

# ELECTRONIC ATTACHMENTS (CD)

- 1 Soil Boring, Test Pit, and Well Construction Logs
    - a. Wall Boring Logs
    - b. Soil Boring Logs
    - c. Test Pit Logs
    - d. Piezometer Logs
    - e. Monitoring Well Construction & Boring Logs
    - f. NAPL Recovery Well Construction Logs
  - 2 Community Air Monitoring Data
  - 3 Project Correspondence/Reports
    - a. Reports
      - 1 Initial Submittal (January 1995)
      - 2 Preliminary Site Assessment/Interim Remedial Measures Report (Vol 1) (February 1998)
      - 3 Remedial Investigation Report (May 2003)
      - 4 Supplemental Remedial Investigation Report (November 2007)
      - 5 Final Remedial Investigation Report (September 2008)
      - 6 Vapor Intrusion Report (February 2009)
      - 7 Feasibility Study Report (July 2014)
      - 8 Site Management Plan (January 2018)
    - b. Correspondence
      - 1 April 28, 2005 – Letter Not a Subsite
      - 2 1998 – 2006 – Historic Letters & E-mail Correspondence
      - 3 November 13, 2007 – SRI Report
      - 4 December 27, 2007 – NYSDOH Comments on SRI Report
      - 5 April 4, 2008 – Summary of Recent Discussion, Follow-up Activities, and Project Schedule
      - 6 April 14, 2008 – NYSDEC Approval of Schedule and SOW
      - 7 April 18, 2008 – Soil Vapor Investigation Response Letter
      - 8 April 25, 2008 – Pre-FS Additional Investigation Work Plan
      - 9 May 2, 2008 – NYSDEC Approval of Pre-FS Additional Investigation Work Plan
      - 10 May 16 and May 22, 2008 – E-mail Status Update to NYSDEC
      - 11 June 26, 2008 – NYSDOH Request Heating Season Sampling
      - 12 July 9, 2008 – Schedule Letter
      - 13 July 11, 2008 – NYSDEC Approval Letter
      - 14 July 18, 2008 - Data Submittal Letter
      - 15 August 15, 2008 – Sub-Slab Vapor Sampling Concept
      - 16 August 25, 2008 – Schedule Letter
      - 17 September 12, 2008 – NYSDEC Approval of Schedule Change
      - 18 September 19, 2008 – Final RI Report
      - 19 September 25, 2008 – NYSDEC Approval of Conceptual Sub-Slab Vapor and Indoor Air Sampling Plan
      - 20 October 27, 2008 – Vapor Intrusion Work Plan
      - 21 November 5, 2008 – NYSDEC Approval Letter
      - 22 February 13, 2009 – Vapor Intrusion Investigation Report
      - 23 March 31, 2009 – NYSDEC Comments on Vapor Intrusion Report
      - 24 April 24, 2009 – Product Inventory Summary Letter
      - 25 May 4, 2009 – Chlorinated Solvents in Soil Vapor
      - 26 July 31, 2012 – Building D Handicap Entrance Ramp Construction Proposed Soil Investigation
      - 27 February 8, 2013 – NAPL Summary Approval
  - 28 March 8, 2013 – Groundwater Monitoring Letter Report
  - 29 April 16, 2013 – Soil Investigation Report (Ramp and Bridge Construction Project)
  - 30 June 26, 2013 – NAPL Summary Approval
  - 31 July 25, 2014 – Draft Revised Feasibility Study Approval
  - 32 July 29, 2014 – Feasibility Study Report
  - 33 February 24, 2015 – Proposed Remedial Action Plan Fact Sheet
  - 34 February 24, 2015 – Proposed Remedial Action Plan
  - 35 March 30, 2015 – Record of Decision
  - 36 May 6, 2016 – Remedial Action Work Plan Approval
  - 37 May 9, 2016 – Remedial Action Work Plan (Final)
  - 38 August 9, 2016 – Catch Basin Replacement and Soil Management Work Plan
  - 39 August 10, 2016 – NYSDEC Approval of Catch Basin Replacement and Soil Management Work Plan
  - 40 February 28, 2017 – NAPL Gauging and Removal Pilot Study Summary
  - 41 March 15, 2017 – NAPL Study Report Approval
  - 42 July 20, 2017 – NYSDEC Comments on Draft SMP
  - 43 December 8, 2017 – Semi-Annual NAPL Gauging Summary Letter
  - 44 December 20, 2017 – NAPL Study Report Approval
  - 45 January 11, 2018 – Site Management Plan
  - 46 January 16, 2018 – Site Management Plan Approval
  - 47 October 24, 2018 – 2018 Semi-Annual NAPL Gauging, Groundwater Monitoring, and Site Inspection
  - 48 December 19, 2019 – NYSDEC Approval of the 2018 Semi-Annual NAPL Gauging, Groundwater Monitoring, and Site Inspection
  - 49 April 8, 2020 – 2019 Annual Groundwater Monitoring and Site Inspection Summary Report
  - 50 April 9, 2020 – 2019 Groundwater Emerging Contaminant Summary Report
- 4 Construction Photos
  - 5 Site Management Plan

ARCADIS

**Wall Boring Logs**

Contractor: Northstar  
 Driller: Harry Lyons  
 Inspector: W. D. Lilley  
 Rig Type: CME 4S-ATV  
 Drilling Method: HS A-SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-3  
 Sheet 1 of 5  
 Location Northern most boring, near Genesee St.

PROJECT NAME Wall Replacement  
 PROJECT NO.

GROUND WATER OBSERVATIONS

Water Level	G.O	G.4
Time	2:45	8:00
Date	3/29	3/30

Weather: Sunny 60°  
 Date/Time Start 3/27/95 3:00 pm  
 Date/Time Finish 3/31/95 4:00 pm

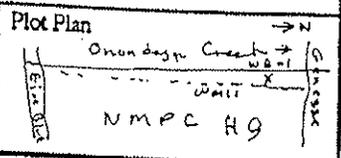


Photo No. Reading	Sample ID	Sample Depth	% Recovery	SPT
0	A	1	20	1
		2		2
		3		2
		4		1
		5		2
		6		3
0	C	4	30	2
		5		1
		6		2
0	D	6	20	1
		7		4
		8		7
		9		8
0	E	8	50	12
		9		9
		10		12
		11		17
0	F	10	50	12
		11		9
		12		7
		13		6
		14		8
0	H	14	10	8
		15		5
		16		5
0	I	16	20	7
		17		11
		18		9
		19		7
		20		7
0	J	18	30	8
		19		9
		20		7
0	K	20		4

FIELD IDENTIFICATION OF MATERIAL

Black and Brown silt and sand, Trace Gravel, trace wood & (moist) (Fill)  
 Same  
 Same  
 6.5'  
 Brown coarse sand, little Gravel, Trace Silt Trace Brick, (Cobble and Bricks) (wet) (Fill)  
 8.0  
 Brown and Gray Gravel, some sand, little Silt (2" layer of topsoil) (wet)  
 Same (no topsoil)  
 12.0'  
 Brown Gravel, little sand, Trace silt (wet) (Brown stains)  
 14.0'  
 Brown Gravel, some sand, Trace silt (wet)  
 Same  
 Same

WELL SCHEMATIC

Boring grouted with Bentonite Cement

TCL/TAL 0-6' with 3' Split spoon Grain Size Sample

Borehole PID=200 LEL=200

Lab Sample BTX, PAH CN-

Borehole PID=1.0 LEL=200

STANDARD PENETRATION TEST  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY Fill 0-8, Sandy Gravel 8-21, Sand and Gravel 21-45, Silty Sand & Gravel 45-69, Sand & Gravel

Contractor: North star  
 Driller: Harry Lyons  
 Inspector: W. D. Lilley  
 Rig Type: CME 45-ATV  
 Drilling Method: HS A - SS

## ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-1

Sheet 2 of 5

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

Location \_\_\_\_\_

**GROUNDWATER OBSERVATIONS**

Water Level			
Time			
Date			

Weather: Sunny 65° → Rain

Plot Plan

See Sheet # 1

Date/Time Start 3/28

Date Time Finish \_\_\_\_\_

Photo No. / Rocking	Sample ID	Sample Depth	% Recovery	SPT
	K		50	8
		21		22
				4
	L	22	50	7
				5
		23		4
				4
	M	24	5	7
				3
		25		4
				4
	W	26	10	5
				5
		27		4
				6
✓	O	28	30	9
				7
		29		7
				8
✓	P	30	25	12
				25
		31		9
				6
✓	Q	32	35	9
				9
		33		6
				7
✓	R	34	50	6
				✓
		35		3
				5
✓	S	36	25	5
				7
		37		6
				8
✓	T	38	20	12
				✓
		39		5
				4
✓	U	40		6

**FIELD IDENTIFICATION OF MATERIAL**

**WELL SCHEMATIC**

**COMMENTS**

21.0 Brown Gravel, some Sand, Trace Silt

Gray Gravel and sand (layers)  
Trace Silt (wet)

Same

Same

Same

Same

Same

Cobble (Trace stain)

Same (Trace stain)

Cobble  
Same (Trace stain)

(6" layer of silt)

Lab Sample  
PAH  
34.9-36  
BT&T, CN-  
36-38

**STANDARD PENETRATION TEST**

**SUMMARY**

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

Contractor: Northstar  
 Driller: Harry Lyons  
 Inspector: W. D. Lilley  
 Rig Type: CME 45-HTV  
 Drilling Method: MSA-SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-1  
 Sheet 3 of 5  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			

Weather: \_\_\_\_\_  
 Date/Time Start \_\_\_\_\_  
 Date Time Finish \_\_\_\_\_

Plot Plan  
See Sheet #1

Photo Rocking	Sample ID	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
✓	U		20	6	Gray sand and gravel (stained)		PAH 40-42
		41		7			
				8			
✓	V	42	46	12	Same (stained)		PAH 44-46'
				9			
		43		6			
✓	W	44	50	8	49.5 Gray sand, little gravel (Brown stains)		PAH 44-46'
				6			
		45		8			
				15	Gray sand, little gravel, trace silt (fill) (Brown stains)		Borehole PIO = 0.8 LEL = 2000 PAH 52-54
15	X	46	10	16			
				12			
		47		14	Same		
✓	Y	48	10	17			
				20			
		49		17	Same		
				14			
✓	Z	50	25	14			
				17	51 Gray sand and gravel, trace silt (fill)		
		51		21			
				25			
✓	AK	52	10	30	Same (Gravel layer stained)		
				17			
		53		11			
				34	Same		
✓	BB	54	10	25			
				19			
		55		14	Same		
				43			
✓	CC	56	0	48			
				50/1"	Same		
		57					
✓	DD	58	20	50/1"			
				21	Same		
		59					
				33			
✓	EE	60		41			
				43			

STANDARD PENETRATION TEST SUMMARY \_\_\_\_\_  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED \_\_\_\_\_

Contractor: North star  
 Driller: Harry Lyons  
 Inspector: W. D. Lilley  
 Rig Type: SME 4S-ATV  
 Drilling Method: HS A - SS

## ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-1  
 Sheet 4 of 5  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

GROUNDWATER OBSERVATIONS		
Water Level		
Time		
Date		

Weather: Cloudy → Snow  
 Date/Time Start 3/31/95 - 9:10 am  
 Date Time Finish \_\_\_\_\_

Plot Plan  
 See Sheet # 1

Photo Reel	Sample Lvl	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS	
\	EE		60	30	Gray Gravel and Sand, trace Silt (Screens)			
		61		46				
				43				
\	FF	62	0	48	Same			
		63		↓				
				↓				
\	GG	64	0	50/3"	Same			
		65		↓				
				↓				
\	II	66	0	50/1"	Same			
		67		↓				
				↓				
\	JJ	68	0	100/1"	Same			
		69		↓				
				↓				
100+	KK	70	50	14	Gray Sand and Gravel (Screens)			Borehole PID=1.8 LEL=2.0 PAH Lab sample 70-72
				17	Same (Screens)			
		71		16				
				66				
	LL	72	5	68	Same (Screens)			
				15				
		73		13				
				14	Same (Screens)			
15+	MM	74	50	15				
				17				
		75		14	Same (Screens)			
				17				
				18				
105+	NN	76		18	Same (Screens)			
				16				
		77		12				
				13	Coarse Sand, little Gravel			
10	OO	78		12				
				12				
		79		10	Same (Screens)			
				12				
	PP	80						

STANDARD PENETRATION TEST SUMMARY \_\_\_\_\_  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED



Contractor: North star  
 Driller: Harry Lyons  
 Inspector: W.D. Liley, & N.A. Smith  
 Rig Type: CME 45-ATV  
 Drilling Method: HS A - SS

# ENGINEERING-SCIENCE DRILLING RECORD

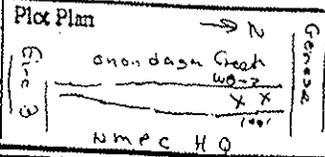
BORING NO. WB-2  
 Sheet 1 of 5  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

**GROUNDWATER OBSERVATIONS**

Water Level	
Time	
Date	

Weather: Cloudy 45°  
 Date/Time Start 4/14 0900 am  
 Date/Time Finish 4/19/95 0900 am



Flowmeter Reading	Sample Depth	% Recovery	SPT
0		50	1
	1		1
			3
0	2	70	3
			3
	3		6
			3
29	4	20	3
			3
	5		6
			6
0	6	20	7
			7
	7		17
			11
5	8	50	9
			8
	9		12
			12
0	10	25	12
			10
	11		8
			8
0	12	10	7
			6
	13		7
			5
6	14	10	4
			4
	15		6
			7
6	16	25	7
			12
	17		6
			6
	18	20	10
			25
	19		5
			5
	20		6

**FIELD IDENTIFICATION OF MATERIAL**

Dark Brown silt, some sand (Fill)  
 Trace gravel, Trace Brick (moist)

4.5  
 Light Yellow cinders

5.5  
 Brown silt and sand, little cinders  
 Trace Gravel, (wet) (Fill)

8.5'  
 Black to olive gray sand, some gravel  
 (wet) (sheens) (topsoil)

10.5  
 Gray Gravel and sand, trace silt  
 (wet) (loose) (sheens)

Same (sheens and brown spots)

Same (strong odor + sheens)

18.5'  
 Brown + Gray silt, some sand  
 little gravel.

**WELL SCHEMATIC: COMMENTS**

Boring grouted with Bentonite Cement

TCL/TAL  
 ms/TMSD  
 +  
 grain size samples  
 0-6'

Lab  
 PATT  
 analysis  
 16-18

**STANDARD PENETRATION TEST**  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

**SUMMARY** Fill 0-8.5', Gravelly Sand and Silt 8.5-44.5  
Silty Sand and Gravel 44.5-71.5, Gravelly Sand 71.5-98

Contractor: <u>North Star</u>		<b>ENGINEERING-SCIENCE DRILLING RECORD</b>	BORING NO. <u>WB-2</u>
Driller: <u>Harry Lyons</u>			Sheet <u>2</u> of <u>5</u>
Inspector: <u>W.D. Lilly + U.S. Army</u>		PROJECT NAME <u>Wall Replacement</u>	Location _____
Rig Type: <u>CM 45-A-TV</u>		PROJECT NO. _____	
Drilling Method: <u>HS A-SS</u>			
GROUNDWATER OBSERVATIONS			
Water Level		Weather: <u>Cloudy 45°</u>	Plot Plan
Time		Date/Time Start <u>4/14 10:50 am</u>	
Date		Date/Time Finish _____	

Photocon Reading	Section ID	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
18			25	7	Gray sand and silt, little gravel		
		21		7			
				8			
8.6		2 1/2	12.5	22	Same (odor)		
				7			
		23		7			
				5	23'		
35.7		24	10	6	Gray sand and gravel, little silt (trace of black sheen)		
				4			
		25		3			
				4	No Recovery		
		26	0	4			
				8			
		27		6	Same (sheens)		
				6			
9.3		28	12.5	6			
				5	29'		
		29		10			
				12			
0		30	37.5	12	Fine to medium gray sand, some fine gravel (wet)		
				17			
		31		8			
				7	Same (slight septic odor)		
0		32	62.5	7			
				6			
		33		6	Same		
				5			
0		34	37.5	7			
				6	Fine to medium gray sand, some fine gravel, trace silt (slight odor)		
		35		5			
				6			
0		36	62.5	5	Same		
				8			
		37		9			
				7	Same		
0		38	2.5	6			
				NOT			
		39		4	Same		
				6			
0		40	2.5	6			
				12	Fine to medium gray sand, some fine gravel, little silt (wet)		
				9			

BTEY  
Sample  
36-38

STANDARD PENETRATION TEST	SUMMARY
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED	

Contractor: Northstar  
 Driller: Harry Lyons  
 Inspector: W. D. Lille, & N.A. Smith  
 Rig Type: CME 45-ATV  
 Drilling Method: HSA-SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-2  
 Sheet 3 of 5  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

**GROUNDWATER OBSERVATIONS**

Water Level		
Time		
Date		

Weather: \_\_\_\_\_  
 Date/Time Start \_\_\_\_\_  
 Date Time Finish \_\_\_\_\_

Plot Plan \_\_\_\_\_

Phone Number	Sample ID	Sample Depth	% Recovery	SPT
			25	12
		41		9
				8
27.5	42	50		7
				9
	43			8
				9
39.1	44	37.5		16
				15
	45			33
				19
100	46	25		16
				12
	47			22
				50/01
129	48	50		
				12
	49			12
				21
21	50	50		19
				38
	51			24
				34
NA	52	NA		48
				50/01
	53			
40.5	54	62.5		39
				33
	55			19
				18
78.2	56	25		40
				50/3'
	57			
34.1	58	50		17
				24
	59			28
				27
142	60	25		50
				50/2'

**FIELD IDENTIFICATION OF MATERIAL**

Fine-medium gray sand, some fine gravel  
 little silt (wet)  
 sand.

same (trace seen)  
 44.5'

Gray sand, little silt, little gravel  
 (Till) (wet)

(trace of Free phase at 47')

(trace of Free phase 48.5-49')

Gray sand, little silt, little gravel  
 (compact) (scattered Free phase  
 54-62 feet)

**WELL SCHEMATIC**

**COMMENTS**

PAH + CW  
 Sample  
 42-44

BTEX  
 Sample  
 50-52

PAH  
 Sample  
 54-56

**STANDARD PENETRATION TEST SUMMARY**  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

Contractor: North Star  
 Driller: Harry Lyons  
 Inspector: W.D. Willey & M.A. Smith  
 Rig Type: CM E 45-ATV  
 Drilling Method: HSA-SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-2  
 Sheet 4 of 5  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

GROUND WATER OBSERVATIONS			
Water Level			
Time			
Date			

Weather: \_\_\_\_\_  
 Date/Time Start \_\_\_\_\_  
 Date Time Finish \_\_\_\_\_

Plot Plan \_\_\_\_\_

Provenance Reading	Success ID	Sample Depth	% Recovery	SPT
142		6.1	25	50
				50/21
129		6.2	62.5	18
		6.3		25
				28
128		6.4	62.5	31
				18
		6.5		32
				22
93.4		6.6	62.5	41
				20
		6.7		20
				20
52.7		6.8	50	18
				20
		6.9		25
				23
110		7.0	62.5	22
				21
		7.1		17
				16
110		7.2	50	21
				18
		7.3		18
				17
85.1		7.4	37.5	16
				21
		7.5		14
				14
73.1		7.6	50	15
				20
		7.7		15
				20
21.2		7.8	VR	17
				20/1
		7.9		
97.4		8.0	62.5	
				17
				16

**FIELD IDENTIFICATION OF MATERIAL**

Gray Sand, some silt, little gravel  
 (trace free phase in seams)

Gray sand, some gravel, little silt (shcen)

Same (Scattered free phase layers!)

same (Free phase 66-66.5')

Gray Sand, some silt, little gravel  
 (no shcen or free phase)

same  
 (Free phase 70.5-71)

71.5'

Gray Sand, some gravel, little silt  
 (loose) (Free phase)

Gray sand, some gravel (loose) (Free phase)

same (Free phase 76.75-77 feet)

same

Gray sand, some gravel, trace silt  
 in partings (1/4" thick)

**WELL SCHEMATIC** \_\_\_\_\_

**COMMENTS**  
 BTEX & PHH sample 64-66'

**STANDARD PENETRATION TEST SUMMARY**  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

Contractor: North star  
 Driller: Harry Lyons  
 Inspector: W.D. Lillo, or N. Smith  
 Rig Type: CME 45-ATV  
 Drilling Method: HSA - SS

## ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-2  
 Sheet 5 of 5  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

GROUNDWATER OBSERVATIONS		
Water Level		
Time		
Date		

Weather: \_\_\_\_\_  
 Date/Time Start: \_\_\_\_\_  
 Date/Time Finish: \_\_\_\_\_

Plot Plan \_\_\_\_\_

Penetration Reading	Sample LLA	Sample Depth	% Recovery	SPT
47.4			62.5	17
		81		16
				15
94.8		82	50	20
				18
		83		19
				15
27		84	75	14
				11
		85		14
				14
25		86	37.5	15
				9
		87		14
				11
		88		10
		89		
		90		
		91		
		92		
		93		
		94		
		95		
		96		
		97		
		98		
		99		
		100		

**FIELD IDENTIFICATION OF MATERIAL**

Gray sand, some gravel, trace silt in parting (2 1/2" thick)  
 (2" free phase on top of silt at 81')

Gray sand, some gravel, (compact) (free phase)  
 (5 holes)  
 (free phase)

Boring terminated at 88'

WELL SCHEMATIC	COMMENTS
	PAH sample 80-82
	BTEXT PAH sample 86, 88'

**STANDARD PENETRATION TEST SUMMARY**  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

Contractor: North star  
 Driller: Harry Lyons  
 Inspector: W. D. Lilley  
 Rig Type: CME 45-ATV  
 Drilling Method: HSA-SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-3  
 Sheet 1 of 4  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

**GROUNDWATER OBSERVATIONS**  
 Water Level | 8.4 |  
 Time | 1:00 |  
 Date | 4/4 |

Weather: pt Cloudy to light Rain 50°  
 Date/Time Start 4/4/95 9:30 am  
 Date/Time Finish 4/6/95 3:00 pm

Plot Plan  
 On on edge → 2  
 Creek  
  
 NMPCH 9

Photo Recovery	Sample Depth	% Recovery	SPT
			2
	1		2
			6
	2	50	4
			2
	3		1
			1
	4	60	1
			3
	5		4
			20
	6	70	12
			4
	7		4
			10
	8	30	36
			9
	9		9
			9
	10	80	26
			6
	11		8
			7
	12	50	11
			9
	13		7
			10
	14	10	11
			6
	15		10
			5
	16	5	4
			5
	17		7
			6
	18	25	6
			10
	19		4
			11
	20	50	6

**FIELD IDENTIFICATION OF MATERIAL**

Dark Brown to Black sand, little silt,  
 Trace cinders, trace gravel (Fill)  
 (moist)

Same  
 5.0'

Gray Gravel (Fill)  
 7.0'

Brown sand and gravel, trace silt  
 (wet)

Same

Black sand and gravel, trace silt  
 (wet) (5 heens)

Dark Gray sand and gravel (Sheens)  
 (wet)

Same (Sheens)

**WELL SCHEMATIC**

Boring  
 Grouted  
 with  
 Bentonite  
 Cement

0-6  
 TML/TCL  
 m&ms.D

Boring  
 grouted  
 cement/  
 Bentonite

PAH+STW  
 12-14

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

**SUMMARY** 0-7 Fill sand and gravel to 46.5, fill  
 silty sand and gravel to 72', gravel + sand to 78'

Contractor: Northstar  
 Driller: Harry Lyons  
 Inspector: W. D. Lilley  
 Rig Type: CME 4S-ATV  
 Drilling Method: MSA-SS

## ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-3

Sheet 2 of 4

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

Location \_\_\_\_\_

**GROUNDWATER OBSERVATIONS**

Water Level			
Time			
Date			

Weather: Lt Rain and Snow 38°

Date/Time Start 4/4

Date Time Finish \_\_\_\_\_

Plot Plan

See Sheet #1

Feet From Surface	Sample ID	Sample Depth	% Recovery	SPT
			25	22
		21		34
				12
		22	20	12
				16
		23		10
				10
		24	25	12
				10
		25		10
				6
		26	5	7
				8
		27		6
				5
		28	20	5
				4
		29		10
				7
		30	20	7
				7
		31		4
				6
		32	15	7
				8
		33		6
				7
		34	5	8
				9
		35		7
				10
		36	10	12
				8
		37		8
				8
		38	20	16
				14
		39		30
				11
		40		11

**FIELD IDENTIFICATION OF MATERIAL**

**WELL SCHEMATIC**

**COMMENTS**

Dark Gray Sand + gravel, Trace Silt  
(wet) (Shears)

Same (strong shears)

Same

Same

Same (shears)

Same

Same

Same

Gray Sand + Gravel (shears)

Same

Bore hole  
PID = 2  
LEL = 2000

PAH, BTEX  
+ CN-  
30-32'

**STANDARD PENETRATION TEST**

**SUMMARY**

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

Contractor: Northstar  
 Driller: Harry Lyons  
 Inspector: W. D. Lilley  
 Rig Type: CMG 45-ATV  
 Drilling Method: HS A - SS

## ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-3  
 Sheet 3 of 4  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			

Weather: Snow 30° → 20°  
 Date/Time Start 4/4  
 Date/Time Finish \_\_\_\_\_

Plot Plan  
 See Sheet # 1

Photo Reading	Sample ID	Sample Depth	% Recovery	SPT
			25	7
		41		7
				7
		42	5	7
				7
		43		11
				8
		44	30	8
				9
		45		8
				7
		46	20	9
				14
		47		5
				7
		48	25	10
				8
		49		12
				10
		50	20	10
				16
		51		11
				15
		52	25	19
				38
		53		50/3"
				↓
		54	5	30/3"
				auger
		55		↓
				↓
		56	30	↓
				20
		57		24
				30
		58	80	30
				21
		59		23
				22
		60		17

FIELD IDENTIFICATION OF MATERIAL

Gray sand, some gravel, little silt  
 (slight sheen)

Same

Gray sand, some silt, little gravel  
 (little sheen)

46.5'

Gray sand and gravel, trace silt  
 (fill) (trace odor)

Same  
 (2" gravel layer stained)

Same (stains)

Same

Same

Gray sand, some gravel, trace silt  
 (stiff) (slight odor)

WELL SCHEMATIC	COMMENTS
	Lab BTEX + PAH 52-57.5
	CN 58-60

STANDARD PENETRATION TEST SUMMARY \_\_\_\_\_  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED



Contractor: North star  
 Driller: Harry Lyons  
 Inspector: E N Felte & W.D. Lilly  
 Rig Type: CM E 45-ATV  
 Drilling Method: HSA-SS

# ENGINEERING-SCIENCE DRILLING RECORD

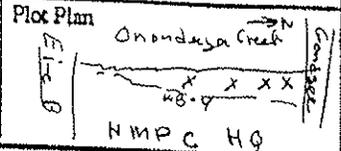
BORING NO. WB-4  
 Sheet 1 of 4  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

GROUNDWATER OBSERVATIONS

Water Level	5.9
Time	8:15
Date	4/13

Weather: Rain 52  
 Date/Time Start 4/12/95 0830  
 Date Time Finish 4/13/95 11:00



Photores Reaction	Secale ID	Sample Depth	% Recovery	SPT
			50	1
		1		1
				1
		2	60	1
				3
		3		8
				6
		4	30	2
				2
		5		2
				3
		6	35	3
				6
		7		15
				20
		8	0	12
				10
		9		9
				8
		10	50	7
				5
		11		4
				3
		12	40	5
				4
		13		7
				5
		14	30	7
				2
		15		4
				8
		16	40	6
				4
		17		5
				4
		18	25	6
				4
		19		4
				3
		20		8

FIELD IDENTIFICATION OF MATERIAL

Brown silt, little sand

3.5' -----

Black silt with odor, trace brick & trace concrete

6.0' -----

Black gravel, some sand, little silt (odor of silt)

10' -----

Gray sand, little gravel, little silt (wet) (shen) (Free phase) (odor.s)

same

-----

Gray gravel, little sand, little silt (stainy shen, Free phase) (purific. odor)

same

-----

Same

WELL SCHEMATIC: Boring Grouted with Bentonite Cement

COMMENTS: TCL/TAL  
 6-8' PAN  
 BTEX  
 CN-  
 TCL PG-9'  
 Haz waste sample

STANDARD PENETRATION TEST SUMMARY Fill 0-6, Sand and gravel 6-48'  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED Silty sand and gravel (fill) 48-67.5'

Contractor: North star  
 Driller: Harry Lyons  
 Inspector: EA Felton & W.D. Lill  
 Rig Type: CM 5 45-RTV  
 Drilling Method: HS A - SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-4  
 Sheet 2 of 4  
 Location: \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

**GROUNDWATER OBSERVATIONS**

Water Level	
Time	
Date	

Weather: \_\_\_\_\_  
 Date/Time Start: \_\_\_\_\_  
 Date Time Finish: \_\_\_\_\_

Plot Plan

Flowmeters Reading	Annular LL	Sample Depth	% Recovery	SPT
			25	13
		21		12
				16
		22	45	12
				10
		23		10
				10
		24	55	14
				7
		25		6
				8
		26	65	5
				6
		27		5
				5
		28	40	4
				4
		29		5
				7
		30	5	5
				9
		31		9
				9
		32	5	4
				4
		33		7
				10
		34	0	20
				50/10
		35		
		36		
		37	25	5
				7
		38		6
				6
		39		7
				8
		40		6

**FIELD IDENTIFICATION OF MATERIAL**

Gray gravel and silt, little sand (wet)  
 (Brown stain, sheen, free phase, odor)  
 same  
 same  
 same  
 same  
 same (center appears clean)  
 32 - - - - -  
 Gray sand, little silt, trace gravel  
 33 - - - - -  
 (Cobble)  
 Brown gravel and sand, trace silt  
 same (Free phase, odor & sheen)

**WELL SCHEMATIC**

PAK, BTEX  
 CN -  
 20-22

PAH, BTEX  
 CN -  
 38-40'

STANDARD PENETRATION TEST SUMMARY \_\_\_\_\_  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

Contractor: North star  
 Driller: Harry Lyons  
 Inspector: EA Felk. & W. D. Lill  
 Rig Type: CME 45-ATV  
 Drilling Method: HSA-SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-4  
 Sheet 3 of 4  
 Location \_\_\_\_\_

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			

Weather: \_\_\_\_\_  
 Date/Time Start \_\_\_\_\_  
 Date Time Finish \_\_\_\_\_

Plot Plan \_\_\_\_\_

Probes / Rods	Sample ID	Sample Depth	% Recovery	SPT
			0	2
	41			9
				8
	42	10		16
				4
	43			4
				7
	44	10		6
				Work
	45			7
				8
	46	60		9
				6
	47			7
				7
	48	50		6
	49			7
				9
	50	50		9
				11
	51			14
				67
	52	0		14
				15
	53			23
				17
7	54	50		16
				17
	55			27
				23
7	56	25		29
				35
	57			25
				50/4'
	58	5		30
				100/0'
	59			
	60			

FIELD IDENTIFICATION OF MATERIAL

Brown gravel and sand little silt  
 (wet) (stained) (odor) (sheen)

Same

Same (no stain or sheen)

48'

Gray brown gravel & silt, little sand  
 (Till)

Same

Same

Same

Same (Brown stains)

Same

WELL SCHEMATIC

COMMENTS

BTET, PAH  
 CR  
 50-52

PAH  
 Sample  
 56-58

STANDARD PENETRATION TEST SUMMARY \_\_\_\_\_  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED \_\_\_\_\_

Contractor: North star  
 Driller: Harry Lyons  
 Inspector: W.D. Lilly  
 Rig Type: CME 45-ATV  
 Drilling Method: HS A - SS

## ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-4

Sheet 4 of 4

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

Location \_\_\_\_\_

GROUNDWATER OBSERVATIONS		
Water Level		
Time		
Date		

Weather: \_\_\_\_\_  
 Date/Time Start: \_\_\_\_\_  
 Date Time Finish: \_\_\_\_\_

Plot Plan \_\_\_\_\_

Picture Reading	Sample Int.	Sample Depth	% Recovery	SPT
5			10	10
		61		20
				30
25		62	10	26
				14
		63		12
				11
		64	10	12
				20
		65		24
				23
		66	25	26
				20
		67		30
				59/4'
		68		
		69		
		70		
		1		
		2		
		3		
		4		
		5		
		6		
		7		
		8		
		9		
		0		

### FIELD IDENTIFICATION OF MATERIAL

WELL SCHEMATIC

COMMENTS

Gray sand and gravel, little silt

same (shears)

same (no shears)

same (no shears)

Boring terminated at 67.5'

66-67.5  
 PAH,  
 BTEX  
 CN-  
 Sample

STANDARD PENETRATION TEST

SUMMARY \_\_\_\_\_

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

Contractor: Northstar  
 Driller: Harry Lyons  
 Inspector: W. D. Lilley  
 Rig Type: CM E 45-ATV  
 Drilling Method: HS A - SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-5  
 Sheet 1 of 3  
 Location Southern most  
boring

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

GROUNDWATER OBSERVATIONS	
Water Level	<u>5.9</u>
Time	<u>11:35</u>
Date	<u>4/10</u>

Weather: Sunny 90°  
 Date/Time Start 4/10 9:30 am  
 Date/Time Finish 4/11 11:00 am

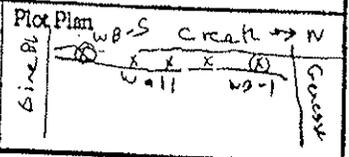
Plot Plan  


Photo No	Sample ID	Sample Depth	% Recovery	SPT
3			50	1
		1		8
				8
		2	30	49
				8
		3		5
				8
		4	50	11
				2
		5		2
				2
		6	60	2
				3
		7		2
				8
		8	50	9
				5
		9		7
				8
		10	50	7
				10
		11		12
				8
13		12	30	12
				9
		13		5
				5
12		14		6
				4
		15		5
				5
8		16		4
				4
		17		4
				7
6		18		10
				9
		19		8
				6
0		20		6

**FIELD IDENTIFICATION OF MATERIAL**

Dark Brown silt + sand little gravel  
 1.5  
 Concrete  
 2.5  
 Gray + Red sand, little gravel,  
 Trace silt, Trace coal  
 (moist to wet) (Fill)  
 (1" layer of yellow cinders)  
 6.5  
 7.0 Black sand (Sewer odor) (Wet)  
 8.0' Gray sand  
 Gray Brown sand, little gravel (wet)  
 10.0' \_\_\_\_\_  
 Gray Brown sand and gravel (wet)  
 \_\_\_\_\_  
 Brown and Black gravel and sand  
 trace silt (slight odor)  
 same  
 Same  
 Same

**WELL SCHEMATIC: COMMENTS**

Boring  
 Grouted  
 with  
 Bentonite  
 Cement

0-6  
 Sample with  
 3" open  
 T4L/TCH  
 +  
 Grain-Size

P4H+  
 BTEX  
 6-8

**STANDARD PENETRATION TEST**  
 SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

**SUMMARY** Fill 0-6.5, Sand + Gravel 8.0-52  
Silty sand and gravel (fill) 52-56

Contractor: Northstar  
 Driller: Harry Lyons  
 Inspector: W. D. Lilley  
 Rig Type: CM E 45-ATV  
 Drilling Method: HB A - SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-5

Sheet 2 of 3

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

Location: \_\_\_\_\_

**GROUNDWATER OBSERVATIONS**

Water Level	
Time	
Date	

Weather: \_\_\_\_\_  
 Date/Time Start \_\_\_\_\_  
 Date Time Finish \_\_\_\_\_

Plot Plan

Photo No Rocking	Sample ID	Sample Depth	% Recovery	SPT
				6
		21		6
0		22		7
				7
		23		7
				7
5		24		6
				10
		25		5
				5
3		26		5
				8
		27		6
				5
3		28		8
				6
		29		8
				13
3		30		8
				6
		31		8
				13
		32	0	12
				10
		33		12
				14
6.7		34	10	12
				8
		35		9
				10
0		36	30	7
				8
		37		9
				7
2.2		38	30	8
				9
		39		6
				6
		40		4

**FIELD IDENTIFICATION OF MATERIAL**

WELL SCHEMATIC

COMMENTS

Brown and Black Sand and gravel  
 (No odor) trace silt

same

same (Slight odor)

26' \_\_\_\_\_

Brown and Black gravel, some little sand  
 + trace silt (Slight odor)

same

30' \_\_\_\_\_

Gray Gravel, some sand, trace silt  
 (Slight odor)

33' \_\_\_\_\_

Gray FFC Gravel + Fine to coarse sand  
 little silt (Slight odor)

same (No odor)

same

**STANDARD PENETRATION TEST**

**SUMMARY**

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

# ENGINEERING-SCIENCE DRILLING RECORD

Director: North star  
 Officer: Harry Lyons  
 Inspector: W. D. Lilley

BORING NO. WB-5

Sheet 3 of 3

Rig Type: CME 4S-4TV

PROJECT NAME Wall Replacement

Location \_\_\_\_\_

Drilling Method: HS A - SS

PROJECT NO. \_\_\_\_\_

**GROUNDWATER OBSERVATIONS**

Water Level	
Time	
Date	

Weather: \_\_\_\_\_  
 Date/Time Start \_\_\_\_\_  
 Date Time Finish \_\_\_\_\_

Plot Plan \_\_\_\_\_

Photo No / Sample Reading	Sample ID	Sample Depth	% Recovery	SPT
			0	1
		41		.2
				1
1.2		42	10	2
		43		1
				7
5.2		44	15	4
		45		1
				5
				7
C		46	35	5
		47		7
				7
O		48	45	7
		49		8
				7
O		50	35	9
				8
		51		10.4
				8
		52	35	22
				18
		53		30
				11
		54		7
				12
				15
		55		19
				22
		56		23

**FIELD IDENTIFICATION OF MATERIAL**

Brown silt and sand, little F-C gravel  
 43.5'  
 Gray sand and gravel, little silt  
 Same  
 Same  
 Same  
 Same  
 52'  
 Gray sand & gravel, some silt (fill)  
 Boring terminated at 56'

**WELL SCHEMATIC**

**COMMENTS**

PAH  
 BTEX  
 CN  
 54-56'

STANDARD PENETRATION TEST

SUMMARY \_\_\_\_\_

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

Contractor: North star  
 Driller: Harry Lyons  
 Inspector: N. A. Smith  
 Rig Type: CM 45-ATV  
 Drilling Method: HSA-SS

# ENGINEERING-SCIENCE DRILLING RECORD

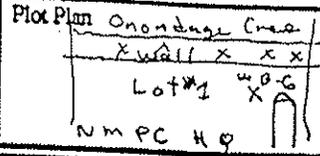
BORING NO. WB-6  
 Sheet 1 of 4  
 Location NMPC Parking  
Lot

PROJECT NAME Wall Replacement  
 PROJECT NO. \_\_\_\_\_

**GROUNDWATER OBSERVATIONS**

Water Level		
Time		
Date		

Weather: Sunny 60°  
 Date/Time Start 4/20/95 12:55  
 Date/Time Finish 4/21/95 1330



Procedure Reading	Sample ID	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
2.1			50	12	Gray sand, some crushed stone (dry)	Boring Grouted with Bentonite Cement	TCL/TCL MS/MSB single 0-6
		1		43			
				37			
2.5		2	62.5	40	light Brown sand (dry)		
				33			
		3		31			
				27			
2.4		4	75	22	same		
				18			
		5		15			
				15	S.S		
2.2		6	62.5	12	Dark brown silt, some fine sand, trace brick,		
				6			
		7		6			
				6			
3.1		8	25	7	same		
				8			
		9		8			
				7			
11.5		10	75	6	same (stained 10-5 - 14.75) (odor)		
				4			
		11		6			
				2			
25.9		12	50	2	same (moist to wet)		
				2			
		13		8			
				6			
85.9		14	75	7	15'		
				1			
		15		1			
				1			
99		16	75	1	Dark gray silt, Trace sand, trace clay		
				2			
		17		3			
				4	(stained 16-17)		
65		18	87.5	3	Same		
				1			
		19		3			
				4			
460		20	25	7	20' (thick black Free phase)		
				13	Gray brown sand, little silt, little gravel (moist)		
				14			

GRAVELLY SAND  
 CN -  
 14-16

**STANDARD PENETRATION TEST**

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY Fill 0-5.5, Sandy silt 5.5-7.0,  
Gravelly Sand 20-60', Silty Sand to Gravel 60-70

Contractor: North Star

Driller: Harry Lyons

Inspector: N. A. Smith

Rig Type: CM E 45-A-TV

Drilling Method: HS A - SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-6

Sheet 2 of 4

PROJECT NAME Wall Replacement

PROJECT NO.

Location

## GROUNDWATER OBSERVATIONS

Water Level

Time

Date

Weather:

Date/Time Start

Date Time Finish

Plot Plan

Photo Reading	Sample ID	Sample Depth	% Recovery	SPT
460			25	13
		21		16
				13
125		22	12.5	24
				20
		23		14
				12
392		24	25	14
				7
		25		7
				6
274		26	32.5	7
				6
		27		6
				6
274		28	25	9
				WOR
		29		4
				6
375		30	50	12
				15
		31		9
				10
227		32	50	10
				8
		33		12
				17
166		34	25	15
				4
		35		5
				9
NA		36	NR	16
				11
		37		10
				11
173		38	25	19
				3
		39		6
				8
55		40	50	6
				33
				14

## FIELD IDENTIFICATION OF MATERIAL

WELL SCHEMATIC

COMMENTS

Gray brown sand, little silt, little gravel (moist)

Same (Sheen 22-24') (wet)

Same (Brown Free phase 24-26')

Gray sand, some gravel (wet) (Sheen)

Same (Sheen & odor)

Same (heavy sheen, little Free phase)

Gray sand, some gravel, little silt (Free phase)

Same (heavy sheen 34.3-38.25)

Same (No sheen)

Same (sheen)

BTG, PAH,  
CN - Lab  
sample  
30-32

## STANDARD PENETRATION TEST

## SUMMARY

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

Location: North star

Driller: Harry Lyons

Inspector: NA Sm. 42

Rig Type: CME 45-RTV

Drilling Method: HS A - SS

# ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. WB-6

Sheet 3 of 4

PROJECT NAME Wall Replacement

PROJECT NO.

Location

### GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			

Weather:

Date/Time Start

Date Time Finish

Plot Plan

Penetration Reading	Sample ID	Sample Depth	% Recovery	SPT
55.9			50	23
		41		14
				9
NR		42	NR	8
				8
		43		8
				8
139		44	37.5	7
				4
		45		4
				5
140		46	37.5	7
				5
		47		6
				9
45.5		48	50	14
				5
		49		6
				7
93.9		50	62.5	7
				8
		51		15
				16
35.1		52	62.5	10
				8
		53		8
				10
36.3		54	20	30
				10
		55		8
				7
35		56	92.5	8
				7
		57		7
				7
20.8		58	12.5	9
				6
		59		6
				7
20.3		60	20	7
				6
				14

### FIELD IDENTIFICATION OF MATERIAL

WELL SCHEMATIC COMMENTS

Gray sand, some gravel (shorn)

Same (Trace shorn)

Same

Gray sand, some gravel, little silt

Gray sand, little gravel, little silt (no shorn)

Gray sand, some silt, little gravel

same

same

same

60'

Gray sand, some silt, some gravel

BTEX PAH  
Sample  
48-50

### STANDARD PENETRATION TEST

### SUMMARY

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED



ARCADIS

**Appendix A**

Well Construction Logs and Soil  
Boring / Test Pit Logs

**APPENDIX A  
ELEVATIONS  
WELL CONSTRUCTION LOGS AND SOIL BORINGS/TEST PIT LOGS**

**FINAL REMEDIAL INVESTIGATION REPORT  
NATIONAL GRID  
ERIE BOULEVARD FORMER MGP SITE  
SYRACUSE, NEW YORK**

Location ID	Elevations (feet, NAVD 88)	
	Measuring Point	Ground
MW-1S	390.82 (thru 4/25/08)	391.23 (thru 4/25/08)
	390.76 (after 4/25/08)	391.35 (after 4/25/08)
MW-1D	390.49	391.1
MW-2	391.16 (thru 4/25/08)	391.45 (thru 4/25/08)
	391.35 (after 4/25/08)	391.95 (after 4/25/08)
MW-3S	395.26	395.7
MW-3D	395.68	395.7
MW-4S	388.74	389.5
MW-4D	389.12	389.5
MW-6	400.71	398.2
MW-7S	388.22	388.4
MW-7D	387.98	388.3
MW-8S	398.06	398.4
MW-8D	398.09	398.4
MW-9D <sub>1</sub>	397.92	398.3
MW-9D <sub>2</sub>	398.10	398.5
MW-10S	394.37	394.8
MW-10D	394.49	394.8
MW-11D	394.50	392.2
MW-12D	399.24	399.6
MW-13D	399.05	397.1
MW-14D	398.27	396.4
MW-15D	398.82	399.4
MW-16D	398.80	399.3
MW-17D	387.63	388.2
MW-18D	376.31	376.7
MW-19	390.73	391.1
PZ-1	376.99	374.1
PZ-2	378.70	376.0
PZ-3	393.94	392.1

Location ID	Ground Surface Elevation (feet, NAVD 88)
SB-1	390.9
SB-2	391.8
SB-3	393.6
SB-4	388.2
SB-5	387.1
SB-7	392.3
SB-8	387.3
SB-9	391.3
SB-10	388.7
SB-11	391.1
SB-12	389.6
SB-13	388.7
SB-14	388.6
SB-15	389.4
SB-16	388.4
SB-17	387.1
SB-18	389.8
SB-19	387.6
SB-20	387.2
SB-21	389.9
WB-1	374.6
WB-2	373.9
WB-3	376.4
WB-4	374.6
WB-5	374.9
WB-6	389.0
TP-1	389.9
TP-2	389.5
TP-2A	389.2

**Notes:**

1. NAVD 88 = North American Vertical Datum of 1988, based on NGS Station S-34, elevation 405.340 feet.
2. Wells MW-1S and MW-2 were modified on April 25, 2008 so that the cover for each well is flush with new asphalt pavement installed in Fall 2007. Casings were extended and new curb boxes were installed. Wells were resurveyed on May 12, 2008.

ARCADIS

**Soil Boring Logs**

# SAMPLE/CORE LOG

Boring/Well SB-1 Project/No. Eric Blvd. PSA/IRM AY0207.001 Page 1 of 2

Site Location Syracuse, NY Drilling Started 8/8/95 Drilling Completed 8/8/95

Total Depth Drilled 50 feet Hole Diameter 8 inches Type of Sample/ Coring Device Split-Spoon

Length and Diameter of Coring Device 2' x 2" (2' x 3" for lab sample) Sampling Interval 2 feet

Land-Surface Elevation 390.9 feet  Surveyed  Estimated Datum NAVD 93 -NGVD 1929

Drilling Fluid Used Water Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff, Inc. Driller Brian Waters Helper Rick Navatka

Prepared By S. Blackmer Hammer Weight 140 lb. Hammer Drop 30 inches

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	0.0	0.5	--	--	Asphalt.
0.0	0.5	2.0	1.5	9,7,8	Fill: Brown to reddish brown fine Sand, some silt, some gravel, (rock fragments of various composition, cinders, coal), dry.
0.0	2.0	4.0	0.5	8,7,3,1	Fill: Gravel (brick fragments, cinders, coal, rock), little sand, dry.
0.0	4.0	6.0	0.5	5,3,6,7	Fill: Like above, damp in some zones.
0.0	6.0	8.0	2.0	4,3,3,4	Fill: Gravel (coal, cinders and ash, brick fragments and rock), some sand, trace silt, dry (damp in zones).
0.0	8.0	10.0	0.75	15,22,7,4	Brown, very fine Sand, some gravel, trace silt, damp.
0.0	10.0	12.0	0.2	8,4,3,5	Same as above.
0.0	12.0	14.0	0.2	5,3,2,1	Same as above; wet.
0.0	14.0	16.0	2.0	1,2,8,13	Brown Silt, some clay, trace fine sand, trace fine gravel, damp to wet.
0.0	16.0	18.0	0.3	80,35,36,22	Top 1": like above; Bottom 2": Gravel, little silt, rock flour, dry.
2.9	18.0	20.0	1.0	8,18,15,10	Brown very fine to fine Sand, some silt, some gravel, trace clay, damp.
0.2	20	22	1.0	15,26,28,14	Brown silty Sand and Gravel, damp (with wetter zones in more gravelly zones).
0.0	22	24	1.2	24,14,14,18	Same as above with trace clay, Bottom 7" wetter than top 7" but not saturated.
9.0	24	26	0.8	14,15,16,12	Gravel, little sand, trace silt, strong petroleum hydrocarbon odor, wet, little sheen.
7.5	26	28	0.5	18,11,12,6	Gravel (finer than above) and Sand, trace silt, strong odor, sheen, trace visible petroleum (brownish liquid).
1.6	28	30	1.5	9,7,6,5	Same as 26' to 28'.





# SAMPLE/CORE LOG

Boring/Well SB-2 Project/No. Erie Blvd. PSA/IRM AY0207.001 Page 1 of 2

Site Location Syracuse, NY Drilling Started 8/15/95 Drilling Completed 8/15/95

Total Depth Drilled 43.5 feet Hole Diameter 8 inches Type of Sample/ Coring Device Split-Spoon

Length and Diameter of Coring Device 2' x 2" (2' x 3" for lab sample) Sampling Interval 2 feet

Land-Surface Elevation 391.8 feet  Surveyed  Estimated Datum NAVD 88  
~~NGVD 1929~~

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff, Inc. Driller Brian Waters Helper Layne Pech

Prepared By S. Blackmer Hammer Weight 140 lb Hammer Drop 30 inches

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	0.0	0.5			Asphalt.
0.0	0.5	2.0	0.5	7, 9-7	Brown Sand and Gravel, dry, loose.
0.0	2.0	4.0	1.0	3-5, 9-15	Similar to above but more compact with trace silt.
0.0	4.0	6.0	1.2	7-7, 6-4	Brown to reddish brown Sand and Gravel, little to trace silt, dry to damp.
0.0	6.0	8.0	1.0	2-2, 3-3	Brown very fine to coarse Sand and Gravel (finer than above), trace silt, fairly loose, dry to damp.
0.0	8.0	10.0	0.75	12-26, 25-14	Brown very fine to coarse Sand, and Gravel, dry, loose.
0.0	10.0	12.0	1.2	10-14, 23-12	Same as above.
0.0	12.0	14.0	1.0	15-9, 11-11	Same as above.
0.0	14.0	16.0	0.2	17-12, 4-3	Same as above, but damp.
0.0	16.0	18.0	1.0	13-9, 11-8	Same as above, dry with damp zones.
	18.0	20.0	0.0	50/2	No recovery.
0.0	20.0	22.0	0.25	29-18, 12-12	Gravel and brown Sand, dry.
0.0	22.0	24.0	1.0	22-22, 12-14	Gravel (various sizes, compositions, and textures), and very fine to coarse sand, dry except for bottom 2" wet.
0.0	24.0	26.0	0.75	9-19, 11-9	Gravel, some sand, little to trace fines (silt and clay), wet, faint sheen, no odor.
0.0	26.0	28.0	0.5	13-11, 8-9	Gravel (various sizes, compositions), little sand, trace silt and clay, wet, faint sheen, faint petroleum hydrocarbon odor.





# SAMPLE/CORE LOG

Boring/Well SB-3 Project/No. Erie Blvd. PSA/IRM AY0207.001 Page 1 of 2

Site Location Syracuse, NY Drilling Started 8/14/95 Drilling Completed 8/14/95

Total Depth Drilled 50 feet Hole Diameter 8 inches Type of Sample/  
Coring Device Split-Spoon

Length and Diameter of Coring Device 2' x 2" (2' x 3" for lab sample) Sampling Interval 2 feet

Land-Surface Elevation 393.6 feet  Surveyed  Estimated Datum NAVD 88  
NGVD 1929

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff, Inc. Driller Layne Pech Helper Brian Waters

Prepared By S. Blackmer Hammer Weight 140 lb Hammer Drop 30 inches

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	0.0	0.5			Asphalt.
0.0	0.5	2.0	1.0	13,17,8	Gravel (natural and brick), and brown sand, dry.
0.0	2.0	4.0	1.75	10,8,7,6	Top 3": Like above. Bottom 16": Brown very fine Sand, some gravel, little silt, little coarse sand; top 6" dry, bottom 10" damp.
0.0	4.0	6.0	1.75	3,6,10,22	Brown to dark brown very fine Sand, some gravel, little silt, trace clay, trace coarse sand, dry with damp zone in middle of sample.
0.0	6.0	8.0	1.5	28,20,23,19	Brown Sand and Gravel (various compositions, sizes, and textures), dry.
0.0	8.0	10.0	1.0	9,16,12,9	Brown very fine to coarse Sand and Gravel, little to trace silt, top 2" damp, the rest of sample dry.
0.0	10.0	12.0	1.0	23,18,50/0.4	Same as above, dry.
0.0	12.0	14.0	1.3	9,13,14,10	Same as above, dry to damp.
0.0	14.0	16.0	1.5	16,35,31,14	Brown to red-brown very fine to coarse Sand and Gravel, trace silt, dry.
0.0	16.0	18.0	0.5	22,72	Brown very fine to coarse Sand and Gravel, dry.
0.0	18.0	20.0	0.4	23,14,14,10	Brown very fine to medium Sand, some gravel, trace silt, dry.
0.0	20.0	22.0	0.5	26,25,12,12	Gravel (gray siltstone, angular, fine to coarse), little brown very fine to coarse sand.
0.0	22.0	24.0	1.0	11,26,50/0.3	Brown very fine to coarse Sand, some gravel, trace silt, dry.
0.0	24.0	26.0	1.5	22,22,11,13	Top 8": Gravel (various compositions and sizes), trace sand, dry.





# SAMPLE/CORE LOG

Boring/Well SB-4 Project/No. Eric Blvd. PSA/IRM AY0207.001 Page 1 of 2

Site Location Syracuse, NY Drilling Started 8/23/95 Drilling Completed 8/23/95

Total Depth Drilled 50 feet Hole Diameter 8 inches Type of Sample/ Coring Device Split-Spoon

Length and Diameter of Coring Device 2' x 2" (2' x 3" for lab sample) Sampling Interval 2 feet

Land-Surface Elevation 388.2 feet  Surveyed  Estimated Datum NAVD 88  
NGVD 1929

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff, Inc. Driller Brian Waters Helper Layne Pech

Prepared By C. Moul Hammer Weight 140 lb Hammer Drop 30 inches

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	0.0	0.5	-		Asphalt.
0.0	0.5	2.0	0.8	8, 17-13	Top 5": Brown, silty Sand and gravel, moist. Bottom 4": Yellow-brown Sand, trace clay, moist, no odor.
0.0	2.0	4.0	0.8	6-11, 7-6	Top 4": Red-brown Sand and gravel (broken brick), dry. Bottom 5": Yellow-brown Sand, trace clay, dry.
0.3	4.0	6.0	0.2	4-4, 2-1	Red-brown Sand and gravel (broken brick), dry, fragment of red sandstone.
1.3	6.0	8.0	0.5	1-7, 8-6	Dark brown Sand, little sand and silt, moist, odor.
2.5	8.0	10.0	1.5	4-5, 5-9	Top 12": Black clayey Silt, moist, odor. Bottom 6": Black, silty Sand, moist, odor.
4.7	10.0	12.0	1.2	3-3, 4-6	Top 6": Black-brown, clayey Silt, little sand, moist, odor. Bottom 8": Black, sandy Silt, trace clay, moist, odor.
22.3	12.0	14.0	1.0	4-4, 4-6	Black Sand, silt, trace clay, moist, odor, thick petroleum stringers.
25.0	14.0	16.0	2.0	1-1, 2-1	Black and dark brown, silty Clay, little fine sand, moist, odor.
23.3	16.0	18.0	2.0	3-3, 3-6	Top 6": Black fine sandy Silt, moist, odor, petroleum droplets; bottom 18": Dark brown to brown, fine, silty Sand, trace clay, odor, moist, no petroleum.
25.2	18.0	20.0	1.3	7-16, 12-11	Black, fine, sandy Silt, moist, odor, petroleum stringers and droplets.
20.3	20.0	22.0	1.0	6-9, 13-50/2	Black Sand and Gravel, little silt, trace clay, wet, odor.



# SAMPLE/CORE LOG (Cont.d)

Boring/Well SB-4

Prepared by C. Moul

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
	22.0	24.0	0.0	50/2	No recovery.
27.5	24.0	26.0	0.7	13-13 , 12-14	Black Sand and gravel, little silt and clay, wet, odor, petroleum.
24.6	26.0	28.0	0.6	7-15 , 11-11	Same as above.
25.0	28.0	30.0	0.3	12-9 , 2-8	Same as above.
28.7	30.0	32.0	0.7	6-9 , 13-8	Same as above.
23.6	32.0	34.0	2.0	8-9 , 17-17	Same as above.
25.0	34.0	36.0	1.0	6-9 , 11-13	Black Sand and Gravel, some silt and clay, wet, odor, petroleum.
27.4	36.0	38.0	1.5	6-10 , 11-15	Same as above.
19.3	38.0	40.0	1.0	18-8 , 9-8	Same as above.
19.0	40.0	42.0	0.7	6-9 , 15-11	Same as above.
15.0	42.0	44.0	2.0	18-12 , 19-21	Dark gray-brown Gravel, little sand, trace silt, odor, petroleum, wet.
21.1	44.0	46.0	2.0	8-8 , 9-8	Top 18": Black Sand and Gravel, little silt and clay, wet, odor, petroleum. Bottom 6": Brown-gray, clayey Silt, some sand, moist, petroleum in pockets.
20.2	46.0	48.0	1.5	7-7 , 9-8	Black Gravel, little silt and clay, wet, odor, petroleum. Brown-gray, clayey Silt, with some sand in tip.
14.7	48.0	50.0	1.0	7-12 , 19-11	Black Gravel, little silt and clay, wet, odor, petroleum droplets. Brown gray clayey Silt, with some sand in tip.



# SAMPLE/CORE LOG

Boring/Well SB-5 Project/No. Erie Blvd. PSA/IRM AY0207.001 Page 1 of 2

Site Location Syracuse, NY Drilling Started 8/21/95 Drilling Completed 8/21/95

Total Depth Drilled 50 feet Hole Diameter 8 inches Type of Sample/ Coring Device Split-Spoon

Length and Diameter of Coring Device 2' x 2" (2' x 3" for lab sample) Sampling Interval 2 feet

Land-Surface Elevation 387.1 feet  Surveyed  Estimated Datum NAVD 88 NGVD 1929

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff, Inc. Driller Layne Pech Helper Brian Waters

Prepared By C.Moul Hammer Weight 140 lb Hammer Drop 30 inches

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	0.0	2.0	1.3	5, 10-26	Asphalt (0 - 0.5'); Brown clayey Silt, some fine to medium gravel, moist.
0.0	2.0	4.0	0.7	16-17, 10-19	Brown-gray Sand and Gravel, little clay and silt, dry.
0.0	4.0	6.0	1.2	6-13, 9-7	Top 6": Brown-gray Sand and Gravel, some clay and silt, dry. Bottom 8": Brown-yellow silty clay, trace fine to medium gravel, moist.
1.1	6.0	8.0	1.0	5-5, 8-19	Brown to brown-gray clayey Silt, some Sand and Gravel, moist.
4.8	8.0	10.0	1.1	6-3, 5-5	Top 9": Brown silty Clay, trace fine sand, moist. Next 4": Red brown Gravel, dry. Bottom 1": Black organic silty Clay, moist, odor.
12.8	10.0	12.0	0.5	10-9, 5-4	Black silty fine Gravel, little clay, moist, odor.
10.9	12.0	14.0	2.0	2-3, 2-3	Top 1": Black Sand and Gravel, some silt and clay, moist, odor. Bottom 1": Black clayey Silt, trace fine to medium gravel, moist, odor.
10.6	14.0	16.0	0.1	4-1, 2-1	Black silty clay, wet, odor.
15.0	16.0	18.0	1.8	1-1, 11-11	Top 18": Brown-gray clayey silt, odor, sheen around outside of profile. Bottom 2": Red-brown to black, Sand and Gravel, little silt and clay, wet, odor.
15.8	18.0	20.0	0.7	6-14, 22-17	Brown-gray Sand and Gravel, wet, odor, petroleum in pockets.
22.1	20.0	22.0	1.7	14-27, 14-15	Brown-gray Sand and Gravel, little silt and clay, moist, odor, petroleum in pockets.
23.5	22.0	24.0	0.5	9-11, 12-12	Black Sand and Gravel, little silt and clay, moist, odor.



# SAMPLE/CORE LOG (Cont.d)

Boring/Well SB-5

Prepared by C. Moul

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
14.3	24.0	26.0	0.5	8-5, 7-4	Black-gray Sand and Gravel, trace silt and clay, wet, odor, petroleum in pockets
16.4	26.0	28.0	0.5	6-7, 8-7	Black Gravel (cobble fragments), wet, odor, petroleum stringers.
22.8	28.0	30.0	0.5	7-7, 8-5	Black Gravel (like above), little silt and clay, wet, odor.
21.1	30.0	32.0	0.5	2-8, 16-11	Black Gravel (like above), trace silt and clay, wet odor.
24.0	32.0	34.0	1.5	12-11, 10-7	Top 6": Same as above. Bottom 12": Brown Sand and Gravel, some silt and clay, wet, odor.
22.4	34.0	36.0	1.5	9-14, 7-6	Top 14": Black Gravel, trace silt and clay, wet, odor, sheen. Bottom 4": Rock fragments (shale).
32.2	36.0	38.0	0.7	6-12, 30-13	Brown-gray Gravel, some silt and clay, wet, odor, petroleum in pockets.
28.9	38.0	40.0	0.3	25-17, 10-10	Black Sand and Gravel, trace silt and clay, wet, odor.
22.4	40.0	42.0	1.2	9-8, 5-4	Top 12": Brown-gray Sand and Gravel, trace silt and clay, wet, odor. Bottom 2": Gray fine sandy Silt, some clay, trace fine to medium gravel, wet, odor, petroleum droplets.
18.0	42.0	44.0	1.0	4-7, 8-7	Top 10": Black Sand and Gravel, trace silt and clay, wet, odor. Bottom 2": Gray Sand, some silt and clay, odor, wet.
18.2	44.0	46.0	1.2	9-5, 7-4	Top 12": Black Sand and Gravel, trace clay and silt, wet, odor. Bottom 2": Gray Sand, some clay and silt, wet, odor, petroleum in pockets.
12.9	46.0	48.0	0.5	6-8, 6-12	Same as above.
10.9	48.0	50.0	1.5	3-5, 5-7	Top 12": Gray Sand, little silt and clay, wet, odor. Bottom 6": Gray sandy, silty Clny, wet, odor.
					End hole.



# SAMPLE/CORE LOG

Boring/Well SB-7 Project/No. Erie Blvd. PSA/IRM AY0207.001 Page 1 of 3

Site Location Syracuse, NY Drilling Started 8/15/95 Drilling Completed 8/23/95

Total Depth Drilled 50 feet Hole Diameter 8 inches Type of Sample/ Coring Device Split-Spoon

Length and Diameter of Coring Device 2' x 2" (2' x 3" for lab sample) Sampling Interval 2 feet

Land-Surface Elevation 392.3 feet  Surveyed  Estimated Datum NAVD 88 NGVD-1929-

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff, Inc. Driller Brian Waters Helper Layne Pech

Prepared By S. Blackmer Hammer Weight 140 lb Hammer Drop 30 inches

Page 3 of 3

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	0.0	0.5			Asphalt.
0.0	0.5	2.0	1.0	19, 21-16	Brown medium Sand and Gravel (top 3-4 inches and bottom inch are more gravelly, middle zone more sandy), dry.
0.0	2.0	4.0	1.5	11-16, 26-26	Brown fine to coarse Sand and Gravel, trace silt, dry, loose with zones of compaction.
0.0	4.0	6.0	1.4	23-37, 19-13	Brown to gray-brown very fine to coarse Sand and gravel (varying compositions), trace silt, dry.
0.0	6.0	8.0	1.0	25-22, 17-25	Same as above.
0.0	8.0	10.0	0.5	65/5	Same as above.
0.0	10.0	12.0	1.0	32-41, 50/4	Same as above (brownier - less gray).
0.0	12.0	14.0	1.0	24-25, 41-21	Brown to gray brown very fine to coarse Sand and Gravel, trace silt and clay, dry.
0.0	14.0	16.0	1.2	9-9, 9-11	Same as above.
0.0	16.0	18.0	0.5	13-19, 9-15	Same as above, but slightly damp in places.
0.0	18.0	20.0	0.2	4-6, 50/4	Same as above.
0.0	20.0	22.0	1.3	27-7, 12-8	Brown very fine to coarse Sand and Gravel, little to trace silt, moderately compact, dry.
0.0	22.0	24.0	0.5	7-12, 50/3	Same as above but damp.





# SAMPLE/CORE LOG (Cont.d)

Boring/Well SB-7

Prepared by C.Moul

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
1.2	24.0	26.0	1.1	12-16 , 16-15	Brown clayey Silt, some sand, wet, odor (wetter at bottom of spoon).
7.4	26.0	28.0	1.5	14-14 , 14-14	Brown clayey Silt, some sand and gravel, odor.
27.5	28.0	30.0	1.2	8-11 , 11-11	Brown-gray Sand and Gravel, some clayey silt, wet, odor, sheen.
8.4	30.0	32.0	1.3	7-14 , 22-11	Brown-gray clayey Silt, some sand and gravel, wet, odor.
0.0	32.0	34.0	0.5	12-9 , 9-6	Brown-gray clayey Silt, some sand and gravel, wet, odor, sheen.
0.0	34.0	36.0	0.9	19-13 , 10-12	Brown-gray Gravel, some clayey silt, wet, odor.
0.0	36.0	38.0	1.5	14-10 , 6-12	Brown-gray Gravel, some medium to coarse sand, trace silt and clay, wet, odor.
0.5	38.0	40.0	0.2	22-28 , 12-13	Brown Sand and Gravel, wet, odor.
0.0	40.0	42.0	0.5	7-8 , 7-13	Brown-gray Sand and Gravel, little silt and clay, wet, slight odor.
0.0	42.0	44.0	1.2	13-8 , 8-8	Top 6": Same as above. Bottom 8": Gray Gravel, some medium to coarse sand, wet, slight odor.
0.0	44.0	46.0	1.5	15-16 , 14-12	Top 10 ": Brown-gray silty Clay, some sand and gravel, wet, slight odor; Bottom 8": Gray Silt, some clay, little sand and fine gravel, slight odor, wet.
0.0	46.0	48.0	0.5	26-26 , 5-5	Gray Gravel (angular limestone fragments), little medium to coarse sand, wet, no odor or sheen.
0.0	48.0	50.0	1.0	14-9 , 17-22	Gray clayey Silt, some sand, little gravel, wet, slight odor.
					End hole.



# SAMPLE/CORE LOG

Boring/Well SB-8 Project/No. Erie Blvd. PSA/IRM AY0207.001 Page 1 of 2

Site Location Syracuse, NY Drilling Started 8/18/95 Drilling Completed 8/18/95

Total Depth Drilled 50 feet Hole Diameter 8 inches Type of Sample/ Coring Device Split-Spoon

Length and Diameter of Coring Device 2' x 2" (2' x 3" for lab sample) Sampling Interval 2 feet

Land-Surface Elevation 387.3 feet  Surveyed  Estimated Datum NAVD 88 -NGVD 1929

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff, Inc. Driller Layne Pech Helper Brian Waters

Prepared By S. Blackmer Hammer Weight 140 lb Hammer Drop 30 inches

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	0.0	0.5			Asphalt.
0.0	0.5	2.0	0.3	10, 23-13	Brown-gray very fine to coarse Sand and Gravel (fine to coarse, various compositions, subrounded to round), dry.
0.0	2.0	4.0	1.2	9-9, 5-4	Brown-gray very fine to coarse Sand and gravel (including brick fragments), little cinder/ash, dry.
0.0	4.0	6.0	0.3	7-6, 5-2	Cinders and Sand, some to little gravel, dry.
0.0	6.0	8.0	0.2	2-1, 1-1	Black cinders/ash, little to trace fine to medium sand, dry to damp.
0.0	8.0	10.0	1.0	5-3, 4-1	Red brick and concrete fragments, little black/brown sand and cinders; top inch damp, rest dry.
0.0	10.0	12.0	0.6	6-4, 6-12	Same as above, damp to dry.
0.1	12.0	14.0	0.5	9-4, 6-18	Top 4": Brick, dry to damp. Bottom 2": Black stained Gravel and sand, black/brown petroleum, wet.
0.0	14.0	16.0	1.3	14-11, 52-45	Top 3": Gravel and brick, sheen. Next 8": Brown Clay, trace silt, trace gravel (near bottom), some black staining, damp. Bottom: Gravel (including some concrete and brick), some cinders, some sand.
0.0	16.0	18.0	1.5	18-19, 24-19	Brown very fine to coarse Sand and Gravel. Top 3" wet with sheen.



# SAMPLE/CORE LOG (Cont.d)

Boring/Well SB-8

Page 2 of 2

Prepared by S. Blackmer

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
	16.0	18.0	cont.		Middle 10' damp. Bottom 4' dry and lighter brown.
0.0	18.0	20.0	1.0	17-9 , 16-17	Brown Sand and Gravel, trace silt and clay, wet, very faint (trace) sheen.
0.0	20.0	22.0	1.0	12-13 , 8-5	Same as above with faint odor.
0.1	22.0	24.0	0.5	9-18 , 24-14	Gravel, little sand, wet with sheen, faint odor.
2.2	24.0	26.0	0.6	17-13 , 17-19	Fine Gravel and fine to coarse Sand, wet with sheen, trace visible petroleum (brown thin liquid)
2.0	26.0	28.0	1.5	8-9 , 9-11	Top 6": Brown Sand and Gravel, some silt, wet with sheen. Bottom 1': Gravel, blue/gray silty water with brown petroleum stringers.
1.7	28.0	30.0	0.5	10-10 , 10-6	Same as bottom of above.
2.1	30.0	32.0	1.5	8-5 , 6-8	Gravel (fine to coarse, various textures), some fine to coarse sand, silty/muddy brown-gray water with a sheen and trace visible petroleum, no odor.
1.9	32.0	34.0	0.3	17-17, 6-4	Same as above.
1.1	34.0	36.0	2.0	13-13 , 13-14	Brown to grayish-brown, Gravel and very fine to coarse Sand, some to little silt, wet, some sheen, fairly loose - Bottom 3" more compact.
2.8	36.0	38.0	1.3	12-10 , 7-6	Top 3": fine to coarse Sand, wet with sheen. Bottom 12": Gravel, little fine to coarse sand, silty water and petroleum (has a copper-colored appearance).
0.2	38.0	40.0	0.75	6-7 , 8-8	Gravel, some fine to coarse sand, little to trace petroleum droplets, wet (water less silty/muddy)
0.0	40.0	42.0	0.75	7-5 , 10-8	Gravel and brown-gray sand, silty/muddy water, little faint sheen.
0.0	42.0	44.0	1.0	7-7 , 11-12	Gravel, some fine to coarse sand, little to trace petroleum, wet (water less silty/muddy).
0.0	44.0	46.0	1.75	9-8 , 7-7	Brown very fine to coarse Sand, some silt, little gravel, wet, loose, trace sheen.
0.0	46.0	48.0	2.0	14-14 , 19-12	Top 1.5': Same as above; Bottom 6": Gray-brown Gravel and Sand, some to little silt, wet, little sheen.
0.0	48.0	50.0	0.75	44-18 , 4-9	Gravel and Sand, trace silt, wet, sheen.



# SAMPLE/CORE LOG

Boring/Well SB-9 Project/No. Eric Blvd. PSA/IRM AY0207.001 Page 1 of 2

Site Location Syracuse, NY Drilling Started 8/22/95 Drilling Completed 8/22/95

Total Depth Drilled 38 feet Hole Diameter 8 inches Type of Sample/ Coring Device Split-Spoon

Length and Diameter of Coring Device 2' x 2" (2' x 3" for lab sample) Sampling Interval 2 feet

Land-Surface Elevation 391.3 feet  Surveyed  Estimated Datum NAVD 88  
--NGVD 1929

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Parratt -Wolff, Inc. Driller Brian Waters Helper Layne Pech

Prepared By C. Moul Hammer Weight 140 lb Hammer Drop 30 inches

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	0.0	2.0	1.2	26 , 47-56	Asphalt (0 - 0.5'); Top 8": Brown Sand, little silt, dry; Bottom 6": Black fine Sand, dry.
0.0	2.0	4.0	0.3	57-50/4	Black fine Sand, dry.
0.0	4.0	6.0	0.1	50/3	Same as above.
0.0	6.0	8.0	0.1	44-50/4	Black to brown fine Sand, little medium to coarse sand, dry.
0.0	8.0	10.0	0.1	6-6 , 4-2	Dark brown Sand, some medium to coarse sand, quartzite fragment in tip, dry.
0.1	10.0	12.0	0.1	4-6 , 7-5	Dark brown to yellow brown clayey Silt, little fine sand, moist.
0.9	12.0	14.0	0.0	3-4 , 2-4	No recovery - odor at bottom of spoon.
1.3	14.0	16.0	1.8	2-2 , 4-8	Top 12": Black Sand, some clay (clayey fine sand), petroleum in pockets, wet, odor. Bottom 9": Dark brown, fine Sand, with pockets of clayey silt, moist, odor, some wood fragments.
2.2	16.0	18.0	2.0	11-13 , 21-18	Top 12": Black, silty Sand, wet (petroleum droplets), odor. Next 6": Gray-green, clayey Sand, moist, odor. Bottom 6": Brown-yellow clayey Sand, moist, odor.
2.0	18.0	20.0	1.0	15-26 , 36-45	Brown-yellow, clayey Sand, moist, odor.
2.2	20.0	22.0	0.0	33-23 , 16-9	Red-brown sandstone (1 fragment).





# SAMPLE/CORE LOG

Boring/Well SB-10 Project/No. Eric Blvd. PSA/IRM AY0207.001 Page 1 of 2

Site Location Syracuse, NY Drilling Started 8/22/95 Drilling Completed 8/22/95

Total Depth Drilled 50 feet Hole Diameter 8 inches Type of Sample/Coring Device Split-Spoon

Length and Diameter of Coring Device 2' x 2" (2' x 3" for lab sample) Sampling Interval 2 feet

Land-Surface Elevation 388.7 feet  Surveyed  Estimated Datum NAVD 83  
~~NGVD 1929~~

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff, Inc. Driller Layne Pech Helper Brian Waters

Prepared By C. Moul Hammer Weight 140 lb Hammer Drop 30 inches

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	0.0	2.0	0.5	5, 21-22	Brown-gray Sand and Gravel, moist.
0.0	2.0	4.0	0.5	14-20, 11-19	Brown-gray Sand and Gravel, little silty clay, moist.
0.0	4.0	6.0	0.7	11-9, 3-2	Top 5": Brown to yellow brown silty Clay, little sand, moist; Bottom 3": Brown-gray Sand and Gravel, moist.
0.0	6.0	8.0	0.5	2-4, 16-13	Top 4": Brown-gray Gravel and Brick; Bottom 2": Brown clayey Silt, little sand, moist.
0.0	8.0	10.0	1.0	25-6, 13-18	Top 5": Brown-gray Sand and Gravel (with concrete and cobble fragments), dry; Next 4": Brown clayey Silt, little sand, moist; Bottom 3": Brown-gray Sand and Gravel, dry.
0.0	10.0	12.0	0.4	16-22, 16-16	Brown-gray Sand and Gravel, dry.
0.0	12.0	14.0	1.0	17-10, 20-10	Brown silty Sand, trace clay, moist, some fine to medium gravel.
0.0	14.0	16.0	1.2	10-10, 13-25	Brown silty Sand and fine Gravel, moist, moist in pockets.
0.0	16.0	18.0	0.3	14-16, 22-9	Brown silty Sand and Gravel, moist.
	18.0	19.0	--	--	Cobble at 18' (augered through to 19').



# SAMPLE/CORE LOG (Cont.d)

Boring/Well SB-10

Prepared by S. Blackmer

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description
	From	To			
0.0	19.0	20.0	0.0	19-21	No recovery (gray sandstone in tip)
0.4	20.0	22.0	0.9	5-7 , 8-7	Brown silty Sand and Gravel; top 4" moist, bottom 5" wet.
3.4	22.0	24.0	0.70	10-11 , 17-14	Top 4": Brown silty Sand and Gravel, wet; Bottom 4": Gray-brown silty Sand and Gravel, wet, odor, sheen.
5.7	24.0	26.0	1.0	33-29 , 24-27	Top 9": Same as bottom 4" of above; Bottom 4": Gray angular gravel, wet, odor.
4.6	26.0	28.0	0.6	22-9 , 13-7	Gray-brown silty Sand and Gravel, wet, odor.
3.9	28.0	30.0	1.0	5-5 , 6-6	Same as above.
3.5	30.0	32.0	1.0	4-5 , 6-7	Gray-brown silty Sand and Gravel, little clay, wet, odor.
3.2	32.0	34.0	0.2	8-9 , 6-9	Gray-brown silty Sand and Gravel, wet, odor.
3.4	34.0	36.0	0.5	3-5 , 8-8	Gray-brown silty Sand and Gravel, wet, odor, petroleum in pockets.
2.1	36.0	38.0	1.0	8-10 , 19-10	Gray-brown silty Sand and Gravel, wet, odor, some angular sandstone fragments.
2.4	38.0	40.0	2.0	7-8 , 9-15	Top 15": Gray-brown silty Sand and Gravel, wet, odor. Bottom 9": Gray-brown silty Sand and Gravel, little clay, wet, odor, petroleum in pockets.
2.5	40.0	42.0	0.8	15-29 , 31-27	Gray-brown Sand and Gravel, little silt, wet, odor.
2.2	42.0	44.0	1.0	7-11 , 6-5	Gray Sand and Gravel, trace silt, wet, odor.
1.3	44.0	46.0	0.9	18-18 , 18-12	Gray-brown clayey Silt, some sand, little fine to medium gravel, wet, odor product in pockets.
1.5	46.0	48.0	1.0	12-8 , 2-5	Gray-brown clayey Silt, some sand, little fine to medium gravel, wet, odor.
1.1	48.0	50.0	0.2	8-10 , 22-37	Gray-brown clayey Silt, some sand and gravel, wet, odor.



<b>Date Start/Finish:</b> 5/27/2008 - 5/28/2008 <b>Drilling Company:</b> Parratt-Wolff, Inc. <b>Driller's Name:</b> Jim Lansing <b>Drilling Method:</b> Hollow Stem Auger <b>Auger Size:</b> 4.25" OD <b>Rig Type:</b> CME-75 <b>Sampling Method:</b> 2"x2" SS	<b>Northing:</b> 1112412.89 <b>Eastings:</b> 933902.804 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 43' bgs <b>Surface Elevation:</b> 391.1056  <b>Descriptions By:</b> Dan Zuck	<b>Well/Boring ID:</b> SB-11  <b>Client:</b> National Grid  <b>Location:</b> Erie Boulevard Syracuse, NY
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0											ASPHALT	
390		1	0-2	0.8		NA			SM		Light gray very fine to fine Silty SAND, some subangular fine Gravel, moist. (SM)	
											Black/trace brown medium angular Gravelly SAND, RCA material (Brick, Concrete, Asphalt) with fine to medium Sand, Volcanic like material, some small wood pieces, moist. (GM)	
		2	2-4	0.75		5	0.0		GM		Light to medium gray/trace brown medium subangular Sandy GRAVEL, Silt, moist. (GM)	
											Light to medium brown very fine to fine Silty SAND, little medium to coarse subrounded to subangular Sand, wet. (SM)	
5		3	4-6	0.8		5	0.0				No recovery (Stone stuck in tip @ 6.3' bgs.)	
385		4	6-8	0.3		4	NA		SM		Medium brown very fine to fine subangular Silty SAND, some Clay, trace coarse Sand, moist to wet. (SM)	
		5	8-10	0.6		5	0.0				Medium brown Sandy CLAY, little coarse subrounded Sand, trace Gravel, low plasticity, wet. (GC)	
10		6	10-12	1.2		2	0.0		GC		Color change to brown below 14' bgs.	
		7	12-14	0.4		6	0.0				Black/dark gray Sandy SILT, and Organics (wood), some Clay, organic odor, wet. (OL)	
		8	14-16	1.0		na	0.0		OL		Light to medium brown Silty CLAY, low plasticity, medium dense, varved, moist. (OL)	
15											Black/dark gray Sandy SILT, and Organics (wood), some Clay, organic odor, wet. (OL)	Borehole tremie-grouted with Bentonite/Cement to grade

 <i>infra. structure. environment. facilities.</i>	<b>Remarks:</b> bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.
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Client: National Grid

Well/Boring ID: SB-11

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 43' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows /6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
375		9	16-18	0.9	3	5	1.3				Black-stained Silty SAND, odor, wet. (SM)	Borehole tremie-grouted with Bentonite/Cement to grade
					3							
					2						Black-stained Silty SAND, oil like material, sheen, odor, wet. (SM)	
					2							
		10	18-20	0.9	3	5	14.3					
					2							
20					4							
					1				SM			
					1							
370		11	20-22	0.8	3	4	15.6				Saturated @ 20' bgs.	
					3							
					3							
					4							
					3	7	70.6				tar like material present @ 22' bgs.	
					7							
					4							
25		13	24-26	0.5	6	12	15.1				Light gray angular SHALE fragments, dry.	
					6							
					8							
					8				SM		Black Silty SAND, trace fine Gravel, strong odor, saturated with oil like material. (SM)	
365					7							
					9							
		14	26-28	0.6	9	18	11.1		GM		Light gray Clayey SAND, trace subangular to subrounded Gravel, moist to wet, saturated with oil like material. (GM)	
					9							
					9							
					6							
					8							
					8							
		15	28-30	0.5	9	17	22.2				Black-stained, wet @ 29' bgs. Light gray/some black-stained/trace brown Silty fine to medium SAND, wet.	
					9							
					9							
30					5				GM		Black-stained subangular Silty GRAVEL, and Silt, tar like material, sheen, odor, saturated. (GM)	
					8							
					8							
		16	30-32	1.0	5	13	11.1				Black-stained/trace brown and gray Sandy CLAY, little fine Gravel, odor, saturated with oil like material, sheen. (SC)	
					8							
					4				SC		mix of tar like material and Silt, saturated @ 32' bgs.	
					6							
					5							
		17	32-34	1.0	5	11	16.6					
					5							
					5							
					5							
35		18	34-36	0.75	7	13	0.0		GM		Black fine subangular to angular Sandy GRAVEL, odor and tar like material, sheen, saturated. (GM)	
					6							
					4							

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Client: National Grid

Well/Boring ID: SB-11

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 43' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Inch/Type	Recovery (feet)	Blows /6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
33.5		19	36-38	0.8	4	9	56.3		GM		Black-staining/olive gray Gravely CLAY, odor, wet to saturated.	Borehole tremie-grouted with Bentonite/Cement to grade
					4						mix of tar like material and Silt, saturated @ 38' bgs.	
					5							
		20	38-40	0.4	6	12	0.0				Dark gray to black subangular GRAVEL, tar like material, sheen, saturated.	
					8							
40					4						Medium gray Silty GRAVEL, some fine Sand and fine to coarse Gravel, little Cobbles, saturated. (GM)	
		21	40-42	1.6	32	31	7.5					
35.0					16							
		22	42-43	0.0	9	NA	0.0					
					15							
					9							
					14							
					9							
45												
34.5												
50												
34.0												
55												

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



<b>Date Start/Finish:</b> 5/27/2008 - 5/28/2008 <b>Drilling Company:</b> Parratt-Wolff, Inc. <b>Driller's Name:</b> Jim Lansing <b>Drilling Method:</b> Hollow Stem Auger <b>Auger Size:</b> 4.25" OD <b>Rig Type:</b> CME-75 <b>Sampling Method:</b> 2"x 2" SS	<b>Northing:</b> 1112367.857 <b>Easting:</b> 933892.3009 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 60' <b>Surface Elevation:</b> 389.6046  <b>Descriptions By:</b> Dan Zuck	<b>Well/Boring ID:</b> SB-12  <b>Client:</b> National Grid  <b>Location:</b> Erie Boulevard Syracuse, NY
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
390												
		1	0-2	0.7		NA			GC	○	ASPHALT	
						4					Light gray broken PEBBLES, subangular to angular Gravel, RCA material (Brick, Concrete, Asphalt) with very fine to medium Sand, dry. (GC)	
						6	10	0.0			Redish brown fine to medium subangular Clayey SAND, low to no plasticity, moist. (SC)	
						7						
		2	2-4	0.4		3			SC			
						2						
						11	13	0.0				
						14						
		3	4-6	0.3		3					Brown angular BRICK fragments (0.5-1" diameter), some fine to medium Silty Sand, dry. Gravel content increasing to some below 4.7' bgs.	
						10						
						3	13	0.0				
						3						
						2					No recovery	
		4	6-8	0.0		2						
						2						
						1	3	NA				
						2						
									SM		Medium brown fine to medium Silty SAND, trace odor and sheen, saturated. (SM)	
						1						
						1						
		5	8-10	0.9		51	20.0				Black Silty SAND and tar like material, odor and sheen, moist to wet.	
						50	48.0					
						0						
						45						
		6	10-12	0.4		5					White to light gray fine to medium Gravel and fine to coarse Sand, fractured angular Stones (0.5-1" diameter), dry. [FILL]	
						3	8	0.0				
						1						
		7	12-14	0.8		1			SM		Fine to medium subangular Silty SAND, trace coarse Sand, slight odor, medium dense, wet. (SM)	
						1						
						2	3	14.0				
						3						
		8	14-16	0.5		1					SLAG, fine to medium Sand, trace tar like material, slight odor loose, wet.	
						1						
						1	2	123				
						1						

Borehole tremie-grouted with Bentonite/Cement to grade

**Remarks:** bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Analytical sample collected from 12-14' and 22-24' bgs for BTEX, PAHs, and Total Cyanide.

Client: National Grid

Well/Boring ID: SB-12

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 60'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
		9	16-18	0.25	4 3 2 1	5	146			XXXXXX	SLAG, fine to medium Sand, trace tar like material, slight odor loose, wet.	
		10	18-20	1.1	3 3 2 50	5	248			XXXXXX	SLAG and oil like material, some Silts and fine Sand, odor, sheen, saturated.	
20	370	11	20-22	0.8	1 1 1 50	2	694			XXXXXX		
		12	22-24	1.0	7 7 6 4	13	304	X	SM	XXXXXX	Silty SAND, some coarse subangular to angular Gravel, medium dense, odor, moist. (SM)	
		13	24-26	0.0	15 12 12 8	24	NA			XXXXXX	No recovery	
25	365	14	26-28	0.8	6 8 8 11	16	128			XXXXXX	Angular GRAVEL and SILT, some oil like material and tar like material blebs, odor, saturated.	Borehole tremie-grouted with Bentonite/Cement to grade
		15	28-30	1.1	3 4 5 4	9	355			XXXXXX	Black fine to coarse subangular to angular Silty GRAVEL, little tar like material and sheen, odor, saturated. (GM)	
30	360	16	30-32	0.9	3 2 2 7	4	148			XXXXXX	Trace Silt (30-30.25' bgs).	
		17	32-34	0.7	5 5 6 7	11	214			XXXXXX		
35	355	18	34-36	0.5	4 5 4 3	9	160			XXXXXX		

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.

Analytical sample collected from 12-14' and 22-24' bgs for BTEX, PAHs, and Total Cyanide.



Client: National Grid

Well/Boring ID: SB-12

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 60'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
40	350	19	36-38	1.6	4	16	239			GM	Black fine to coarse subangular to angular Silty GRAVEL, little tar like material and sheen, odor, saturated. (GM)	
					5						Less saturated with NAPL, more dense (38-40' bgs).	
40	350	20	38-40	0.6	7	16	70			GM		
					9							
45	345	21	40-42	1.2	2	6	184			GM		
					3						More serperate faze NAPL (42-44' bgs).	
45	345	22	42-44	1.3	3	11	193			GM		
					6							
45	345	23	44-46	1.4	5	12	86			GM	Light gray/brown NAPL staining subangular Silty GRAVEL, saturated. (GM)	
					7							
50	340	24	46-48	1.3	4	7	128			GM		
					3							
50	340	25	48-50	1.3	4	9	38.2			GM	Fine to medium Clayey SAND, trace fine angular Gravel, medium stiff, saturated.	
					5							
55	335	26	50-52	0.8	7	16	90.8			GM to GC	Light gray coarse subangular Silty SAND, blebs of tar like material, medium dense, saturated.	
					7							
55	335	27	52-54	0.9	9	14	28.6			GM to GC	Light gray subangular Silty GRAVEL, slight to no odor, medium dense, saturated. (GM to GC)	
					14						Trace angular Gravel (52-54' bgs).	
55	335	28	54-56	0.9	6	8	104			GM to GC		
					6						Light to medium gray Silty GRAVEL, slight odor and staining, loose, saturated.	

Borehole tremie-grouted with Bentonite/Cement to grade

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Analytical sample collected from 12-14' and 22-24' bgs for BTEX, PAHs, and Total Cyanide.



<b>Date Start/Finish:</b> 5/29/2008 <b>Drilling Company:</b> Parratt-Wolff, Inc. <b>Driller's Name:</b> Jim Lansing <b>Drilling Method:</b> Hollow Stem Auger <b>Auger Size:</b> 4.25" OD <b>Rig Type:</b> CME-75 <b>Sampling Method:</b> 2"x 2" SS	<b>Northing:</b> 1112277.51 <b>Easting:</b> 933947.6639 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 54' <b>Surface Elevation:</b> 388.7386  <b>Descriptions By:</b> Dan Zuck	<b>Well/Boring ID:</b> SB-13  <b>Client:</b> National Grid  <b>Location:</b> Erie Boulevard Syracuse, NY
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DEPTH	ELEVATION	Sample Run Number	Sample Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
390												
		1	0-2	1.1	4	NA			GM	ASPHALT		
					5	9	0.0		SM	Light brown/trace gray fine to medium subangular coarse subrounded Sandy GRAVEL, little Silt, trace coarse Sand, loose, dry. (GM)		
					6					Dark brown Silty SAND, fine to medium subangular to subrounded Gravel, trace coarse subangular Sand and Gravel, medium dense, moist. (SM)		
		2	2-4	0.8	4				GM	Light gray fractured coarse subangular Silty GRAVEL, little fine Sand, trace course subrounded Sand, dry. (GM)		
					6	13	0.0			1 cm piece of Coal (4-4.4')		
					7					Light brown/trace green very fine to fine subrounded Sandy SILT, medium dense, moist. (SM)		
		3	4-6	1.0	2	4	0.0		SM	Wood fragments (6.7-8.1')		
					2					No wood fragments, slight odor, and becomes saturated @ 8.1'		
		4	6-8	1.1	2	6	29.8			Dark brown/black-stained Silty fine to medium subangular to subrounded SAND, medium dense, saturated. (SM)		Borehole tremie-grouted with Bentonite/Cement to grade
					2				GP	Black fine SAND, oil like material, significant odor, loose, saturated. (GP)		
		5	8-10	1.6	3	NA	207		SC	Redish brown Silty CLAY, trace course subangular Sand, low plasticity, moist. (SC)		
					6		106			Black-staining/trace brown Silty GRAVEL, trace Gravel, odor evident, medium dense, moist. (GM)		
					5					Black-stained Silty GRAVEL, trace course Gravel, wet. (GM)		
		6	10-12	1.25	7	12	722		GM	oil like material present @ 13.5'		
					4					Black Sandy SILT, loose, saturated. (SM)		
		7	12-14	1.75	3	7	922		SM	Black Silty CLAY, low plasticity, medium stiff, moist to wet. (ML-CL)		
					3					Color change to brown @ 20'		
		8	14-16	1.75	3	5	275		ML to CL	Slight plasticity @ 16'		

**Remarks:** bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon.

Analytical sample collected from 8-10' and 20-22' bgs for BTEX, PAHs, and Total Cyanide.



Client: National Grid

Well/Boring ID: SB-13

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 54'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
370		9	16-18	1.9	4 6 7 6	13	253		ML to CL	[ML-CL]	Brown Silty CLAY, low plasticity, medium stiff, moist to wet. (ML-CL)	
		10	18-20	1.4	WH WH 2 5	NA	183 91 346		ML			
20		11	20-22	1.0	7 11 11 13	22	1218	X		[GM]	Black/dark brown Silty GRAVEL, medium to coarse subangular Sand, some oil like material, significant odor, wet. (GM) Becomes saturated @ 20	Borehole tremie-grouted with Bentonite/Cement to grade
365		12	22-24	0.6	12 34 27 16	61	203			[GM]	Silty fine subangular GRAVEL, medium to coarse subangular Sand, some oil like material, saturated. (GM)	
		13	24-26	0.8	6 4 4 4	8	809		GM	Light brown trace Silty CLAY, odor @ 24' oil like material, no Silty CLAY @ 26'		
25		14	26-28	0.75	6 4 4 4	8	233			[GM]		
		15	28-30	0.5	2 4 3 2	7	55			[GM]		
30		16	30-32	0.6	6 5 6 8	11	114			[GM]		
		17	32-34	0.3	8 8 12 12	20	63			[GM]	Light brown/gray coarse subangular Sandy GRAVEL, Sand and tar like material blebs, saturated.	
35		18	34-36	0.9	6 4 5 8	9	105			[GM]	Black/trace light brown and gray oil like material, Sand and coarse subangular Gravel, saturated.	

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon.

Analytical sample collected from 8-10' and 20-22' bgs for BTEX, PAHs, and Total Cyanide.



Client: National Grid

Well/Boring ID: SB-13

Site Location:  
Erie Boulevard  
Syracuse, NY

Borehole Depth: 54'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows /6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
		19	36-38	2	11 12 16 17	28	111				Black/trace gray Silty GRAVEL, oil like material and fine Sand, loose, odor, saturated. (GM)	
350		20	38-40	2	9 8 8 11	16	132		GM		Brown/light gray Gravelly SILT, medium dense, oil like material, some staining, wet to saturated. (GM) Black outside of recovery (38.3-42.2')	
40		21	40-42	1.3	8 8 7 5	15	89				Dark gray Silty GRAVEL, trace Clay, oil like material, saturated.	
	345	22	42-44	0.75	8 7 4 3	11	44				No recovery	
45		23	44-46	NA	6 6 5 4	11	NA					Borehole tremie-grouted with Bentonite/Cement to grade
		24	46-48	0.6	7 5 6 4	11	10.1				Light gray coarse subangular Silty GRAVEL, little fine to medium Sand, trace angular Gravel, slight odor, trace oil like sheen, saturated. (GM)	
	340	25	48-50	0.8	5 4 3 3	7	17.3				Light gray coarse subangular Silty GRAVEL, little fine to medium Sand, trace angular Gravel, slight odor, trace oil like sheen, saturated. (GM)	
50		26	50-52	1.0	6 3 3 5	6	18.6		GM			
		27	52-54	1.6	4 5 6 7	11	114					
335												
55												

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon.

Analytical sample collected from 8-10' and 20-22' bgs for BTEX, PAHs, and Total Cyanide.



<b>Date Start/Finish:</b> 5/30/2008 <b>Drilling Company:</b> Parratt-Wolff, Inc. <b>Driller's Name:</b> Jim Lansing <b>Drilling Method:</b> Hollow Stem Auger <b>Auger Size:</b> 4.25" OD <b>Rig Type:</b> CME-75 <b>Sampling Method:</b> 2"x 2" SS	<b>Northing:</b> 1112197.647 <b>Easting:</b> 933948.3549 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 50' <b>Surface Elevation:</b> 388.5556  <b>Descriptions By:</b> Dan Zuck	<b>Well/Boring ID:</b> SB-14  <b>Client:</b> National Grid  <b>Location:</b> Erie Boulevard Syracuse, NY
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
390												
		1	0-2	0.8		NA						
					5	12	0.0				Light brown/light gray coarse subangular Gravelly fine to medium SAND, RCA material (Brick, Concrete, Asphalt) with fine to medium Sand, little Brick fragments and Pebble fragments, dry. (GM)	
					7							
					10							
					9						Medium brown fine to coarse subrounded to rounded Gravelly SILT, little fine to medium Sand, medium dense, moist. (GM)	
		2	2-4	0.9		13	0.0					
385					8							
					5							
					4						Some coarse subrounded Sand @ 4'	
					6				GM			
		3	4-6	0.75		6	0.0					
					3							
					3						Becomes wet @ 6'	
					2							
		4	6-8	0.5		6	0.0					
					3							
					3							
					2							
					2							
380		5	8-10	0.8		5	885		GM to GC		Dark brown/black-stained Gravelly SILT, some odor, soft, wet. (GM-GC)	Borehole tremie-grouted with Bentonite/Cement to grade
					2							
					3							
					2							
		6	10-12	0.9		4	514		GM			
					1							
					1							
					3							
					4							
					2							
		7	12-14	0.3		7	58		ML		Black/brown Silty CLAY, possible oil like material, very soft, low to medium plasticity, viscous, wet. (ML)	
					4							
					3							
					3							
					38							
					11							
		8	14-16	0.5		15	72		GM		Light brown Silty angular GRAVEL, some fine to medium Sand, loose, wet. (GM)	
					4							
					5							

 <i>infrastructure, environment, facilities</i>	<b>Remarks:</b> bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.  Analytical sample collected from 8-10' and 18-20' bgs for BTEX, PAHs.
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Client: National Grid

Well/Boring ID: SB-14

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 50'

DEPTH	ELEVATION	Sample Run Number	Sample Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
370		9	16-18	2.0	16	30	174		GM	[Symbol]	Black subangular Gravelly SILT, oil like material with small tar like blebs, odor. (GM)	
					18						Medium brown fine to medium Sandy SILT, some subangular coarse Sand, dense, moist. (SM)	
20		10	18-20	2.0	11	15	398	X		[Symbol]	Medium brown fine to coarse subangular Gravelly SILT, some NAPL (droplets), trace fractured Pebbles, wet. (GM)	
					9						Trace black (oil like material) staining, becomes saturated @ 20'	
365		11	20-22	0.75	8	15	154			[Symbol]	Some reddish brown Silt @ 22'	
					8							
25		12	22-24	0.9	5	11	217		GM	[Symbol]	Redish brown fine to coarse subangular Gravelly SILT, tar like material (droplets) some fine to medium Sand, trace Pebbles and odor, saturated. (GM)	
					6						some odor, no oil like material @ 26'	
360		13	24-26	1.7	7	17	230			[Symbol]	Medium brown coarse subangular Silty GRAVEL, fine to medium Sand, some black (oil like material) staining and tar like material (droplets), saturated. (GM)	
					10							
30		14	26-28	0.75	6	11	46.3			[Symbol]	Black Gravelly SILT, oil like material with small blebs of tar like material, some fine to medium subangular Sand, little coarse Gravel, saturated.	
					5							
355		15	28-30	1.1	3	8	64.3			[Symbol]	Black fine to coarse subangular Silty GRAVEL, coarse subangular Sand and oil like material, little medium Sand, strong odor and sheen, saturated. (GM)	
					4							
35		16	30-32	2.0	3	7	59		GM	[Symbol]	Black Gravelly SILT, oil like material with small blebs of tar like material, some fine to medium subangular Sand, little coarse Gravel, saturated.	
					3							
		17	32-34	2.0	2	6	45			[Symbol]	Black fine to coarse subangular Silty GRAVEL, coarse subangular Sand and oil like material, little medium Sand, strong odor and sheen, saturated. (GM)	
					3							
		18	34-36	2.0	8	15	96			[Symbol]		

Borehole tremie-grouted with Bentonite/Cement to grade

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Analytical sample collected from 8-10' and 18-20' bgs for BTEX, PAHs.

Client: National Grid

Well/Boring ID: SB-14

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 50'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction				
350		19	36-38	2.0	7 9 13 12	22	126			GM	Black fine to coarse subangular Silty GRAVEL, coarse subangular Sand and oil like material, little medium Sand, strong odor and sheen, saturated. (GM)	Borehole tremie-grouted with Bentonite/Cement to grade				
		20	38-40	1.1	8 8 7	16	142				Light brown to medium brown fine to coarse subangular Silty GRAVEL, tar like materia and oil like material, strong odor and sheen, loose to medium dense, saturated. (GM)					
40		21	40-42	1.2	8 6 10 10	16	177			GM	Light brown to light gray fine to coarse subrounded to sub angular Gravelly SILT, some tar like material (droplets), little medium to coarse subangular Sand, saturated. (GM)		Borehole tremie-grouted with Bentonite/Cement to grade			
		22	42-44	2.0	4 4 5	8	59.3				Light gray little tar like material blebs @ 43.4'					
45		23	44-46	0.5	4 5 5 10	10	115			GM	Light gray fine to coarse subangular Gravelly SILT, significant tar like material, some fine to medium Sand, loose, saturated. (GM)			Borehole tremie-grouted with Bentonite/Cement to grade		
		24	46-48	0.8	6 6 5 4	11	105									
340		25	48-50	0.875	3 4 4 4	8	92.6			GM					Borehole tremie-grouted with Bentonite/Cement to grade	
					5											
50																
335																
55																

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.

Analytical sample collected from 8-10' and 18-20' bgs for BTEX, PAHs.



<b>Date Start/Finish:</b> 6/2/2008 <b>Drilling Company:</b> Parratt-Wolff, Inc. <b>Driller's Name:</b> Jim Lansing <b>Drilling Method:</b> Hollow Stem Auger <b>Auger Size:</b> 4.25" OD <b>Rig Type:</b> CME-75 <b>Sampling Method:</b> 2"x 2" SS	<b>Northing:</b> 1112098.112 <b>Easting:</b> 933987.1159 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 40' <b>Surface Elevation:</b> 389.3586  <b>Descriptions By:</b> Dan Zuck	<b>Well/Boring ID:</b> SB-15  <b>Client:</b> National Grid  <b>Location:</b> Erie Boulevard Syracuse, NY
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
390												
		1	0-2	1.1	11	20	0.0		GM	ASPHALT		
					12					Light to medium brown fine to coarse subangular Silty GRAVEL, some coarse Sand, loose, moist to wet. (GM)		
					14				GM	Gray fractured LIMESTONE fragments		
					16					Light to medium brown fine to coarse subangular Silty GRAVEL, some coarse Sand, loose, moist to wet. (GM)		
		2	2-4	1.2	34	58	0.0			Light gray fine to coarse Gravely SILT, some medium to coarse Sand, loose, moist to dry. (GM)		
					24					Black SLAG, dense, dry.		
385					17					Redish brown BRICK, loose to medium dense, moist.		
		3	4-6	1.3	18	25	0.0		GM	Dark gray Gravely SILT, fine to medium Sand, some Slag, loose, wet. (GM)		
					7					Medium brown/trace light gray fine to medium Sandy SILT, little fine subangular Gravel, trace fragments of Brick and Concrete, loose to medium dense, moist. (GM to SM)		
					4				GM to SM	Redish brown Brick fragments (7-7.2)		
					3					Fragmented BRICK, moist. Brick stuck in tip @ 8.4'		Borehole tremie-grouted with Bentonite/Cement to grade
		4	6-8	1.3	4	8	0.0			Fragmented BRICK, loose, moist.		
					3					Medium brown Silty fine to medium subangular SAND, trace Gravel and fragmented Brick, loose, moist to wet. (SM)		
		5	8-10	0.4	3	5	0.0			Little coarse subangular Gravel, saturated (GM to GC) @ 12'		
					2					Black-stained coarse subrounded Gravely SILT, some odor, medium dense, moist. (GM)		
					2					Light brown/trace staining, slight odor @ 15.1'		
		6	10-12	1.1	1	1	0.0		SM			
					1							
					1							
		7	12-14	0.75	WOH	NA	0.0					
					1							
					1							
375					4							
					4							
		8	14-16	1.25	8	12	28.3		GM			
					7							

**Remarks:** bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon.

Analytical sample collected from 14-16' for BTEX (3 Jars), 8270c and 9012B (2 Jars), and PAH (1 Jar), and from 22-24' bgs for BTEX ( 1 Jar), 8270c and 9012B (2 Jars), and for Cyanide (1Jar).



Client: National Grid

Well/Boring ID: SB-15

Site Location:  
Erie Boulevard  
Syracuse, NY

Borehole Depth: 40'

DEPTH	ELEVATION	Sample Run Number	Sample Int/Type	Recovery (feet)	Blows /6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction	
		9	16-18	2	8 10 14 22	24	41.2		SM		Dark brown/trace grayish-black fine to medium subangular Sandy SILT, some tar like material (droplets), little coarse Sand, significant odor, saturated. (SM)		
									GM		Light gray to light brown Silty GRAVEL, slight odor, moist to dry. (GM)		
	370	10	18-20	1.2	7 8 11 23	19	18.2				Dark brown/trace grayish-black fine to medium subangular Sandy SILT, some tar like material (droplets), little coarse Sand, odor, saturated. (SM)		
	20										Fractured SHALE?? (20.4-20.5')		
		11	20-22	1.3	10 15 12 4	27	53				Light gray to medium brown fine to coarse subangular to angular Silty GRAVEL, trace fractured angular Cobbles, moist to dry. (GM)		
		12	22-24	1.7	8 10 11 8	21	99.8	X			Light gray to medium brown/slight stained fine to coarse subangular Silty GRAVEL, little blebs or tar like material, trace fractured angular Cobbles, some odor, moist to dry. (GM)		
	365										Dark gray fine subangular Gravely SILT, little coarse Gravel, trace tar like material (droplets), some odor, dense to medium dense, moist. (GM)		
	15	13	24-26	0.9	12 9 8	21	62				Medium brown fine to coarse subangular to angular Gravely SILT, some tar like material, loose, saturated. (GM)		
		14	26-28	1.5	2 2 5 7	7	53					Borehole tremie-grouted with Bentonite/Cement to grade	
		15	28-30	1.2	3 5 5 7	10	48.1		GM		Medium brown fine to coarse subrounded gravely SILT, some fine to medium Sand, trace tar like material, slight odor, loose, saturated. (GM)		
	360	16	30-32	1.3	3 5 6 6	11	38.6						
	30												
		17	32-34	1.4	3 3 6 8	9	38.8						
	355												
	35	18	34-36	0.8	7 7 6 5	13	0.3						

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon.



Analytical sample collected from 14-16' for BTEX (3 Jars), 8270c and 9012B (2 Jars), and PAH (1 Jar), and from 22-24' bgs for BTEX ( 1 Jar), 8270c and 9012B (2 Jars), and for Cyanide (1Jar).

Client: National Grid

Well/Boring ID: SB-15

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 40'

DEPTH	ELEVATION	Sample Run Number	Sample Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
		19	36-38	1.1	6	14	8.1				Medium brown fine to coarse subrounded Gravely SILT, some fine to medium Sand, trace tar like material, slight odor, loose, saturated. (GM)	
					8							
	350	20	38-40	0.9	6	12	13.8		GM			Borehole tremie-grouted with Bentonite/Cement to grade
					6							
16					5							
	345											
45												
	340											
50												
	335											
55												

**Remarks:** bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon.

Analytical sample collected from 14-16' for BTEX (3 Jars), 8270c and 9012B (2 Jars), and PAH (1 Jar), and from 22-24' bgs for BTEX ( 1 Jar), 8270c and 9012B (2 Jars), and for Cyanide (1Jar).



<b>Date Start/Finish:</b> 6/5/2008 <b>Drilling Company:</b> Parratt-Wolff, Inc. <b>Driller's Name:</b> Jim Lansing <b>Drilling Method:</b> Hollow Stem Auger <b>Auger Size:</b> 4.25" OD <b>Rig Type:</b> CME-75 <b>Sampling Method:</b> 2"x 2" SS	<b>Northing:</b> 1112309.823 <b>Easting:</b> 934001.0439 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 50' <b>Surface Elevation:</b> 388.3566  <b>Descriptions By:</b> Dan Zuck	<b>Well/Boring ID:</b> SB-16  <b>Client:</b> National Grid  <b>Location:</b> Erie Boulevard Syracuse, NY
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
390												
		1	0-2	0.9	13	23	0.0		SM	ASPHALT		
					11						Dark brown Sandy SILT, RCA material (Brick, Concrete, Asphalt) with fine to medium Sand, loose, moist to dry. (SM)	
					5							
					4							
335		2	2-4	0.5	3	7	1.0		SM			
					4							
					5							
		3	4-6	0.8	1	2	1.9		SM to GM			
					1						Medium to dark brown Sandy SILT, little fine to coarse angular Gravel, trace Coal fragments, loose, wet. (SM)	
					1							
					2							
		4	6-8	0.9	1	2	1.7		SM to GM			
					1							
380					1						Slight staining @ 8'	
		5	8-10	1.0	1	2	0.0		SM			
					1							
					3							
					2							
		6	10-12	1.7	2	3	114		SM			
					1						Black-stained fine to medium SAND, trace oil like material (about 5%), loose, saturated. (SM)	
					1							
					1							
		7	12-14	1.9	1	3	476		GM to SM			
					1						Black Sandy SILT, little fine to coarse subangular Gravel, trace tar like material (about 5%), loose, saturated. (GM to SM)	
					2							
375					4				SM		Black to dark brown stained SILT, trace coarse Sand, odor, medium dense, wet. (SM)	
					4							
					8							
		8	14-16	1.5	4	12	91.3		GM			
					4						Medium to dark brown fine to coarse subangular to angular Gravelly SILT, slight odor, medium dense, moist. (GM)	
					9							

Borehole tremie-grouted with Bentonite/Cement to grade

**Remarks:** bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Analytical sample collected from 12-14' and 18-20' bgs for BTEX, PAH.

Client: National Grid

Well/Boring ID: SB-16

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 50'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	370	9	16-18	1.0	6 7 8 14	15	66.1		GM		Medium to dark brown fine to coarse subangular to angular Gravely SILT, slight odor, medium dense, moist. (GM) Trace staining on exterior of sample (16-18.2)	Borehole tremie-grouted with Bentonite/Cement to grade
		10	18-20	0.9	5 5 13 19	18	41.3	X			Black-stained fine to coarse angular Gravely SILT, strong odor, sheen, wet. (GM) Medium to dark brown fine to coarse subangular to angular Gravely SILT, fractured Cobbles, slight odor, medium dense, moist. (LS)	
25	361	11	20-22	2.0	11 14 13 19	27	140				Medium brown Gravely SILT, some odor, dense, wet. (GM) Trace blebs of tar like material @ 20.0'	
		12	22-24	2.0	11 22 14 16	36	41.3		GM		Dark gray fine to coarse angular Silty GRAVEL, trace tar like material (droplets), loose, wet to saturated. (GM)	
30	360	13	24-26	2.0	6 8 11 10	19	427				Trace Clayey SILT, saturated @ 25.4'	
		14	26-28	NA	10 7 6 7	13	NA				No recovery	
35	355	15	28-30	NA	3 3 4 3	7	NA				Not representative recovery	
		16	30-32	2.0	4 5 5 4	10	66.2				Dark gray/trace medium brown fine to coarse angular Gravely SILT, some odor, trace to no sheen and staining, saturated. (GM)	
35	355	17	32-34	1.75	4 5 4 5	9	25.6				Dark gray fine to coarse angular Silty GRAVEL, tar like material, trace sheen, saturated. (GM)	
		18	34-36	0.9	4 6 9 7 4	16	25.1		GM		Black silt, odor @ 33.6' Trace fractured Cobble @ 34.31	

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.

Analytical sample collected from 12-14' and 18-20' bgs for BTEX, PAH.



Client: National Grid

Well/Boring ID: SB-16

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 50'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
		19	36-38	2.0	2	11	49.3				Dark gray fine to coarse Gravelly SILT, trace fractured Cobbles, tar like material sheen and odor, saturated. (GM)	
	350				4							
		20	38-40	0.8	7	9	96.9				Dark gray fine to coarse Silty GRAVEL, little fine to medium Sand, slight odor, medium dense, saturated. (GM)	
					10						Trace sheen on outside of recovery (38-40)	
40					5							
		21	40-42	2.0	4	10	81.2					
					6							
					6				GM			
	345				5							
		22	42-44	2.0	4	8	91.3					
					4							
					5							
45					4						Light to dark gray fine to coarse subrounded Gravelly SILT, slight odor, medium dense, wet. (GM)	
		23	44-46	1.2	5	9	33.2				Light to dark gray fine to coarse angular Silty GRAVEL, loose, saturated. (GM)	
					4							
					5							
		24	46-48	1.3	8	14	75.8					
					6							
					7						Trace sheen on outside of recovery (48-50)	
340					7							
		25	48-50	1.25	5	13	41.6		GC		Light gray/olive gray Clayey SILT, little fine subrounded to rounded Gravel, trace coarse Gravel, slight odor and plasticity, stiff, saturated to wet. (GC)	
					8							
50					5							
	335											
55												

Borehole tremie-grouted with Bentonite/Cement to grade

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Analytical sample collected from 12-14' and 18-20' bgs for BTEX, PAH.

<b>Date Start/Finish:</b> 6/6/2008 <b>Drilling Company:</b> Parratt-Wolff, Inc. <b>Driller's Name:</b> Jim Lansing <b>Drilling Method:</b> Hollow Stem Auger <b>Auger Size:</b> 4.25" OD <b>Rig Type:</b> Diedrich D-50 <b>Sampling Method:</b> 2"x 2' SS	<b>Northing:</b> 1112205.886 <b>Easting:</b> 934030.7299 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 64' bgs <b>Surface Elevation:</b> 387.1286  <b>Descriptions By:</b> Dan Zuck	<b>Well/Boring ID:</b> SB-17  <b>Client:</b> National Grid  <b>Location:</b> Erie Boulevard Syracuse, NY
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
	390											
					NA						ASPHALT	
		1	0-2	1.3	6	11	0.0		GM		Medium brown fine to coarse angular to subangular Gravelly SILT, RCA (Brick, Cement), trace fractured Cobbles, medium dense, moist. (GM) Slag and Silt (0.9-1' bgs).	
	385				5							
		2	2-4	1.0	8	13	0.0		SP		Light brown fine to medium SAND, trace Silt, loose, wet. (SP)	
					5						Medium brown fine Silty SAND, trace fine Gravel and coarse Sand, loose, moist. (SM)	
					4				SM		Black SLAG and COAL fragments, moist	
		3	4-6	1.1	3	9	0.0		GM		Medium brown fine to coarse angular Gravelly SILT, little RCA fragments (Brick, Cement), trace fractured Cobbles, loose to medium dense, moist. (GM)	
					6							
					4							
	380	4	6-8	0.5	3	6	0.0		GM		Medium brown fine to coarse angular Gravelly SILT, some fine to coarse Sand, medium dense, wet to saturated. (GM)	
					3							
					3							
		5	8-10	0.9	2	5	0.0				medium to dark brown fine to coarse angular GRAVEL, little Silt, saturated.	
					3						Black fine to coarse Gravelly SLAG, little Brick and Cement fragments, trace odor, saturated.	
					3							
					2							
		6	10-12	0.75	2	3	0.6					
					1							
					2							
	375				2						Odor, sheen @ 12' bgs.	
					1							
		7	12-14	1.3	1	2	304				Black fine Gravelly SLAG, some fine to medium Sand, some odor and sheen, loose, wet to saturated.	
					1							
					2							
					6							
		8	14-16	1.25	50/ 0.2	NA	602		SM		Medium brown/gray Sandy SILT, trace fine Gravel, droplets of tar like material, staining and odor, sheen throughout, medium dense, wet. (SM)	Borehole tremie-grouted with Bentonite/Cement to grade
					-							

**Remarks:** bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Client: National Grid

Well/Boring ID: SB-17

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 64' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
370		9	16-18	0.6	34 50/ 0.0	NA	407		SM		Medium brown/gray Sandy SILT, trace fine Gravel, droplets of tar like material, staining and odor, sheen throughout, medium dense, wet. (SM) Brown saturated tar like material @ 18.3' bgs.	
20		10	18-20	1.25	13 17 50/0.2	NA	204				Medium brown fine to coarse subrounded to subangular Gravely SILT, some fine Sand, trace droplets of tar like material, slight sheen and odor, medium dense, wet. (GM)	
		11	20-22	0.6	50/ 0.1	NA	243				fine to coarse Gravely SILT, some odor and staining, medium dense, moist. (GM)	
365		12	22-24	2.0	34 41 37 8	78	212				Sandy SILT, trace fine subrounded Gravel, loose, dry. (GM)	
25		13	24-26	1.3	6 5 6 8	11	55.3		GM		Dark gray fine to coarse subrounded Silty GRAVEL, mix of water and tar like material (~5%), odor and sheen, saturated. (GM)	
360		14	26-28	1.25	3 4 3 3	7	64.6				Some fractured and full Cobbles, some brown droplets on water surface (26-28' bgs).  Tar like material (~5-10%), significant sheen @ 28' bgs.	Borehole tremie-grouted with Bentonite/Cement to grade
30		15	28-30	0.3	6 7 7 5	14	25.1					
		16	30-32	0.6	6 8 8 15	16	32.6		SM to GM		Dark gray Sandy SILT, little fine to coarse subangular Gravel, odor and sheen, trace droplets/pockets of tar like material, medium loose to loose, wet. (SM-GM)	
355		17	32-34	2.0	12 12 9	24	116				Dark gray fine to coarse angular Gravely SILT, trace fractured Cobbles, some droplets of tar like material within spaces, loose, saturated. (GM)	
35		18	34-38	2.0	7 9 10 9	19	83.2		GM			

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Client: National Grid

Well/Boring ID: SB-17

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 64' bgs

DEPTH	ELEVATION	Sample Run Number	Sample Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
350		19	36-38	2.0	13 9 10 9	19	154				Dark gray fine to coarse angular Gravely SILT, trace fractured Cobbles, some droplets of tar like material within spaces, loose, saturated. (GM)	
40		20	38-40	1.6	8 8 8 6	16	97.5					
		21	40-42	2.0	7 7 7	14	72.8					
345		22	42-44	2.0	7 9 7 6	14	123				Dark olive gray fine to coarse subrounded Gravely SILT, some fine to medium Sand, little pockets/droplets of tar like material within spaces, odor and staining, some sheen, saturated. (GM)	
45		23	44-46	1.7	5 6 6 6	12	89.3		GM		Greenish light gray fine to coarse subangular Gravely SILT, little fine to medium Sand, some pockets of tar like material and odor, medium dense, wet to saturated. (GM)	
		24	46-48	0.7	11 6 4	12	114				Light gray @ 46' bgs.	Borehole tremie-grouted with Bentonite/Cement to grade
50		25	48-50	0.6	7 7 7 4	14	96.4					
		26	50-52	2.0	8 6 7 8	13	85.5					
335		27	52-54	2.0	8 8 8 6	16	40.5				Light gray fine to coarse subangular Gravely SILT, some fine Sand, little pockets of tar like material, sheen and odor, medium dense, wet. (GM)	
		28	54-56	2.0	12 11 10 12	21	42.7		ML GM		Light gray Clayey SILT, slight odor and plasticity, dense, moist. (ML) Greenish light gray fine to coarse subangular Gravely SILT, little fine to medium Sand, some pockets of tar like material and odor, medium dense, wet to saturated. (GM) Light gray fine to coarse subangular Gravely SILT, some fine Sand, little pockets of tar like material, sheen and odor, medium dense, wet. (GM)	

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Client: National Grid

Well/Boring ID: SB-17

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 64' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/in/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
330	29	56-58	1.25	10	9	18	83.9				Light gray fine to coarse subangular Gravely SILT, some fine Sand, little pockets of tar like material, sheen and odor, medium dense, wet. (GM)	
				9								
60	30	58-60	0.9	16	12	22	91.4		GM		Light greenish gray fine to coarse subrounded Gravely SILT, some fine Sand, trace Pebbles, little pockets of brown tar like material, sheen on water, some odor, trace staining, medium dense, wet.	Borehole tremie-grouted with Bentonite/Cement to grade
				10								
	31	60-62	1.3	NA	NA	NA	115					
325				NA								
				NA								
	32	62-64	1.5	NA	NA	NA	63.9					
				NA								
65												
320												
70												
315												
75												

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



<b>Date Start/Finish:</b> 6/3/2008 <b>Drilling Company:</b> Parratt-Wolff, Inc. <b>Driller's Name:</b> Jim Lansing <b>Drilling Method:</b> Hollow Stem Auger <b>Auger Size:</b> 4.25" OD <b>Rig Type:</b> CME-75 <b>Sampling Method:</b> 2"x2' SS	<b>Northing:</b> 1112058.117 <b>Easting:</b> 934018.9509 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 44' <b>Surface Elevation:</b> 389.8146  <b>Descriptions By:</b> Dan Zuck	<b>Well/Boring ID:</b> SB-18  <b>Client:</b> National Grid  <b>Location:</b> Erie Boulevard Syracuse, NY
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DEPTH	ELEVATION	Sample Run Number	Sample/In/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
	390											
		1	0-2	1.4	NA	14	0.0		GM	ASPHALT		
					6						Medium to light gray fine to coarse Gravely SILT, RCA material (Brick, Concrete, Asphalt) with fine to medium Sand, moist. (GM)	
					8							
					9							
		2	2-4	1.3	34	29	0.0		GM		Medium brown Sandy SILT, little coarse subangular Sand, trace fine Gravels, medium dense, moist to wet. (SM)	
					17							
					12							
					11							
					4							
5	385	3	4-6	1.5	3	6	0.0	X	SM		Medium brown Sandy SILT, RCA material (Brick, Concrete, Asphalt) with fine to medium Sand, little Brick and Cement pieces, trace Coal pieces, wet. (SM) Some Clay, slight plasticity (4-6')	
					3							
					3							
		4	6-8	1.25	4	8	0.0		SM to SC		Medium brown Sandy SILT, trace coarse angular Sand, soft, wet. (SM to SC)	
					4							
					4							
		5	8-10	1.2	2	5	0.6		GM		Medium brown fine to coarse subangular Gravely SILT, some fine to medium Sand, medium dense, moist to wet. (GM)	
					2							
					3							
10	380	6	10-12	0.9	8	16	0.0		GM		Olive brown/gray Silty fine to coarse angular GRAVEL, trace Cobbles (fractured Limestone and Quartzite), medium dense, moist.	
					8							
					8							
					9							
		7	12-14	1.0	2	13	0.0		GM		Medium brown fine to coarse subangular to angular Gravely SILT, some fine to medium Sand, trace Cobble fragments, medium dense, wet. (GM)	
					4							
					9							
					11							
15	375	8	14-16	1.4	4	10	0.0		SM		Olive gray SILT, trace coarse subangular Sand, medium dense, moist. (SM)	
					6							
					4							
					3							

Borehole tremie-grouted with Bentonite/Cement to grade

**Remarks:** bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.

Analytical sample collected from 4-6' and 24-26' bgs for for BTEX, 8270c and 9012B.



Client: National Grid

Well/Boring ID: SB-18

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 44'

DEPTH	ELEVATION	Sample Run Number	Sample Int/Type	Recovery (feet)	Blows / 6 inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	370	9	16-18	0.75	3	19	0.8		SM		Olive gray SILT, trace coarse subangular Sand, medium dense, moist. (SM)	
					8						Olive gray/medium brown fine to coarse angular Gravely SILT, little fractured Cobbles (Limestone and Quartzite), moist. (SM)	
					11							
					14							
25	365	11	20-22	0.8	5	28	0.0		SM to SC		Medium brown fine Sandy SILT, Clay, trace coarse subrounded Sand, soft, slight to low plasticity, wet. (SM to SC)	
					10							
					7							
					6							
30	360	12	22-24	0.75	4	10	0.0		GM		Light gray fine to coarse subangular Gravely SILT, little tar like material (droplets within pore space), odor and sheen, loose, wet. (GM)	Borehole tremie-grouted with Bentonite/Cement to grade
					6							
					6							
					5							
35	355	13	24-26	1.0	9	19	135	X			Light gray fine to coarse subangular Gravely SILT, little tar like material (droplets, about 1%), odor and sheen, loose, saturated. (GM)	
					10							
					4							
					9							
		14	26-28	0.8	9	17	62				Trace fractured Cobbles @ 32'	
					8							
					8							
					5							
		15	28-30	0.9	6	12	27.3					
					6							
					6							
					8							
		16	30-32	2.0	7	15	40.1					
					8							
					7							
					8							
		17	32-34	0.75	16	19	16.2					
					3							
					5							
					2							
		18	34-36	0.75	3	7	8.2					
					4							
					3							
					5							

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.

Analytical sample collected from 4-6' and 24-26' bgs for for BTEX, 8270c and 9012B.



Client: National Grid

Well/Boring ID: SB-18

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 44'

DEPTH	ELEVATION	Sample Run Number	Sample/in/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction						
40	350	19	36-38	0.6	3	8	21.9		GM		Light gray fine to coarse subangular Gravely SILT, little tar like material (droplets, about 1%), odor and sheen, loose, saturated. (GM)	Borehole tremie-grouted with Bentonite/Cement to grade						
					3						Medium brown fine to coarse subangular Gravely SILT, trace tar like material sheen, slight odor, saturated. (GM)							
					5						6		6	6	6	6	6	6
		20	38-40	1.1	6	12	0.0				No Recovery (40-42')							
					6	6	6				6		6	6	6	6	6	6
					4	6	6				6		6	6	6	6	6	6
		21	40-42	0.5	6	11	0.0				Color change to light gray @ 42'							
					6	6	6				6		6	6	6	6	6	6
					5	6	6				6		6	6	6	6	6	6
		22	42-44	0.9	6	12	1.3 to 10.1				Medium brown fine to coarse subangular Gravely SILT, trace tar like material sheen, slight odor, saturated. (GM)							
					6	6	6				6		6	6	6	6	6	6
					6	6	6				6		6	6	6	6	6	6

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.

Analytical sample collected from 4-6' and 24-26' bgs for for BTEX, 8270c and 9012B.





Client: National Grid

Well/Boring ID: SB-19

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 40'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
370		9	16-18	1.3	10 8 11 12	19	0.0		GM		Medium brown fine to coarse subangular to angular Gravely SILT, some fine to medium Sand, trace to little fractured Cobbles, medium dense, moist. (GM) Fractured Quartzite Cobbles, moist to wet @ 16.5'	
20		10	18-20	0.3	8 11 10 9	21	0.0		SM		Medium brown fine to coarse subangular to subrounded Gravely SILT, trace fractured Cobbles, wet. (SM)	
		11	20-22	1.1	5 4 5 9	9	0.0					
165		12	22-24	NA	75 NA NA NA	NA	NA				No recovery	
25		13	24-26	1.0	8 11 22 24	33	0.0				Medium to dark brown fine to coarse subangular to angular Gravely SILT, some fine to medium Sand, little fractured Cobbles, trace sheen, saturated. (GM)	
360		14	26-28	0.8	8 8 6 5	14	0.0					Borehole tremie-grouted with Bentonite/Cement to grade
		15	28-30	2.0	5 6 11 9	17	0.0				No sheen @ 29'	
30		16	30-32	1.2	4 8 11 7	19	0.0		GM		Light olive gray fine to coarse subangular to angular Gravely SILT, some fine to medium Sand, little fractured Cobbles, saturated. (GM)	
35.5		17	32-34	1.9	6 7 7 7	14	0.0					
35		18	34-36	1.1	4 4 4 4	8	0.0					

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.



Client: National Grid

Well/Boring ID: SB-19

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 40'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
350		19	36-38	1.25	4	7	0.0		GM		Light olive gray fine to coarse subangular to angular Gravelly SILT, some fine to medium Sand, little fractured Cobbles, saturated. (GM)	Borehole tremie-grouted with Bentonite/Cement to grade
		20	38-40	1.3	4	8	0.0					
40					5							
345												
45												
340												
50												
335												
55												

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; RCA = Re-Constituted-Aggregate.





Client: National Grid

Well/Boring ID: SB-20

Site Location:  
Erie Boulevard  
Syracuse, NY

Borehole Depth: 32' bgs

DEPTH	ELEVATION	Sample Run Number	Sampler/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
370		6	16-20	4.0			0.0				Brown to light brown fine to coarse SAND, some Silt and angular Gravel, dense, dry.	Borehole tremie-grouted with Bentonite/Cement to grade
							0.0					
20							0.0					
365		7	20-24	4.0			0.0				Angular ROCK fragments, some Silt, dense, moist to wet at the tip	
							0.0				Brown fine to coarse SAND and fine to coarse subangular to subrounded GRAVEL, dense, dry.	
25		8	24-28	2.80			0.0				Gray fine to coarse subrounded GRAVEL, some fine to coarse Sand, medium dense to loose, wet.	
360							0.0				Gray fine to coarse SAND and fine to coarse subangular GRAVEL, dense to medium dense, wet.	
							0.0					
30		9	28-32	2.35			0.0					
355												
35												

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; OLM = Oil Like Material; TLM = Tar Like Material; PLO = Petroleum Like Odor.



<b>Date Start/Finish:</b> 6/9/08 <b>Drilling Company:</b> Parratt-Wolff, Inc. <b>Driller's Name:</b> Jim Lansing <b>Drilling Method:</b> Hollow Stem Auger <b>Auger Size:</b> 4.25" OD <b>Rig Type:</b> Diedrich D-50 <b>Sampling Method:</b> 2"x 2" SS	<b>Northing:</b> 1112344.65 <b>Easting:</b> 933949.5633 <b>Casing Elevation:</b> NA  <b>Borehole Depth:</b> 50' bgs <b>Surface Elevation:</b> 389.871  <b>Descriptions By:</b> Ricardo Jaimes	<b>Well/Boring ID:</b> SB-21  <b>Client:</b> National Grid  <b>Location:</b> Erie Boulevard Syracuse, NY
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DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
	390										ASPHALT	
		1	0-2	0.9	NA	NA	0.0				Dark brown to black Silty CLAY, Sand, and fine Gravel, slight odor and plasticity, moist.	
					0.5							
					2							
					0							
		2	2-4	1.0	4	9	0.0				Brown Silty CLAY and fine Sand, some Coal, wet.	
					5							
					5							
					6							
-5	385	3	4-6	0.82	3	5	0.0				Dark brown fine to coarse SAND and angular fine GRAVEL, trace Silt, loose, moist.	
					2							
					3							
					6							
		4	6-8	1.4	7	12	0.0				Dark brown to dark gray fine to coarse SAND, some fine angular Gravel, little Silt, Slag, and Brick, moist.	
					7							
					7							
					6							
		5	8-10	1.38	8	15	0.0				Dark gray Silty CLAY and fine Sand, slight plasticity, medium dense, slight petroleum like odor (PLO), moist.	
					7							
					4							
-10	380	6	10-12	0.93	3	7	10.0				Brown to dark gray SAND and SILT, little Brick fragments, PLO, dense, moist.	
					4							
					3							
					11							
					13						No recovery	
		7	12-14	0.0	11	24	NA					
					13							
					20							
					2							
-15	375	8	14-16	1.7	4	8	11.5				Dark gray fine to medium SAND and SILT, trace Clay, low plasticity, PLO, medium stiff, wet.	
					4							
					4							
					6							

Borehole tremie-grouted with Bentonite/Cement to grade

**Remarks:** BGS = Below Ground Surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; OLM = Oil Like Material; TLM = Tar Like Material; PLO = Petroleum Like Odor.



Client: National Grid

Well/Boring ID: SB-21

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 50' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	370	9	16-18	2.0	4	11	14.7				Dark gray fine to medium SAND and SILT, trace Clay, low plasticity, PLO, medium stiff, wet.	
					5						Dark gray-stained CLAY and SILT, slight PLO, medium plasticity, stiff, moist.	
					6						Dark gray Clayey SAND, medium dense, moist.	
					6							
					6							
					6							
25	365	10	18-20	1.9	6	12	3.8				Gray to brown-stained Silty CLAY, high plasticity, stiff, moist.	
					6							
					6							
					7							
					2							
					3							
30	360	11	20-22	1.62	20	23	7.7				Gray and dark gray fine to coarse SAND and subangular GRAVEL, PLO, dense, wet.	
					23						Dark gray CLAY and SILT, little Sand, slight PLO, plastic, medium stiff, moist.	
					16							
					12							
					10							
					15							
35	355	12	22-24	0.9	12	22	2.3				Dark gray fine to coarse SAND and CLAY, slight PLO and plasticity, medium dense, moist.	
					8							
					8							
					12							
					8							
					12							
35	355	13	24-26	1.25	7	15	3.8				Gray to dark brown fine to coarse SAND and fine to coarse angular GRAVEL, some Silt, trace Clay, PLO, medium dense, moist.	
					12							
					8							
					12							
					12							
					9							
35	355	14	26-28	0.4	10	24	7.2				Dark gray fine to coarse SAND and fine to medium subangular to subrounded GRAVEL, slight odor, sheen, medium dense, wet.	
					9							
					7							
					6							
					2							
					6							
35	355	15	28-30	0.62	9	16	2.6				Gray fine to coarse subangular to subrounded GRAVEL, tiny blebs of oil like material (OLM), PLO, sheen, medium dense, wet.	
					5							
					5							
					2							
					5							
					6							
35	355	16	30-32	0.56	6	11	3.1				Gray fine to coarse subangular to subrounded GRAVEL, trace fine to coarse Sand, very small blebs of OLM, PLO, medium dense, wet.	
					5							
					5							
					2							
					6							
					6							
35	355	17	32-34	1.55	6	11	3.0				Dark gray medium to coarse subangular GRAVEL, little blebs of OLM, PLO, sheen, medium dense, wet.	
					6							
					6							
					5							
					5							
					6							
35	355	18	34-36	1.25	6	11	6.0				Small blebs of tar like material (TLM), and wet @ 36' bgs	
					6							
					5							
					5							
					5							
					5							

Borehole tremie-grouted with Bentonite/Cement to grade

Remarks: BGS = Below Ground Surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; OLM = Oil Like Material; TLM = Tar Like Material; PLO = Petroleum Like Odor.



Client: National Grid

Well/Boring ID: SB-21

Site Location:

Erie Boulevard  
Syracuse, NY

Borehole Depth: 50' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
40	350	19	36-38	1.5	2	12	5.1				Dark gray medium to coarse subangular GRAVEL, little blebs of OLM, PLO, silt, and clay, medium dense, wet.	Borehole tremie-grouted with Bentonite/Cement to grade
					5							
					7							
		20	38-40	2.0	10	30	6.3				Gray fine to coarse SAND and fine to coarse subangular to subrounded GRAVEL, PLO, dense, wet.	
					10							
					13							
		21	40-42	0.7	17	17	0.5				Gray fine to coarse SAND and fine to coarse subangular to subrounded GRAVEL, trace Silt, medium dense, wet.	
					7							
					6							
		22	42-44	0.85	7	15	0.0				Gray to dark gray coarse SAND and fine to coarse angular to subrounded GRAVEL, medium dense, wet.	
7												
8												
45	345	23	44-46	0.68	5	12	0.0				Gray SILT and fine to coarse SAND, some angular Gravel, medium dense, wet.	
					7							
					5							
24	46-48	1.10	6	11	0.2				Gray coarse SAND and fine to coarse angular GRAVEL, medium dense, wet.			
			5									
			5									
25	48-50	1.3	10	15	0.0				Slight organic matter odor at 48' bgs			
			9									
			6									
50	340											
55	335											

Remarks: BGS = Below Ground Surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; SS = Split Spoon; OLM = Oil Like Material; TLM = Tar Like Material; PLO = Petroleum Like Odor.



ARCADIS

**Test Pit Logs**

# TEST PIT LOG

Test Pit TP-1 Project/No. Erie Blvd. PSA/IRM AY0207.001 Page 1 of 1  
 Site Location Syracuse, NY Start Date 8/28/95 Finish Date 8/28/95  
 Excavated Depth 9 feet Hole Diameter NA feet Type of Sample/ Coring Device Back-hoe  
 Length and Width of Surface Cut 10' x 4' Sampling Interval Cont. feet  
 Land-Surface Elevation 389.9 feet  Surveyed  Estimated Datum NAVD 88 - NGVD 1929  
 Fluid Used None Excavator Back-hoe  
 Subcontractor Parratt-Wolff, Inc. Operator Brad Helper \_\_\_\_\_  
 Prepared By S. Blackmer

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Sample/Core Description
	From	To		
0.0	0.0	0.5		Asphalt.
0.5	0.5	2.5		Brick (mostly red, some yellow/off-white) and concrete, some brown sand, little cinders, dry, loose.
3.5	2.5	5.0		Concrete and red brick, larger fragments than above, some gray-black staining, some brown sand, little natural gravel, trace metal fragments.
3.6	5.0	6.0		Brick and Concrete fragments, some sand and natural gravel.
7.9	6.0	7.0		Brown Sand, some brick (less than above), faint odor, black staining; concrete foundation (or large concrete block) at 7'.
23.8	7.0	8.0		Sand, very fine, some gravel and coarse sand, thick petroleum liquid, odors.
25.7	8.0	9.0		Black stained fill materials (very fine Sand, some coarse sand, and gravel), wood planks (4x6 or possibly railroad ties?), concrete and brick, metal rods or pipes.
				Concrete foundation or floor at 9'.
				End test pit.



# TEST PIT LOG

Test Pit TP-2 Project/No. Eric Blvd. PSA/IRM AY0207.001 Page 1 of 1

Site Location Syracuse, NY Start Date 8/28/95 Finish Date 8/28/95

Excavated Depth 11 feet Hole Diameter NA feet Type of Sample/ Coring Device Back-hoe

Length and Width of Surface Cut 10' x 4' Sampling Interval Cont. feet

Land-Surface Elevation 389.5 feet  Surveyed  Estimated Datum NAVD 88  
NGVD-1929

Fluid Used None Excavator Back-hoe

Subcontractor Parratt-Wolff, Inc. Operator Brad Helper \_\_\_\_\_

Prepared By S. Blackmer

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Sample/Core Description
	From	To		
0.0	0.0	0.5		Asphalt.
0.0	0.5	2.0		Brown Sand and gravel, dry; bricks and brick fragments evident at 2'.
0.0	2.0	4.0		Brown sand, some gravel, little red brick/concrete, dry, trace metal, little to trace cinders; Larger fragments/blocks of brick and concrete evident.
0.2	4.0	5.0		Stone/rock and concrete wall or foundation materials.
0.0	5.0	6.0		Brown very fine Sand, some to little coarse sand and gravel.
2.3	6.0	7.0		Brown Sand and Gravel with some black staining (coal, cinders, and/or asphalt) evident - shiny appearance.
1.9	7.0	11.0		Brown very fine to fine Sand, some gravel, dry to damp. End test pit.



# TEST PIT LOG

Boring/Well TP-2A Project/No. Eric Blvd, PSA/IRM AY0207.001 Page 1 of 1

Site Location Syracuse, NY Start Date 9/19/95 Finish Date 9/19/95

Excavated Depth 10 feet Hole Diameter NA feet Type of Sample/Coring Device Back-hoe

Length and Width of Surface Cut 10' x 4' Sampling Interval Cont. feet

Land-Surface Elevation 389.2 feet  Surveyed  Estimated Datum NAVD 88 NGVD-1929

Fluid Used None Excavator Back-hoe

Subcontractor Parratt-Wolff, Inc. Operator Brad Helper \_\_\_\_\_

Prepared By S. Blackmer

OVM	Sample/Core Depth (feet below land surface)		Core Recovery (feet)	Sample/Core Description
	From	To		
0.0	0.0	0.5		Asphalt.
0.0	0.5	2.0		Brown Sand and Gravel (various sizes and compositions), dry to damp; bricks and brick fragments evident at 2'.
0.0	2.0	5.0		Brown fine to very coarse Sand and Gravel, some red brick/concrete, little to trace cinders, dry to damp.
0.0	5.0	10.0		Brown Sand and Gravel (finer than above), dry.
				Move back (away from wall) to extend test pit.
0.0	0.5	5.0		Fill - Sand and Gravel, some to little brick and cinders, little metal debris.
6.0	5.0	10.0		Dark brown Sand and Gravel (various sizes, compositions, and textures), dry to damp, trace black "staining" from coal or cinders(?) - petroleum not evident.
				Move back (away from wall) to extend test pit.
7.0	0.5	3.0		Fill, as seen in adjacent cuts, plus trace wood fragments.
				At approximately 3' pipes diagonal across hole; attempt to move back and go around;
				hit large concrete block (unmovable) at about 2.5'.



ARCADIS

**Piezometer Construction Logs  
and Soil Boring Logs**



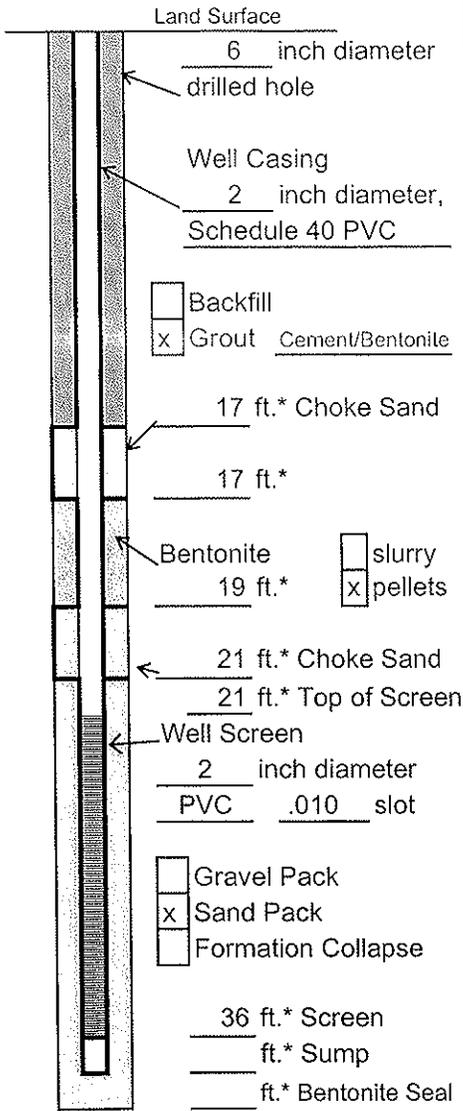






# WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is  
Top of Well Casing  
Unless Otherwise Noted.

\* Depth Below Land Surface

Project Erie Blvd Site PSA/IRM Well PZ-1<sup>3</sup>

Town/City Syracuse

County Onondaga State New York

Permit No. \_\_\_\_\_

Land-Surface Elevation and Datum 392.1 feet  Surveyed  
 Estimated

Installation Date NAV 88 October 3, 2000

Drilling Method Hollow Stem Auger

Drilling Contractor Parratt Wolff

Drilling Fluid Potable Water

Development Technique(s) and Date(s) \_\_\_\_\_

Fluid Loss During Drilling \_\_\_\_\_ gallons

Water Removed During Development \_\_\_\_\_ gallons

Static Depth to Water \_\_\_\_\_ feet below M.P.

Pumping Depth to Water \_\_\_\_\_ feet below M.P.

Pumping Duration \_\_\_\_\_ hours

Yield \_\_\_\_\_ gpm Date \_\_\_\_\_

Specific Capacity \_\_\_\_\_ gpm/ft.

Well Purpose Groundwater Monitoring

Remarks \_\_\_\_\_

Prepared by TM/DD

# ARCADIS

## Sample/Core Log

Boring/Well PZ-3 Project/No. Niagara Mohawk - Erie Boulevard/AY000207.0005 Page 1 of 1

Site Syracuse, NY Drilling Started 10/2/00 Drilling Completed 10/3/00

Total Depth Drilled 36 Feet Hole Diameter 8 inches Type of Sample/ Coring Device Split Spoon

Length and Diameter of Coring Device 2-feet x 2-inches Sampling Interval 2.0' feet

Land-Surface Elev. 392.14 feet  Surveyed  Estimated Datum \_\_\_\_\_

Drilling Fluid Used Potable water Drilling Method 4 1/4 HSA

Drilling Contractor Parratt Wolff Driller J. Perry Helper J. Lansing

Prepared By T. McClenahan/D. DeOrazio Hammer Weight 140 lbs. Hammer Drop 30 ins.

Sample/Core Depth (feet below land surface)	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	PID
0	2	1.0	5,20,16,13 brown, f SAND, some m gravel (angular), brick in bottom of spoon	1.2
2	4	1	12,12,13,16 brown, f SAND, dry, trace white ash, gravel and brick	0.8
4	6	1	13,19,18,21 brown, f SAND, trace small gravel (angular), trace silt	1.1
6	8	0.6	18,21,13,16 SAME AS ABOVE	0.7
8	10	0.5	9,10,9,8 lt. Brown, f SAND, 3" down packet of f black ash, trace silt and gravel	0.5
10	12	0.9	5,7,9,10 SAME AS ABOVE, some coarse gravel	0.8
12	14	0.8	14,16,15,20 f SAND, f-m gravel (angular), dry, trace silt	1.1
14	16	1.0	14,11,10,11 SAME AS ABOVE, trace silt	0.3
16	18	1.5	10,10,9,9 lt brown, f SAND, trace silt and clay, little gravel, trace ash	0
18	20	1	12,13,5,4 top 8" SAME AS ABOVE, no ash; bottom 4" gray plastic CLAY, no odor	1.2
20	22	1.0	2,2,2,2 gray, plastic CLAY	
22	24	1.5	2,4,5,5 top 1' gray CLAY, layer of wood chips at 1' down; bottom 4" gray silt	
24	26	2	20,34,24,31 top 1' SILT and SAND, bottom 1' f-c gravel (angular), silty, wet	
26	28		41, 50/.3 NO RECOVERY	
28	30	0.3	50/.3 f-m GRAVEL, wet, some silt	
30	32	0.8	10,15,12,13 f-m GRAVEL (rounded-angular), silty	
32	34	0.5	29,10,9,8 SAME AS ABOVE	
34	36	1.2	4,2,2,4 top 8", f-m SILTY GRAVEL; bottom 5" brown SILT, trace gravel	

**Date Start/Finish:** 5/26/16-5/27/16  
**Drilling Company:** Parratt-Wolff  
**Driller's Name:** Bill Rice  
**Drilling Method:** Hollow Stem Augers  
**Auger Size:** 3.25" ID followed by 10.25" ID  
**Rig Type:** Truck-mounted CME-75  
**Sampling Method:** 2' x 2" Split Spoon

**Northing:** 1112414.84'  
**Easting:** 933900.16'  
**Casing Elevation:** 390.54' AMSL  
**Borehole Depth:** 44' bgs  
**Surface Elevation:** 391.04' AMSL  
**Descriptions By:** Chris Kassel

**Well/Boring ID:** RW-1  
**Client:** National Grid  
**Location:** Erie Blvd Former Manufactured Gas Plant

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	390	1	0-5'	Hand cleared	NA	NA	0.0	Asphalt	Brown fine to coarse GRAVEL, some fine to coarse Sand, trace Brick, Silt, moist [FILL].	12" Heavy Duty Flush-Mount Locking J-Plug Concrete (0.0-1.0' bgs) Sand Drain (1.0-2.0' bgs)
5	385	2	5-7'	0.8	1 2 3	5	0.2	Brown SILT, little fine to medium subangular Gravel, trace Brick fragments, fine to medium Sand, clay, low plasticity, soft, moist [FILL].	Brown Sandy fine to coarse subangular to subrounded GRAVEL, trace Cobble, Brick, Silt, moist [FILL].	Cement-Bentonite Grout (2.0-7.0' bgs)
		3	7-9'	0.6	2 8 5 4	9	0.2	Little Sand, non-plastic starting at 7' bgs.	Light spotty black staining, no odor starting at 9' bgs.	Bentonite Chips (7.0-9.0' bgs)
10	380	4	9-10'	0.6	2 5	NA	0.2	Brown and light blue-stained Silty fine to medium SAND, little fine subangular Gravel, trace coarse Sand, loose, moist. [FILL]	Brown SILT, little fine to medium subangular Gravel, trace Brick fragments, soft, moist. Light spotty black staining, no odor [FILL].	6" OD sch 40 PVC Riser (0.4-14' bgs)
		5	10-12'	0.9	2 2 1	4	3.1	No odor at 12' bgs.	Olive grey SILT, trace fine to coarse Sand, soft, moist [FILL].	#2 Sand Pack (9.0-34' bgs)
		6	12-14'	1.2	3 3 2	6	0.2	Heavy black-coated Silty SAND and WOOD, soft, wet. Coating is viscous and oily. No odor [FILL].		6" OD 0.020" slot sch 40 PVC Screen (14-34' bgs)
15		7	14-16'	0.7	4 2 2 2	4	4.6			

**Remarks:** NM: Not Measured  
 NA: Not Applicable  
 bgs: Below ground surface  
 ': Feet  
 ": Inches  
 AMSL: Above Mean Sea Level  
 Elevations referenced to the North American Vertical Datum of 1988.  
 Geographic coordinates referenced to New York State Plane Central Zone, 3102.



Site Location:

Borehole Depth: 44' bgs

Erie Blvd Former Manufactured Gas Plant

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
37.5		8	16-18	1.1	2 7 3 3	10	2.6		Heavy black-coated Silty SAND and WOOD, soft, wet. Coating is viscous and oily. Iridescent sheen at 16.3 - 16.8' bgs, no odor [FILL].	<p>#2 Sand Pack (9.0-34' bgs)</p> <p>6" OD 0.020" slot sch 40 PVC Screen (14-34' bgs)</p> <p>Cement-Bentonite Grout (34-44' bgs)</p> <p>6" OD sch 40 PVC Sump (34-39' bgs)</p>
									BRICK and black-stained WOOD, no odor [FILL].	
					2 2 3 7	5	27.0		Black-stained SILT, trace fine Sand, soft, wet. Several dozen sand-sized iridescent blebs, slight coal tar-like odor.	
									Black Silty fine SAND, wet. Iridescent sheen, slight coal tar-like odor, saturated with viscous oily material.	
									Black-stained SILT, trace Clay, soft, low to moderately plastic, wet. Slight coal tar-like odor.	
					12 26 36 36	62	85.4		Greyish black stained medium to coarse SAND, little Silt, trace fine Gravel, Wood. Coarsens down to little Gravel, moist. Light spotty black coating with iridescent sheen.	
					7 10 7 8	17	76.2		Grey to olive coarse SAND, little fine subangular Gravel, trace Silt, loose, wet. Moderate coal tar-like odor, heavy coating of brown oily material. Note: Based on rig behavior, blow counts and recovery, likely coarser material from 20-23.5' bgs.	
					5 5 5 4	9	95.4		Black-stained to olive grey Sandy SILT, trace fine to medium angular Gravel, medium dense, wet. Moderate to heavy coating of black to brown viscous oil material on gravel, slight coal tar-like odor. Coarsens downward and coating decreases with depth. At 24' bgs coarsened to black-stained fine to coarse GRAVEL, trace small Cobbles, Silt, medium to coarse Sand, Dense, wet, light viscous brown to black coating, slight coal tar-like odor. No coating below 26' bgs. 26-27' bgs approximately 6 medium sand-sized blebs of brown oily-like material. No staining starting at 28' bgs. Note: based on rig behavior, blow counts and recovery, likely coarser material from 23.5-33' bgs.	
					8 6 7 7	13	7.5		Grey coarse Sand with fine angular Gravel lens from 31 - 31.5' bgs, wet, dense, no odor.	
					12 8 8	15	3.7		Black-stained coarse SAND, little fine subangular Gravel, trace Silt, fine to medium Sand, dense, wet. Slight coal tar-like odor.	
					6 10 10	18	1.8		Black-stained coarse SAND, little fine subangular Gravel, trace Silt, fine to medium Sand, dense, wet. Slight coal tar-like odor.	
					8 7 7 5	14	15.8		Black-stained coarse SAND, little fine subangular Gravel, trace Silt, fine to medium Sand, dense, wet. Slight coal tar-like odor.	
					4 4 4 5	8	6.2		Black-stained Silty fine to coarse GRAVEL, little small to medium Cobbles, trace coarse Sand, medium dense, wet, no odor.	
									Olive grey to black stained from 35-36' bgs.	

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 Geographic coordinates referenced to New York State Plane Central Zone, 3102.



Client: National Grid

Well/Boring ID: RW-1

Site Location:

Borehole Depth: 44' bgs

Erie Blvd Former Manufactured Gas Plant

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
355		18	36-38	0.6	8 7 6 6	13	6.1		Olive grey fine to coarse GRAVEL, some subround to rounded Cobbles, trace coarse Sand, dense, wet. Note: Based on rig behavior, blow counts and recovery, likely coarser material from 36-40' bgs.	<p>6" OD sch 40 PVC Sump (34-39' bgs)</p> <p>Cement-Bentonite Grout (34-44' bgs)</p>
		19	38-40	0.4	9 5 5 5	10	1.3			
40		20	40-42	1.0	5 6 6 7	12	2.8			
350		21	42-44	0.7	6 6 5 6	11	4.8			
		22								
45		23								
345		24								
		25								
50		26								
340										
55										

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**Date Start/Finish:** 5/16/16- 5/20/16  
**Drilling Company:** Parratt-Wolff  
**Driller's Name:** Bill Rice  
**Drilling Method:** Hollow Stem Augers  
**Auger Size:** 3.25" ID followed by 10.25" ID  
**Rig Type:** Truck-mounted CME-75  
**Sampling Method:** 2' x 2" Split Spoon

**Northing:** 1112306.86'  
**Easting:** 933898.96'  
**Casing Elevation:** 388.92' AMSL  
**Borehole Depth:** 54' bgs  
**Surface Elevation:** 389.36' AMSL  
**Descriptions By:** Chris Kassel

**Well/Boring ID:** RW-2  
**Client:** National Grid  
**Location:** Erie Blvd Former Manufactured Gas Plant

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								Asphalt	12" Heavy Duty Flush-Mount
		1	0-5'	Hand cleared	NA	NA	0.0		Softdig to 5' bgs. Grey fine to medium rounded GRAVEL, little fine Sand, trace Silt and Clay, dense, dry [FILL]. No odor.	Locking J-Plug
									Stone pavers/blocks [FILL]. No odor	Concrete (0.0-1.0' bgs)
									Grey fine to medium rounded GRAVEL, little fine Sand, trace Silt and Clay, Dense, Dry [FILL]. No odor.	Sand Drain (1.0-2.0' bgs)
5	-5				2				Grey fine to coarse SAND, trace medium subround Gravel, loose, dry [FILL]. No odor.	
		2	5-7'	0.9'	5	11	0.0		Bricks [FILL].	Cement-Bentonite Grout (2.0-7.0' bgs)
					6					
					5					
		3	7-9'	0.9'	6	15	2.0		Yellow-brown to black stained fine to coarse SAND, trace Silt and subangular fine Gravel, loose, moist [FILL]. No odor.	Bentonite Chips (7.0-9.0' bgs)
					7					
					8					
					10					
10	-10	4	9-10'	1.0'	5	NA	178.6		Black stained Silty fine to medium SAND, trace fine to medium subround Gravel, loose, moist [FILL]. moderate coating of black viscous tar-like substance, moderate coal tar-like odor.	6" OD sch 40 PVC Riser (0.4-15.3' bgs)
					7					
					8					
					7					
					7					
		5	10-12'	1.6'	7	14	168.4			
					8					
					7					
					7					
		6	12-14'	1.4'	8	16	161.0		Olive Grey SILT, little Clay, trace coarse Sand, medium stiff, medium plasticity, moist [FILL].	#2 Sand Pack (9.0-45.3' bgs)
					9					
					7					
					3				Black stained Silty fine SAND, trace Wood fibers, loose, moist [FILL]. Moderate coating of viscous tar-like substance, strong coal tar-like odor.	
					2					
					2					
15	-15	7	14-16'	1.5'	1	3	396.3		14.5 - 14.7' bgs: Black stained fine to medium angular GRAVEL fining down to fine to medium SAND, little Silt, wet [FILL]. Heavy viscous tar-like to oily black coating, strong coal tar-like odor.	6" OD 0.020" slot sch 40 PVC Screen (15.3-45.3' bgs)
					2					

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Site Location:

Borehole Depth: 54' bgs

Erie Blvd Former Manufactured Gas Plant

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	-20	8	16-18	2.0'	3	4	189.5		14.7 - 16' bgs: Black stained fine SAND, little Silt, trace Wood fibers, soft, wet [FILL]. Strong coal tar-like odor.	<p>6" OD 0.020" slot sch 40 PVC Screen (15.3-45.3' bgs)</p> <p>#2 Sand Pack (9.0-45.3' bgs)</p>
					2			16 - 16.4' bgs: Black stained fine GRAVEL to coarse SAND, little fine Sand, trace Wood, loose, wet [FILL]. Saturated with oil-like material with slight iridescent sheen, strong coal tar-like odor.		
					2			Black stained Sandy SILT, medium stiff, moist [FILL]. Staining decreases with depth and soil becomes olive grey at 17.9' bgs. Moderate coal tar-like odor.		
					2			Olive Grey Clayey SILT, medium stiff, moist [FILL]. Slight odor.		
25	-25	9	18-20	1.2'	3	10	32.1		WOOD [FILL].	
					7			Olive Grey angular Shale fragments, medium sand to fine gravel in size, loose, dry [FILL]. Slight odor.		
					22			Olive grey Silty fine subangular GRAVEL, little fine to medium Sand, medium dense, moist [FILL]. Trace black spotty staining and brown coarse sand-sized oily blebs. Slight coal tar-like odor increasing with depth.		
					10			No Recovery.		
30	-30	10	20-22	0.6'	18	34	95.7		Black stained subround fine to coarse GRAVEL and freshly shattered COBBLES, little coarse Sand, trace fine Sand and Silt, loose, wet. Moderate coating of black viscous oil-like material with spotty silvery to iridescent sheens, slight coal tar-like odor.	
					16			Olive grey Silty fine subangular GRAVEL, little fine to medium Sand, medium dense, moist [FILL]. Trace black spotty staining and brown coarse sand-sized oily blebs. Slight coal tar-like odor increasing with depth.		
					14			No Recovery.		
					6			Black stained subround fine to coarse GRAVEL and freshly shattered COBBLES, little coarse Sand, trace fine Sand and Silt, loose, wet. Moderate coating of black viscous oil-like material with spotty silvery to iridescent sheens, slight coal tar-like odor.		
35	-35	11	22-24	0.8'	9	17	6.8		Yellow-brown to dark grey brown with some black staining Silty fine to coarse subangular to subround GRAVEL, trace fine to coarse Sand, loose, wet. Spotty iridescent sheens in split spoon and moderate coal tar-like odor.	
					8					
					8					
					6					
		12	24-26	0.5'	6	11	8.0			
					6					
					5					
					8					
		13	26-28	0.0'	6	14	NA			
					8					
					6					
					7					
		14	28-30	0.3'	6	13	1.3			
					6					
					7					
					5					
		15	30-32	0.7'	3	14	17.7			
					5					
					9					
					24					
		16	32-34	0.8'	29	NA	12.0			
					50/0.3'					
					-					
					-					
		17	34-36	1.2'	11	18	6.1			
					11					
					7					
					6					

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Site Location:

Borehole Depth: 54' bgs

Erie Blvd Former Manufactured Gas Plant

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
40	-40	18	36-38	0.8'	8	18	57.0		Black stained fine to coarse subangular GRAVEL, little coarse Sand, loose, wet. Heavy coating of black oily tar-like material, moderate coal tar-like odor.	<p>6" OD 0.020" slot sch 40 PVC Screen (15.3-45.3' bgs)</p> <p>#2 Sand Pack (9.0-45.3' bgs)</p> <p>6" OD sch 40 PVC Sump (45.3-50.5' bgs)</p> <p>Bentonite Pellets (45.3-51.5' bgs)</p> <p>Formation Collapse</p>
					9			Dark grey brown with spotty black staining Silty fine to coarse subangular to subround GRAVEL, trace fine to coarse Sand, loose, wet. Moderate coal tar-like odor.		
					9			Black Stained Sandy fine to coarse subround to subangular GRAVEL, trace Silt, loose, wet. Approximately 12 sand-sized brown blebs of low viscosity NAPL, spotty iridescent sheens, moderate coal tar-like odor.		
					11			Black Stained coarse SAND and fine rounded GRAVEL, trace fine to medium Sand, medium dense, wet. Moderate coal tar-like odor.		
45	-45	20	40-42	0.7'	5	14	20.8		Olive Grey Silty fine SAND, trace medium to coarse Sand, medium stiff, non plastic, wet. One brown low viscosity bleb at 41' bgs.	
					9					
					2					
50	-50	21	42-44	0.5'	11	19	24.9		Dark Grey to black stained medium SAND, little coarse Sand, trace fine to medium subround to sub angular Gravel, one freshly broken small Cobble, medium dense, wet. Spotty iridescent sheen, one brown low viscosity bleb at 43.5' bgs, moderate coal tar-like odor.	
					10					
					9					
55	-55	22	44-46	0.5'	9	11	39.7		Dark Grey fine to coarse subround to subangular GRAVEL, some medium to coarse Sand, trace Silt, dense, wet. Spotty silvery to iridescent sheens, slight coal tar-like odor. Fining down to Sandy fine to medium GRAVEL trace Silt.	
					5					
					6					
					5					
55	-55	23	46-48	0.9'	6	10	70.9		Light Grey coarse subangular to subround GRAVEL with medium Sand, trace Silt and Clay, dense, wet. Spotty iridescent sheen 46.5-48' bgs only, no odor.	
					5					
					5					
					4					
55	-55	24	48-50	0.8'	10	17	2.4			
					12					
					5					
					8					
55	-55	25	50-52	0.9'	5	13	2.7			
					4					
					9					
					5					
55	-55	26	52-54	0.9'	5	13	2.5			
					5					
					8					
					4					

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**Date Start/Finish:** 5/23/16-5/24/16  
**Drilling Company:** Parratt-Wolff  
**Driller's Name:** Bill Rice  
**Drilling Method:** Hollow Stem Augers  
**Auger Size:** 3.25" ID followed by 10.25" ID  
**Rig Type:** Truck-mounted CME-75  
**Sampling Method:** 2' x 2" Split Spoon

**Northing:** 1112244.30'  
**Eastings:** 933922.73'  
**Casing Elevation:** 388.29' AMSL  
**Borehole Depth:** 53' bgs  
**Surface Elevation:** 388.75' AMSL  
**Descriptions By:** Chris Kassel

**Well/Boring ID:** RW-3  
**Client:** National Grid  
**Location:** Erie Blvd Former Manufactured Gas Plant

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0									
		1	0-5'	NA	NA	NA	0.0		Asphalt	12" Heavy Duty Flush-Mount Locking J-Plug Concrete (0.0-1.0' bgs) Sand Drain (1.0-2.0' bgs) Cement-Bentonite Grout (2.0-3.0' bgs) Bentonite Chips (3.0-5.0' bgs)
		2	5-7'	0.7	2 1 2 1	3	0.3		Softdig to 5' bgs. Dark Grey Sandy fine to coarse subround GRAVEL, trace Silt, dense, moist to dry [FILL].	6" OD sch 40 PVC Riser (0.4-7.0 bgs)
		3	7-9'	1.5	1 5 11 10	16	361.1		Black stained medium SAND, little fine to medium subround to subangular Gravel, trace fine to coarse Sand, Silt, brick and slag, loose, moist. Slag has light coating of hard asphalt-like tar, no odor [FILL]. Yellow brown Silty CLAY, trace fine Sand, medium stiff, moist [FILL].	
		4	9-10'	0.9	6 4	NA	580.3		Black stained medium SAND, little fine to medium subround to subangular Gravel, trace fine to coarse Sand, Silt, brick, wood and slag, loose, moist. Partial heavy coating of viscous tar-like material, strong coal tar-like odor. Becomes wet with iridescent sheen at 9 feet [FILL].	#2 Sand Pack (5.0-47.0' bgs)
		5	10-12'	0.9	5 4 2	9	286.4		Black stained WOOD and fine angular GRAVEL, little Silt, Dense, wet. Heavy coating of viscous tar-like material, moderate coal tar-like odor [FILL].	
		6	12-14'	1.9	3 4 3 4	7	268.8		Olive grey SILT, trace fine Sand, fine subround Gravel, and Clay, stiff, low plasticity, moist. Moderate coal tar-like odor.	6" OD 0.020" slot sch 40 PVC Screen (7.0-47.0' bgs)
		7	14-16'	0.6	3 3 3 4	6	24.9			

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Site Location:

Borehole Depth: 53' bgs

Erie Blvd Former Manufactured Gas Plant

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		8	16-18	1.9	3	8	20.0		Olive grey SILT, trace fine Sand, fine subround Gravel, and Clay, stiff, low plasticity, moist. Moderate coal tar-like odor.	<p>6" OD 0.020" slot sch 40 PVC Screen (7.0-47.0' bgs)</p> <p>#2 Sand Pack (5.0-47.0' bgs)</p>
					4			Dark grey SILT, trace fine Sand, fine subround Gravel, and Clay, stiff, low plasticity, wet to moist, steadily coarsens down to coarse SAND, little Silt, little fine subangular Gravel, Dense by 18 feet, coarsens further to Silty medium to fine SAND, some subround fine Gravel, dense. Moderate to slight coal tar-like odor.		
					4					
20	-20	9	18-20	0.8	3	18	103.8		Olive grey fine to coarse subround to angular GRAVEL with larger pieces freshly broken, trace Silt and fine to coarse Sand, Dense in spoon, slight coal tar-like odor. Wet with trace spotty dark grey staining 22-24 feet, moderate coal tar-like odor. small cobble in nose of spoon and augers heavily grinding through this zone indicates coarser material than recovered likely present at this depth.	
					5					
					13					
25	-25	10	20-22	0.9	3	15	240.2		Olive grey fine to coarse subround to angular GRAVEL with larger pieces freshly broken, trace Silt and fine to coarse Sand, Dense in spoon, slight coal tar-like odor. Wet with trace spotty dark grey staining 22-24 feet, moderate coal tar-like odor. small cobble in nose of spoon and augers heavily grinding through this zone indicates coarser material than recovered likely present at this depth.	
					6					
					9					
25	-25	11	22-24	0.7	9	22	79.4		Olive grey fine to coarse subround to angular GRAVEL with larger pieces freshly broken, trace Silt and fine to coarse Sand, Dense in spoon, slight coal tar-like odor. Wet with trace spotty dark grey staining 22-24 feet, moderate coal tar-like odor. small cobble in nose of spoon and augers heavily grinding through this zone indicates coarser material than recovered likely present at this depth.	
					13					
					12					
25	-25	12	24-26	0.3	-	NA	1.2		Grey fine to coarse subround to angular GRAVEL, trace Cobbles, loose, wet. Bleds of oily brown NAPL, spotty iridescent sheen, moderate odor.	
					6					
					9					
30	-30	13	26-28	0.2	14	14	5.4		Grey fine to coarse subround to angular GRAVEL, trace Cobbles, loose, wet. Bleds of oily brown NAPL, spotty iridescent sheen, moderate odor.	
					8					
					6					
30	-30	14	28-30	1.2	7	14	11.3		Grey Silty subround to angular fine to coarse GRAVEL, some fine to coarse Sand, loose, wet.	
					6					
					8					
30	-30	15	30-32	0.7	8	28	7.0		Black stained coarse SAND, little medium to coarse subangular Gravel and Silt, loose, wet. Strong coal tar-like odor becoming slight by 30 feet. Augers grinding through this interval as if gravel or coarser material present.	
					15					
					29					
35	-35	16	32-34	0.9	4	11	2.8		Black stained to olive grey fine to coarse subround to subangular GRAVEL, little coarse Sand, trace Silt and fine to medium Sand, loose, wet. Coarsening down to some cobbles. Spotty iridescent sheen around approximately 12 fine sand-sized blebs of brown oily material from 32-34 feet, moderate coal tar-like odor.	
					6					
					5					
35	-35	17	34-36	1.0	3	10	25.0		Black stained to olive grey fine to coarse subround to subangular GRAVEL, little coarse Sand, trace Silt and fine to medium Sand, loose, wet. Coarsening down to some cobbles. Spotty iridescent sheen around approximately 12 fine sand-sized blebs of brown oily material from 32-34 feet, moderate coal tar-like odor.	
					4					
					6					

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Site Location:

Borehole Depth: 53' bgs

Erie Blvd Former Manufactured Gas Plant

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
40	-40	18	36-38	0.5	5	15	2.0		Black stained to olive grey fine to coarse subround to subangular GRAVEL, little coarse Sand, trace Silt and fine to medium Sand, loose, wet. Coarsening down to some cobbles. Moderate coal tar-like odor.	
					6					
					9					
40	-40	19	38-40	0.2	9	19	1.3		Olive grey coarse SAND, trace fine to coarse subround Gravel, small Cobbles and Silt, loose, wet, no odor. 45-46.5 feet gravel heavily coated with brown oily material, fine sand-sized blebs of same material in sand and silt, Strong coal tar-like odor.	
					10					
					9					
45	-45	20	40-42	0.7	1	6	6.1		Olive grey Silty coarse SAND, trace fine to medium subround Gravel, medium stiff, wet, no odor.	
					5					
					3					
45	-45	21	42-44	0.7	5	12	1.7		Olive Grey Silty fine to coarse GRAVEL, little small subround Cobbles, trace fine Sand, dense, wet, no odor.	
					5					
					7					
45	-45	22	44-46	0.7	8	16	179.4		Olive grey Silty coarse SAND, trace fine to medium subround Gravel, medium stiff, wet, no odor.	
					8					
					7					
50	-50	23	46-48	0.7	8	16	15.8		Olive Grey Silty fine to coarse GRAVEL, little small subround Cobbles, trace fine Sand, dense, wet, no odor.	
					8					
					6					
50	-50	24	48-50	0.7	5	21	0.7		Olive Grey Silty fine to coarse GRAVEL, little small subround Cobbles, trace fine Sand, dense, wet, no odor.	
					7					
					14					
50	-50	25	50-52	0.6	9	18	0.5		Olive Grey Silty fine to coarse GRAVEL, little small subround Cobbles, trace fine Sand, dense, wet, no odor.	
					9					
					11					
55	-55	26	52-53	0.0	NA	NA	NA		Olive Grey Silty fine to coarse GRAVEL, little small subround Cobbles, trace fine Sand, dense, wet, no odor.	
					NA					
					NA					

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