QUARTERLY PROGRESS REPORT NO. 3
REMEDIAL INVESTIGATION
DELPHI FACILITY
1000 LEXINGTON AVENUE
ROCHESTER, NEW YORK
Registry Site No. 8-28-064
EPA ID No. NYD002215234

by

Haley & Aldrich of New York
Rochester, New York

for

Delphi Corporation
Rochester, New York

File No. 70014-054
November 2002

HALEY & ALDRICH

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8 November 2002
File No. 70014-054

New York State Department of
Environmental Conservation
Division of Environmental Remediation
Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

Attention: Regional Hazardous Waste Remediation Engineer

Subject: Remedial Investigation Quarterly Progress Report No. 3
Registry Site No. 8-28-064, EPA ID No. NYD002215234
Delphi Facility
1000 Lexington Avenue
Rochester, New York

Ladies and Gentlemen:

Please find enclosed two copies of Quarterly Progress Report No. 3 (Progress Report) for NYSDEC Registry Site No. 8-28-064. This is the third progress report covering Remedial Investigation (RI) activities performed at the Delphi Corporation (Delphi) facility located at 1000 Lexington Avenue in the City of Rochester, Monroe County, New York. The Delphi facility property is hereinafter referred to as the "site." The site location is shown on Figure 1 of this report.

This Progress Report is submitted on behalf of Delphi. It has been prepared in accordance with the terms of an Order On Consent between NYSDEC and Delphi ("RI/FS Order," Index # B8-0531-98-06).

This report covers RI activities performed during the period 1 August through 31 October 2002. Investigative activities performed during the reporting period include off-site bedrock well installations, a follow-up soil vapor survey in the vicinity of OW-322 and Bldg. 11 (scrap metal handling building), continued water level measurements in DR-315 and initial measurements in new off-site shallow- and intermediate-bedrock monitoring wells (-303, -304, and -307 locations), and on-site exterior follow-up drilling and soil and groundwater sampling as outlined in Work Plan Amendment No. 2 (Appendix E in Quarterly Report No. 2). Laboratory results from soil and groundwater sampling were not available at the time this report was prepared and will be presented in the next quarterly report.

Please feel free to contact us if you have any questions about the enclosed report.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Michael G. Beikirch
Staff Hydrogeologist

Thomas D. Wells
Senior Environmental Geologist

Jeffrey E. Loney
Vice President

Enclosures

c: Delphi Corporation - R. Eisenman, K. Jones
NYSDEC Environmental Enforcement Division, Buffalo - M. Desmond, Senior Attorney
NYSDEC Environmental Remediation Division, Albany - E. Belmore, Chief Western Section
MCDOH - R. Elliott
NYSDOH - D. Napier, Regional Toxics Coordinator

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I. INTRODUCTION

This report is the third Quarterly Progress Report covering remedial investigation (RI) activities performed at the Delphi Corporation facility located at 1000 Lexington Avenue in the City of Rochester, Monroe County, New York. The Delphi property is hereinafter referred to as the "site." The site location is shown on Figure 1.

This report has been prepared in accordance with the terms of an Order On Consent between the New York State Department of Environmental Conservation (NYSDEC) and Delphi for a remedial investigation and feasibility study of the Delphi site ("RI/FS Order," Index # B8-0531-98-06). The Delphi site is listed as Site # 8-28-064 on the New York State Registry of Inactive Hazardous Waste Disposal Sites, and it is identified under state and federal programs regulating management of hazardous waste by its U.S. Environmental Protection Agency (EPA) identification number NYD002215234.

Quarterly Report No. 3 covers RI activities performed during the period of 1 August 2002 through 31 October 2002.

Activities performed during the reporting period include:

- off-site shallow- and intermediate-bedrock monitoring well installations (-303, -304, and –307 locations),
- groundwater level measurements in off-site bedrock wells,
- periodic ongoing monitoring of the groundwater level at newly-installed deep-bedrock monitoring well DR-315,
- completion of a soil vapor survey in the vicinity of OW-322/Bldg. 11,
- follow-up investigation at other on-site exterior locations in accordance with Work Plan Amendment No. 2, and
- sampling and analysis of soil samples and mini-well groundwater samples.

This report presents the results of the activities performed during this reporting period and describes the activities to be undertaken during the next period of the RI. The report includes text, tables summarizing sample data, figures showing investigation locations and soil vapor data, and appendices presenting field data forms.

II. RI/FS ACTIVITIES COMPLETED

2.01 Work Plan Activities

Work Plan soil-boring and monitoring-well installation activities continued into this reporting period. Approximately 95 percent of the soil-boring and well-installation work identified in the RI/FS Work Plan has been completed through the third reporting period. During this third reporting period, Delphi continued to conduct negotiations with owners of adjacent properties concerning agreements to grant Delphi access to install and sample the off-site wells specified in the RI/FS Work Plan.

Delphi intends to complete facility interior soil-boring and well-installation work during the holiday shutdown in the next reporting period. Delphi will also complete the planned deep rock well and offsite wells during the last quarter of 2002 if property access issues are resolved. Planned site-wide and off-site groundwater sampling activities will be initiated in the first quarter of 2003 provided that additional off-site monitoring well installations are completed.

A. Off-Site Monitoring Wells

Shallow- and intermediate-bedrock monitoring wells SR-/R-303, SR-/R-304, and R-307 were installed during the reporting period. Access agreements for these properties were received by Delphi as discussed in Section 3.01 of Quarterly Report No. 2. Access agreements for remaining off-site monitoring wells R-302, R-305, and R-306 are still pending. Delphi continues to work with NYSDEC to obtain access agreements for these properties.

B. SSB-4

Soil test boring SSB-4 was installed and completed as a temporary mini-well. Soil samples were collected and submitted for laboratory analysis of VOCs, PAHs, PCBs, and PPL metals in accordance with the Work Plan. Laboratory analysis results from these soil samples will be presented in the next Quarterly Report (No. 4).

Upon completion of a soil test boring, temporary mini-well SSB-4 was installed in the borehole. The 1-inch diameter, 10-foot long PVC well was screened from 11.5 to 21.5 ft. and was sampled for groundwater on 29 October 2002. The mini-well was thereafter abandoned.

No LNAPL was observed in mini-well SSB-4. A groundwater sample from SSB-4 mini-well was submitted for analysis of VOCs and "site" metals by SW-846 methods in accordance with the Work Plan. Laboratory results from this groundwater sample will be presented in the next Quarterly Report (No. 4). Upon evaluation of the groundwater analytical results a decision will be made whether a permanent overburden observation well is warranted.

A soil boring report for SSB-4 is presented in Appendix A. Headspace screening reports are presented in Appendix B. The soil-boring and mini-well location is presented on Figure 2.

2.02 Work Plan Amendment No. 2 Activities

The following investigation activities were performed as a follow-up to RI/FS Work Plan activities and were conducted in accordance with Work Plan Amendment No. 2, which was presented in Appendix E of Quarterly Report No. 2.

A. Bldg. 11 Soil Vapor Survey

Soil vapor work specified in Work Plan Amendment No. 2 was completed during this reporting period. Soil vapor survey points were installed and sampled in the OW-322/Bldg. 11 area to delineate elevated chlorinated VOCs detected in shallow soils in test boring OW-322. One follow-up round of soil vapor survey work was completed during the reporting period on 28 October 2002. Soil vapor survey protocols were performed in accordance with the RI/FS Work Plan using the same procedures outlined in Quarterly Report Nos. 1 and 2.

Soil vapor samples were collected from eight (8) exterior locations in the paved area surrounding Bldg. 11 and at one (1) location inside Bldg. 11. Some variation in the spacing was allowed to accommodate a gas main and to yield a greater number of locations within that particular area. Soil vapor results indicated that the extent of soil chlorinated VOCs contamination of soil at OW-322 appears to be limited to the immediate vicinity of OW-322. Soil vapor readings in excess of the 100 ppm threshold are limited to the single soil vapor point immediately adjacent to OW-322. No additional investigation is planned for this area.

The soil vapor survey area is shown on Figure 2, and the soil vapor survey locations investigated during this reporting period are shown in detail on Figure 3. A summary of soil vapor survey results is presented in Table 1; Table 1 is an update of the Table 7 presented in Quarterly Report Nos. 1 and 2. Results for the OW-322/Bldg. 11 area survey are also shown on Figure 3.

B. Mini-Well at SSB-3

Installation of mini-well SSB-3 was omitted during the initial phase of RI/FS work. Therefore, a temporary mini-well was installed (without soil sampling) in a borehole within a few feet of the original SSB-3 boring location. A 1-inch diameter, 10-foot long PVC well was screened from 9 to 19 ft. and was sampled for groundwater on 29 October 2002. The mini-well was thereafter abandoned.

No LNAPL was observed in mini-well SSB-3. A groundwater sample from SSB-3 mini-well was submitted for analysis of VOCs and "site" metals by SW-846 methods in accordance with the Work Plan. Laboratory results from this groundwater sample will be presented in the next Quarterly Report (No. 4). Upon evaluation of the

groundwater analytical results a decision will be made whether a permanent overburden observation well is warranted.

Soil boring and mini-well locations are presented on Figure 2.

C. Easement Area A/Storm Sewer Boring SSB-5

Additional soil sampling and analysis was performed from three follow-up borings in the vicinity of SSB-5 in the Easement Area A/48-inch storm sewer area. As per Work Plan Amendment No. 2, three soil borings were installed in the vicinity of SSB-5.

Soil borings SSB-5A through -5C were installed at the locations shown on Figure 2.

Soil borings were installed and soil samples collected in accordance with Work Plan protocols. Soil samples were submitted for analysis of VOCs and "site" metals. Laboratory analysis results from these soil samples will be presented in the next Quarterly Report (No. 4).

Soil boring reports are presented in Appendix A.

D. Monitoring Well Installations

1. Off-Site Wells

Off-site monitoring well installations were initiated during the reporting period. Installations included the SR-/R-303 cluster on the R.D.U Inc. property at 970 Driving Park Avenue, the SR-/R-304 cluster on the New Penn Motors Express property at 864 Driving Park Avenue, and intermediate-bedrock well R-307 installed just east of the site in the center of Lexington Avenue, on the north side of the Lexington Avenue Sewer.

Wells were installed in accordance with protocols specified in the Work Plan. At each well cluster one soil test boring was performed and the soils screened for the presence of VOCs. Screening results indicated no elevated levels of VOCs and no visible evidence of other contaminants in soils. Therefore, no soil samples were submitted for laboratory analysis from any of the off-site locations.

Shallow-bedrock monitoring wells were installed to a depth between 7 and 10 feet below the top-of-bedrock surface and completed as 2-inch diameter, 10-foot-screen-length PVC wells with a flush-mount surface completion. Intermediate-bedrock wells were installed as 4-inch diameter open rock hole wells with monitoring intervals from 15 to 25 feet below top-of-bedrock, and a flush-mount surface completion.

Wells were developed until dry or recovery of at least the volume of water lost to the formation within the monitoring interval during coring operations.

Soil boring reports are included in Appendix A and Observation Well Installation Reports in Appendix C. Monitoring well locations are shown on Figure 2.

2. On-Site Wells

Three groundwater monitoring wells were installed at exterior locations on-site. Two overburden and one shallow-bedrock monitoring wells were installed as follows:

- one permanent overburden well (OW-323) to replace the temporary mini-well at the USTB-1 location,
- one permanent overburden well (OW-324) to replace the temporary mini-well at the OHB-1 location, and
- one shallow-bedrock well (SR-325) to evaluate the extent of LNAPL in the Building 22 courtyard area.

Overburden and shallow-bedrock wells were installed in accordance with the RI/FS Work Plan protocols and sampled for the analytical parameters described in Work Plan Amendment No. 2. Soils were characterized and logged at overburden well OW-324 (location of OHB-1) and shallow-bedrock well SR-325 locations. Soil sampling was performed at OW-324 and samples submitted for analysis of VOCs and PAHs by SW-846 methods. Laboratory analysis results from these soil samples will be presented in the next Quarterly Report (No. 4).

Soil test boring reports are presented in Appendix A. Groundwater observation well installation reports are presented in Appendix C.

2.03 Water Level Measurements

Water level measurement events were performed on 20 September 2002 and 30 October 2002. Wells measured on 20 September 2002 included all six on-site deep-bedrock monitoring wells. Wells measured on 30 October 2002 included the five recently-installed off-site shallow- and intermediate-bedrock wells at the SR-/R–303, SR-/R-304, and R-307 locations.

The groundwater level in newly-installed deep-bedrock well DR-315 is still being monitored routinely. Water levels are currently collected about once a month to determine if the water level in DR-315 has reached an equilibrium level. The water level in DR-315, at 34.22 feet below top of casing on 29 October, still does not appear to have attained equilibrium; the water level continues to respond (rise) at a rate of about one foot every 3 weeks and has risen 4.8 feet since the end of the last reporting period.

Groundwater levels were recorded on monitoring forms presented in Appendix D. For purposes of calculating groundwater elevations, reference elevations for several newly-installed monitoring wells were surveyed by Haley & Aldrich on 15 August 2002. Surveyed reference elevations for these select wells are presented in Appendix E.

III. UPCOMING RI/FS ACTIVITIES

The following RI/FS activities are planned for the upcoming reporting period of November 2002 through January 2003.

3.01 Off-Site Well Installations

The off-site well drilling program will continue during the next quarterly reporting period provided additional access agreements can be negotiated with adjacent property owners. Delphi is currently working with NYSDEC to facilitate these agreements. It is anticipated that NYSDEC's involvement will permit drilling at well locations R–302 on City of Rochester property, R-305 on American Packaging property, and R-306 on Royal Environmental property.

If access approval is granted during the next quarter, installation of some or all of the remaining off-site wells at approved locations will be included in the winter drilling activities (quarter no. 4). If property access at these locations is granted after the next reporting period, wells will be installed in the following quarter. If access agreements cannot be agreed upon, Delphi will work with the NYSDEC to discuss potential alternative locations or other alternatives for these wells.

3.02 Deep-Bedrock Wells

As discussed in Section 3.03 of Quarterly Report No. 2, a proposal for the installation of the second deep-bedrock well addressed in the RI/FS Work Plan is provided herein. One additional deep-bedrock monitoring well will be installed on-site in accordance with the Work Plan. This well will be installed in conjunction with remaining off-site well installations, as described above, during the next reporting period if access agreements are granted for the off-site wells. The deep-bedrock well will be installed at a location anticipated to be downgradient of former degreaser areas, on the east side of Bldgs. 24/25 near the R–132 well cluster.

In addition, groundwater level monitoring at DR-315 will continue until it is evident that the water level has reached equilibrium with respect to response to drilling. An additional round of water level measurements will then be made at all site deep-bedrock wells.

3.03 Interior Work

Additional facility interior investigation will be performed in the next reporting period as outlined in Work Plan Amendment No. 2 (Appendix E of Quarterly Report No. 2).

3.04 Groundwater Sampling

Quarterly groundwater sampling is tentatively planned to begin in the first quarter of 2003. Sampling for first-quarter 2003 is planned provided additional access agreements can be

agreed upon and drilling can be initiated at remaining off-site monitoring well locations. This is intended to keep all off-site monitoring wells on a consistent schedule.

If groundwater sampling can be initiated, groundwater samples will be analyzed in accordance with Table IV of the Work Plan.

IV. CITIZEN PARTICIPATION ACTIVITIES

No Citizen Participation activities were performed during this reporting period. No Citizen Participation activities are planned for the next reporting period.

REFERENCES

Data Summary Report, Previous Remedial Investigations, Delphi Automotive Systems, 1000 Lexington Avenue, Rochester, New York, Site No. 8-28-064, Volume V. Haley & Aldrich of New York, September 1998.

RI/FS Work Plan, Delphi Automotive Systems Facility, 1000 Lexington Avenue, Rochester, Monroe County, New York, Registry Site No. 8-28-064, Volume V. Haley & Aldrich of New York, October 2001.

Quarterly Progress Report No. 1, Remedial Investigation, Delphi Facility, 1000 Lexington Avenue, Rochester, New York, Site No. 8-28-064, EPA Id No. NYD002215234. Haley & Aldrich of New York, May 2002.

Quarterly Progress Report No. 2, Remedial Investigation, Delphi Facility, 1000 Lexington Avenue, Rochester, New York, Site No. 8-28-064, EPA Id No. NYD002215234. Haley & Aldrich of New York, August 2002.

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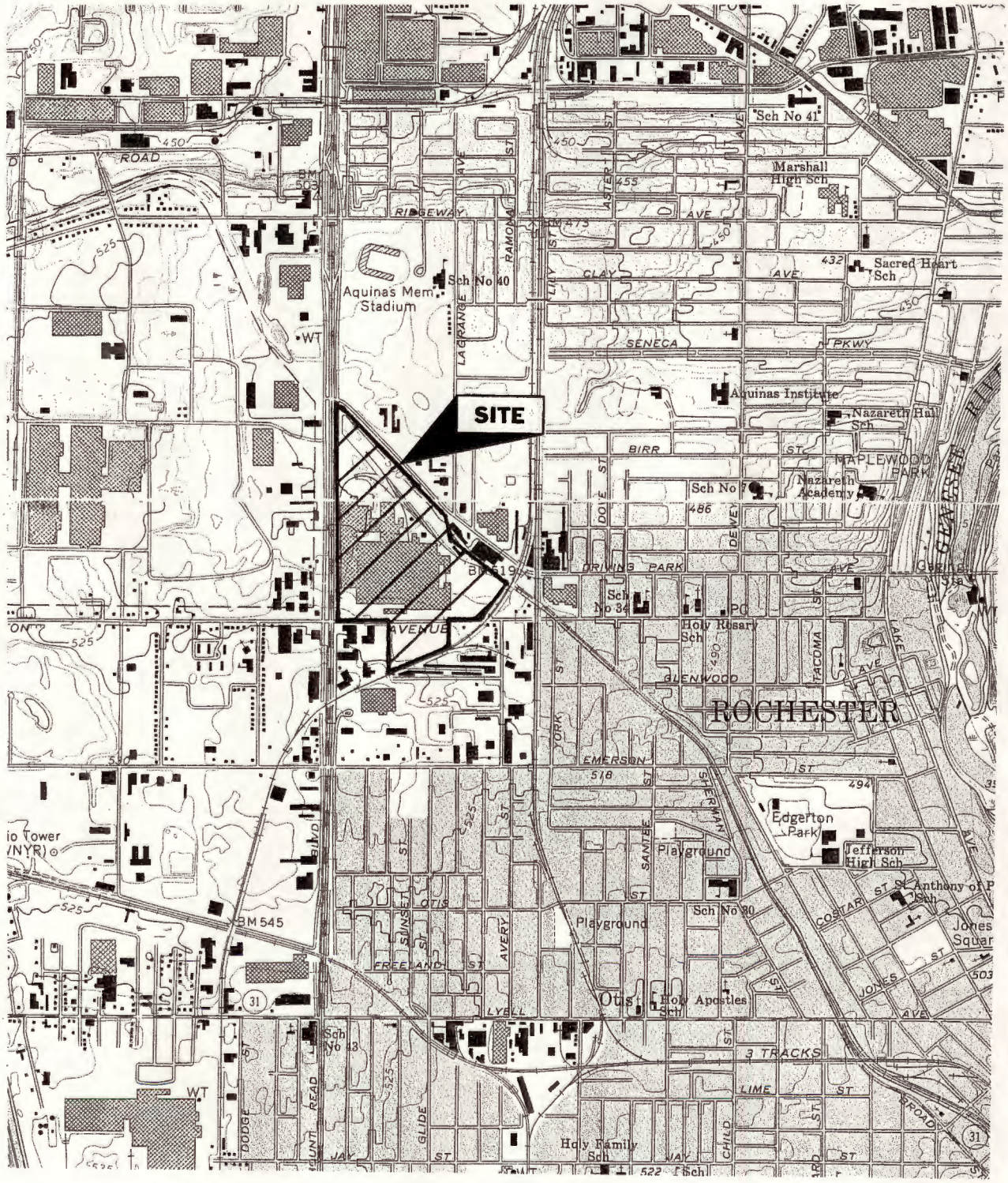
TABLE 1
SOIL VAPOR SURVEY RESULTS SUMMARY

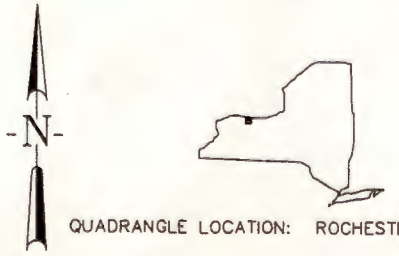
Soil Vapor Survey Area	Material	Sample ID	Reference	Coordinates	Date Sampled	Sample Depth (ft.)	Initial PID Screen (ppm)	GC Analysis Conc. - VOCs (ppmV)	GC Analysis Conc. - Stoddard (ppmV)	GC Analysis Conc. VOCs + Stoddard (ppmV)	Comments
Blg. 1 East near Blgs.15/18	Fuel & Stoddard	W-25, 20N, 20E	Col. W-25	20N, 20E	01/16/02	3.1	69.9	13.7	20.1	33.8	
		W-25, 60N, 20E	Col. W-25	60N, 20E	01/16/02	2.0	1600	35.2	2640	2680	
		W-25, 100N, 20E	Col. W-25	100N, 20E	01/16/02	3.0	25	7.0	3.5	10.5	
		W-25, 140N, 20E	Col. W-25	140N, 20E	01/16/02	2.9	113	3.5	255	259	
		W-25, 180N, 20E	Col. W-25	180N, 20E	01/16/02	3.0	210	28.5	1820	1850	
		W-25, 220N, 20E	Col. W-25	220N, 20E	01/31/02	3.0	180	16.2	776	792	
		W-25, 260N, 20E	Col. W-25	260N, 20E	04/04/02	3.1	29	11.2	1.6	12.8	
		T-37, 20N, 23E	Col. T-37	20N, 23E	04/04/02	3.1	2.3	1.9	0.0	1.9	
		W-35, 20N, 15W	Col. W-35	20N, 15W	04/04/02	3.1	150	16.1	578	594	
		W-35, 20S, 27W	Col. W-35	20S, 27W	04/04/02	1.6	37	5.2	99	104.4	
		T-33, 16S, 13W	Col. T-33	16S, 13W	04/04/02	2.8	162	11.6	1940	1950	
		W-29, 13N, 20W	Col. W-29	13N, 20W	04/04/02	1.7	3.0	1.2	0.0	1.2	
		Y-31, 20S, 40E	Col. Y-31	20S, 40E	04/04/02	3.0	15	5.5	2.0	7.5	
		Y-33, 20S, 50E	Col. Y-33	20S, 50E	04/04/02	3.0	95	0.0	1.1	1.1	
		Y-33, 20N, 50E	Col. Y-33	20N, 50E	04/04/02	2.9	9.8	19.6	1370	1390	
		Equip. Blank W-29	---	---	04/04/02	---	---	0.0	0.0	0.0	
		W-27, 20N	Col. W-27	20N	01/31/02	3.0	9.0	1.6	1.2	2.8	
		W-31, 20N	Col. W-31	20N	01/31/02	3.0	420	2.7	992	995	
		W-33, 20N	Col. W-33	20N	01/31/02	3.0	145	12.1	1990	2000	
		Y-27, 20N, 15E	Col. Y-27	20N, 15E	04/04/02	2.9	56	4.7	48.7	53.4	
		Y-31, 20N, 5E	Col. Y-31	20N, 5E	01/31/02	3.0	155	11.0	1700	1710	
		Y-33, 12N, 5E	Col. Y-33	12N, 5E	01/31/02	3.0	2.0	0.0	2.9	2.9	
		Equip. Blank Y-33	---	---	01/31/02	---	---	0.0	0.3	0.3	
		P-33, 17N, 1E	Col. P-33	17N, 1E	04/25/02	3.2	29	5.2	26.9	32.1	
		R-33, 20S, 18W	Col. R-33	20S, 18W	04/25/02	3.2	9999	6.5	0.0	6.5	
		R-37, 20S, 12W	Col. R-37	20S, 12W	04/25/02	3.2	276	2.4	80.0	82.4	
		T-31, 15S, 19W	Col. T-31	15S, 19W	04/25/02	2.3	1600	7.0	1040	1050	
		T-37, 17N, 21W	Col. T-37	17N, 21W	04/25/02	3.1	9999	49.3	3240	3290	
		Equip. Blank	---	---	04/25/02	---	---	3.4	0.0	3.5	
		R-29, 16S, 17E	Col.	16S, 17E	05/21/02	3.1	9999	19700	5.4	19700	
		P-29, 12N, 17E	Col.	12N, 17E	05/21/02	2.0	325	133	0.0	133	
		P-37, 2S, 4W	Col.	2S, 4W	05/21/02	3.1	285	4.7	0.0	4.7	
		N-41, 25S, 7E	Col.	25S, 7E	05/21/02	3.0	59	3.0	0.0	3.0	
		R-41, 20S, 20W	Col.	20S, 20W	05/21/02	2.0	48	3.0	0.0	3.0	
		R-41, 12S, 20E	Col.	12S, 20E	05/21/02	2.1	33	2.4	0.0	2.4	
		Equip Blk. R-41	---	---	05/21/02	---	---				
Blg. 4	Fuel & Stoddard	YE-34, 2S, 3E	Col. YE-34	2S, 3E	03/20/02	3.1	134	37.3	910	947	
		YE-32, 2N, 4E	Col. YE-32	2N, 4E	03/20/02	3.1	83	27.6	585	613	
		YE-30, 2N, 2E	Col. YE-30	2N, 2E	03/20/02	2.7	4.2	1.9	0.0	1.9	
		YE-28, 1N, 2E	Col. YE-28	1N, 2E	03/20/02	3.0	2.5	1.5	0.0	1.5	
		YE-26, 3S, 2E	Col. YE-26	3S, 2E	03/20/02	3.1	3.3	0.0	0.0	0.0	
		YF-24, 11N, 15W	Col. YF-24	11N, 15W	03/20/02	2.5	1.7	1.3	0.0	1.3	
		YF-22, 4N, 20W	Col. YF-22	4N, 20W	03/20/02	3.1	6.3	0.0	0.0	0.0	
		YG-34, 1S, 3E	Col. YG-34	1S,3E	03/20/02	3.1	154	61.5	604	666	
		YG-32, 3S, 3E	Col. YG-32	3S,3E	03/20/02	3.1	136	25.7	381	407	
		YG-30, 2S, 2W	Col. YG-30	2S,2W	03/20/02	3.1	10.6	1.1	2.8	3.9	
		YG-28, 3N, 3W	Col. YG-28	3N,3W	03/20/02	2.7	1.8	7.4	0.0	7.4	
		YG-26, 1S, 5W	Col. YG-26	1S,5W	03/20/02	2.5	2.2	0.6	0.0	0.6	
		YF-24, 17E	Col. YF-24	17E	03/20/02	3.1	93	193	412	605	
		YF-22, 2N, 18E	Col. YF-22	2N,18E	03/20/02	3.1	15.9	0.0	7.4	7.4	
		Y-35, 20N, 70E	Col. Y-35	20N, 70E	04/25/02	3.2	175.0	0.6	15.8	16.4	
		Equip. Blank #1	---	---	03/20/02	---	---	0.0	0.0	0.0	
Blg. 3 North	Fuel & Stoddard	B3-1	Blg. 3 NW crnr.	13S, 12E	03/20/02	3.1	57	55.5	5.5	61.0	
		B3-2	Blg. 3 NE crnr.	15S, 13W	03/20/02	3.1	285	0.0	319	319	
		B3-3	Blg. 3 NW crnr.	50S, 15E	03/20/02	3.1	384	20.4	253	273	
		B3-4	Blg. 3 NE crnr.	52S, 15W	03/20/02	2.7	12.0	0.0	0.7	0.7	
		B3-5	Blg. 3 NW crnr.	91S, 15E	03/20/02	3.1	266	1090	58.5	1149	
		B3-6	Blg. 3 NE crnr.	96S, 15W	03/20/02	3.1	8.9	4.5	1.3	5.8	
		YD-11, 5S, 19E	Col. YD-11	5S, 19E	04/04/02	1.1	1.7	0.0	0.0	0.0	
		B3-7	Blg. 3 NE crnr.	20S, 8E	04/04/02	3.1	64	3.4	62.9	66.3	
Blg. 1 West - two sumps	Stoddard	Equip. Blank B-19	---	---	01/31/02	---	---	0.1	2.5	2.6	
		B-15, 10S, 10E	Col. B15	10S, 10E	01/31/02	3.0	350	10.2	1450	1460	
		B-15, 14N, 18W	Col. B15	14N, 18W	01/31/02	3.0	3.0	0.4	0.0	0.4	
		B-17, 5S	Col. B17	5S	01/31/02	3.0	900	1.3	1740	1740	
		B-17, 15N, 23E	Col. B17	15N, 23E	01/31/02	3.0	75	1.5	99.8	101	
		B-19, 16S, 23W	Col. B19	16S, 23W	02/06/02	3.1	73	1.7	354	356	
		B-21, 7S, 21W	Col. B-21	7S, 21W	01/16/02	1.8	64	3.2	783	786	Approximate center of South sump is located 7'S and 9'W of col. B-21.
		B-21, 9S, 11E	Col. B-21	9S, 11E	01/16/02	3.1	99	6.7	666	673	
		B-21, 27S, 6W	Col. B-21	27S, 6W	01/16/02	3.3	92	22.9	1620	1640	
		B-21, 13N, 6W	Col. B-21	13N, 6W	01/16/02	1.7	77	27.0	1180	1207	
		Equip. Blank B-21	---	---	01/16/02	---	---	0.0	122	122	
		B-23, 3N, 23W	Col. B-23	3N, 23W	01/31/02	3.0	95	5.5	741	747	
		B-23, 11E	Col. B-23	11E	01/31/02	3.0	550	1.3	1660	1660	
		B-25, 4N, 4W	Col. B-25	4N, 4W	01/31/02	3.0	120	12.6	2240	2250	
		B-27, 7S, 23W	Col. B-25	7S, 23W	01/31/02	3.0	220	10.1	2250	2260	
		B-27, 7S, 23E	Col. B-27	7S, 23E	01/31/02	3.0	515	0.0	937	937	
		Equip. Blank B-25	---	---	01/31/02	---	---	0.0	4.1	4.1	
		B-29, 7N, 22W	Col. B-29	7N, 22W	01/16/02	3.0	173	4.6	2130	2130	Approximate center of North sump is located 7'N and 10'W of col. B-29.
		B-29, 4N, 10E	Col. B-29	4N, 10E	01/16/02	1.8	82	11.1	1260	1270	
		B-29, 27N, 6W	Col. B-29	27N, 6W	01/16/02	3.3	195	10.5	2120	2130	
		B-29, 13S, 6W	Col. B-29	13S, 6W	01/16/02	2.1	143	11.3	2360	2370	
		Equip. Blank B-29	---	---	01/16/02	---	---	0.0	34.9	34.9	
		B-33, 18S, 23W	Col. B-33	18S, 23W	01/31/02	3.0	119	0.0	290	290	
		B-33, 20S, 23E	Col. B-33	20S, 23E	01/31/02	3.0	165	0.0	313	313	
		B-33, 10N, 8W	Col. B-33	10N, 8W	01/31/02	3.0	220	36*	2580*	2620*	* Approximate value only (power failure caused superposition of sample run).
		B-35, 2S, 23W	Col. B-35	2S, 23W	01/31/02	3.0	95	4.8	105	110	
		B-35, 3S, 21E	Col. B-35	3S, 21E	01/31/02	3.0	40	8.3	440	448	
		Equip. Blank B-33	---	---	01/31/02	---	---	0.0	0.1	0.1	

TABLE 1
SOIL VAPOR SURVEY RESULTS SUMMARY

Soil Vapor Survey Area	Material	Sample ID	Reference	Coordinates	Date Sampled	Sample Depth (ft.)	Initial PID Screen (ppm)	GC Analysis Conc. - VOCs (ppmV)	GC Analysis Conc. - Stoddard (ppmV)	GC Analysis Conc. VOCs + Stoddard (ppmV)	Comments
Bldg. 1 West - two sumps(con't.)	Stoddard	C-13, 4'N, 2'W	Col. C-13	4N, 2W	02/06/02	3.1	32	24.6	222	247	
		A15, 22'S, 2E	Col. A-15	22S, 2E	02/18/02	3.1	1.0	0.0	0.9	0.9	
		BB-15, 19'S, 4'E	Col. BB-15	19S, 4E	02/06/02	3.1	ND	0.0	0.0	0.0	
		BB-17, 18'S, 4'E	Col. BB-17	18S, 4E	02/06/02	3.1	30	1.6	3.8	5.4	
		BB-19, 20'S, 1'E	Col. BB-19	20S, 1E	02/06/02	3.1	ND	0.0	0.7	0.7	
		BB-21, 20'S	Col. BB-21	20S	02/18/02	3	1.9	1.3	0.0	1.3	
		BB-23, 23'S, 3'E	Col. BB-23	23S, 3E	02/06/02	3.1	ND	0.0	0.0	0.0	
		BB-25, 20'S, 1'E	Col. BB-25	20S, 1E	02/06/02	3.1	0.9	4.8	0.3	5.1	
		CC-27, 19'S, 28'E	Col. CC-27	19S, 28E	02/06/02	3.0	ND	0.6	0.0	0.6	
		CC-29, 20'S, 28'E	Col. CC-29	20S, 28E	02/06/02	2.9	ND	3.5	0.6	4.1	
		BB-31, 20'S, 2'E	Col. BB-31	20S, 2E	02/06/02	3.1	9.1	0.0	6.0	6.0	
		CC-33, 19'S, 28'E	Col. CC-33	19S, 28E	02/06/02	3.0	ND	10.6	0.7	11.3	
		CC-35, 20'S, 28'E	Col. CC-35	20S, 28E	02/06/02	3.1	42	26.5	0.0	26.5	
		BB-35, 17'N, 3'W	Col. BB-35	17N, 3W	02/06/02	3.0	ND	0.0	1.0	1.0	
		Equip. Blk. BB-30	---	---	02/06/02	---	---	0.0	4.5	4.5	
		Equip. Blk. A-15	---	---	02/06/02	---	---	0.0	0.0	0.0	
		C-13, 20S, 20W	Col. C-13	20S, 20W	03/11/02	3.1	78	5.9	34.0	39.9	
		E-13, 20S, 6W	Col. E-13	20S, 6W	03/11/02	3.0	50	3.0	50.0	53.0	
		E-15, 16S, 2E	Col. E-15	16S, 2E	03/11/02	3.1	20	11.8	1.5	13.3	
		E-15, 20N, 1E	Col. E-15	20N, 1E	04/04/02	2.0	32	38.0	3.1	41.1	
		E-17, 20N, 9E	Col. E-17	20N, 9E	04/04/02	1.7	1400	2520	4.3	2524	
		E-19, 14N, 2W	Col. E-19	14N, 2W	03/11/02	2.8	181	809	0.0	809	
		E-21, 10N, 2W	Col. E-21	10N, 2W	03/11/02	3.1	9999+	15900	7.8	15900	
		E-23, 7N, 2W	Col. E-23	2N, 2E	03/11/02	3.1	3085	5030	6.1	5030	
		E-25, 12N, 12W	Col. E-25	12N, 12W	04/04/02	2.9	835	1560	8.8	1570	
		E-27, 12N, 2E	Col. E-27	12N, 2E	03/11/02	3.0	5.6	0.7	0.0	0.7	
		E-31, 21S, 2E	Col. E-31	21S, 2E	03/11/02	1.7	3.1	0.0	0.0	0.0	
		E-33, 15S, 2E	Col. E-33	15S, 2E	03/11/02	1.7	3.6	0.0	0.0	0.0	
		E-35, 4S, 2E	Col. E-35	4S, 2E	03/11/02	1.6	13.7	0.0	0.0	0.0	
		E-37, 4S, 4E	Col. E-37	4S, 4E	03/11/02	3.1	3.0	0.0	0.0	0.0	
		C-37, 3S, 10E	Col. C-37	3S, 10E	03/11/02	3.1	41	18.7	2.6	21.3	
		A-37, 3S, 23E	Col. A-37	3S, 23E	04/04/02	3.1	25	34.2	1.8	36.0	
		Equip. Blk. MM-11	--	--	03/11/02	--	--	0.0	0.5	0.5	
Bldg. 2 Degreaser 36	Solvents	CC-11, 5N, 5E	Col. CC-11	5N, 5E	02/18/02	3.0	2.1	0.0	0.0	0.0	Approximate center of degreaser located 3'S and 3'W of col. CC-11.
		BB-13, 8S, 13W	Col. BB-13	8S, 13W	02/18/02	3.1	3	0.0	0.0	0.0	
		BB-9, 20N, 13W	Col. BB-9	20N, 13W	02/18/02	3.1	0.9	0.0	0.9	0.9	
		CC-9, 16N, 15W	Col. CC-9	16N, 15W	02/18/02	3.1	2.7	0.0	0.0	0.0	
		DD-13, 8S, 17E	Col. DD-13	8S, 17E	02/18/02	3.1	6.1	14.4	0.8	15.2	
		Equip. Blk. DD-13	--	--	02/18/02	--	--	0.0	0.0	0.0	
Bldg. 2A Degreaser 36	Solvents	NN-11, 7N, 1W	Col. NN-11	7N, 1W	02/18/02	3.1	6.5	2.2	0.0	2.2	Approximate center of degreaser located at col. NN-11.
		MM-13, 7S, 15W	Col.MM-13	7S, 15W	02/18/02	3.1	10.4	3.7	0.0	3.7	
		MM-11, 15S, 12W	Col. MM-11	15S, 12W	Not Sampled	Refusal @1.3	NA	--	--	--	
		NN-11, 15S, 25W	Col. NN-11	15S, 25W	02/18/02	2.7	2.0	0.0	0.0	0.0	
		PP-13, 15S, 15E	Col. PP-13	15S, 15E	02/18/02	3.0	1.0	0.0	0.0	0.0	
		Equip. Blk. PP-13	--	--	02/18/02	--	--	0.0	0.0	0.0	
Bldg. 2A Degreaser 39	Solvents	RR-23, 15N, 15W	Col. RR-23	15N, 15W	02/18/02	2.9	1.4	0.0	0.4	0.4	Approximate center of degreaser located 17'N and 17'W of col. RR-23.
		RR-25, 1S, 12E	Col. RR-25	1S, 12E	02/18/02	3.0	8.1	5.4	0.0	5.4	
		RR-23, 5S, 2E	Col. RR-23	5S, 2E	02/18/02	3.0	1.2	0.0	0.0	0.0	
		SS-25, 2S, 8E	Col. SS-25	2S, 8E	02/18/02	3.1	1.9	0.0	0.0	0.0	
		SS-23, 6S, 2W	Col. SS-23	6S, 2W	02/18/02	3.1	4.1	0.4	0.4	0.8	
		Equip. Blk. SS-23	--	--	02/18/02	--	--	0.0	0.6	0.6	
Bldg. 2A West - sump	Stoddard	VW-27, 12S, 2E	Col. VW-27	12S, 2E	01/16/02	3.0	28.5	0.0	11.5	11.5	Approximate center of sump located 32'S and 3'E of col. VW-29.
		VW-29, 12S, 2E	Col. VW-29	12S, 2E	01/16/02	3.0	95	0.0	68.6	68.6	
		VW-29, 32S, 18W	Col. VW-29	32S, 18W	01/16/02	3.1	6.5	0.0	2.7	2.7	
		VW-29, 34S, 27E	Col. VW-29	34S, 27E	01/16/02	3.0	8.6	0.0	4.9	4.9	
		Equip. Blank VW-29	---	---	01/16/02	---	---	0.0	4.1	4.1	
		WW-29, 18'E	Col. WW-29	18E	02/06/02	3.0	27	2.9	44.0	46.9	
		VU-29, 2'N, 6'W	Col. VU-29	2N, 6W	02/06/02	2.1	ND	0.0	0.0	0.0	
		VW-31, 14'S, 10'E	Col. VW-31	14S, 10E	02/06/02	2.0	3.9	0.0	2.6	2.6	
		Equip. Blank VW-29	---	---	02/06/02	---	---	0.0	1.1	1.1	
		WW-29, 3W	WW-29	3W	04/25/02	3.2	2.9	0.4	26.7	27.0	
Bldg. 11/OW-322		Bldg. 11-1	OW-322	43N, 30E	10/28/02	3.3	4.1	2.0	0.0	2.0	
		Bldg. 11-2	OW-322	30E	10/28/02	Wet	---	---	---	---	Probe hole saturated, no sample obtained.
		Bldg. 11-3	OW-322	35S, 30E	10/28/02	3.3	83	36.5	0.0	36.5	
		Bldg. 11-4	OW-322	35S	10/28/02	3.3	67	23.8	0.0	23.8	
		Bldg. 11-5	OW-322	2E	10/28/02	3.3	1400	105.5	0.0	105.5	
		Bldg. 11-6	OW-322	43N, 30E	10/28/02	3.3	84	56.0	2.1	58.1	
		Bldg. 11-7	OW-322	43N, 35W	10/28/02	3.3	1.9	0.0	0.0	0.0	
		Bldg. 11-8	OW-322	8N, 35W	10/28/02	Wet	---	---	---	---	Probe hole saturated, no sample obtained.
		Bldg. 11-9	OW-322	37S, 35W	10/28/02	3.3	8.1	1.5	1.4	2.9	

Notes:
1. Results presented include a maximum of 3 significant figures.
2. All coordinates are referenced to column lines as shown on Figure 2, Exploration Location Plan.





HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

DELPHI CORPORATION
LEXINGTON AVENUE FACILITY RI/FS
ROCHESTER, NEW YORK

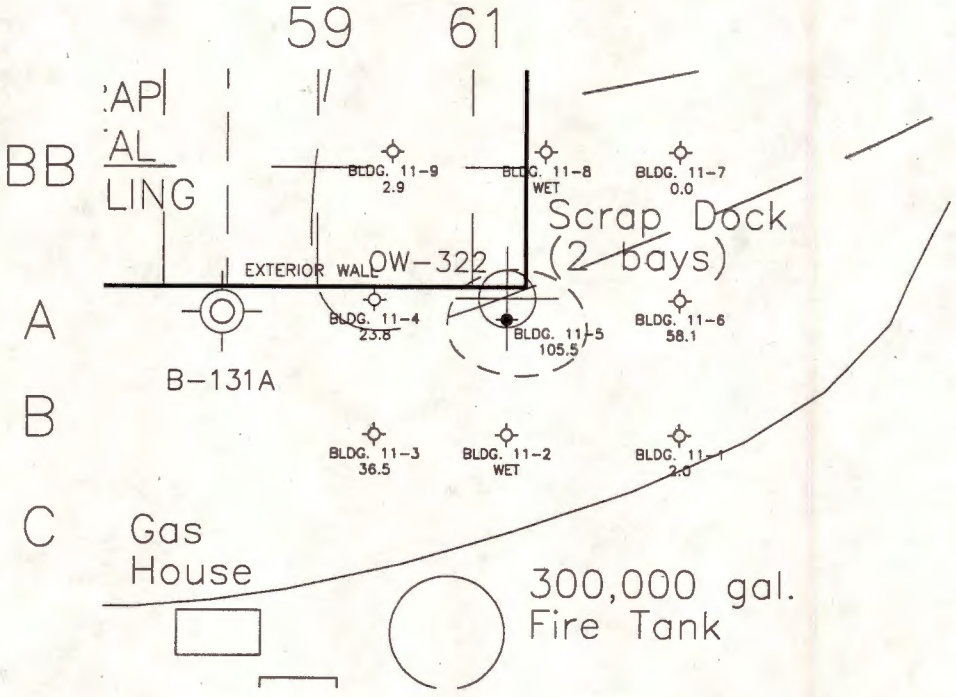
PROJECT LOCUS

SCALE: 1" = 2000'

MAY 2002

70014-054

FIGURE 1



LEGEND:

W-25,100N,20E 10.5	APPROX. LOCATION & NO. OF SOIL VAPOR SAMPLE TOTAL VOLATILES DETECTED LESS THAN 100 ppm.
E-19, 14N, 2W 809	APPROX. LOCATION & NO. OF SOIL VAPOR SAMPLE TOTAL VOLATILES DETECTED GREATER THAN 100 ppm.

NOTE:

REFER TO TEXT AND SOIL VAPOR SURVEY RESULTS SUMMARY TABLE FOR ADDITIONAL INFORMATION.

N

0 50 100

SCALE IN FEET

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

DELPHI CORPORATION
LEXINGTON AVENUE FACILITY RI/FS
ROCHESTER, NY

SOIL VAPOR SURVEY PLAN BLDG. 11/OW-322 AREA

SCALE: AS SHOWN

NOVEMBER 2002

70014-054 SVSPLANSR1.DWG

FIGURE 3

APPENDIX A

Test Boring Reports

HALEY & ALDRICH

TEST BORING REPORT

Boring No. SR-303

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 1
Start October 17, 2002
Finish
Driller S. Loranty
H&A Rep. S. Amrozowicz
Elevation
Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	--	--	Rig Make & Model: Geoprobe
Inside Diameter (in.)	4	--	--	Bit Type:
Hammer Weight (lb.)	--	--	-	Drill Mud: None
Hammer Fall (in.)	--	--	-	Casing:
				Hoist/Hammer:

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			Advanced 4-1/4 in. augers without sampling to top of rock at 9.0 ft. Drove 4 in. HSA casing to top of rock. Rollerbit 6 in. diameter tri-cone rollerbit 7.0 ft. into rock to 16.0 ft. No water lost during drilling.										
5																	
10																	
15																	
					16.0		Bottom of Boring at 16.0 ft.										

Notes:

1. Installed shallow-bedrock monitoring well SR-303 in completed borehole.

2. See Bedrock Observation Well Installation Report for details.

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.)	9.0
Rock Cored (lin. ft.)	7.0
Samples	0

Boring No. SR-303

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

USCS_TB3_PID_CENTER LibFile USCSTBC3.GDT G:\PROJECTS\70014054\TESTBORE.GPJ Nov 7, 02

HALEY & ALDRICH

TEST BORING REPORT

Boring No. R-303

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 2
Start October 16, 2002
Finish October 17, 2002
Driller S. Loranty
H&A Rep. S. Amrozowicz
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	8.0/4.0	1 3/8	1-7/8	Bit Type: Roller Bit/Cutting Head
Hammer Weight (lb.)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	30	-	Casing:
				Hoist/Hammer: Cat-Head Safety Hammer

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 2 3 2	S1 9/24	0.0 2.0	NO WELL INSTALLED		ML	Medium stiff, brown SILT, with organics (ML), mps 1/8 in., no structure, moist. -TOPSOIL FILL- PID = ND ppm				5		95	R	L	L	
	2 3 4 5	S2 10/24	2.0 4.0		2.5	ML	Same as above. Medium stiff, light brown, sandy SILT (ML), mps 3/8 in., no structure, moist, sandstone gravel lodged in probe tip. -FILL- PID = ND ppm			10	15	10	65	R	L	L	
5	2 3 3 6	S3 15/24	4.0 6.0		4.0	ML	Medium stiff, mottled gray-light-brown sandy SILT (ML), slightly stratified laminea, moist. -REWORKED LACUSTRINE- PID = ND ppm				5	25	70	R	L	M	
	9 19 28 41	S4 17/24	6.0 8.0		6.0	ML	Hard, light brown SILT (ML), well bonded structure, homogeneous, mps 1/16 in., moist to dry siltstone. -WEATHERED BEDROCK- PID = ND ppm						100	N	H	N	H
	30 100/6	S5 12/24	8.0 9.0				Same as above with weathered shale gravel in the probe tip. -WEATHERED BEDROCK- PID = ND ppm						100	N	H	N	H
10					9.0		Spoon refusal at 9.0 ft. Augers driven to 9.0 ft. and temporary 8 in. casing driven to 9.0 ft. See Core Boring Report.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 9.0
Rock Cored (lin. ft.) 25.0
Samples 5S, 3C

Boring No. R-303

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

USCS_T83_PID_CENTER LibFile USCSTBC3.GDT G:\PROJECTS\70014054\TESTBORE.GPJ Nov 6, 02

HALEY & ALDRICH

CORE BORING REPORT

Boring No. R-303
File No. 70014-054
Sheet No. 1 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Well Diagram	Elev./ Depth (ft)	Visual Description and Remarks
									SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
0									
5									8 in. temporary casing driven to top of rock at 9.0 ft.
		Run 1	9.0 19.0	102 4	85 1	SL	NO WELL INSTALLED	9.0	Moderately hard, slightly weathered, banded light and dark gray, aphanitic, very thin bedded, dolomitic MUDSTONE, with very close, open, horizontal joints, with infrequent pits or vugs.
10	3								Severely fractured from 9.0 to 11.0 ft. and 16.0 to 16.2 ft., occasional low angle joints and occasional thinly bedded clay partings from 16.0 to 16.2 ft.
	3								
	3								-ROCHESTER SHALE-
	3								
	2								
15	3								
	3								
	2								
	2								
	2								
		Run 2	19.0 24.0	60 24	100 40	SL			Same description as above, except joint spacing is close and not very open.
20	3								
	3								
	3								
	3								Moderately dipping joint at 22.8 ft.
	3								Approximately 150 gallons of water lost in process of reaming from 9.0 to 24.0 ft.
		Run 3	24.0 34.0	118 75	98 63	SL			Moderately hard, slightly weathered, banded light and dark gray aphanitic, very thin bedded, dolomitic MUDSTONE, with moderately wide, closely
25	3								

H:\A_CORE+WELL3 LibFile USCSTBC2.GDT G:\PROJECTS\70014054\TESTBORE.GPJ Nov 6, 02

HALEY & ALDRICH

CORE BORING REPORT

Boring No. R-303
File No. 70014-054
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Well Diagram	Elev./ Depth (ft)	Visual Description and Remarks
25	3						NO WELL INSTALLED		spaced horizontal shear discontinuities. Slickenslides present at fractured surfaces along with some secondary mineral deposits, likely gypsum. Trace low angle joints and some areas of very close spacing between discontinuities. -ROCHESTER SHALE-
	3								
	3								
	3								
30	3								
	2								
	3								
	3								
	3							34.0	Bottom of Boring at 34.0 ft.
35									Notes: 1. No water loss in monitoring interval during R3 from 24.0 to 34.0 ft. 2. Installed intermediate-bedrock well R-303 in completed borehole as open-rock interval from 24.0 to 34.0 ft. See Bedrock Observation Well Installation Report.

H:\A_CORE+WELL3 LibFile USCSTBC2.GDT G:\PROJECTS\70014054\TESTBORE.GPJ Nov 7, 02

HALEY & ALDRICH

TEST BORING REPORT

Boring No. SR-304

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 1
Start October 21, 2002
Finish October 21, 2002
Driller S. Loranty
H&A Rep. S. Amrozowicz
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	--	--	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	4	--	--	Bit Type: Roller Bit, Cutting Head
Hammer Weight (lb.)		--	-	Drill Mud: None
Hammer Fall (in.)	--	--	-	Casing: Driven
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			Advance 4-1/4 in. augers without sampling to top of rock at 6.0 ft. Drive temporary 4 in. HSA casing to top of rock. Rollerbit 4 in. diameter to tri-cone rollerbit 16.0 ft.										
5																	
10																	
15					16.0		Bottom of Boring at 16.0 ft.										

Notes:

1. Installed shallow-bedrock monitoring well SR-304 in completed borehole.
2. See Bedrock Observation Well Installation Report for details.

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification: O Open End Rod; T Thin Wall Tube; U Undisturbed Sample; S Split Spoon; G Geoprobe

Well Diagram: Riser Pipe; Screen; Filter Sand; Cuttings; Grout; Concrete; Bentonite Seal

Summary
Overburden (lin. ft.) 6.0
Rock Cored (lin. ft.) 7.0
Samples 0

Boring No. SR-304

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None; Toughness: L-Low, M-Medium, H-High; Plasticity: N-Nonplastic, L-Low, M-Medium, H-High; Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. R-304

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 1
Start October 18, 2002
Finish October 21, 2002
Driller S. Loranty
H&A Rep. S. Amrozowicz
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	8.0/4.0	1 3/8	1-7/8	Bit Type: Roller Bit, Cutting Head
Hammer Weight (lb.)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	30	-	Casing: Driven
				Hoist/Hammer:

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 2 3 8	S1 15/24	0.0 2.0	NO WELL INSTALLED		ML	Medium stiff, brown SILT (ML), some organics, homogeneous, organic odor, moist.					5	95		L	N	
					0.8	SW	PID = ND ppm Loose, brown-tan, well-graded SAND (SW), organics, mps. 1/8 in., no structure, moist.			5	5	85	5				
	5 9 17 28	S2 18/24	2.0 4.0		2.5	SW	-FILL- PID = ND ppm Medium dense, tan, well-graded SAND (SW), infrequent gravel, mps 1 in., no structure, dry.			5	15	80					
5	10 16 20 36	S3 19/24	4.0 6.0		4.5	ML	-GLACIAL TILL- PID = ND ppm Dense, light-brown SILT (ML), homogeneous, blocky structure, dry. (WEATHERED SILTSTONE)					10	90		M	N	M
					6.0		PID = ND ppm PID = ND ppm -WEATHERED BEDROCK- Apparent Top of Rock at 6.0 ft. Augers advanced to 6.0 ft. Drove 8 in. temporary HSA casing to 6.0 ft. See Core Boring Report for details.										
10																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 6.0
Rock Cored (lin. ft.) 25.0
Samples 3S, 3C

Boring No. R-304

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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CORE BORING REPORT

Boring No. R-304
File No. 70014-054
Sheet No. 1 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Well Diagram	Elev./ Depth (ft)	Visual Description and Remarks
									SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
0									
									Drove temporary 8" HSA casing to 6.0 ft.
		Run 1	6.0	115	96	SL		6.0	Begin coring at 6.0 ft.
	1		16.0	8	7				Moderately hard, slightly weathered, gray, aphanitic, very thin bedded, dolomitic MUDSTONE, with extremely close, moderately wide, horizontal joints with frequent vertical fracturing. Infrequent clay partings evident in seams, infrequent pits and vugs.
5	1								Severe fracturing from 6.0 to 11.5 ft.
	2								-ROCHESTER SHALE-
	2								
10	2						NO WELL INSTALLED		
	3					SL			
	2								
	3								
	4								
15	3								
		Run 2	16.0	60	100	SL			Same as above, except close joint spacing. Occasional vugs filled with gypsum.
	4		21.0	30	50				
	4								-ROCHESTER SHALE-
	5								
20	4								
	4								
		Run 3	21.0	116	97				Same as above, except higher frequency of vertical fractures.
	4		31.0	40	34				
	3								
	3								
25	3								

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HALEY & ALDRICH

CORE BORING REPORT

Boring No. R-304
File No. 70014-054
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Well Diagram	Elev./ Depth (ft)	Visual Description and Remarks
25									
	3								
	4								
	6								
	6								
	5								Severe fracturing at 29.4 to 29.7 ft.
30									
	4								
								31.0	Bottom of Boring at 31.0 ft.

Notes:

1. Lost 20 gallons of water in monitoring interval during R3 from 21-31 ft.

2. Installed intermediate-bedrock well R-304 in completed borehole as open-rock interval from 21.0 to 31.0 ft. See Bedrock Observation Well Installatin Report.

NO WELL INSTALLED

H+A_CORE+WELL3 LibFile USCSTBC2.GDT G:\PROJECTS\70014054\TESTBORE.GPJ Nov 7, 02

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TEST BORING REPORT

Boring No. R-307

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 1
Start October 22, 2002
Finish
Driller S. Loranty
H&A Rep. S. Amrozowicz
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	8.0/4.0	1 3/8	1-7/8	Bit Type: Roller Bit/Cutting Head
Hammer Weight (lb.)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	30	-	Casing: HSA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			Advanced 6-1/4 in. augers without sampling to 1.0 ft. -PAVEMENT/GRAVEL SUB-BASE-	100									
	8 6 9 12	S1 19/24	1.0 3.0		1.0	ML	Stiff, mottled tan, brown, black sandy SILT with gravel (ML), wood splinters, mps 1 in., angular gravel, no structure, moist. -FILL- PID = ND ppm	5	10	10	5	20	50		M	N	
	3 6 12 20	S2 15/24	3.0 5.0			ML	PID = ND ppm Same, no wood splinters, mps 0.5 in. PID = ND ppm		15	15	10	10	60		M	N	
5	9 12 100/1	S3 9/24	5.0 6.1		6.1		PID = ND ppm Same. Note: Weathered bedrock fragment lodged in tip of spoon. PID = ND ppm	5	10	10	5	15	55			N	
							Probe Refusal at 6.1 ft. Apparent Top of Rock at 6.1 ft. Drove 8-inch temporary casing to top of rock at 7.0 ft. See Core Boring Report.										
10																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 7.0
Rock Cored (lin. ft.) 25.0
Samples 3S, 3C

Boring No. R-307

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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CORE BORING REPORT

Boring No. R-307
File No. 70014-054
Sheet No. 1 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Well Diagram	Elev./ Depth (ft)	Visual Description and Remarks
									SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
0									
									Began Coring at 7.0 ft.
		Run 1	7.0 17.0	116 10	97 9	SL		7.0	Moderately hard, slightly weathered, gray to light gray banded, aphanitic, very thin bedded, dolomitic MUDSTONE, with extremely close, moderately wide, horizontal joints with occasional vertical fracturing. Frequent clay seams present at joint partings with gypsum also present at joint surfaces. Pits and vugs in trace amount with slight secondary filling.
	4								
	3								Note: Moderately weathered with thicker clay seams at 7.0 to 7.4 ft.
	3								
10	3								
	3								
	3								
	3								
	3								
	3								-ROCHESTER SHALE-
15	3								
	3								
	3	Run 2	17.0 22.0	60 50	100 83	SL			Same, except close joint spacing and no vertical fracturing.
	3								
	2								-ROCHESTER SHALE-
	2								
20	3								
	3								
	3	Run 3	22.0 32.0	118 69	98 58	SL			Same, except with some wide joint spacing. Occasional gypsum seams and clay partings.
	2								Note: Areas of extremely close joint spacing usually occurring between segments of high RQD rock.
	3								-ROCHESTER SHALE-
25									

NO WELL INSTALLED

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CORE BORING REPORT

Boring No. R-307
File No. 70014-054
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Well Diagram	Elev./ Depth (ft)	Visual Description and Remarks
25									
	3								
	2								
	3								
	3								
	4								
30									
	3								
	3								
								32.0	Bottom of Boring at 32.0 ft.

NO WELL INSTALLED

Notes:

1. ~~Lost approximately 30 gallons of water in cased interval from 7.0 to 22.0 ft.~~ Lost approximately 300 gallons water in monitoring interval during R3 from 22.0 to 32.0 ft.

2. Installed intermediate-bedrock well R-307 in completed borehole as open-rock interval from 22.0 to 32.0 ft. See Bedrock Observation Well Installation Report.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. OW-323

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 1
Start October 24, 2002
Finish October 24, 2002
Driller S. Loranty
H&A Rep. S. Amrozowicz
Elevation Datum
Location 1.5' S x 1.5' W of Boring USTB-1

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	--	--	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	4-1/4	--	--	Bit Type:
Hammer Weight (lb.)	--	--	-	Drill Mud: None
Hammer Fall (in.)	--	--	-	Casing:
				Hoist/Hammer:

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED			Advanced 4-1/4 inch augers to top of rock at 15.0 ft. without sampling.										
							For description of overbuden soils, refer to Test Boring Report for USTB-1.										
							Installed overbuden well OW-323 in completed borehole. See Overburden Observation Well Installation Report.										
5																	
10																	
15																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) --
Samples --

Boring No. OW-323

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. OW-324

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 2
Start October 25, 2002
Finish October 25, 2002
Driller S. Loranty
H&A Rep. S. Amrozowicz
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	G	--	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	4-1/4	2.0	--	Bit Type:
Hammer Weight (lb.)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	Auto	-	Casing:
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	NA	G1 23	0.0 4.0	NO WELL INSTALLED		ML	-PAVEMENT-											
					0.4	ML	Brown sandy SILT (ML), no structure, moist. -FILL-	PID = ND ppm		5	20	10		65		M		
		G2 22	4.0 8.0		4.5	SM	Brown silty SAND (SM), mps 3/4 in., no structure, wet. -REWORKED LACUSTRINE FILL-	PID = ND ppm		5	20	10	20	45		L	N	
5								PID = ND ppm										
		G3 16	8.0 12.0			SP	Same as above. Also found glass shard and seashells present. -REWORKED LACUSTRINE FILL- Note: Coarse gravel fragment lodged in tip of spoon causing poor recovery.	PID = ND ppm	5	5	15	10	25	40		L	N	
10																		
		G4 20	12.0 16.0		12.5	CL	Yellow-brown mottled lean CLAY (CL), laminated, moist to wet, small amount of silt. -LACUSTRINE-	PID = ND ppm						100			L	
					14.0	ML	Light brown SILT (ML), blocky structure, dry (siltstone). -WEATHERED BEDROCK-	PID = ND ppm						100				
15		G5 34	16.0 19.0				Same as above. -WEATHERED BEDROCK-	PID = ND ppm						100				
								PID = ND ppm										
20					19.0		Probe Refusal and bottom of Boring at 19.0 ft.											

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 19.0
Rock Cored (lin. ft.) --
Samples 5G

Boring No. OW-324

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. OW-324
File No. 70014-054
Sheet No. 2 of 2

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20							4-1/4 in. augers advanced to 16.0 ft. and overburden well installed at 16.0 ft. See Overburden Observation Well Installation Report for details.										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. SR-325

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 2
Start October 28, 2002
Finish October 28, 2002
Driller S. Loranty
H&A Rep. M. Reay
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	--	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	4-1/4	1-3/8	--	Bit Type: Roller Bit, Cutting Head
Hammer Weight (lb.)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	30	-	Casing: HSA
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	40	S1	0.0	NO WELL INSTALLED			BLACKTOP/GRAVEL SUB-BASE											
	38	18/24	2.0		0.3	GP	COARSE GRAVEL FILL-	PID = ND ppm										
	14																	
	14							PID = ND ppm										
	10	S2	2.0		2.0	ML	Stiff, dark brown, sandy SILT (ML), mps < 1 mm., no structure, moist.	PID=*3264 ppm		5	5	5	20	65				
	6	6/24	4.0															
	4																	
	4																	
	14	S3	4.0			ML	Same.	PID=*9999 ppm										
5	16	4/24	6.0															
	19																	
	20																	
	1	S4	6.0			ML	Same.											
	1	16/24	8.0															
	1							PID = 72 ppm										
	1						-FILL-											
	1	S5	8.0			ML	Same.	PID = *314 ppm										
	2	12/24	10.0					PID = 75.1 ppm										
	2																	
	4							PID = 25 ppm										
10	10	S6	10.0			ML	Same.	PID = 1.1 ppm										
	16	10/24	12.0															
	100																	
					11.5	GM	Medium dense, brown silty gravel with sand (GM), mps < 40 mm.	PID = 1.0 ppm	30	25	10	10	5	20				
	4	S7	12.0				Same.	PID = 1.5 ppm										
	6	6/24	14.0				-FILL-											
	7																	
	9																	
	2	S8	14.0				Black color at 14.0 ft.	PID = 3.8 ppm										
	3	0/24	16.0				No Recovery	PID = 0.8 ppm										
15	5																	
	6							PID = 0.7 ppm										
	4	S9	16.0		16.0	ML	Medium stiff, brown sandy SILT (ML), mps < 3 mm., moist, no structure or odor.	PID = 0.4 ppm			5	5	20	70				
	4	12/24	18.0															
	5						-GLACIAL TILL-											
	7																	
	11	S10	18.0															
	12	15/24	20.0															
	18				19.0		Hard, brown CLAY, dry, laminated.	PID = 0.4 ppm										
20	24																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 21.5
Rock Cored (lin. ft.) 8.5
Samples 11S

Boring No. SR-325

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. SR-325
File No. 70014-054
Sheet No. 2 of 2

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	18 40 100/6"	S11 10/18	20.0 21.5				-WEATHERED BEDROCK- Wet at 20.5 ft.	PID = 0.8 ppm										
					21.5		Bottom of Test Boring at apparent Top of Bedrock at 21.5 to 30.0 ft. * PID detections were consistent with moisture interference. Advanced 6.0-inch tri-cone rollerbit from 21.5 to 30.0 ft. without coring. Installed shallow-bedrock well SR-325 in completed borehole. Refer to Bedrock Observation Well Installation Report.											

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. SSB-4

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 2
Start October 25, 2002
Finish October 25, 2002
Driller S. Loranty
H&A Rep. S. Amrozowicz
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	--	G	--	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	--	2.0	--	Bit Type:
Hammer Weight (lb.)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	Auto	-	Casing:
				Hoist/Hammer:

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	NA	G1 27	0.0 4.0	NO WELL INSTALLED		ML	Brown SILT (ML), organics.				10			90		L	N	
					1.0	GP	0.4 ft. of coarse gravel.	PID = ND ppm	100									
					1.4	ML	Brown sandy SILT (ML), mps 0.5 in., no structure, moist. -FILL-	PID = 0.2 ppm		5	10	10	5	70	R	L	N	
5	NA	G2 11	4.0 8.0			ML	Brown sandy SILT (ML), mps 1 in., no structure, moist, infrequent brick fragments. -FILL-	PID = ND ppm		5	10	10	5	70	R	L	M	
								PID = ND ppm										
	NA	G3 6	8.0 12.0			ML	Same as above.	PID = ND ppm		5	10	10	5	70	R	L	N	
10																		
	NA	G4 2	12.0 16.0		12.0	GP	Note: Wet pieces of rock lodged in tip causing no recovery.	PID = NA ppm	100									
15																		
	NA	G5 19	16.0 20.0		16.0	CL	Light brown sandy lean CLAY (CL), gravel, occasional black staining, slight odor, no structure, wet. -FILL-	PID = 0.6 ppm	10				20	70				
20								PID = 1.4 ppm										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 21.5
Rock Cored (lin. ft.) --
Samples 6G

Boring No. SSB-4

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. SSB-4
File No. 70014-054
Sheet No. 2 of 2

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																		
	NA	G6 18	20.0 21.5		20.5	CL												
						SM	Brown silty SAND (SM), mps 0.4 in. blocky structure, moist.	PID = 3.1 ppm			20	10	40	30		H	N	
					21.5		-GLACIAL TILL-											
							Probe Refusal and Bottom of Boring at 21.5 ft.											

Notes:
Installed 1" temporary PVC well in completed borehole screened from 11.5 to 21.5 ft., later sampled and abandoned.

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. SSB-4

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. SSB-5A

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 1
Start October 24, 2002
Finish October 24, 2002
Driller S. Loranty
H&A Rep. S. Amrozowicz
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	--	G	--	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	--	2.0	--	Bit Type:
Hammer Weight (lb.)	--	140	-	Drill Mud: None
Hammer Fall (in.)	--	Auto	-	Casing:
				Hoist/Hammer:

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel %	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test: Dilatancy	Toughness	Plasticity	Strength
0		G1 38	0.0 4.0	NO WELL INSTALLED		SM	Brown silty SAND (SM), some ash and wood, mps 1", no structure, slight odor, moist. -FILL-	PID = 1.2 ppm		20	10	20	40				
								PID = 2.3 ppm									
								PID = 6.1 ppm									
		G2 15	4.0 8.0		4.0	ML	Black SILT (ML), scrap metal, wood, ash, slight solvent odor, no structure, moist. -ASH FILL-	PID = 72 ppm				10	80				
5								PID = 85 ppm									
		G3 24	8.0 12.0		8.8	SP	Black, poorly-graded SAND (SP), staining, homogeneous, strong odor, wet. -LACUSTRINE-	PID = 211 ppm				100					
10								PID = 174 ppm									
					12.1		Probe Refusal and bottom of Boring at 12.1 ft.										
15																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 12.1
Rock Cored (lin. ft.) --
Samples 3G

Boring No. SSB-5A

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. SSB-5B

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 2
Start October 28, 2002
Finish October 28, 2002
Driller S. Loranty
H&A Rep. M. Reay
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	--	G	--	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	--	2.0	--	Bit Type:
Hammer Weight (lb.)	--	140	-	Drill Mud:
Hammer Fall (in.)	--	Auto	-	Casing:
				Hoist/Hammer:

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	NA	G1 41	0.0 4.0	NO WELL INSTALLED		SM	Light brown silty SAND with gravel (SM), mps 1-1/2", no structure, no odor, moist, with brick, gravel and wood. -FILL-	PID = ND ppm	10	10	5	15	40	20		L	N	
								PID = ND ppm										
5	NA	G2 45	4.0 8.0			SM	Same as above, mps 1", with some brick, gravel. -FILL-		5	10	5	5	45	30		L	N	
								PID = 1.5 ppm										
								PID = 3.5 ppm										
							Wet at 7.5 ft.											
10	NA	G3 42	8.0 12.0			SM	Light brown, silty SAND (SM), moist at 9.1 ft., mps 1.5 in. with some brick and ash.	PID = ND ppm	5	5	10	10	40	30		L	N	
								PID = ND ppm										
								PID = 1.2 ppm										
							-FILL-	PID = ND ppm										
15	NA	G4 17	12.0 16.0			SM	Same as above, mps 2.0 in.			10	10	10	45	25		L	N	
								PID = ND ppm										
							-FILL-	PID = ND ppm										
	NA	G5 32	16.0 18.5		16.0	MH	Mottled yellow-brown elastic SILT (MH), slightly stratified, moist to wet. -LACUSTRINE-	PID = ND ppm					5	95	S	L	M	
					17.5	SP	Brown silty SAND with gravel (SP), mps 1.25 in., no structure, wet. Wet from 17.5 to 18.5 ft. -GLACIAL TILL-	PID = ND ppm	10	5	10	10	35	30		M	N	
20					18.5													

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 18.5
Rock Cored (lin. ft.) --
Samples 5G

Boring No. SSB-5B

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. SSB-5B
File No. 70014-054
Sheet No. 2 of 2

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20							Probe Refusal and bottom of Boring at 18.5 ft.										

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. SSB-5C

Project LEXINGTON AVENUE FACILITY RI/FS
Client DELPHI CORPORATION
Contractor NOTHNAGLE DRILLING, INC.

File No. 70014-054
Sheet No. 1 of 1
Start October 28, 2002
Finish October 28, 2002
Driller S. Loranty
H&A Rep. S. Amrozowicz/ M. Reay
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	--	G	--	Rig Make & Model: Truck CME 85
Inside Diameter (in.)	--	2.0	--	Bit Type:
Hammer Weight (lb.)	--	140	-	Drill Mud:
Hammer Fall (in.)	--	Auto	-	Casing:
				Hoist/Hammer:

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	NA	G1 29	0.0 4.0	NO WELL INSTALLED	0.3	ML	-PAVEMENT- Light brown gravelly SILT with sand (ML), with wood, mps 1.25 in., no structure, moist. -FILL-	PID = ND ppm	10	15		5	10	60		M	N	
								PID = ND ppm										
								PID = ND ppm										
	NA	G2 47	4.0 8.0			ML	Same.	PID = ND ppm	10	15		5	10	60				
5					6.5	SP	Concrete and ash layer at 6.5 ft.	PID = ND ppm		40	20	20	20					
					7.5	ML	Same as 4-6.5 ft., strong odor at 7.5 to 8.0 ft., rags, wood, moist to wet.	PID = 86 ppm	5	10		15	10	60				
	NA	G3 48	8.0 12.0			ML	Same as above, residual free-product present, strong odor, trace glass and scrap metal, moist. -FILL-	PID = 6 ppm	5	10		15	10	60		M		
10								PID = 19 ppm										
					11.1	SP	Light brown, silty SAND (SP), slightly stratified, odor (VOCs), moist to wet. -LACUSTRINE-	PID = 27 ppm					60	40		L	L	
	NA	G4 24	12.0 14.0					PID = 2.1 ppm										
					13.2	ML	Same, except wet to 13.2 ft. Light brown-tan SILT (ML) with sand, homogeneous, blocky structure, moist to dry siltstone. -WEATHERED BEDROCK-	PID = 17 ppm					10	90				
15					14.0		Probe Refusal and bottom of Boring at 14.0 ft.											
20																		

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water

Sample Identification

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 14.0
Rock Cored (lin. ft.) --
Samples 4G

Boring No. SSB-5C

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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IDENTIFICATION AND DESCRIPTION OF SUBSURFACE MATERIALS

SOIL

Soil description on logs of subsurface explorations are based on Standard Penetration Test results, visual-manual examination of exposed soil and soil samples, and the results of laboratory tests on selected samples. The criteria, descriptive terms and definitions are as follows:

DENSITY OR CONSISTENCY

Density of Cohesionless Soils	Penetration Resistance (Blows per ft.)	Consistency of Cohesive Soils	Penetration Resistance (Blows per ft.)
Very Loose	0-4	Very Soft	0-2
Loose	5-10	Soft	3-4
Medium	11-30	Medium	5-8
Dense	31-50	Stiff	9-15
Very Dense	over 50	Very Stiff	16-30
		Hard	over 30

PENETRATION RESISTANCE

Standard Penetration Test (ASTM D-1586) - Number of blows required to drive a standard 2 in. O.D. split spoon sampler 1 ft. with a 140 lb. weight falling freely through 30 in.

COLOR: Basic colors and combinations: black, brown, gray, yellow-brown, etc.

SUPPLEMENTAL SOIL TERMINOLOGY:

Lamina	- 0 to 1/16 in. thick (cohesive)
Parting	- 0 to 1/16 in. thick (granular)
Seam	- 1/16 to 1/2 in. thick
Layer	- 1/2 to 12 in. thick
Stratum	- > 12 in. thick
Pocket	- Small, erratic deposit less than 12 in. size
Lens	- Lenticular deposit larger than a pocket
Occasional	- One or less per 12 in. of thickness
Frequent	- More than one per 12 in. of thickness
Interbedded	- Alternating soil layers of differing composition
Varved	- Alternating thin seams of silt and clay
Mottled	- Variation of color

GEOLOGIC INTERPRETATION

Deposit type - GLACIAL TILL, ALLUVIUM, FILL.....

The natural soils are identified by criteria of Unified Soil Classification System (USCS), with appropriate group symbol in parenthesis for each soil description. Fill materials may not be classified by USCS criteria.

U.S. Standard Series Seive / Clear Square Sieve Openings

12"	3"	3/4"	4	10	40	200
Boulders	Cobbles	Gravel: Coarse	Gravel: Fine	Sand: Coarse	Sand: Medium	Sand: Fine	Silts and Clays
305 mm	76 mm	19 mm	4.75 mm	2.00 mm	0.43 mm	0.074 mm	

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			Group Symbol	Graphic Symbol	TYPICAL NAMES
Coarse grained soils: more than half is larger than number 200 sieve	Gravels: More than half of coarse fraction is larger than number 4 sieve	Gravels with little or no fines	GW		Well graded gravels, gravel-sand mixtures
			GP		Poorly graded gravels, gravel-sand mixtures
		Gravels with over 12% fines	GM		Silty gravels, poorly graded gravel-sand-silt mixtures
			GC		Clayey gravels, poorly graded gravel-sand-clay mixtures
	Sands: More than half of coarse fraction is smaller than number 4 sieve	Sands with little or no fines	SW		Well graded sands, gravelly sands
			SP		Poorly graded sands, gravelly sands
		Sands with over 12% fines	SM		Silty sands, poorly graded sand-silt mixtures
			SC		Clayey sands, poorly graded sand-clay mixtures
Fined-grained soils: more than half smaller than number 200 sieve	Silts and Clays: Liquid limit 50% or less		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic clays and organic silty clays of low plasticity
	Silts and Clays: Liquid limit greater than 50%		MH		Inorganic silty, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH		Inorganic clays of high plasticity, fat clays
			OH		Organic clays of medium to high plasticity, organic silts
Highly organic soils			PT		Peat and other highly organic soils

ROCK

Rock descriptions noted on logs of subsurface explorations are based on visual-manual examination of exposed rock outcrops and core samples. The criteria, descriptive terms and definitions used are as follows:

FIELD HARDNESS: A measure of resistance to scratching.

Very Hard	Cannot be scratched with a knife point or sharp pick.
Hard	Can be scratched with a knife point or sharp pick, only with difficulty.
Moderately Hard	Can be readily scratched with a knife point or pick.
Medium Hard	Can be grooved or gouged 1/16 in. deep with firm pressure on a knife point or sharp pick.
Soft	Can be grooved or gouged easily with a knife point or pick.
Very Soft	Can be carved with a knife and excavated with a pick point.

WEATHERING: The action of organic and inorganic and chemical and physical processes resulting in alteration of color, texture and composition.

Weathering:

Fresh-FR	No visible sign of alteration, except perhaps slight discoloration on major discontinuity surfaces.
Slight-SL	Discoloration of rock material and discontinuity surfaces.
Moderate-MOD	Less than half the rock material decomposed to soil. Some fresh rock; continuous "framework".
High-HIGH	More than half the rock material decomposed and/or disintegrated to soil. Fresh rock corestones or discontinuous "framework".
Complete-COMP	All rock material disintegrated to soil, but mass still intact.
Residual Soil	All rock material converted to soil. Volume of mass changed, but material has not been significantly transported.

COLOR: Basic colors and combinations: gray, light gray, brown, red-brown.

TEXTURE: Size, shape and arrangements of constituents.

Aphonitic	Individual grains invisible.
Fine-grained	Grains barely visible to the unaided eye, up to 1/16 in. diameter.
Medium-grained	Grains between 1/16 and 3/16 in. diameter
Coarse-grained	Grains between 3/16 and 1/4 in. diameter
Very Coarse-grained	Grains larger than 1/4 in.

LITHOLOGY: Rock classification and modifiers; accepted formation names.

DISCONTINUITIES:

Type	Definition
Joint	A natural fracture along which no displacement has occurred. May occur in parallel groups called sets.
Shear	A natural fracture along which displacement has occurred. Surface may be slickensided or striated.
Fault	A natural fracture along which displacement has occurred. Usually lined with gouge and slickensides.
Shear or Fault Zone	Zone of fractured rock and gouge bordering the displacement plane.

ORIENTATION/ATTITUDE:

Term	Angle (degrees)
Horizontal	0-5
Low Angle	6-35
Moderately Dipping	36-55
High Angle	56-85
Vertical	86-100

SPACING

Term	Inches
Extremely Close	< 3/4
Very Close	3/4 - 2-1/2
Close	2-1/2 - 8
Moderate	8 - 24
Wide	24 - 80
Very Wide	80 - 20 ft.
Extremely Wide	> 20 ft.

PERSISTENCE/CONTINUITY:

Term	Feet
Very Low	0-3
Low	3-10
Medium	10-40
High	40-80
Very High	> 80

SOLUTION CAVITIES:

Term	Size
Pit	Barely visible - 1/4 in.
Vug	1/4 - 2 in.
Cavity	2 in. - 2 ft.
Cave	> 2 ft.

APERTURE/GAP:

Term	Inches
Very Tight	< 0.004
Tight	0.004 - 0.01
Partly Open	0.01 - 0.02
Open	0.02 - 0.1
Moderately Wide	0.1-0.4
Wide	> 0.4
Very Wide	0.4 - 4.0
Extremely Wide	4.0 - 40
Cavernous	> 40

BEDDING:

Term	Inches	Term
Very thin	< 2.5	Thick
Thin	2.5-8	Very thick
Medium	9-24	Massive

GENERAL NOTES

1. Logs of subsurface explorations depict soil, rock and groundwater conditions only at the locations specified on the dates indicated. Subsurface conditions may vary at other locations and at other times.
2. Water levels noted on the logs were measured at the times and under the conditions indicated. During test borings, these water levels could have been affected by the introduction of water into the borehole, extraction of tools on other procedures and thus may not reflect actual groundwater level at the test boring location. Groundwater level fluctuations may also occur as a result of variations in precipitation, temperature, season, tides, adjacent construction activities and pumping of water supply wells and construction dewatering systems.

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

SUBSURFACE EXPLORATION KEY

NOT TO SCALE

FILENAME: EXPLKEY.DWG - DATE:18 JULY 2000

APPENDIX B

Headspace Screening Reports

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

PROJECT	Delphi Lexington Avenue Facility RI/FS	**H&A FILE NO.**	70014-054
LOCATION	Rochester, NY	**PROJECT MGR.**	T. Wells
CLIENT	Delphi Automotive Systems	**FIELD REP**	SRA
INSTRUMENT	MiniRAE	**DATE SAMPLED**	10/25
DATE CALIBRATED (1)	10/25	**LAMP (eV)**	10.4
AMBIENT TEMPERATURE	70	**CALIBRATED BY**	SRA
		DATE SCREENED	10/25
		SCREENING LOC.	LAB

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers			
								Drill	Jar		
OW-324	G1	0-4		20	0.0			✓			
	G2	4-8		27	0.0	Submit		✓			
	G3	8-12		15	1.1			✓			
	G4	12-14		26	0.1	Submit		✓			
	G4	14-16		13	0.0			✓			
	G5	16-17.5		12	0.0			✓			
↓	G5	17.5-19		18	0.0			✓			
SSB-4	G1	0-4		00	0.0			✓			
	G2	4-8		1.2	0.0	Submit		✓			
	G3	8-12		1.6	0.0			✓			
	G5	16-20		92	0.0	Submit		✓			
↓	G6	20-21.5		24	1.3			✓			

1. Instrument calibrated to the manufacturer standard.
2. "ppm" represents concentration of detectable volatile gaseous compounds in parts-per-million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign:	Sign:	Sign:	Sign:
Print:	Print:	Print:	Print:
Firm:	Firm:	Firm:	Firm:
Date: Time:	Date: Time:	Date: Time:	Date: Time:

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

PROJECT	Delphi Lexington Avenue Facility RI/FS	H&A FILE NO.	70014-054
LOCATION	Rochester, NY	PROJECT MGR.	T. Wells
CLIENT	Delphi Automotive Systems	FIELD REP	SRA
INSTRUMENT	MiniRAE 2000	DATE SAMPLED	10/24
DATE CALIBRATED (1)	10/24/02 LAMP (eV) 10.4	DATE SCREENED	10/24
AMBIENT TEMPERATURE	65 CALIBRATED BY SRA	SCREENING LOC.	LAB

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers: Drill	Jar		
SMHB-1	G1	0-4	FILL	4.1	0.0		✓	X			
↓	G2	4-8	FILL	2.9	0.0			X			
SSB-5A	G1	0-2	FILL	28.4	0.0	slight odor		X			
	G1	2-4	FILL	6.8	2.3	slight odor		X			
	G2	4-8	Ash	784	1.7	odor	✓	X			
↓	G3	8-12	Peat	655	3.2	strong odor	✓				

1. Instrument calibrated to the manufacturer standard.
2. "ppm" represents concentration of detectable volatile gaseous compounds in parts-per-million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign:	Sign:	Sign:	Sign:
Print:	Print:	Print:	Print:
Firm:	Firm:	Firm:	Firm:
Date: Time:	Date: Time:	Date: Time:	Date: Time:

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

PROJECT	Delphi Lexington Avenue Facility RI/FS	H&A FILE NO.	70014-054
LOCATION	Rochester, NY	PROJECT MGR.	T. Wells
CLIENT	Delphi Automotive Systems	FIELD REP	SRA
INSTRUMENT	MiniRAE 2000	DATE SAMPLED	10/28/02
DATE CALIBRATED (1)	10/28	LAMP (eV)	10.4
AMBIENT TEMPERATURE	72°	CALIBRATED BY	SRA
		DATE SCREENED	10/28/02
		SCREENING LOC.	LAB

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers			
								Drill	Jar		
SB-5	G1	0-2		0.0	0.0			Y			
	G1	2-4		0.0	0.0			Y			
	G2	4-6		0.4	0.0	Submit 3 Dup		Y			
	G2	6-8		2.3	0.0			Y			
	G3	8-10		15.0	0.0			X			
	G3	10-12		25.0	1.0	Submit		X			
	G4	12-14		2.6	1.0			X			
	G5	14-18.5		-	1.2			Y			

1. Instrument calibrated to the manufacturer standard.
2. "ppm" represents concentration of detectable volatile gaseous compounds in parts-per-million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign:	Sign:	Sign:	Sign:
Print:	Print:	Print:	Print:
Firm:	Firm:	Firm:	Firm:
Date: Time:	Date: Time:	Date: Time:	Date: Time:

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

PROJECT	Delphi Lexington Avenue Facility RI/FS	**H&A FILE NO.**	70014-054
LOCATION	Rochester, NY	**PROJECT MGR.**	T. Wells
CLIENT	Delphi Automotive Systems	**FIELD REP**	SRA
INSTRUMENT	miniRAE 2000 PID	**DATE SAMPLED**	10/29/02
DATE CALIBRATED (1)	10/29 **LAMP (eV)** 10.4	**DATE SCREENED**	10/29/02
AMBIENT TEMPERATURE	**CALIBRATED BY** SRA	**SCREENING LOC.**	LAB

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers: Drill	Jar		
SSB-5C	G1	0-4		1.4	0.3			X			
	G2	4-6		27	0.0			X			
	G2	6-8		2000	0.7	Submit ms/msd also submitted		X			
	G3	8-10		899	1.2			X			
	G3	10-12	Horizon break @ 11.1	1587	1.0	Submit		X			
	G4	12-16		347	2.1			X			

1. Instrument calibrated to the manufacturer standard.
2. "ppm" represents concentration of detectable volatile gaseous compounds in parts-per-million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign:	Sign:	Sign:	Sign:
Print:	Print:	Print:	Print:
Firm:	Firm:	Firm:	Firm:
Date: Time:	Date: Time:	Date: Time:	Date: Time:

APPENDIX C

Observation Well Installation Reports

HALEY & ALDRICH

BEDROCK OBSERVATION WELL INSTALLATION REPORT

Well No. SR-303
Boring No. SR-303

PROJECT	LEXINGTON AVENUE FACILITY RI/FS	H&A FILE NO.	70014-054
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	T. WELLS
CLIENT	DELPHI CORPORATION	FIELD REP.	S. AMROZOWICZ
CONTRACTOR	NOTHNAGLE DRILLING	DATE INSTALLED	10/17/2002
DRILLER	S. LORANTY	WATER LEVEL	

Ground El. _____ ft
El. Datum _____
Location _____
☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	CONCRETE 2.0 FT.
	BENTONITE SEAL 4.0 FT.
OVERBURDEN SOILS 9.0 FT.	
ROCHESTER SHALE	#00N QUARTZ SAND
16.0 FT. (Bottom of Exploration)	16.0 FT.

(Numbers refer to depth from ground surface in feet)

(Not to Scale)

Type of protective cover/lock	Bolted Steel Cover
Height of top of guard pipe above ground surface	Flush ft
Depth of top of riser pipe below ground surface	0.2 ft
Type of protective casing:	Roadway Box
Length	1.0 ft
Inside Diameter	8.0 in
Depth of bottom of guard pipe	N/A ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	2.0
Cement Grout	--	--
Bentonite	2.0	2.0
Silica Quartz Sand	4.0	12.0

Depth to the top of bedrock	9.0 ft
Type of riser pipe:	PVC
Inside diameter of riser pipe	2.0 in
Type of backfill around riser	See Above
Diameter of borehole	8.0 in
Depth to top of well screen	6.0 ft
Type of screen	Factory-slotted PVC
Screen gauge or size of openings	0.010 in
Diameter of screen	2.0 in
Type of backfill around screen	#00N Quartz Sand
Diameter of bedrock corehole	6.0 in
Depth of bottom of well screen	16.0 ft
Bottom of Silt trap	16.0 ft
Depth of bottom of borehole	16.0 ft

5.8 ft	+	10 ft	+	0 ft	=	15.8 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: _____

Form # 3010

BEDROCK OBSERVATION WELL INSTALLATION REPORT

HALEY & ALDRICH

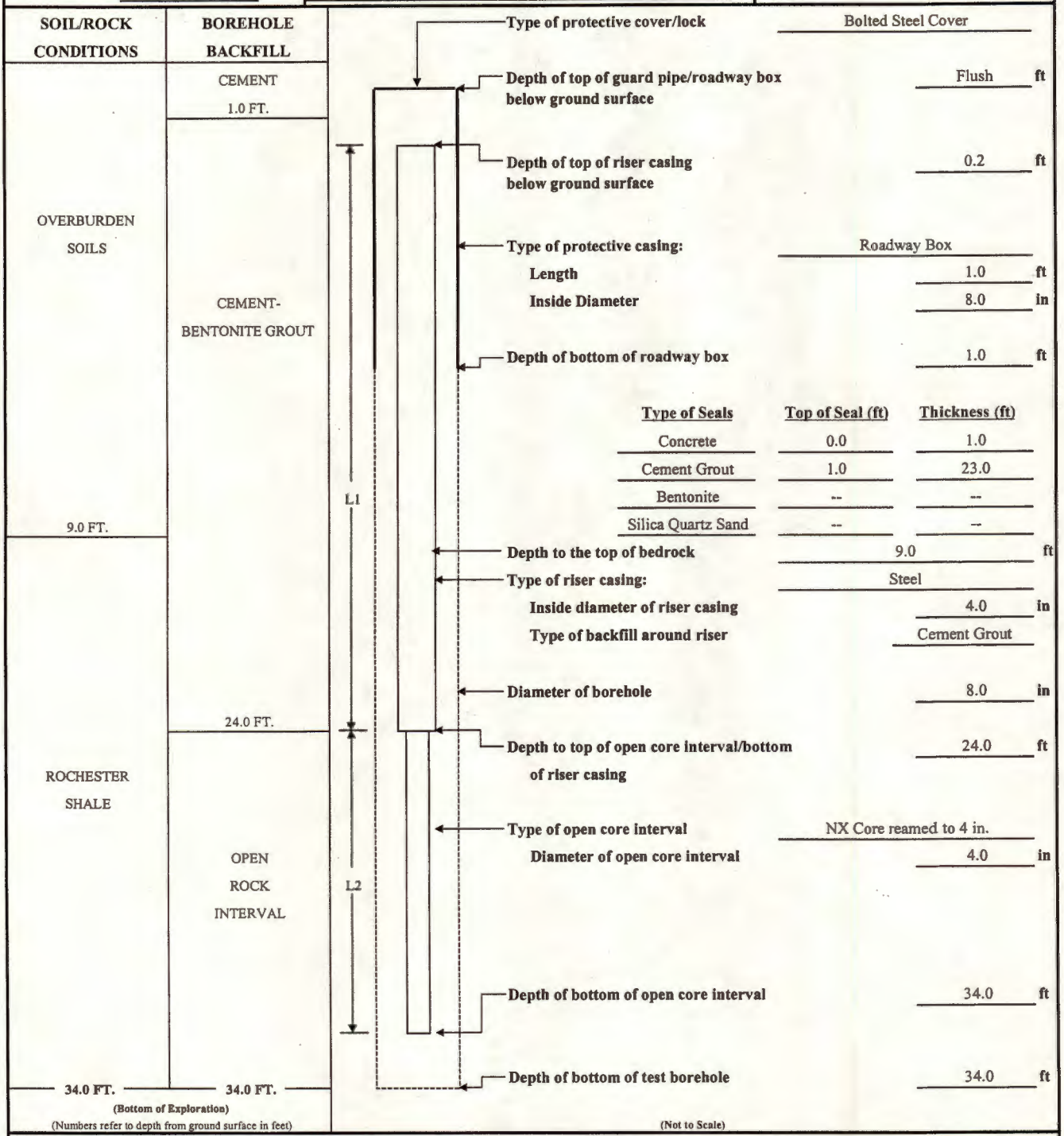
Well No.	Boring No.
R-303	R-303

PROJECT	LEXINGTON AVENUE FACILITY RI/FS	H&A FILE NO.	70014-054
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	T. WELLS
CLIENT	DELPHI CORPORATION	FIELD REP.	S. AMROZOWICZ
CONTRACTOR	NOTHANGLE DRILLING	DATE INSTALLED	10/17/2002
DRILLER	S. LORANTY	WATER LEVEL	

Ground El. _____ ft
El. Datum _____

Location: SEE PLAN

☐ Guard Pipe
☑ Roadway Box



Type of protective cover/lock: Bolted Steel Cover

Depth of top of guard pipe/roadway box below ground surface: Flush ft

Depth of top of riser casing below ground surface: 0.2 ft

Type of protective casing: Roadway Box

Length: 1.0 ft

Inside Diameter: 8.0 in

Depth of bottom of roadway box: 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Cement Grout	1.0	23.0
Bentonite	--	--
Silica Quartz Sand	--	--

Depth to the top of bedrock: 9.0 ft

Type of riser casing: Steel

Inside diameter of riser casing: 4.0 in

Type of backfill around riser: Cement Grout

Diameter of borehole: 8.0 in

Depth to top of open core interval/bottom of riser casing: 24.0 ft

Type of open core interval: NX Core reamed to 4 in.

Diameter of open core interval: 4.0 in

Depth of bottom of open core interval: 34.0 ft

Depth of bottom of test borehole: 34.0 ft

24 ft	+	10 ft	=	34 ft
Casing Length (L1)		Screened Interval (L2)		Pay length

COMMENTS:

Form # 3010

BEDROCK OBSERVATION WELL INSTALLATION REPORT

HALEY & ALDRICH

Well No.	Boring No.
SR-304	SR-304

PROJECT	LEXINGTON AVENUE FACILITY RI/FS	H&A FILE NO.	70014-054
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	T. WELLS
CLIENT	DELPHI CORPORATION	FIELD REP.	S. AMROZOWICZ
CONTRACTOR	NOTHNAGLE DRILLING	DATE INSTALLED	10/21/2002
DRILLER	S. LORANTY	WATER LEVEL	

Ground El. _____ ft
El. Datum _____

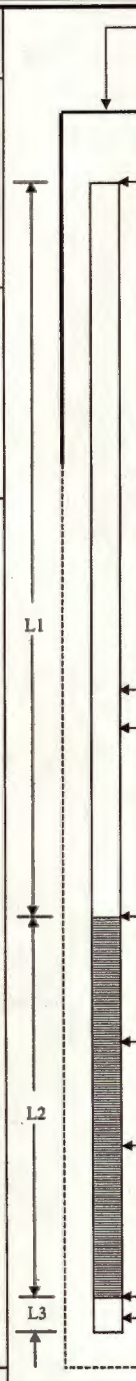
Location _____

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	CONCRETE
OVERBURDEN SOILS	2.0 FT.
	BENTONITE SEAL
	5.0 FT.
6.0 FT.	
ROCHESTER SHALE	#00N QUARTZ SAND
16.0 FT.	16.0 FT.

(Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock	Bolted Steel Cover
Height of top of guard pipe above ground surface	Flush ft
Depth of top of riser pipe below ground surface	0.2 ft
Type of protective casing:	Roadway Box
Length	1.0 ft
Inside Diameter	8.0 in
Depth of bottom of guard pipe	NA ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	2.0
Cement Grout	--	--
Bentonite	2.0	3.0
Silica Quartz Sand	5.0	11.0

Depth to the top of bedrock	6.0 ft
Type of riser pipe:	PVC
Inside diameter of riser pipe	2.0 in
Type of backfill around riser	See Above
Diameter of borehole	8.0 in
Depth to top of well screen	6.0 ft
Type of screen	Factory-slotted PVC
Screen gauge or size of openings	0.010 in
Diameter of screen	2.0 in
Type of backfill around screen	#00N Quartz Sand
Diameter of bedrock corehole	6.0 in
Depth of bottom of well screen	16.0 ft
Bottom of Silt trap	16.0 ft
Depth of bottom of borehole	16.0 ft

6 ft	+	10 ft	+	0 ft	=	16 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: _____

Form # 3010

HALEY & ALDRICH

BEDROCK OBSERVATION WELL INSTALLATION REPORT

Well No. R-304

Boring No. R-304

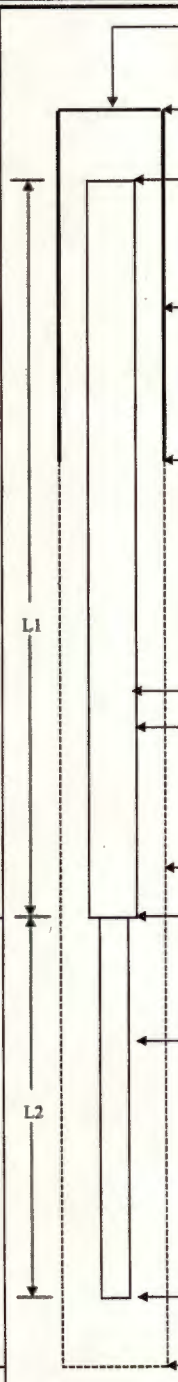
PROJECT	LEXINGTON AVENUE FACILITY RI/FS	H&A FILE NO.	70014-054
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	T. WELLS
CLIENT	DELPHI CORPORATION	FIELD REP.	S. AMROZOWICZ
CONTRACTOR	NOTHANGLE DRILLING	DATE INSTALLED	10/21/2002
DRILLER	S. LORANTY	WATER LEVEL	

Ground El. _____ ft | Location SEE PLAN | ☐ Guard Pipe ☑ Roadway Box

El. Datum _____

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	CEMENT 1.0 FT.
OVERBURDEN SOILS 6.0 FT.	
	CEMENT-BENTONITE GROUT
ROCHESTER SHALE	
	21.0 FT.
	OPEN ROCK INTERVAL
31.0 FT. (Bottom of Exploration)	31.0 FT.

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

- Type of protective cover/lock: Bolted Steel Cover
- Depth of top of guard pipe/roadway box below ground surface: Flush ft
- Depth of top of riser casing below ground surface: 0.2 ft
- Type of protective casing: Roadway Box
  - Length: 1.0 ft
  - Inside Diameter: 8.0 in
- Depth of bottom of roadway box: 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Cement Grout	1.0	20.0
Bentonite	--	--
Silica Quartz Sand	--	--

- Depth to the top of bedrock: 6.0 ft
- Type of riser casing: Steel
  - Inside diameter of riser casing: 4.0 in
  - Type of backfill around riser: Cement Grout
- Diameter of borehole: 8.0 in
- Depth to top of open core interval/bottom of riser casing: 21.0 ft
- Type of open core interval: NX core reamed to 4.0 in
  - Diameter of open core interval: 4.0 in
- Depth of bottom of open core interval: 31.0 ft
- Depth of bottom of test borehole: 31.0 ft

21 ft (Casing Length (L1)) + 10 ft (Screened Interval (L2)) = 31 ft (Pay length)

COMMENTS: _____

Form # 3010

HALEY & ALDRICH

BEDROCK OBSERVATION WELL INSTALLATION REPORT

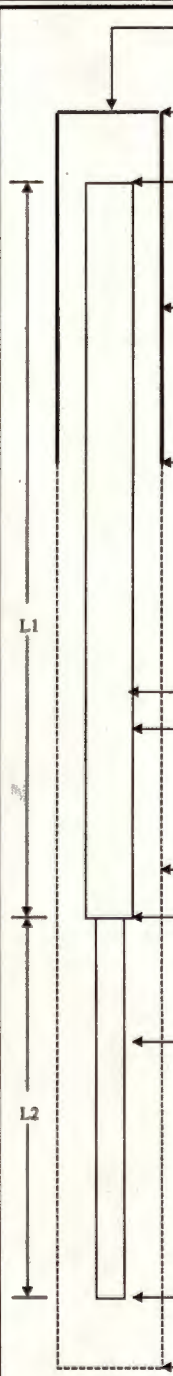
Well No. R-307
Boring No. R-307

PROJECT	LEXINGTON AVENUE FACILITY RI/FS	H&A FILE NO.	70014-054
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	T. WELLS
CLIENT	DELPHI CORPORATION	FIELD REP.	S. AMROZOWICZ
CONTRACTOR	NOTHANGLE DRILLING	DATE INSTALLED	10/23/2002
DRILLER	S. LORANTY	WATER LEVEL	

Ground El. _____ ft
El. Datum _____
Location SEE PLAN
☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	CEMENT 1.0 FT.
OVERBURDEN SOILS 6.1 FT.	
WEATHERED BEDROCK 7.0 FT.	
ROCHESTER SHALE	CEMENT-BENTONITE GROUT 22.0 FT.
	OPEN ROCK INTERVAL
32.0 FT.	32.0 FT.

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)



(Not to Scale)

- Type of protective cover/lock: Bolted Steel Cover
- Depth of top of guard pipe/roadway box below ground surface: Flush ft
- Depth of top of riser casing below ground surface: 0.2 ft
- Type of protective casing: Roadway Box
  - Length: 1.0 ft
  - Inside Diameter: 8.0 in
- Depth of bottom of roadway box: 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Cement Grout	1.0	22.0
Bentonite	--	--
Silica Quartz Sand	--	--

- Depth to the top of bedrock: 7.0 ft
- Type of riser casing: Steel
  - Inside diameter of riser casing: 4.0 in
  - Type of backfill around riser: Cement Grout
- Diameter of borehole: 8.0 in
- Depth to top of open core interval/bottom of riser casing: 22.0 ft
- Type of open core interval: NX Core reamed to 4.0
  - Diameter of open core interval: 4.0 in
- Depth of bottom of open core interval: 32.0 ft
- Depth of bottom of test borehole: 32.0 ft

22 ft (Casing Length (L1)) + 10 ft (Screened Interval (L2)) = 32 ft (Pay length)

COMMENTS:

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. OW-323

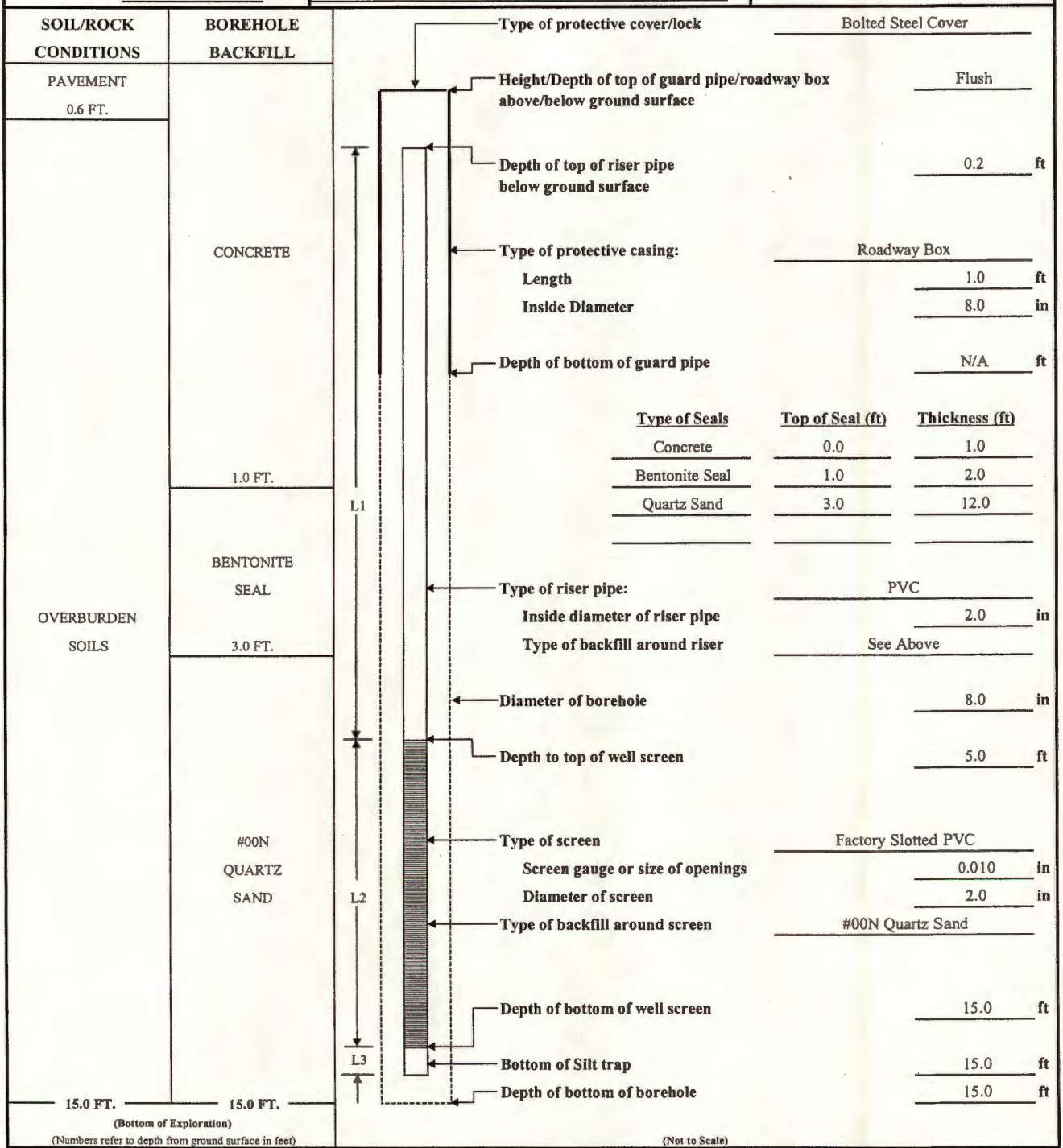
Boring No. USTB-1/OW-323

PROJECT	LEXINGTON AVENUE FACILITY RI/FS	H&A FILE NO.	70014-054
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	T. WELLS
CLIENT	DELPHI CORPORATION	FIELD REP.	S. AMROZOWICZ
CONTRACTOR	NOTHNAGLE DRILLING	DATE INSTALLED	10/24/2002
DRILLER	S. LORANTY	WATER LEVEL	

Ground El. _____ ft | Location SEE PLAN | ☐ Guard Pipe ☑ Roadway Box

El. Datum _____

SOIL/ROCK CONDITIONS | BOREHOLE BACKFILL



Type of protective cover/lock: Bolted Steel Cover

Height/Depth of top of guard pipe/roadway box above/below ground surface: Flush

Depth of top of riser pipe below ground surface: 0.2 ft

Type of protective casing: Roadway Box

Length: 1.0 ft

Inside Diameter: 8.0 in

Depth of bottom of guard pipe: N/A ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Bentonite Seal	1.0	2.0
Quartz Sand	3.0	12.0

Type of riser pipe: PVC

Inside diameter of riser pipe: 2.0 in

Type of backfill around riser: See Above

Diameter of borehole: 8.0 in

Depth to top of well screen: 5.0 ft

Type of screen: Factory Slotted PVC

Screen gauge or size of openings: 0.010 in

Diameter of screen: 2.0 in

Type of backfill around screen: #00N Quartz Sand

Depth of bottom of well screen: 15.0 ft

Bottom of Silt trap: 15.0 ft

Depth of bottom of borehole: 15.0 ft

Riser Pay Length (L1)	+	Length of screen (L2)	+	Length of silt trap (L3)	=	Pay length
ft		ft		ft		ft

COMMENTS:

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. OW-324

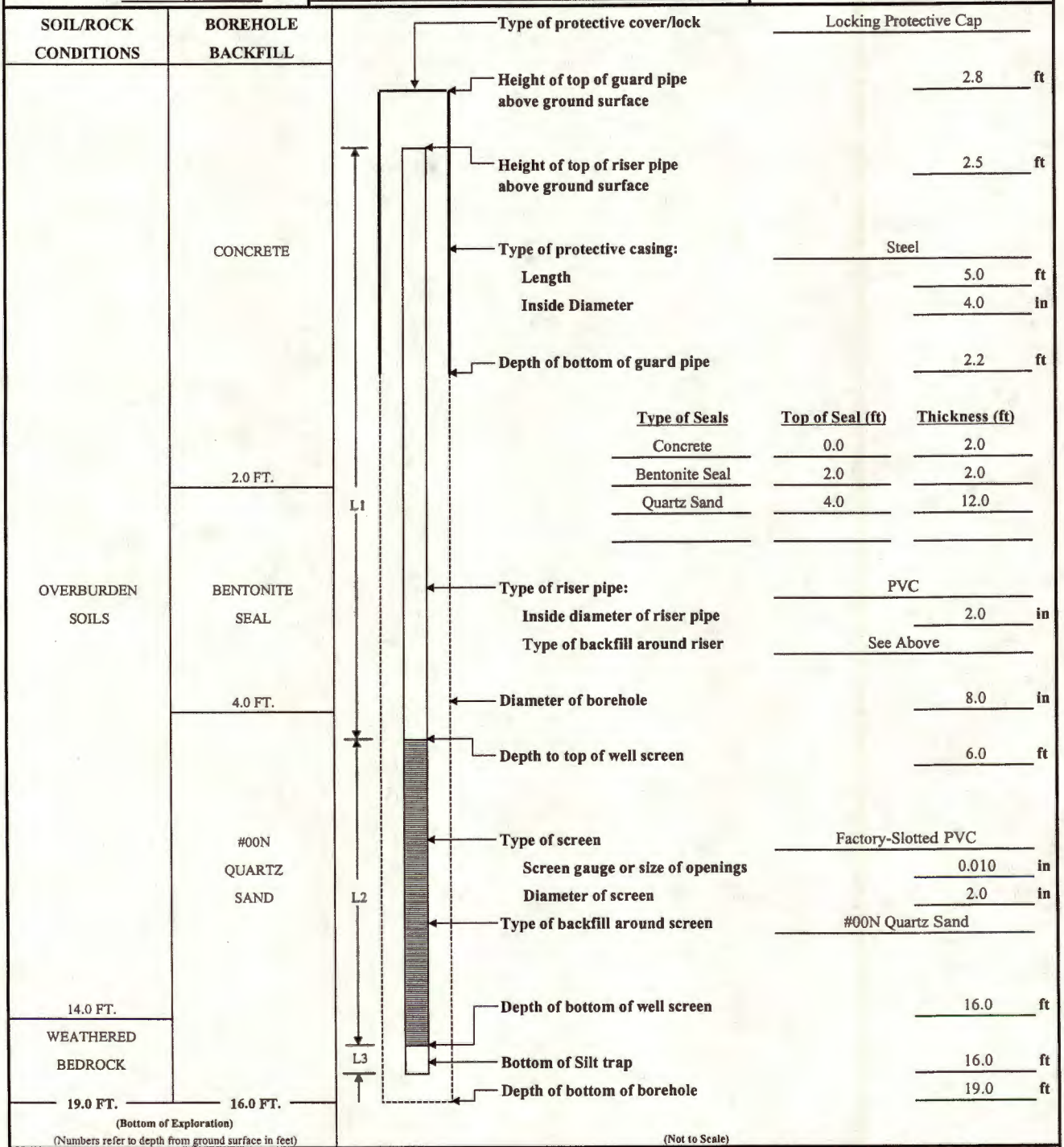
Boring No. OW-324

PROJECT	LEXINGTON AVENUE FACILITY RI/FS	H&A FILE NO.	70014-054
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	T. WELLS
CLIENT	DELPHI CORPORATION	FIELD REP.	S. AMROZOWICZ
CONTRACTOR	NOTHNAGLE DRILLING	DATE INSTALLED	10/25/2002
DRILLER	S. LORANTY	WATER LEVEL	

Ground El. _____ ft
El. Datum _____

Location _____

☑ Guard Pipe
☐ Roadway Box



Type of protective cover/lock: Locking Protective Cap

Height of top of guard pipe above ground surface: 2.8 ft

Height of top of riser pipe above ground surface: 2.5 ft

Type of protective casing: Steel

Length: 5.0 ft

Inside Diameter: 4.0 in

Depth of bottom of guard pipe: 2.2 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	2.0
Bentonite Seal	2.0	2.0
Quartz Sand	4.0	12.0

Type of riser pipe: PVC

Inside diameter of riser pipe: 2.0 in

Type of backfill around riser: See Above

Diameter of borehole: 8.0 in

Depth to top of well screen: 6.0 ft

Type of screen: Factory-Slotted PVC

Screen gauge or size of openings: 0.010 in

Diameter of screen: 2.0 in

Type of backfill around screen: #00N Quartz Sand

Depth of bottom of well screen: 16.0 ft

Bottom of Silt trap: 16.0 ft

Depth of bottom of borehole: 19.0 ft

8.5 ft	+	10 ft	+	0 ft	=	18.5 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: Well filled with native soil cuttings/backfill from 19.0 to 16.0 feet.

Form # 3010

HALEY & ALDRICH

BEDROCK OBSERVATION WELL INSTALLATION REPORT

Well No. SR-325

Boring No. SR-325

PROJECT	LEXINGTON AVENUE FACILITY RI/FS	H&A FILE NO.	70014-054
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	T. WELLS
CLIENT	DELPHI CORPORATION	FIELD REP.	M. REAY
CONTRACTOR	NOTHNAGLE DRILLING	DATE INSTALLED	10/28/2002
DRILLER	S. LORANTY	WATER LEVEL	

Ground El. _____ ft
El. Datum _____

Location _____

☑ Guard Pipe
☐ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
BLACKTOP FILL FLOOR	CEMENT, 1.0 FT.
2,0 FT.	
OVERBURDEN SOILS	CEMENT GROUT, 20.0 FT.
21.5 FT.	BENTONITE SEAL, 22.0 FT.
ROCHESTER SHALE	#00N QUARTZ SAND
30.0 FT.	30.0 FT.

(Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)

(Not to Scale)

Type of protective cover/lock	Locking Protective Cap
Height of top of guard pipe above ground surface	2.8 ft
Height of top of riser pipe above ground surface	2.5 ft
Type of protective casing:	Steel
Length	5.0 ft
Inside Diameter	4.0 in
Depth of bottom of guard pipe	2.2 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Cement Grout	19.0	1.0
Bentonite	20.0	2.0
Silica Quartz Sand	22.5	1.0

Depth to the top of bedrock	21.5 ft
Type of riser pipe:	PVC
Inside diameter of riser pipe	2.0 in
Type of backfill around riser	See Above
Diameter of borehole	8.0 in
Depth to top of well screen	23.0 ft
Type of screen	Factory-Slotted PVC
Screen gauge or size of openings	0.010 in
Diameter of screen	2.0 in
Type of backfill around screen	#00N Quartz Sand
Diameter of bedrock corehole	6.0 in
Depth of bottom of well screen	30.0 ft
Bottom of Silt trap	30.0 ft
Depth of bottom of borehole	30.0 ft

25.5 ft	+	7 ft	+	0 ft	=	32.5 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: _____

Form # 3010

APPENDIX D

Water Level Measurement Forms

HALEY & ALDRICH

Project Name: Delphi Lex. Ave. RI/FS

File Number: 70014-054

Name: Scott Amrozowicz **Date: September 20, 2002**

Well ID	DTW (9/20/02)	Comments
DR-11	43.83	Protective casing lid broken.
DR-103	69.72	Inside of the well is caving in on itself.
DR-105	27.09	
DR-108	Dry	
DR-109	64.09	
DR-315	36.00	

General Comments: All measurements taken from top of outermost riser.

HALEY & ALDRICH

Project Name: Delphi Lex. Ave. RI/FS

File Number: 70014-054

Name: Mike Beikirch

Date: October 30, 2002

Well ID	DTW (10/30/02)	Comments
SR-303	10.76	DTB=15.85
R-303	26.88	DTB=34.4
SR-304	15.78	DTB=16.03
R-304	22.41	DTB=30.65
R-307	24.55	DTB=34.3

General Comments: All measurements taken from top of outer flushmount casing.

APPENDIX E

Preliminary Elevation Survey Results

HALEY & ALDRICH

DELPHI CORPORATION
LEXINGTON AVE. FACILITY RI/FS
ROCHESTER, NEW YORK

DELPHI LEXINGTON AVE. RI/FS
PRELIMINARY WELL ELEVATION SURVEY

Bench Mark Elevation	Well #	SET UP#1	SET UP#2		TOP OF OUTER CASING ELEVATION	COMMENTS
497.32	*PZ-141*	1.42				
	R-301	4.67			**494.07**	
518.89	*R-235*	2.46				
	TP1	4.48			516.87	(TEMP BENCH MARK)
	TP1		5.77			
	SR-308		1.38		**521.26**	
	R-308		1.29		**521.35**	
515.64	*R-131*	2.13				
	TP1	4.63			513.14	(TEMP BENCH MARK)
	TP1		5.92			
	OW-314		2.00		**517.06**	
	R-314		1.63		**517.43**	
	SR-314		1.00		**518.06**	
515.64	*R-131*	2.51				
	DR-315	2.02			**516.13**	

NOTES:

1. Non-Bench Mark elevations surveyed by Haley & Aldrich on 15 September 2002.
2. TP = Turning Point.