPH (ppm)
LSSC-12	1\29\99	Soil	0-1'	979-980	2.3	No	No	140
LSSC-12	1\29\99	Soil	1-2'	978-979	3.9	No	No	ND
LSSC-12	1\29\99	Soil	2-3'	977-978	11.4	No	No	1,400
LSSC-12	1\29\99	Soil	3-4'	976-977	2.8	No	No	5,900
LSSC-12	1\29\99	Soil	4-5'	975-976	2.5	No	No	9,300
LSSC-12	1\29\99	Soil	5-6'	974-975	2.0	No	No	23,000
LSSC-12	1\29\99	Soil	6-7'	973-974	2.4	Yes	No	22,000
LSSC-12	1\29\99	Soil	7-8'	972-973	5.0	Yes	Yes	13,000
LSSC-12	1\29\99	Soil	7-8' (Duplicate)	972-973	5.0	Yes	Yes	12,000
LSSC-13	1\29\99	Soil	0-1'	979-980	0.6	No	No	140
LSSC-13	1\29\99	Soil	1-2'	978-979	0.8	No	No	ND
LSSC-13	1\29\99	Soil	2-3'	977-978	1.1	No	No	140
LSSC-13	1\29\99	Soil	3-4'	976-977	1.2	No	No	ND
LSSC-13	1\29\99	Soil	4-5'	975-976	1.2	No	No	ND
LSSC-13	1\29\99	Soil	5-6'	974-975	1.3	No	No	ND
LSSC-13	1\29\99	Soil	6-7'	973-974	1.4	No	No	4,500
LSSC-13	1\29\99	Soil	7-8'	972-973	5.5	Yes	Sheen	21,000
LSSC-14	1\29\99	Soil	0-1'	979-980	0.6	No	No	180
LSSC-14	1\29\99	Soil	1-2'	978-979	1.1	No	No	ND
LSSC-14	1\29\99	Soil	2-3'	977-978	0.8	No	No	ND
LSSC-14	1\29\99	Soil	3-4'	976-977	0.7	No	No	920
LSSC-14	1\29\99	Soil	4-5'	975-976	0.6	No	No	1,200
LSSC-14	1\29\99	Soil	5-6'	974-975	0.6	No	No	2,900
LSSC-15	1\29\99	Soil	0-1'	979-980	0.1	No	No	120
LSSC-15	1\29\99	Soil	1-2'	978-979	0.2	No	No	ND
LSSC-15	1\29\99	Soil	2-3'	977-978	0.1	No	No	ND
LSSC-15	1\29\99	Soil	3-4'	976-977	0.2	No	No	ND
LSSC-15	1\29\99	Soil	3-4' (Duplicate)	976-977	0.2	No	No	ND
LSSC-15	1\29\99	Soil	4-5'	975-976	0.1	No	No	140
LSSC-15	1\29\99	Soil	5-6'	974-975	0.0	No	No	130
LSSC-15	1\29\99	Soil	6-7'	973-974	0.4	No	No	150
LSSC-15	1\29\99	Soil	7-8'	972-973	0.4	No	No	110
RW-1R	1\29\99	LNAPL	N/A	N/A	N/A	N/A	N/A	680,000
RW-3	1/29/99	LNAPL	N/A	N/A	N/A	N/A	N/A	640,000

Notes:

1. Samples were collected by Blasland, Bouck & Lee, Inc. and screened with a photoionization detector (PID) in the field.
2. Water shake tests were performed on all samples to evaluate the potential presence of LNAPL residuals.
   "No" indicates that no LNAPL residuals were observed.
   "Yes" indicates that LNAPL residuals were observed.
   "Sheen" indicates that a slight sheen formed on the water surface during the test.
3. Total Petroleum Hydrocarbon (TPH) analyses were conducted utilizing USEPA Method 418.1 by Northeast Analytical, Inc.
4. ppm: Dry weight parts per million.
5. ND: Not detected (detection limit of 100 ppm).
6. N/A: Not applicable.
7. LNAPL: Light Non-Aqueous Phase Liquid.