APPENDIX A

WELL CONSTRUCTION LOGS

TRC
Results you can rely on
21 Griffin Road North
Windsor, CT 06095
Telephone: 860-298-9692
Fax: 860-298-6399

BORING/WELL NUMBER: **MW-01 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	42	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/4/09	Date Completed:	11/5/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612775.73	East:	776715.87
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	306.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	308.5 ft.		

DRILLING INFORMATION		GROUND WATER OBSERVATIONS			
Drilling Contractor:	Glacier Drilling LLC	MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
Driller(s):	Dave Gardner	DATE	11/4/2009		
Drilling Method:	Hollow Stem Auger	DEPTH (ft.bgs.)	28.11		
Equipment/Model:	Truck-mounted CME-85	REFERENCE			
Sampler:	2" split spoon	STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
0									Steel stick-up
1–5	AU-0-5		5.0	5.0				0'- 0.5' ASPHALT 0.5'- 10' FILL, light gray, fine to medium sand and silt, little clay and fine gravel, trace coarse gravel, slight combustion residue odor, damp, no staining	Cement (0'-2')
6–10	AU-5-10		5.0	5.0					
11–15	AU-10-15		5.0	5.0				10'- 17' FILL, woody fill (stumps, brush, railroad ties), trace metallic debris, wire fabric, tiles and rubber sheeting	Backfill (2'-21')
16–20	AU-15-20		5.0	5.0				17'- 25' FILL, gray, fine sand and silt, some wood fibers, ash/slag, brown glass, strong resin/dye odor, dry	

Notes: Book 1; Page 20-21

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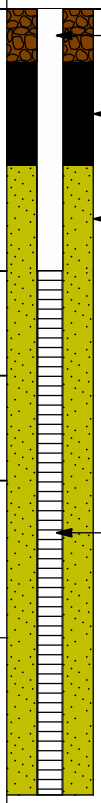
BORING/WELL NUMBER: **MW-01 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	42	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/4/09	Date Completed:	11/5/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612775.73	East:	776715.87
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	306.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	308.5 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
21–25	AU-20-25		5.0	5.0				17'- 25' FILL, gray, fine sand and silt, some wood fibers, ash/slag, brown glass, strong resin/dye odor, dry
26–27	SS-25-27		2.0	1.2	12 20 9 9			25'- 27' FILL, gray, fine sand and silt, some wood fibers, ash/slag, brown glass, strong resin/dye odor, dry
28–29	SS-27-29		2.0	0.3	6 14 6 8			27'- 29' FILL, wood fibers, clear glass, printed paper, moderate odor, moderate stain, wet between 27'-29'
30–34	AU-29-34		5.0	5.0				29'- 32' FILL, wood fibers, clear glass, printed paper, moderate odor, moderate stain, wet
								32'- 35' Light gray-brown, fine to medium SAND, some silt, little fine gravel, trace coarse sand (till), wet. Refusal at bedrock at 41.1'.
35–39	AU-34-35		5.0	1.0				
40–42								
43–46								

WELL DIAGRAM



Refusal at 41.1 feet.
Bottom of borehole at 42.0 feet.

TRC
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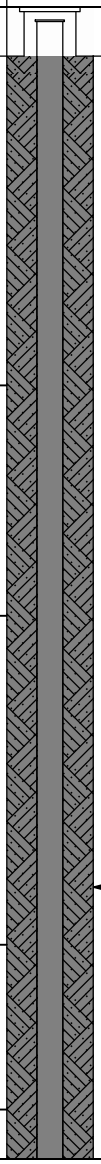
BORING/WELL NUMBER: **MW-01 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	65	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/4/09	Date Completed:	11/9/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612779.6	East:	776714.12
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	306.3
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	307.8 ft.		

DRILLING INFORMATION		GROUND WATER OBSERVATIONS			
Drilling Contractor:	Glacier Drilling LLC	MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
Driller(s):	Dave Gardner	DATE	11/4/2009		
Drilling Method:	Hollow Stem Auger	DEPTH (ft.bgs.)	29.79		
Equipment/Model:	Truck-mounted CME-85	REFERENCE			
Sampler:	2" split spoon	STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–5	AU-0-5		5.0					0'- 0.5' ASPHALT 0.5'- 10' FILL, light gray, fine to medium sand and silt, little clay and fine gravel, trace coarse gravel, slight combustion residue odor, no staining, damp
6–7	SS-5-7		2.0	1.3	3 3 3 3			
8–15	AU-7-15		8.0					10'- 17' FILL, woody fill (stumps, brush, railroad ties), trace metallic debris, wire fabric, tiles and rubber sheeting
16–17	SS-15-17		2.0	0.2	4 5 9 9			
18–25	AU-17-25		8.0					17'- 27' FILL, gray, fine sand and silt, some wood, fiber, ash/slag, brown glass, moderate odor, dry
26–27	SS-25-27		2.0	0.5	9 14 14 17			
28–30	AU-27-30		3.0					27'- 32' FILL, wood fibers, clear glass, printed paper, moderate to strong odor, moderate stain, wet between 27'-30'.
31–32	SS-30-32		2.0	0.5	2 10 4 6			
33								

WELL DIAGRAM



Notes: Book 1; Page 16,21

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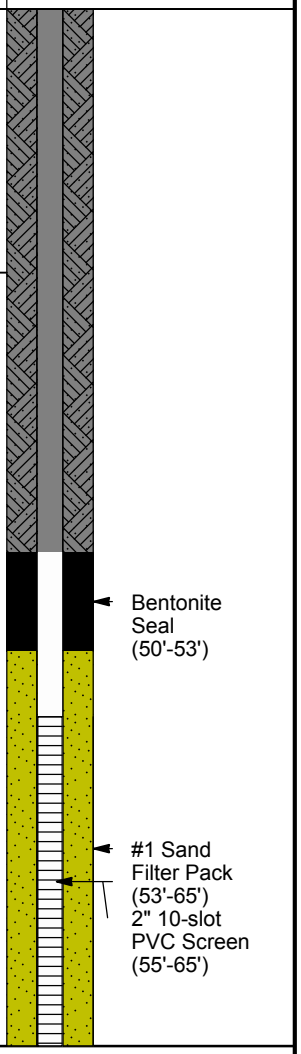
BORING/WELL NUMBER: **MW-01 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	65	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/4/09	Date Completed:	11/9/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612779.6	East:	776714.12
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	306.3
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	307.8 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
34–40	AU-32-40		8.0					32'- 41.5' Light gray, fine to medium SAND, some silt, little fine gravel, trace coarse sand (till), wet	
41–42	SS-40-42		2.0	1.5	61 51 100 0				
43–65	RC-42-65		23.0	23.0				41.5'- 65' Medium gray, medium grained gneiss (bedrock)	



Bottom of borehole at 65.0 feet.

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Results you can rely on

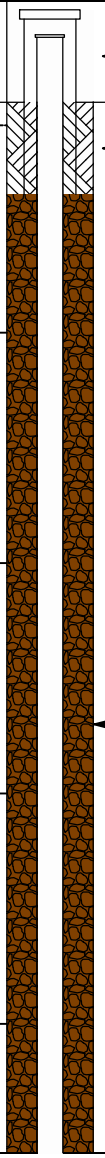
BORING/WELL NUMBER: **MW-02 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	43	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/2/09	Date Completed:	11/3/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612828.99	East:	777537.46
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	301.8
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	304 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	11/2/2009		
DEPTH (ft.bgs.)	29.84		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0								
	AU-0-0.5		0.5	0.5				0'- 0.5' ASPHALT
1–5	AU-0.5-5		4.5	4.5				0.5'- 5' FILL, light gray-brown, fine sand, some silt, trace medium to coarse sand, trace fine gravel, trace ash/slag, trace metallic, plastic and wood debris, moderate combustion residue odor, dry, no staining
6–10	AU-5-10		5.0	5.0				5'- 10' FILL, light gray-brown, fine sand, some silt, trace medium to coarse sand, trace fine gravel, trace ash/slag, trace metallic, plastic and wood debris, moderate combustion residue odor, dry, no staining
11–15	AU-10-15		5.0	5.0				10'- 15' FILL, gray-brown fine sand and silt, some ash/fill material, fiberous, moderate odor, moderate stain, dry
16–20	AU-15-20		5.0	5.0				15'- 20' FILL, dark gray-brown, fine sand and silt, some ash/fill material (styrofoam), slight odor, slight stain, dry
21–22	AU-20-		5.0	5.0				20'- 25' FILL, dark gray fine sand and silt, little clay, some woody material (plastic, trace glass and other fill material), damp



Notes: Book 1; Page 10-11

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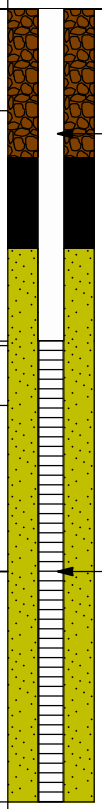
BORING/WELL NUMBER: **MW-02 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	43	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/2/09	Date Completed:	11/3/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612828.99	East:	777537.46
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	301.8
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	304 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
24–25	25							20'- 25' FILL, dark gray fine sand and silt, little clay, some woody material (plastic, trace glass and other fill material), damp
26–30	AU-25-30		5.0	5.0				25'- 30' Dark gray brown FINE SAND and SILT, trace fine gtravel, trace fill materials, damp
31–32	SS-30-32		2.0	1.4	12 66 82 65			30'- 30.1' CRUSHED ROCK (cobble) 30.1'- 31.4' Medium gray FINE to MEDIUM SAND and SILT, little fine gravel, slight odor, no stain.
33–37	AU-32-37		5.0	5.0				31.4'- 35' Medium gray Fine to Medium SAND, little silt, trace fine gravel, wet. 35'- 40' Medium gray-brown FINE to MEDIUM SAND, little silt, little fine to coarse gravel, wet
38–40	AU-37-40		3.0	3.0				
41–43								



WELL DIAGRAM

Refusal at 41.9 feet.
Bottom of borehole at 43.0 feet.

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BORING/WELL NUMBER: **MW-02 (R)**

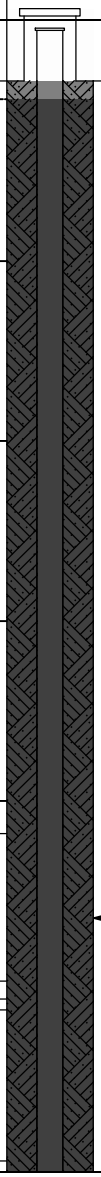
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	60	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/2/09	Date Completed:	11/5/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612831.52	East:	777538.44
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	301.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	303.6 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	11/2/2009		
DEPTH (ft.bgs.)	29.34		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0								
1	AU-0-0.5		0.5	0.5				0'- 0.5' ASPHALT
2 3 4 5	AU-0.5		4.5	5.0				0.5'- 5' FILL, light gray-brown, fine sand, some silt, trace medium to coarse sand, trace fine gravel, trace ash/slag, trace metallic, plastic and wood debris, moderate combustion residue odor, dry, no staining
6 7	SS-5-7		2.0	1.3	3 9 4 5			5'- 10' FILL, light gray-brown, fine sand, some silt, trace medium to coarse sand, trace fine gravel, trace ash/slag, trace metallic, plastic and wood debris, moderate combustion residue odor, dry, no staining
8 9 10	AU-7-10		3.0	3.0				
11 12	SS-10-12		2.0	0.6	2 1 3 2			10'- 15' FILL, gray-brown fine sand and silt, some ash/fill material, fiberous, moderate odor, moderate stain, dry
13 14 15	AU-12-15		3.0	3.0				
16 17	SS-15-17		2.0	0.4	8 4 3 4			15'- 20' FILL, dark gray-brown, fine sand and silt, some ash/fill material (styrofoam), slight odor, slight stain, dry
18 19 20	AU-17-20		3.0	3.0				
21	SS-20-22		2.0	1.3	10 5 11 18			20'- 20.9' WOOD FRAGMENTS, gravel in tip
22 23 24 25	AU-22-25		3.0	3.0				20.9'- 25' FILL, dark gray fine sand and silt, little clay, some woody material (plastic, trace glass and other fill material), damp
26 27	SS-25-27		2.0	1.0	24 28 14 14			25'- 25.5' Light gray FINE SAND, little silt, trace fine gravel, slight odor, no stain, dry
								25.5'- 25.8' FILL, dark brown wood fibers
28 29 30								25.8'- 30' Dark gray brown FINE SAND and SILT, trace fine gtravel, trace fill materials, damp

WELL DIAGRAM



Notes: Book 1; Page 6,11

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
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TRC
Results you can rely on
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Fax: 860-298-6399

BORING/WELL NUMBER: **MW-02 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	60	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/2/09	Date Completed:	11/5/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612831.52	East:	777538.44
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	301.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	303.6 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
31–32	SS-30-32		2.0	1.7	6 70 38 45			30'- 30.3' Dark gray FINE SAND and SILT, some wood fibers, little fine gravel	
32–35	AU-32-35		3.0	3.0				30.3'- 30.8' CRUSHED ROCK (likely cobble) with light gray mica and quarts crystals; 30.8'- 35' Medium gray Fine to Medium SAND, little silt, trace fine gravel, wet at 31'bg	
35–37	SS-35-37		2.0	1.8	12 16 18 79			35'- 35.4' Medium gray-brown FINE to MEDIUM SAND, little silt, little fine to coarse gravel, wet	
37–40	AU-37-40		3.0	3.0				35.4'- 40' CRUSHED ROCK (possibly weathered)	
40–42	SS-40-42		2.0	1.8	12 20 74 100			40'- 41.8' Medium gray FINE SAND and SILT, trace clay, little fine gravel, trace coarse gravel, wet, dense	
42–45	AU-27-30 / AU-42-45		30.0 / 3.0	3.0 / 3.0				41.8'- 45' Auger through possible weathered BEDROCK to 45' and set up air hammer to confirm bedrock	
45–46								45'- 50' Air hammer to 50' bg and install steel casing	
46–48									Bentonite Seal (46'-48')
48–50									
50–60	RC-45-60		15.0	15.0				50'- 60' BEDROCK	#1 Sand Filter Pack (48'-60') 2" 10-slot PVC Screen (50'-60")
60–68								Refusal at 41.9 feet. Bottom of borehole at 60.0 feet.	

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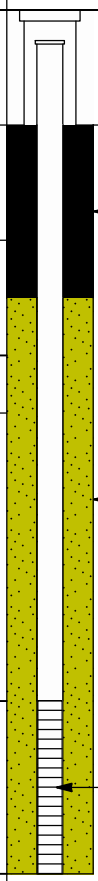
BORING/WELL NUMBER: **MW-03 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	15	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/4/09	Date Completed:	11/4/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612287.34	East:	777043.76
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	296.7
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	298.7 ft.		

DRILLING INFORMATION		GROUND WATER OBSERVATIONS			
Drilling Contractor:	Glacier Drilling LLC	MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
Driller(s):	Dave Gardner	DATE	11/4/2009		
Drilling Method:	Hollow Stem Auger	DEPTH (ft.bgs.)	6		
Equipment/Model:	Truck-mounted CME-85	REFERENCE			
Sampler:	2" split spoon	STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0								
1–2	SS-0-2		2.0	0.5	2 3 2 3			0'- 2' Brown fine SAND and SILT, little clay, trace fine gravel
3–4	SS-2-4		2.0	1.2	3 2 4 28			2'- 4' Dark gray fine to medium SAND and SILT, little caly, trace fine gravel
5	AU-4-5		1.0	1.0				4'- 5' Dark gray fine to medium SAND and SILT, little caly, trace fine gravel
6–10	AU-5-10		5.0	5.0				5'- 10' Brown to black fine to medium SAND and SILT, little fine gravel, little fill materials (brick, ash/slag, concrete, wood), moderate odor, moderate stain, damp to wet
11–13	AU-10-13		3.0	3.0				10'- 13' Brown to black fine to medium SAND and SILT, little clay, little f-gravel, little fill materials (ash/slag, concrete), moderate odor, moderate stain, wet
14–15								
16–18								Bottom of borehole at 15.0 feet.



Notes: Book 1; Page 15,17

TRC
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BORING/WELL NUMBER: **MW-03 (R)**

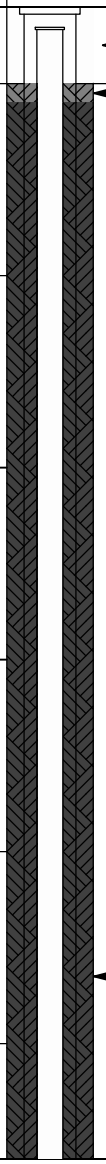
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	60	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/3/09	Date Completed:	11/5/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612287.84	East:	777047.24
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	296.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	298.5 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	11/3/2009		
DEPTH (ft.bgs.)	4		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–5	AU-0-5		5.0	5.0				0'- 5' TOPSOIL. Wet at 4'bg
6–7	SS-5-7		2.0	1.2	2 5 6 5			5'- 10' Brown to black fine to medium SAND and SILT, little fine gravel, little fill materials (brick, ash/slag, concrete, wood), moderate odor, moderate stain, damp to wet
8–10	AU-7-10		3.0	3.0				
11–12	SS-10-12		2.0	1.0	13 30 44 40			10'- 15' Brown to black fine to medium SAND and SILT, little clay, little f-gravel, little fill materials (ash/slag, concrete), moderate odor, moderate stain, wet
13–15	AU-12-15		3.0	3.0				
16–17	SS-15-17		2.0	0.5	7 18 18 8			15'- 20' Dark brown black, fine to medium SAND and SILT/CLAY, little fine gravel, trace wood, moderate odor, wet
18–20	AU-17-20		3.0	3.0				
21–22	SS-20-22		2.0	1.0	26 11 11 9			20'- 25' Dark brown to black fine SAND and SILT/CLAY, some organic material (decaying wood), trace fill materials (glass), moderate odor, wet
23–25	AU-22-25		3.0	3.0				
26–27	SS-25-27		2.0	0.5	8 9 10 14			25'- 30' Medium gray fine to medium SAND and SILT/CLAY, little fine to coarse gravel, organic odor, no stain, wet
28								

WELL DIAGRAM



Notes: Book 1; Page 12,17

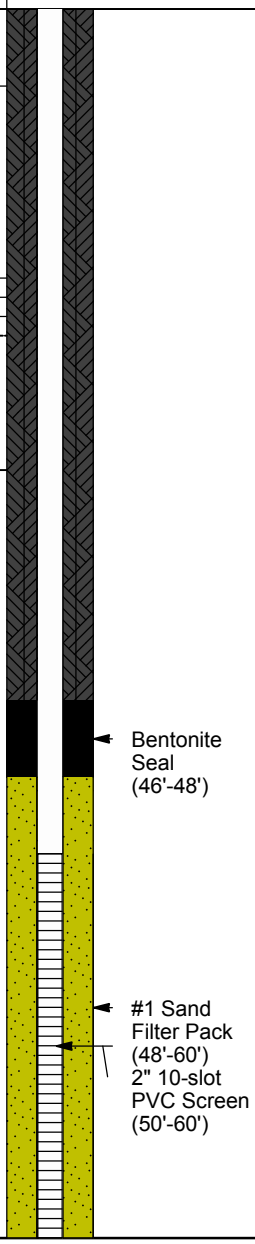
TRC
Results you can rely on
21 Griffin Road North
Windsor, CT 06095
Telephone: 860-298-9692
Fax: 860-298-6399

BORING/WELL NUMBER: **MW-03 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	60	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/3/09	Date Completed:	11/5/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612287.84	East:	777047.24
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	296.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	298.5 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
29–30	AU-27-30		3.0	3.0				
31–32	SS-30-32		2.0	0.7	8 100			30'- 35' Orange brown coarse SAND and fine GRAVEL, little fine sand and silt
33–35	AU-32-35		3.0	3.0				
36–37	SS-35-37		2.0	1.5	35 42 100			35'- 35.5' Medium gray fine to medium SAND and SILT, little fine to coarse gravel, wet
								35.5'- 36' Orange brown coarse SAND and fine to coarse GRAVEL, little silt and clay
								36'- 36.5' WEATHERED BEDROCK
38–40	AU-37-40		3.0	3.0				36.5'- 40' WEATHERED BEDROCK
41–60	RC-40-60		20.0	20.0				40'- 60' BEDROCK
61–64								Refusal at 36.5 feet. Bottom of borehole at 60.0 feet.

WELL DIAGRAM



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BORING/WELL NUMBER: **MW-04 (OB)**

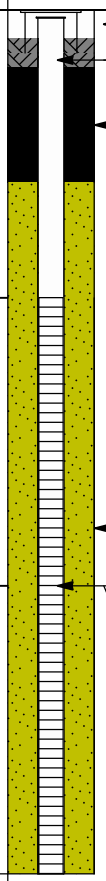
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	17	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/10/09	Date Completed:	11/10/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612342.01	East:	777607.15
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	285.4
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	285.4 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	11/10/2009		
DEPTH (ft.bgs.)	14		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–5	AU-0-5		5.0	5.0			0'- 5' Brown, fine to medium SAND, some silt, some fine to coarse gravel, indications of boulders
6–10	AU-5-10		5.0	5.0			5'- 10' Brown, fine to medium SAND, some silt, some fine to coarse gravel, some cobbles, indications of boulders
11–15	AU-10-15		5.0	5.0			10'- 15' Brown, fine to medium SAND, some silt, some fine to coarse gravel, some cobbles, indications of boulders. Auger refusal at 15' bg
16–17							
18–20							Bottom of borehole at 17.0 feet.

WELL DIAGRAM



Notes: Book 1; Page 37

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BORING/WELL NUMBER: **MW-04 (R)**

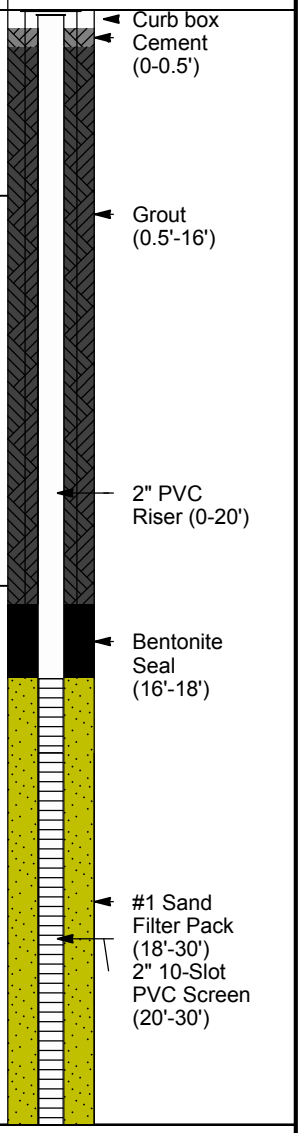
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	30	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/6/09	Date Completed:	11/10/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612345.82	East:	777608.61
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	285.3
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	285.3 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling, LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS				
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	11/6/2009		
DEPTH (ft.bgs.)	8.45		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–5	AU-0-5		5.0	5.0			0'- 5' Brown, fine to medium SAND, some silt, some fine to coarse gravel, indications of boulders
6–10	AU-5-10		5.0	5.0			5'- 15.5' Brown, fine to medium SAND, some silt, some fine to coarse gravel, some cobbles, indications of boulders, wet at 14'.
11–15	AU-10-15		5.0	5.0			
15–16	AU-15-15.5		0.5	0.5			
16–30	RC-15.5-30		14.5	14.5			15.5'- 30' Medium gray, medium-grained gneiss (bedrock)
31							Bottom of borehole at 30.0 feet.

WELL DIAGRAM



Notes: Book 1; Page 28,37

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BORING/WELL NUMBER: **MW-05 (R)**

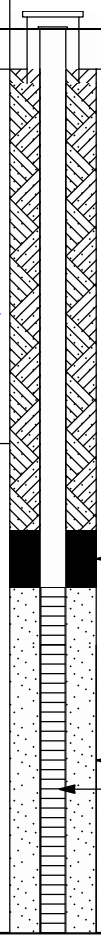
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	30	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/6/09	Date Completed:	11/10/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612366.57	East:	776681.63
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	308
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	309.4 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	11/6/2009		
DEPTH (ft.bgs.)	8.5		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–13	AU-0-5, AU-5-10, AU-10-13		5.0, 5.0, 3.0	5.0, 5.0, 3.0			0'- 13' Brown, fine to medium SAND, some fine to coarse gravel, little cobble, indications of boulders. Auger refusal at 13' bg
13–30	RC-13-30		17.0	17.0			13'- 30' Medium gray, medium-grained gneiss (bedrock)

WELL DIAGRAM



Bottom of borehole at 30.0 feet.

Notes: Book 1; Page 25, 27,35

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BORING/WELL NUMBER: **MW-06 (OB)**

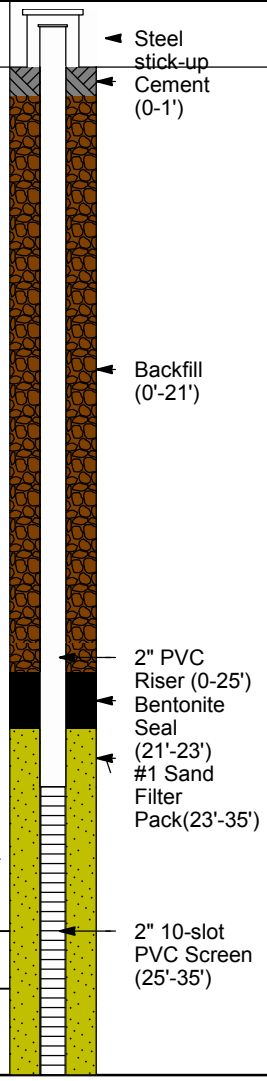
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	35	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/8/12	Date Completed:	3/8/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612880.03	East:	777099.21
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	307.6
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	309.9 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Terry Bell
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/8/2012		
DEPTH (ft.bgs.)	27.5		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–30	AU-0-30		30.0	30.0				0'- 30' FILL, gray fine SAND and wood fragments, dry, no odor, no stain
31–32	SS-30-32		2.0	0.0	2 8 10 9			30'- 32' FILL, gray fine SAND and wood fragments, dry, no odor, no stain
33–35	AU-32-35		3.0	3.0				32'- 35' FILL, gray fine SAND and wood fragments, dry, no odor, no stain

Bottom of borehole at 35.0 feet.



Notes: Book 2; Page 23

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BORING/WELL NUMBER: **MW-06 (R)**

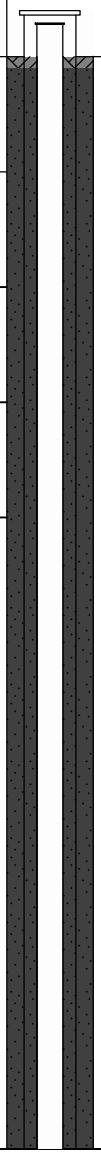
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	100	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	12/8/09	Date Completed:	12/15/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612884.85	East:	777092.75
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	307.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	310.1 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	12/8/2009		
DEPTH (ft.bgs.)	35.52		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–5	AU-0-5		5.0	5.0			0'- 5' FILL, Black organic material, some gravel, wood pieces, concrete
5–10	AU-5-10		5.0	5.0			5'- 10' Gray black, fine to medium SAND and SILT, wet highly organics fines
10–15	AU-10-15		5.0	5.0			10'- 15' Gray black, fine to medium SAND and SILT, wet highly organics fines
15–20	AU-15-20		5.0	5.0			15'- 20' Gray black, fine to medium SAND and SILT, wet highly organics fines
20–68	AU-20-68		48.0	48.0			20'- 68' Gray black, fine to medium SAND and SILT, wet highly organics fines

WELL DIAGRAM



Notes:

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
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BORING/WELL NUMBER: **MW-06 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	100	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	12/8/09	Date Completed:	12/15/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612884.85	East:	777092.75
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	307.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	310.1 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
48–68							20'- 68' Gray black, fine to medium SAND and SILT, wet highly organics fines	
69–100	RC-68-100		32.0	32.0			68'- 100' BEDROCK	Bentonite Seal (88'-86'); #1 Sand Filter Pack (88'-100'); 2" 10-Slot PVC Screen (90'-100')

Refusal at 70.0 feet.
Bottom of borehole at 100.0 feet.

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BORING/WELL NUMBER: **MW-07 (R)**

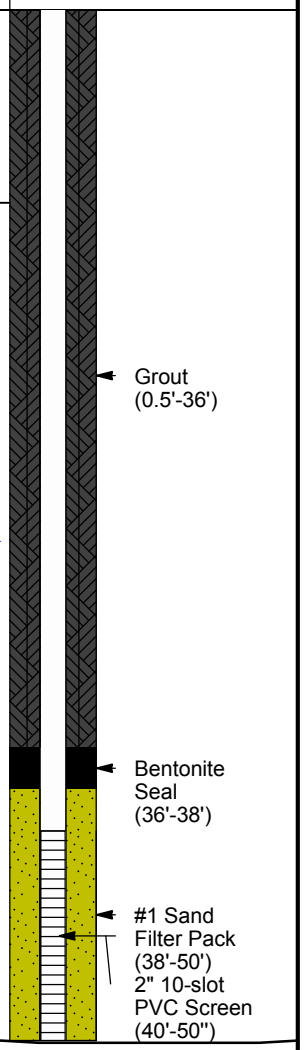
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	50	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/11/09	Date Completed:	11/12/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612722.54	East:	778681.82
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	358.7
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	357.91 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	11/11/2009		
DEPTH (ft.bgs.)	26.17		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
2–10	AU-0-10		10.0	10.0			0'- 10' Brown, fine to medium SAND, some silt, trace clay, some fine to coarse gravel, little cobble
11–50	RC-10-50		40.0	40.0			10'- 50' Medium gray, medium-grained gneiss (bedrock)

WELL DIAGRAM



Bottom of borehole at 50.0 feet.

Notes: Book 1; Page 39

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BORING/WELL NUMBER: **MW-08 (R)**

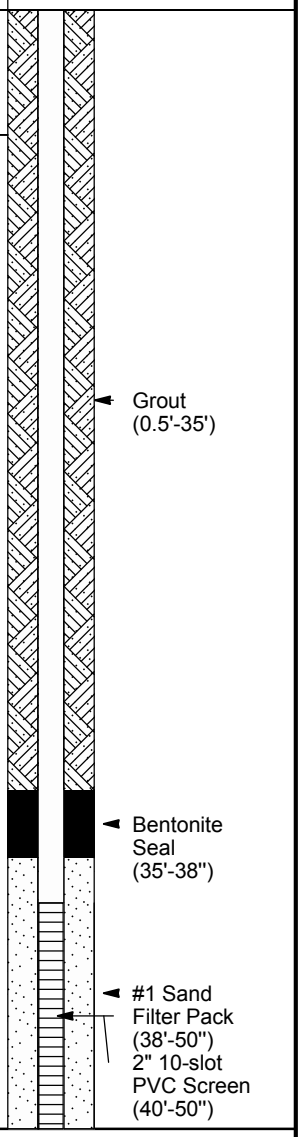
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	50	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	11/9/09	Date Completed:	11/11/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612788.35	East:	780022.75
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	276.1
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	275.64 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	11/8/2009		
DEPTH (ft.bgs.)	4.77		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
2–6	AU-0-6		6.0	6.0			0'- 6' Light yellow brown, rock dust, very boney
7–50	RC-6-50		44.0	44.0			6'- 50' Medium gray, medium-grained gneiss (bedrock)
51							Bottom of borehole at 50.0 feet.

WELL DIAGRAM



Notes: Book 1; Page 29,39

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
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BORING/WELL NUMBER: **MW-09 (OB)**

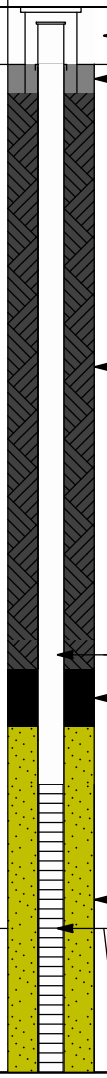
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	35	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/15/12	Date Completed:	3/15/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612553.55	East:	777302.39
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	310.8
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	312.8 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	
Equipment/Model:	
Sampler:	

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–35	AU-0-35		35.0	35.0			0'- 30' FILL, wood, audio cassette tap, boulders and concrete
30–35							30'- 35' Fine SAND and SILT, native material

Bottom of borehole at 35.0 feet.



Notes: Book 2; Page 45

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
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BORING/WELL NUMBER: **MW-09 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	75	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	12/14/09	Date Completed:	12/15/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612552.75	East:	777297.68
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	310.4
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	312.2 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Dave Gardner
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	12/14/2009		
DEPTH (ft.bgs.)	35.72		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
0–30	AU-0-30		30.0	30.0			0'- 30' FILL, wood, audio cassette tap, boulders and concrete	Steel stick-up; Cement (0-0.5)
30–38							30'- 50' Fine SAND and SILT, native material	Grout (0.5'-61')

Notes:

TRC
Results you can rely on
21 Griffin Road North
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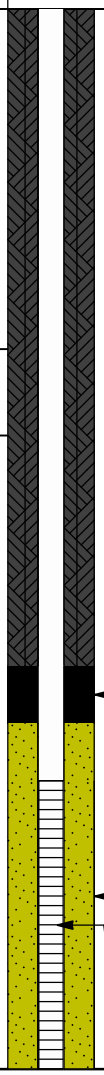
Fax: 860-298-6399

BORING/WELL NUMBER: **MW-09 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	75	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	12/14/09	Date Completed:	12/15/09
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612552.75	East:	777297.68
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	310.4
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	312.2 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
39–50	AU-30-50		20.0	20.0			30'- 50' Fine SAND and SILT, native material
51–53	AU-50-53		3.0	3.0			50'- 53' WEATHERED ROCK
54–75	RC-53-75		22.0	22.0			53'- 75' BEDROCK, medium gray, medium-grained gneiss

WELL DIAGRAM



Bottom of borehole at 75.0 feet.

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BORING/WELL NUMBER: **MW-10 (R)**

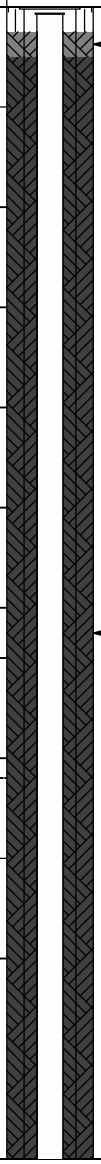
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	40	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/6/12	Date Completed:	3/7/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612594.2	East:	776680.06
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	308.2
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	308.2 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–2	SS-0-2		2.0	0.9	10 10 10			0'- 2' Shattered BRICK, some black silt and fine sand, dry, no odor, no staining
3–4	SS-2-4		2.0	0.9	7 6 4 8			2'- 4' Black, SILT, some organics in tip, moist, no odor, no staining
5–6	SS-4-6		2.0	0.7	4 4 2 4			4'- 6' Black, SILT, wood fragments, light brown fine sand in tip, damp, no odor, no staining
7–8	SS-6-8		2.0	0.5	2 2 2 3			6'- 8' Gray, SILT, little fine sand, damp, no odor, no staining
9–10	SS-8-10		2.0	1.1	16 21			8'- 10' Refusal at 8'. Dark brown, SILT, some fine sand, little fine gravel, rock in tip, damp, no odor, no staining
11–12	SS-10-12		2.0	0.3				10'- 12' Gray, PULVERIZED ROCK. Refusal at 12'.
13								12'- 13' No Core
14–15	SS-13-15		2.0	1.6	17 19 24 22			13'- 15' Gray, fine to medium SAND, some silt, pulverized rock throughout, dry, no odor, no staining
16	SS-15-16.2		1.2	1.2	22 30			15'- 15.4' Light brown, fine SAND, some silt, dry, no odor, no staining
17–19	AU-16.2-19		2.8	2.8				15.4'- 17' Light brown, SILT, some fine gravel, damp, no odor, no staining. Refusal at 19'. 17'- 19' WEATHERED BEDROCK
20–23								19'- 40' BEDROCK

WELL DIAGRAM



Notes: Book 3; Page 5,17

21 Griffin Road North
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BORING/WELL NUMBER: **MW-10 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	40	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/6/12	Date Completed:	3/7/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612594.2	East:	776680.06
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	308.2
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	308.2 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
24								19'- 40' BEDROCK	2" PVC Riser (0-30')
25									
26									Bentonite Seal (25'-28')
27									
28									
29									
30	RC-19-40		21.0	21.0					
31									
32									
33									
34									#1 Sand Filter Pack (28'-40')
35									2" 10-slot PVC Screen (30'-40')
36									
37									
38									
39									
40									
41								Bottom of borehole at 40.0 feet.	
42									
43									
44									
45									
46									
47									
48									
49									
50									

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BORING/WELL NUMBER: **MW-11 (OB)**

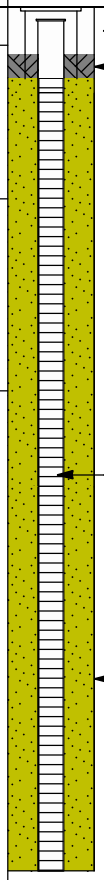
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	10	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/6/12	Date Completed:	3/6/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612330.17	East:	776853.65
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	303.4
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	303.4 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/6/2012		
DEPTH (ft.bgs.)	4.5		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–2	SS-0-2		2.0	1.5	2 3 3 4			0'- 0.4' TOPSOIL 0.4'- 2' Gray, SILT and CLAY, pieces of tire at 1.0', wet at 1.0', no odor, no staining
3–4	SS-2-4		2.0	1.0	1 2 4 2			2'- 4' Gray, SILT and fine SAND, saturated, no odor, no staining
5–6	SS-4-6		2.0	0.0	1 2 50			4'- 10' Refusal on boulder at 7.5'. Refusal again at 8'. Auger cuttings @ 10': wood, tires, plastic debris
7–10	AU-6-10		4.0	4.0				
11–12								Bottom of borehole at 10.0 feet.

WELL DIAGRAM



Notes: Book 3; Page 7,8

TRC
Results you can rely on
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BORING/WELL NUMBER: **MW-11 (R)**

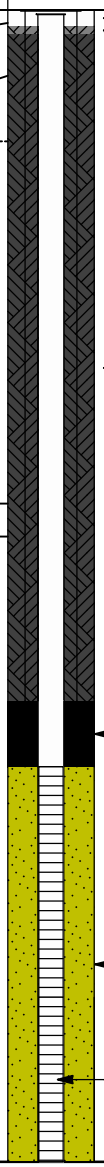
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	35	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/8/12	Date Completed:	3/12/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612328.69	East:	776861.91
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	302.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	302.9 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–5	AU-0-5		5.0	5.0			0'- 0.4' TOPSOIL 0.4'- 2' Gray, SILT and CLAY, pieces of tire at 1.0', wet at 1.0', no odor, no staining 2'- 4' Gray, SILT and fine SAND, saturated, no odor, no staining 4'- 15' Gray, SILT and fine SAND, saturated, no odor, no staining
6–10	AU-5-10		5.0	5.0			
11–15	AU-10-15		5.0	5.0			
16	AU-15-16		1.0	1.0			15'- 16' Boulder encountered at 15' bg 16'- 35' BEDROCK
17–26	RC-16-26		10.0	10.0			
27–35	RC-26-35		9.0	9.0			

WELL DIAGRAM



Notes: Bottom of borehole at 35.0 feet.

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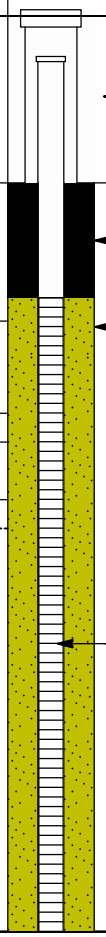
BORING/WELL NUMBER: **MW-12 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	13	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/16/12	Date Completed:	3/16/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612223.52	East:	777321.88
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	291.6
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	294.5 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/16/2012		
DEPTH (ft.bgs.)	5.2		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0							
1–5	AU-0-5		5.0	5.0			0'- 2.4' Medium brown, fine to medium SAND, little fine gravel, trace silt, dry, no odor, no staining
							2.4'- 4' Pulverized rock
							4'- 4.5' Medium brown, fine to medium SAND, little silt, dry, no odor, no staining
							4.5'- 5.5' Pulverized rock
6–10	AU-5-10		5.0	5.0			5.5'- 6' Light brown, fine to coarse SAND, little fine gravel, trace silt, damp, no odor, no staining
							6'- 13' Light brown, fine to coarse SAND, little silt, trace fine gravel, saturated, no odor, no staining
11–13	AU-10-13		3.0	3.0			
14–17							Bottom of borehole at 13.0 feet.



Notes: Book 3; Page 48

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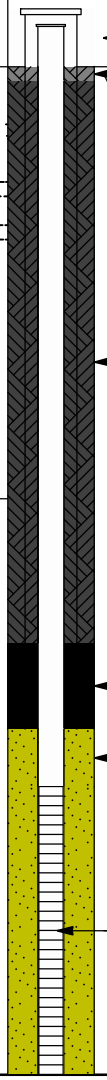
BORING/WELL NUMBER: **MW-12 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	35	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/16/12	Date Completed:	3/20/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612221.31	East:	777326.31
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	291.2
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	294.6 ft.		

DRILLING INFORMATION		GROUND WATER OBSERVATIONS			
Drilling Contractor:	Glacier Drilling LLC	MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
Driller(s):		DATE			
Drilling Method:	Hollow Stem Auger	DEPTH (ft.bgs.)			
Equipment/Model:	Truck-mounted CME-85	REFERENCE			
Sampler:	2" split spoon	STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–2	SS-0-2		2.0	1.4	1 3 4 3			0'- 2' Medium brown, fine to medium SAND, little fine gravel, trace silt, dry, no odor, no staining
2–4	SS-2-4		2.0	0.8	3 9 31 20			2'- 2.4' Medium brown, fine to medium SAND, little fine gravel, trace silt, dry, no odor, no staining; 2.4'- 4' Pulverized rock
4–6	SS-4-6		2.0	2.0	10 31 43 44			4'- 4.5' Medium brown, fine to medium SAND, little silt, dry, no odor, no staining; 4.5'- 5.5' Pulverized rock
6–8	SS-6-8		2.0	0.8	40 100			5.5'- 6' Light brown, fine to coarse SAND, little fine gravel, trace silt, damp, no odor, no staining
8–10	AU-8-10		2.0	2.0				
10–15	AU-10-15		5.0	5.0				6'- 15' Light brown, fine to coarse SAND, little silt, trace fine gravel, saturated, no odor, no staining
15–25	RC-15-25		10.0	10.0				15'- 35' BEDROCK
25–35	RC-25-35		10.0	10.0				



Bottom of borehole at 35.0 feet.

Notes: Book 3; Page 47,49

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BORING/WELL NUMBER: **MW-13 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	23	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/27/12	Date Completed:	3/27/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612350.57	East:	777294.8
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	304.1
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	307.7 ft.		

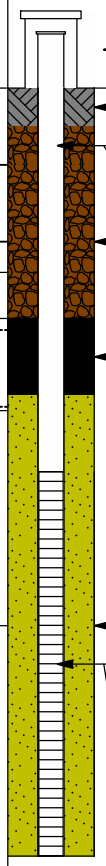
DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Terry Bell
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Track-mounted CME-55
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/27/2012		
DEPTH (ft.bgs.)	12		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0							
1–5	AU-0-5		5.0	5.0			0'- 2' Gray, fine to medium SAND, little fine to medium gravel, dry, no odor, no staining 2'- 4' Gray, fine to medium SAND, little fine to medium gravel, dry, no odor, no staining 4'- 4.8' Dark brown black, SILT, some fine gravel, dry, no odor, no staining
6–10	AU-5-10		5.0	5.0			4.8'- 6' Gray, fine to medium SAND, little fine gravel, dry, no odor, no staining, concrete pieces present 6'- 6.3' Fall in. Large pieces of wood in tip of spoon. 6.3'- 8.3' Fall in. 8.3'- 8.4' Debris (black plastic), wet at tip. Refusal at 8.4'.
11–15	AU-10-15		5.0	5.0			10'- 14' Gray, fine to medium SAND, some fine to medium gravel, damp, spoon is bent and unable to open. Auger past obstruction to 14'.
16–20	AU-15-20		5.0	5.0			14'- 20' Dark brown, SILT, organics, wet, no odor, no staining
21–26							

Bottom of borehole at 23.0 feet.

WELL DIAGRAM



Notes: Book 4; Page 13

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21 Griffin Road North
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Fax: 860-298-6399

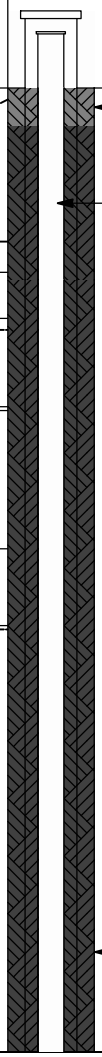
BORING/WELL NUMBER: **MW-13 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	56	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/26/12	Date Completed:	3/27/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612345.33	East:	777296.78
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	303.7
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	308.6 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Terry Bell
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Track-mounted CME-55
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			12 ft above grade
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0								
1–2	SS-0-2		2.0	0.3	4 7 7 8			0'- 0.3' Gray, fine to medium SAND, little fine to medium gravel, dry, no odor, no staining
3–4	SS-2-4		2.0	0.9	3 4 4 7			2'- 4' Gray, fine to medium SAND, little fine to medium gravel, dry, no odor, no staining
5–6	SS-4-6		2.0	1.0	6 4 11 9			4'- 4.8' Dark brown black, SILT, some fine gravel, dry, no odor, no staining
7–8	SS-6-8		2.0	0.3	8 4 3 4			4.8'- 6' Gray, fine to medium SAND, little fine gravel, dry, no odor, no staining, concrete pieces present
9–10	SS-8-10		2.0	0.4	2 2 7 30			6'- 6.3' Fall in. Large pieces of wood in tip of spoon. 8'- 8.3' Fall in.
11–12	SS-10-12		2.0	0.0	47 42 12 12			8.3'- 8.4' Debris (black plastic), wet at tip. Refusal at 8.4'. 10'- 12' Gray, fine to medium SAND, some fine to medium gravel, damp, spoon is bent and unable to open. Auger past obstruction to 14'.
13–14	AU-12-14		2.0	0.0				12'- 14' FILL, dedris, wood, cobbles, concrete.
15–16	SS-14-16		2.0	0.1	5 4 1 1			14'- 14.1' Dark brown, SILT, organics, wet, no odor, no staining
17–21	AU-16-21		5.0	5.0				14.1'- 31' Dark brown, SILT, organics, wet, no odor, no staining
22–25	AU-21-26		5.0	5.0				



Notes: Book 4; Page 10,12

TRC
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21 Griffin Road North
Windsor, CT 06095
Telephone: 860-298-9692
Fax: 860-298-6399

BORING/WELL NUMBER: **MW-13 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	56	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/26/12	Date Completed:	3/27/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612345.33	East:	777296.78
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	303.7
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	308.6 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
26–31	AU-26-31		5.0	5.0				14.1'- 31' Dark brown, SILT, organics, wet, no odor, no staining	
31–36	RC-31-36		5.0	5.0				31'- 56' BEDROCK	
36–46	RC-36-46		10.0	10.0					Bentonite Seal (40'-44')
46–56	RC-46-56		10.0	10.0					#1 Sand Filter Pack (44'-56') 2" 10-slot PVC Screen (46'-56')

Bottom of borehole at 56.0 feet.

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Fax: 860-298-6399

BORING/WELL NUMBER: **MW-14 (OB)**

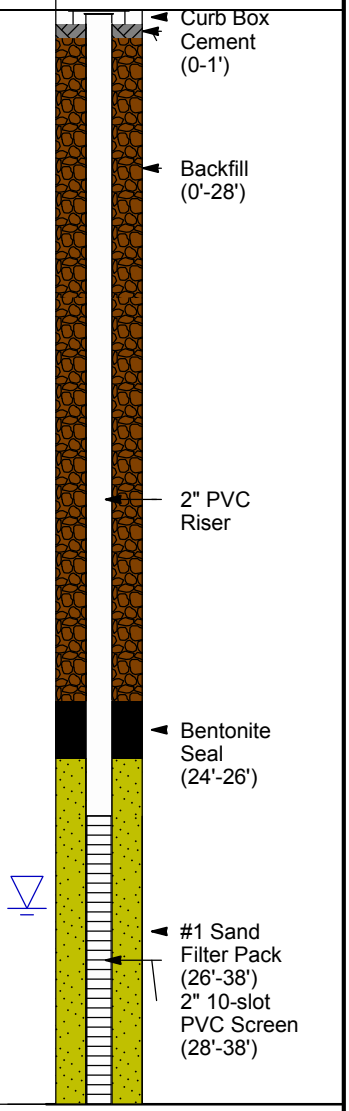
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	38	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/28/12	Date Completed:	3/28/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612718.17	East:	777046
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	311.2
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	311.2 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	Augie and Barry
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Hollow Stem Auger CME 75
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/28/2012		
DEPTH (ft.bgs.)	31.2		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–5	AU-0-5		5.0	5.0			0'- 38' FILL, wood fibers, ash, tape, wet at 31.2' bg
6–10	AU-5-10		5.0	5.0			
11–15	AU-5-15		5.0	5.0			
16–20	AU-15-20		5.0	5.0			
21–25	AU-20-25		5.0	5.0			
26–30	AU-25-30		5.0	5.0			
31–35	AU-30-35		5.0	5.0			
36–38	AU-35-38		3.0	5.0			
39–40							Bottom of borehole at 38.0 feet.

WELL DIAGRAM



Notes: Book 4; Page 16

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Fax: 860-298-6399

BORING/WELL NUMBER: **MW-14 (R)**

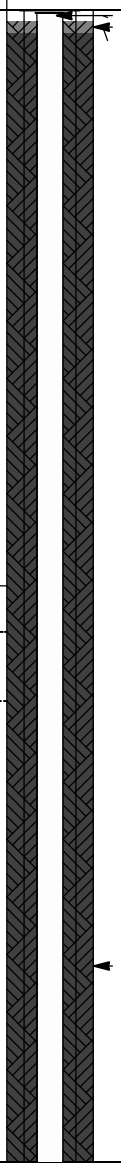
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	96	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/28/12	Date Completed:	3/29/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612711.76	East:	777044.38
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	311.3
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	311.3 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)	31		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–25	AU-0-25		25.0	0.0				0'- 25' Auger to 25' bg. FILL, wood fibers, ash, tape.
26–27	SS-25-27		2.0	0.3	7, 12, 12, 20			25'- 27' Dark brown, fine to medium SAND, brick and wood fragments, dry, no odor, no staining
28–29	SS-27-29		2.0	1.0	20, 80, 14, 13			27'- 30' Wood, ash, brick fragments, moist, no odor, no staining
30–32	SS-30-32		2.0	0.8	5, 7, 9, 11			30'- 30.8' Black, SILT, brick fragments, concrete, wet, slight odor (garbbage), no staining
33–50								30.8'- 72' Native overburden.

WELL DIAGRAM



Notes: Book 4; Page 14,27

TRC
Results you can rely on
21 Griffin Road North
Windsor, CT 06095
Telephone: 860-298-9692
Fax: 860-298-6399

BORING/WELL NUMBER: **MW-14 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	96	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/28/12	Date Completed:	3/29/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612711.76	East:	777044.38
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	311.3
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	311.3 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
51–76	AU-32-76		44.0	0.0				30.8'- 72' Native overburden.	
73–76								72'- 76' Bedrock at 76'	
77–96	RC-76-96		20.0	0.0					Bentonite Seal (82'-84') #1 Sand Filter Pack (84'-96') 2" 10-slot PVC Screen (86'-96')

Bottom of borehole at 96.0 feet.

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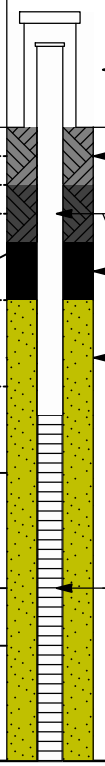
BORING/WELL NUMBER: **MW-15 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	11	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/16/12	Date Completed:	3/16/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612567.31	East:	777524.22
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	282.6
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	284.9 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0							
1	AU-0-5		5.0	5.0			0'- 0.5' Medium brown, fine SAND, trace silt, dry, no odor, no staining
							0.5'- 1' Pulverized rock
2							1'- 1.5' Light brown, fine to medium SAND, some fine gravel, trace silt, dry, no odor, no staining
3							1.5'- 2.2' Fall in.
							2.2'- 3' Pulverized rock
4							3'- 4' Light brown, fine to coarse SAND, some fine gravel, trace silt, dry, no odor, no staining
5							4'- 4.5' Fall in.
6	AU-5-10		5.0	5.0			4.5'- 6' Light brown, fine to medium SAND, little fine gravel, trace silt, moist at bottom
7							6'- 8' Light brown, fine to coarse SAND, some fine gravel, moist, no odor, no staining
8							
9							8'- 9' Light brown, fine to medium SAND, little fine gravel, wet, no odor, no staining
10							9'- 11' Orange, fine to coarse SAND, some fine gravel, saturated, no odor, no staining
11	AU-10-11		1.0	1.0			
12							Bottom of borehole at 11.0 feet.
13							
14							
15							
16							
17							



Notes: Book 3; Page 52

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
H:\HAZMAT\STAMFORD\SCOFIELDTOWN PARK\LANDFILL CLOSURE\WELL INSTALLATIONS\WELL LOGS\SCOFIELD LANDFILL WELL INSTALLATIONS.GPJ

TRC
Results you can rely on
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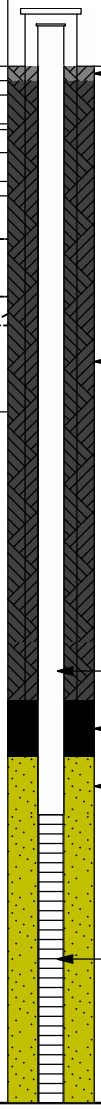
BORING/WELL NUMBER: **MW-15 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	36	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/16/12	Date Completed:	3/19/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612561.41	East:	777523.16
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	282.8
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	285.8 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)	8		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0								
1–2	SS-0-2		2.0	1.5	17 8 12			0'- 0.5' Medium brown, fine SAND, trace silt, dry, no odor, no staining
3–4	SS-2-4		2.0	2.0	39 60 49			0.5'- 1' Pulverized rock; 1'- 2' Light brown, fine to medium SAND, some fine gravel, trace silt, dry, no odor, no staining
5–6	SS-4-6		2.0	1.8	33 34 12			2'- 2.2' Fall in.
7–8	SS-6-8		2.0	1.2	18 27 36			2.2'- 3' Pulverized rock; 3'- 4' Light brown, fine to coarse SAND, some fine gravel, trace silt, dry, no odor, no staining
9–10	SS-8-10		2.0	1.0	20 19 11			4'- 4.5' Fall in.
11–12	AU-10-12		2.0	2.0	15 15 17			4.5'- 6' Light brown, fine to medium SAND, little fine gravel, trace silt, moist at bottom
13–36	RC-12-36		24.0	24.0	54 30			6'- 8' Light brown, fine to coarse SAND, some fine gravel, moist, no odor, no staining; 8'- 8.6' Light brown, fine to medium SAND, little fine gravel, wet, no odor, no staining; 8.6'- 9' Orange, fine to coarse SAND, some fine gravel, saturated, no odor, no staining; 9'- 12' Auger to 12'bg; 12'- 36' BEDROCK
37								Bottom of borehole at 36.0 feet.



Notes: Book 3; Page 50,52

TRC
Results you can rely on
21 Griffin Road North
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Fax: 860-298-6399

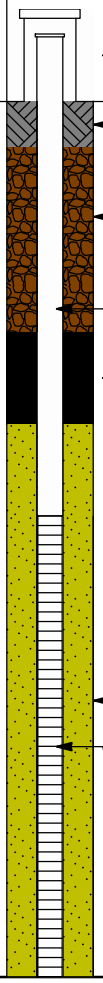
BORING/WELL NUMBER: **MW-16 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	19	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/29/12	Date Completed:	3/29/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612877.59	East:	776684.81
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	290.1
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	292.7 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–5	AU-0-5		5.0	5.0			0'- 19' Medium to dark brown SILT and fine SAND, some plastic sheeting pieces, wood roots, coarse gravel and trace cobble.
5–10	AU-5-10		5.0	5.0			
10–15	AU-10-15		5.0	5.0			
15–19	AU-15-19		4.0	4.0			



Bottom of borehole at 19.0 feet.

Notes: Book 4; Page 25

TRC
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Fax: 860-298-6399

BORING/WELL NUMBER: **MW-16 (R)**

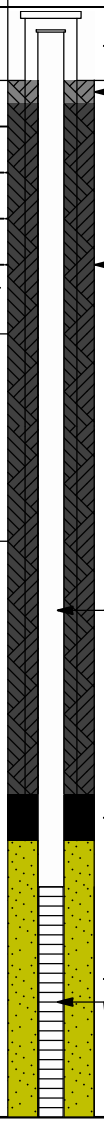
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	45	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/29/12	Date Completed:	3/29/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612869.37	East:	776677.74
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	289.3
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	292.5 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0								
1–4	SS-0-2, SS-2-4		2.0, 2.0	0.0, 0.8	2 5 5 6			0'- 2' Very loose fill; 2'- 4' FILL, brick, concrete, dry, no odor, no staining
5–8	SS-4-6, SS-6-8		2.0, 2.0	1.0, 0.9	5 4 4 3			4'- 6' Light brown, SILT, some fine sand, broken glass, brick fragments and concrete throughout, moist, no odor, no staining
9	AU-8-9		1.0	0.0	4 8			6'- 8' Light brown, SILT, some fine sand, broken glass, brick fragments and concrete throughout, moist, no odor, no staining; 8'- 9'
10–11	SS-9-11		2.0	0.0	8 6			9'- 11' Refusal. Spoon is wet.
12–20	AU-11-20		9.0	0.0	7 21 8 9 11 100			11'- 20' Medium to dark brown SILT and fine SAND, some plastic sheeting pieces, wood roots, coarse gravel and trace cobble.
21–45	RC-20-45		25.0	0.0				20'- 45' BEDROCK. Gray gneiss.
46								Bottom of borehole at 45.0 feet.

WELL DIAGRAM



Notes: Book 4; Page 19,29

TRC
Results you can rely on
21 Griffin Road North
Windsor, CT 06095
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Fax: 860-298-6399

BORING/WELL NUMBER: **MW-17 (OB)**

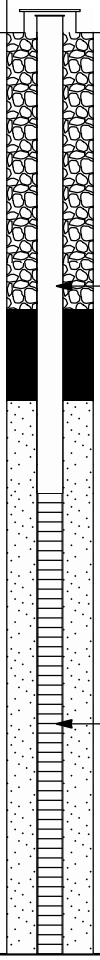
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	20	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/30/12	Date Completed:	3/30/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612984.34	East:	777193.42
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	284.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	287.9 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0							
1–5	AU-0-5		5.0	5.0			0'- 20' Medium brown fine to medium SAND with black staining at deeper intervals and a layer of fiberous material (cotton, wool, etc.)
6–10	AU-5-10		5.0	5.0			
11–15	AU-10-15		5.0	5.0			
16–20	AU-15-20		5.0	5.0			
21							Bottom of borehole at 20.0 feet.

WELL DIAGRAM



Notes: Book 4; Page 34

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Fax: 860-298-6399

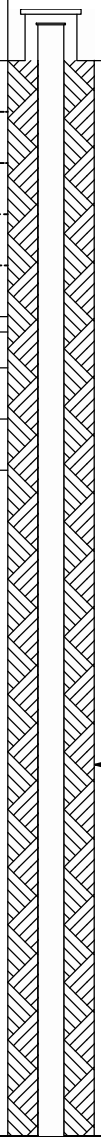
BORING/WELL NUMBER: **MW-17 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	75	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/30/12	Date Completed:	4/3/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612989.77	East:	777188.19
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	283.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	286.5 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)	14		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–2	SS-0-2		2.0	1.6	2 2 2 2			0'- 2' Medium brown, fine to medium SAND, dry, no odor, no staining
2–4	SS-2-4		2.0	0.6	2 2 2 3			2'- 4' Medium brown, fine to medium SAND, slightly moist, no odor, no staining
4–6	SS-4-6		2.0	1.0	5 4 3 6			4'- 6' Medium brown, fine to medium SAND, some organics (roots), trace paper at tip, dry, no odor, no staining
6–8	SS-6-8		2.0	0.5	6 4 4 4			6'- 8' Medium brown, fine to medium SAND, some pulverized rock (weathered), dry, no odor, no staining
8–10	SS-8-10		2.0	0.5	8 5 5 12			8'- 10' Medium brown, fine to medium SAND, some plastic pieces, glass and wood, dry, no odor, no staining
10–12	SS-10-12		2.0	1.0	6 7 10 10			10'- 10.6' FILL, glass, pulverized rock, little fine to medium sand, dry, slight odor, no staining
12–14	SS-12-14		2.0	0.6	3 5 8 8			10.6'- 12' Black, SILT, some burnt wood, little fine to medium sand, trace fine gravel, moist, densely packed, odor, black stains throughout
14–16	SS-14-16		2.0	0.1	3 4 2 2			12'- 14' Black, SILT and fine to medium SAND, wet, odor. Augered to 14'.
16–50	AU-16-50		34.0	34.0				14'- 16' Medium brown, fine to medium SAND, wet, slight odor, no staining. Augered through layer of plastic, cassette tape ribbon, very strong odor, moist to very moist.
								16'- 50' Auger from 14.1 to 50'bg to reach bedrock



Notes: Book 4; Page 31,37

21 Griffin Road North
Windsor, CT 06095
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BORING/WELL NUMBER: **MW-17 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	75	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/30/12	Date Completed:	4/3/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612989.77	East:	777188.19
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	283.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	286.5 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
43–50								16'- 50' Auger from 14.1 to 50'bg to reach bedrock	
51–75	RC-50-75		25.0	25.0				50'- 75' BEDROCK. Gray gneiss.	2" PVC Riser (0-65'); Bentonite Seal (60'-63'); #1 Sand Filter Pack (63'-75'); 2" 10-slot PVC Screen (65'-75')
76–96								Bottom of borehole at 75.0 feet.	

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BORING/WELL NUMBER: **MW-18 (OB)**

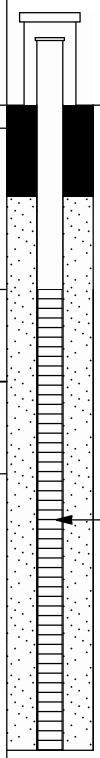
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	17	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	4/3/12	Date Completed:	4/3/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612971.75	East:	777370.11
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	275.1
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	279.1 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	4/3/2012		
DEPTH (ft.bgs.)	7		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–5	AU-0-5		5.0	5.0			0'- 0.5' TOPSOIL, dry, no odor, no staining 2'- 4' No Recovery. Rock in tip. 4'- 6' Medium brown, fine to medium SAND, some silt, little fine to medium gravel, brick fragments throughout, very moist, no odor, no staining
5–10	AU-5-10		5.0	5.0			6'- 8' Light brown, fine to medium SAND, some fine gravel and silt, saturated, no odor, no staining 8'- 17' Auger to top of bedrock and set MW
10–15	AU-10-15		5.0	5.0			
15–17	AU-15-17		2.0	2.0			

Bottom of borehole at 17.0 feet.



Notes: Book 4; Page 47

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
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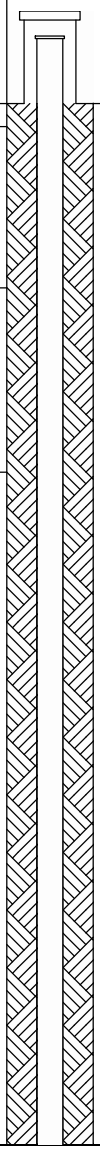
BORING/WELL NUMBER: **MW-18 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	50	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	4/3/12	Date Completed:	4/5/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612976.27	East:	777375.88
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	274.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	277.3 ft.		

DRILLING INFORMATION		GROUND WATER OBSERVATIONS			
Drilling Contractor:	Glacier Drilling LLC	MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
Driller(s):		DATE			
Drilling Method:	Hollow Stem Auger	DEPTH (ft.bgs.)			
Equipment/Model:	Truck-mounted CME-85	REFERENCE			
Sampler:	2" split spoon	STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0								
1–2	SS-0-2		2.0	0.5	2 4 4 6			0'- 0.5' TOPSOIL, dry, no odor, no staining
3–4	SS-2-4		2.0	0.0	3 2 2 1			2'- 4' No Recovery. Rock in tip.
5–6	SS-4-6		2.0	2.0	5 4 2 2			4'- 6' Medium brown, fine to medium SAND, some silt, little fine to medium gravel, brick fragments throughout, very moist, no odor, no staining
7–8	SS-6-8		2.0	0.5	2 1 1 2			6'- 8' Light brown, fine to medium SAND, some fine gravel and silt, saturated, no odor, no staining
9–22	AU-8-24		16.0	16.0				8'- 24' Auger to top of bedrock

WELL DIAGRAM



Notes: Book 4; Page 41,47

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
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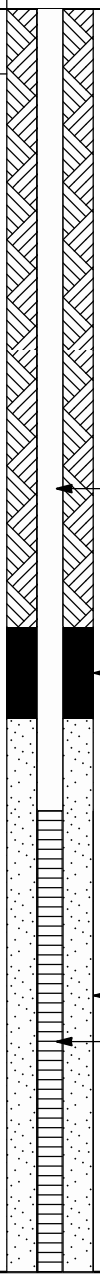
BORING/WELL NUMBER: **MW-18 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	50	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	4/3/12	Date Completed:	4/5/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612976.27	East:	777375.88
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	274.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	277.3 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
23–24								8'- 24' Auger to top of bedrock
24–50	RC-24-50		26.0	26.0				24'- 50' BEDROCK. Gray gneiss.

WELL DIAGRAM



Bottom of borehole at 50.0 feet.

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BORING/WELL NUMBER: **MW-19 (R)**

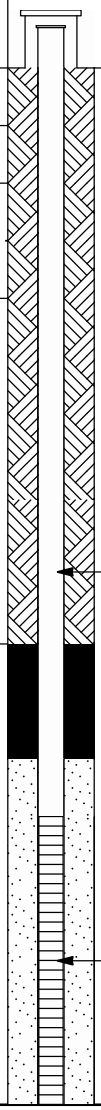
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	36	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/20/12	Date Completed:	3/20/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612827.71	East:	777707.21
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	275.4
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	277.8 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0								
1–2	SS-0-2		2.0	0.9	4 3 2			0'- 2' Dark brown, fine SAND and SILT, organic matter, trace fine gravel, dry, no odor, no staining
3–4	SS-2-4		2.0	0.2	8 6 8			2'- 4' Cobble, dry, no odor, no staining
5–6	SS-4-6		2.0	1.0	10 8 8			4'- 6' Light brown, fine to medium SAND, some fine to medium gravel, trace silt, moist at tip, no odor, no staining
7–8	SS-6-8		2.0	1.5	16 8 14			6'- 8' Orange brown, fine to medium SAND, some gravel, trace silt, moist, no odor, no staining. Auger refusal at 8'.
9–20	AU-8-20		12.0	12.0	36 19 53 28			8'- 20' Auger to top of bedrock
21–36	RC-20-36		16.0	16.0				20'- 36' BEDROCK. Gray gneiss.
37								Refusal at 8.0 feet. Bottom of borehole at 36.0 feet.

WELL DIAGRAM



Notes: Book 3; Page 56-57

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BORING/WELL NUMBER: **MW-21 (OB)**

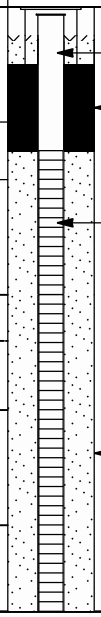
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	10.5	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/7/12	Date Completed:	3/7/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612490.06	East:	776451.72
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	307.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	307.9 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/7/2012		
DEPTH (ft.bgs.)	4.8		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–2	SS-0-2		2.0	0.5	17 50			0'- 2' Light brown, SILT and fine SAND, trace asphalt and fine gravel, dry, no odor, no staining. Refusal at 3'.
3	AU-2-3		1.0	0.0				2'- 3' No core. Augered from 2-3' bg.
4–5	SS-3-5		2.0	0.9	11 5 6 4			3'- 5' Gray, SILT, little fine gravel, trace fine sand, damp, no odor, no staining
6–7	SS-5-7		2.0	1.0	3 3 3 1			5'- 5.8' Gray, SILT, little fine gravel, trace fine sand, wet, no odor, no staining 5.8'- 7' Brown, PEAT, organic odor, wet
8–9	SS-7-9		2.0	1.5	1 3			7'- 9' Grayish brown, PEAT, slight organic odor, wet, no odor, no staining. Auger grinding at 9'.
10	AU-9-10.5		1.5	0.0				9'- 10.5' Refusal at 10.5'.

WELL DIAGRAM



- Curb box
- Cement (0.5'-1')
- 2" PVC Riser (0-2.5')
- Bentonite Seal (1'-2.5')
- 2" 10-slot PVC Screen (2.5'-10.5')
- #1 Sand Filter Pack (2.5'-10.5')

Bottom of borehole at 10.5 feet.

Notes: Book 3; Page 9-11

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BORING/WELL NUMBER: **MW-21 (R)**

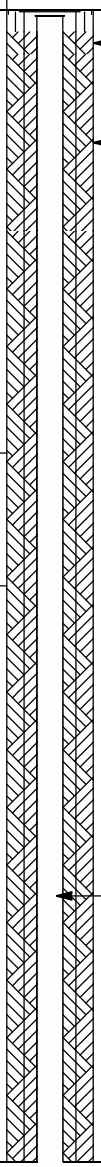
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	50	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/7/12	Date Completed:	3/9/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612490.65	East:	776449.75
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	307.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	307.9 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–5	AU-0-5		5.0	5.0			0'- 10' FILL
6–10	AU-5-10		5.0	5.0			
11–13	RC-10-13		3.0	3.0			10'- 13' BOULDER
14–18	AU-13-18		5.0	5.0			13'- 28' FILL
19–23	AU-18-23		5.0	5.0			
24–26	AU-23-		5.0	5.0			

WELL DIAGRAM



Notes: Book 3; Page 15

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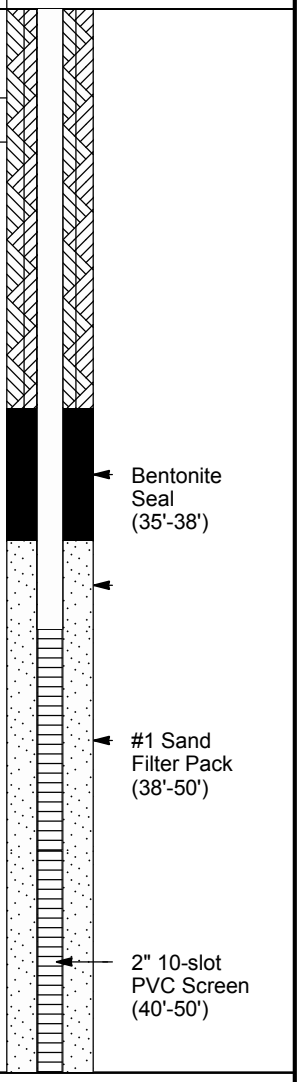
BORING/WELL NUMBER: **MW-21 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	50	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/7/12	Date Completed:	3/9/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612490.65	East:	776449.75
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	307.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	307.9 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
27–28	28						13'- 28' FILL
29							28'- 29' Weathered rock. Auger refusal at 29'.
30–50	RC-28-50		22.0	22.0			29'- 50' BEDROCK. Gray gneiss.
51–57							Refusal at 29.0 feet. Bottom of borehole at 50.0 feet.

WELL DIAGRAM



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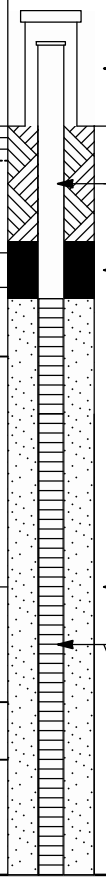
BORING/WELL NUMBER: **MW-22 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	13	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/22/12	Date Completed:	3/22/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612087.77	East:	776609.45
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	312.3
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	315.1 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/22/2012		
DEPTH (ft.bgs.)	8		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0							
1	AU-0-5		5.0	5.0			0'- 0.2' TOPSOIL
							0.2'- 0.4' Medium brown, fine SAND and SILT, dry, no odor, no staining
2							0.4'- 0.6' Pulverized rock
							2'- 2.2' Pulverized rock
3							2.2'- 2.8' Medium brown, fine to medium SAND, some fine gravel, dry, no odor, no staining
4							2.8'- 4' Pulverized rock
5							4'- 8' Pulverized rock, dry, no odor, no staining. Refusal at 5.3'. Auger to 8'.
6	AU-5-10		5.0	5.0			
7							
8							
9							8'- 10' Medium gray, fine to medium SAND, some fine gravel, little silt, moist at bottom, no odor, no staining
10							
11	AU-10-13		3.0	3.0			10'- 11' Medium gray, fine to coarse SAND, little fine gravel, trace silt, saturated, no odor, no staining
12							11'- 13' Auger to bedrock. Refusal at 13'.
13							
14							Bottom of borehole at 13.0 feet.
15							
16							
17							



Notes: Book 4; Page 4

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
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BORING/WELL NUMBER: **MW-22 (R)**

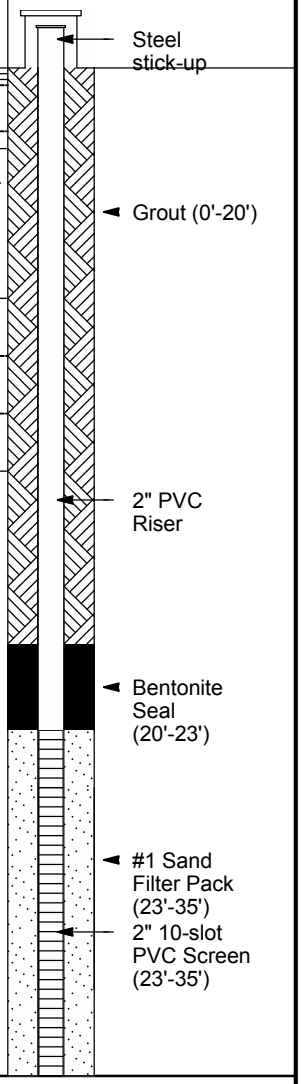
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	35	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/22/12	Date Completed:	3/23/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612092.65	East:	776609.83
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	312.1
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	314.5 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/22/2012		
DEPTH (ft.bgs.)	10		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–1	SS-0-2		2.0	0.6	6 27 18 7			0'- 0.2' TOPSOIL
1–3								0.2'- 0.4' Medium brown, fine SAND and SILT, dry, no odor, no staining
3–5	SS-2-4		2.0	1.2	25 26 62 48			0.4'- 0.6' Pulverized rock
								2'- 2.2' Pulverized rock
5–7	SS-4-6		2.0	1.0	30 57 100			2.2'- 2.8' Medium brown, fine to medium SAND, some fine gravel, dry, no odor, no staining
7–8	AU-6-8		2.0	0.0				2.8'- 4' Pulverized rock
8–10	SS-8-10		2.0	1.5	17 16 17 16			4'- 8' Pulverized rock, dry, no odor, no staining. Split spoon refusal at 5.3'. Auger to 8'.
10–12	SS-10-12		2.0	1.0	4 8 9 11			8'- 10' Medium gray, fine to medium SAND, some fine gravel, little silt, moist at bottom, no odor, no staining
12–14	AU-12-14		2.0	0.0				10'- 12' Medium gray, fine to coarse SAND, little fine gravel, trace silt, saturated, no odor, no staining
								12'- 14' Auger to bedrock. Refusal at 14'.
14–35	RC-14-35		21.0	0.0				14'- 35' BEDROCK. Gray gneiss.

WELL DIAGRAM



Refusal at 14.0 feet.
Bottom of borehole at 35.0 feet.

Notes: Book 3; Page 62, Book 4; Page 5

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BORING/WELL NUMBER: **MW-23 (OB)**

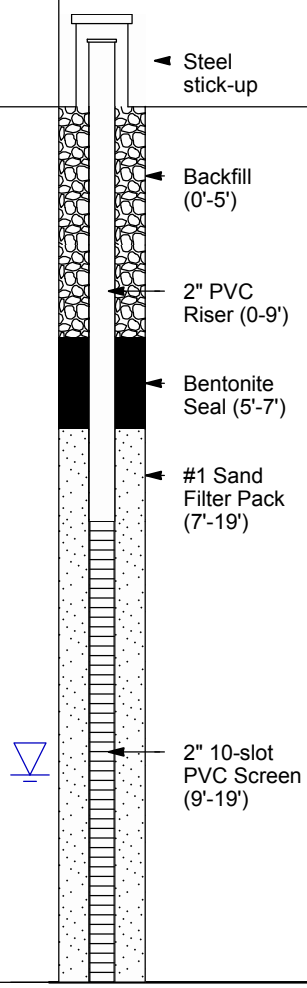
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	19	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/23/12	Date Completed:	3/23/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612052.92	East:	777003.34
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	302.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	305.7 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/23/2012		
DEPTH (ft.bgs.)	14.5		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0							
1–5	AU-0-5		5.0	5.0			0'- 19' Medium gray, fine to medium SAND, some silt, little fine gravel, moist, no odor, no staining. Refusal at 19'bg.
6–10	AU-5-10		5.0	5.0			
11–15	AU-10-15		5.0	5.0			
16–19	AU-15-19		4.0	4.0			
20–22							Bottom of borehole at 19.0 feet.

WELL DIAGRAM



Notes: Book 4; Page 7

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BORING/WELL NUMBER: **MW-23 (R)**

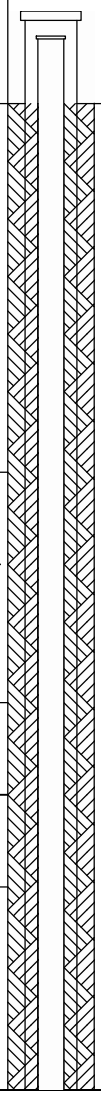
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	45	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/22/12	Date Completed:	3/23/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612060.43	East:	777003.62
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	302.8
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	306.4 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/23/2012		
DEPTH (ft.bgs.)	14.7		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–8	AU-0-8	Auger	8.0	8.0				0'- 8' Boulders - augered to 8'.
9–10	SS-8-10	Split spoon	2.0	1.2	14 74 100			8'- 10' Medium gray, fine to medium SAND, some silt, little fine gravel, moist, no odor, no staining, rock fragments in tip. Split spoon refusal, auger to 10'bg.
11–12	SS-10-12	Split spoon	2.0	0.5	100			10'- 13' Medium gray, fine to medium SAND, some silt, little fine gravel, moist, no odor, no staining, rock fragments in tip. Split spoon refusal at 10.5' - auger to 13'bg.
13	AU-12-13	Auger	1.0	0.0				
14–15	SS-13-15	Split spoon	2.0	0.0	100			13'- 15' Refusal at 13'. Material in spoon is very moist.
16–17	SS-15-17	Split spoon	2.0	0.0	100			15'- 17' Refusal at 15'. Cuttings getting wet.
18–21	AU-17-22	Auger	5.0	0.0				17'- 23' Auger to 23'bg

WELL DIAGRAM



Notes: Book 3; Page 60, Book 4; Page 6

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BORING/WELL NUMBER: **MW-23 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	45	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/22/12	Date Completed:	3/23/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612060.43	East:	777003.62
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	302.8
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	306.4 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
22								17'- 23' Auger to 23'bg	
23	AU-22-27		5.0	0.0				23'- 30' Roller bit to 30'bg	
24									
25									
26									
27									
28	AU-27-30		3.0	0.0					2" PVC Riser
29									
30								30'- 45' BEDROCK. Light gray gneiss.	
31	RC-30-45		15.0	15.0					Bentonite Seal (30'-33')
32									
33									
34									
35									
36									
37									
38									
39									#1 Sand (33'-45')
40									2" 10-slot PVC screen (35'-45')
41									
42									
43									
44									
45									
46								Refusal at 15.0 feet. Bottom of borehole at 45.0 feet.	
47									
48									
49									
50									
51									

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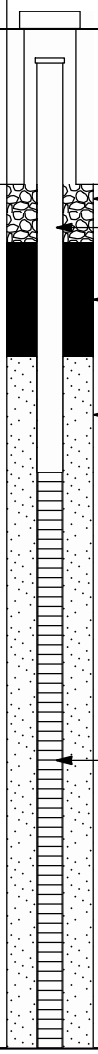
BORING/WELL NUMBER: **MW-24 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	15	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/13/12	Date Completed:	3/13/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612054.49	East:	778036.8
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	267.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	270.6 ft.		

DRILLING INFORMATION		GROUND WATER OBSERVATIONS			
Drilling Contractor:	Glacier Drilling LLC	MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
Driller(s):		DATE			
Drilling Method:	Hollow Stem Auger	DEPTH (ft.bgs.)			
Equipment/Model:	Truck-mounted CME-85	REFERENCE			
Sampler:	2" split spoon	STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–5	AU-0-5		5.0	5.0			0'- 15' Medium gray, medium to coarse SAND, little medium to coarse gravel, slightly moist, no odor, no stain, trace cobble.
5–10	AU-5-10		5.0	5.0			
10–15	AU-10-15		5.0	5.0			

WELL DIAGRAM



Bottom of borehole at 15.0 feet.

Notes: Book 3; Page 36

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
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BORING/WELL NUMBER: **MW-24 (R)**

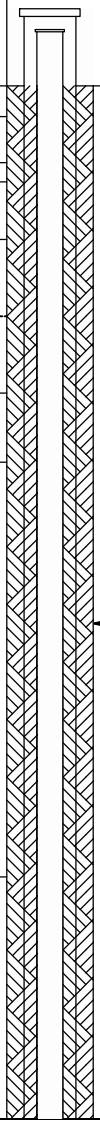
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	27	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/13/12	Date Completed:	3/14/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612053.52	East:	778041.53
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	267.8
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	270.9 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/13/2012		
DEPTH (ft.bgs.)	8		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–2	SS-0-2		2.0	1.0	2 3 6 4			0'- 0.8' Topsoil, very fine SAND and SILT, trace coarse gravel, dry, no odor, no stain.
2–4	SS-2-4		2.0	1.4	10 16 31 25			0.8'- 2' Dark brown, very fine SAND, little silt, trace medium gravel, dry, no odor, no stain.
								2'- 2.5' Dark brown, very fine SAND, little silt, trace medium gravel, dry, no odor no staining
4–6	SS-4-6		2.0	1.8	8 24 26 32			2.5'- 4' Crushed ROCK, some fine sand, little medium to fine gravel, dry, no odor, no staining
6–8	SS-6-8		2.0	1.8	30 54 49 38			4'- 6' Medium brown to tan, very fine SAND and SILT, some medium to fine gravel, little crushed rock, dry, no odor, no staining
8–10	SS-8-10		2.0	1.8	10 18 15 33			6'- 8' Light brown to tan fine SAND and SILT, some fine to medium gravel, littel coarse gravel, dry to wet at tip, no odor, no stain.
10–15	AU-10-15		5.0	5.0				8'- 9.8' Medium gray to orange red, medium to coarse SAND, some fine sand and fine gravel, little coarse gravel, wet, no odor, no staining. Rock at 20.6'. Set casing at 25'.
								9.8'- 20.6' Auger to top of bedrock
15–20	AU-15-20.6		5.6	5.6				
20–26								20.6'- 42' BEDROCK. Light gray to pink gneiss.

WELL DIAGRAM



Notes: Book 3; Page 31,34

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BORING/WELL NUMBER: **MW-24 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	27	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/13/12	Date Completed:	3/14/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612053.52	East:	778041.53
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	267.8
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	270.9 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
28								20.6'- 42' BEDROCK. Light gray to pink gneiss.	Bentonite Seal (28'-30")
29									
30									
31									
32	RC-20.6-42		21.4	21.4					
33									
34									
35									
36									#1 Sand Filter Pack (30'-42') 2" 10-slot PVC Screen (32'-42")
37									
38									
39									
40									
41									
42								Bottom of borehole at 27.0 feet.	
43									
44									
45									
46									
47									
48									
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58									
59									
60									
61									
62									
63									

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BORING/WELL NUMBER: **MW-25 (OB)**

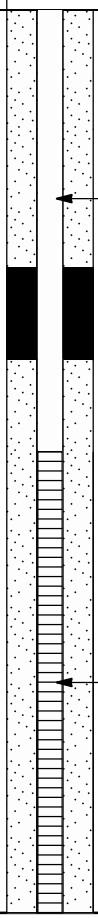
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	20	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/12/12	Date Completed:	3/12/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612611.2	East:	777886.86
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	272.9
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	272.5 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	3/12/2012		
DEPTH (ft.bgs.)	12		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–5	AU-0-5		5.0	5.0			0'- 20' Light to dark brown, fine SAND and SILT, some gravel, trace organics, dry, no odor, no staining
6–10	AU-5-10		5.0	5.0			
11–15	AU-10-15		5.0	5.0			
16–20	AU-15-20		5.0	5.0			
21–25							Bottom of borehole at 20.0 feet.

WELL DIAGRAM



Notes: Book 3; Page 28

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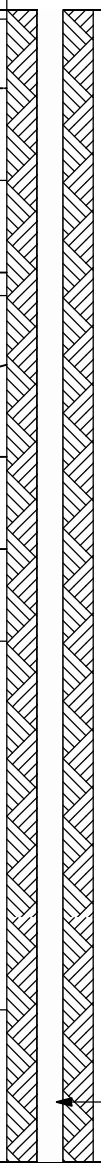
BORING/WELL NUMBER: **MW-25 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	42	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/12/12	Date Completed:	3/15/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612607.65	East:	777881.53
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	273
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	272.7 ft.		

DRILLING INFORMATION		GROUND WATER OBSERVATIONS			
Drilling Contractor:	Glacier Drilling LLC	MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
Driller(s):		DATE			
Drilling Method:	Hollow Stem Auger	DEPTH (ft.bgs.)			
Equipment/Model:	Truck-mounted CME-85	REFERENCE			
Sampler:	2" split spoon	STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
1–2	SS-0-2		2.0	1.2	6 3 11 12			0'- 0.5' TOPSOIL. 0.5'- 2' Light brown fine SAND, some medium gravel, little silt, dry, no odor, no stain.
3–4	SS-2-4		2.0	0.7	9 16 16 21			2'- 4' Light brown fine SAND, some medium gravel, little silt, dry, no odor, no stain.
5–6	SS-4-6		2.0	0.9	2 2 3 4			4'- 6' Dark brown SILT, trace fine gravel, trace organics, moist, no odor, no stain.
7–8	SS-6-8		2.0	1.7	4 6 9 15			6'- 6.5' Dark brown SILT, trace fine gravel, trace organics, moist, no odor, no stain. 6.5'- 8' Light brown SILT and fine SAND, little fine gravel, moist, no odor, no stain.
9–10	SS-8-10		2.0	1.0	3 9 27 24			8'- 10' Light brown SILT and fine SAND, little fine gravel, moist, no odor, no stain.
11–12	SS-10-12		2.0	1.5	15 23 24 38			10'- 12' Light brown to gray fine SAND and SILT, some fine to medium gravel, damp, no odor, no stain.
13–14	SS-12-14		2.0	1.2	23 39 27 43			12'- 14' Medium brown SILT and fine SAND, some fine to medium gravel, saturated, no odor, no stain.
15–19	AU-14-19		5.0	5.0				14'- 22' Auger to top of bedrock.
20–22	AU-19-22		3.0	3.0				
23–25								22'- 42' BEDROCK. Light gray to pink gneiss.

WELL DIAGRAM



Notes: Book 3; Page 26,27,45

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
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BORING/WELL NUMBER: **MW-25 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	42	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	3/12/12	Date Completed:	3/15/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	612607.65	East:	777881.53
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	273
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	272.7 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
26–42	RC-22-42		20.0	20.0				22'- 42' BEDROCK. Light gray to pink gneiss.	Bentonite Seal (28'-30'); #1 Sand Filter Pack (30'-42'); 2" 10-slot PVC Screen (32'-42')
43–55								Bottom of borehole at 42.0 feet.	

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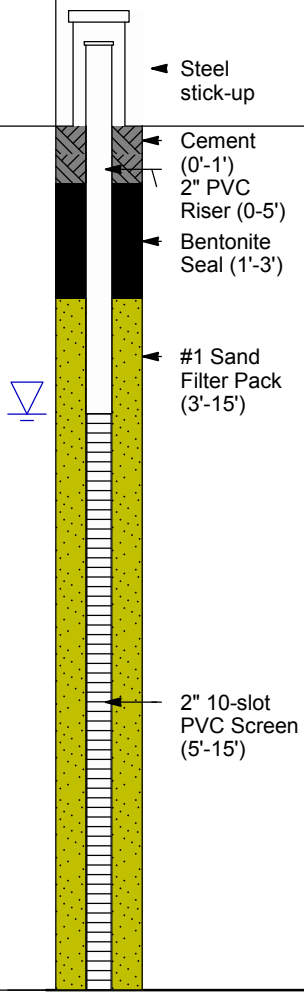
BORING/WELL NUMBER: **MW-26 (OB)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	15	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	4/9/12	Date Completed:	4/9/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	613036.5	East:	777880.19
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	274.3
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	277.1 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	4/9/2012		
DEPTH (ft.bgs.)	5		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–5	AU-0-5		5.0	5.0			0'- 15' Light to medium brown, SILT and fine SAND, some fine to medium gravel, moist, no odor, no staining
5–10	AU-5-10		5.0	5.0			
10–15	AU-10-15		5.0	5.0			



Bottom of borehole at 15.0 feet.

Notes: Book 4; Page 54

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
H:\HAZMAT\STAMFORD\SCOFIELDTOWN PARK\LANDFILL CLOSURE\WELL INSTALLATIONS\WELL LOGS\SCOFIELD LANDFILL WELL INSTALLATIONS.GPJ

TRC
Results you can rely on
21 Griffin Road North
Windsor, CT 06095
Telephone: 860-298-9692
Fax: 860-298-6399

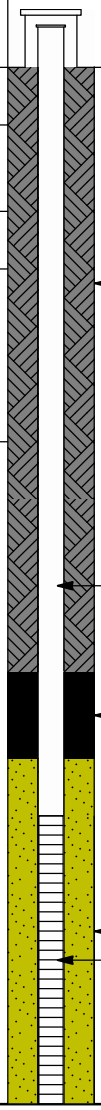
BORING/WELL NUMBER: **MW-26 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	36	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	4/6/12	Date Completed:	4/9/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	613042.26	East:	777875.76
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	274.2
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	277.1 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE			
DEPTH (ft.bgs.)			
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–2	SS-0-2		2.0	1.0	5 4 5 5			0'- 2' Medium brown, SILT and fine SAND, some fine to medium gravel, moist, no odor, no staining
2–5	AU-2-5		3.0	3.0				2'- 5' No core. Auger to 5' bg.
5–7	SS-5-7		2.0	1.0	3 5 14 29			5'- 7' Light brown, fine SAND and SILT, some fine to medium gravel, saturated, no odor, no staining
7–12	AU-7-12		5.0	5.0				7'- 13' Auger to bedrock. Refusal at 13'.
12–15	AU-12-15		3.0	3.0				13'- 36' BEDROCK. Gray gneiss.



Refusal at 13.0 feet.
Bottom of borehole at 36.0 feet.

Notes: Book 4; Page 53,54

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Fax: 860-298-6399

BORING/WELL NUMBER: **MW-27 (OB)**

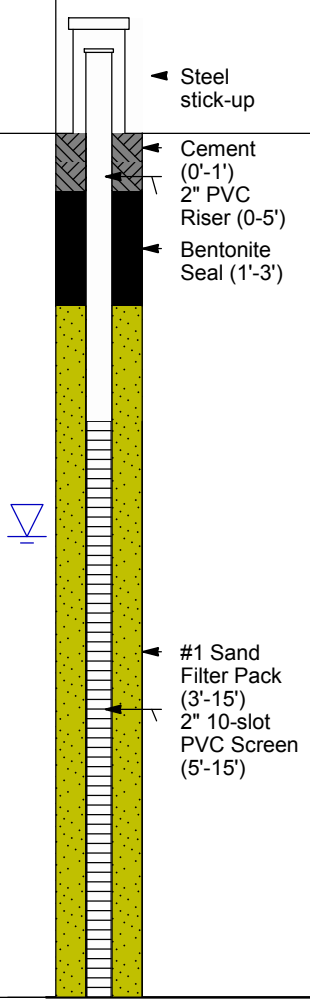
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	15	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	4/6/12	Date Completed:	4/6/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	613097.64	East:	776884.9
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	276.5
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	279.2 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	4/6/2012		
DEPTH (ft.bgs.)	7		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–5	AU-0-5		5.0	5.0			0'- 15' Light to medium brown, fine to medium SAND, little fine to medium gravel, dry, no odor, no staining
5–10	AU-5-10		5.0	5.0			
10–15	AU-10-15		5.0	5.0			

WELL DIAGRAM



Bottom of borehole at 15.0 feet.

Notes: Book 4; Page 50,52

SOIL BORING/WELL COMPLETION WITH NOTES - TRC-STD US.GDT - 10/31/13
H:\HAZMAT\STAMFORD\SCOFIELDTOWN PARK\LANDFILL CLOSURE\WELL INSTALLATIONS\WELL LOGS\SCOFIELD LANDFILL WELL INSTALLATIONS.GPJ

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BORING/WELL NUMBER: **MW-27 (R)**

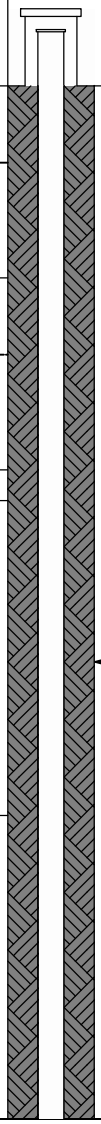
PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	52	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	4/5/12	Date Completed:	4/6/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	613091.23	East:	776886.46
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	276.1
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	279.2 ft.		

DRILLING INFORMATION	
Drilling Contractor:	Glacier Drilling LLC
Driller(s):	
Drilling Method:	Hollow Stem Auger
Equipment/Model:	Truck-mounted CME-85
Sampler:	2" split spoon

GROUND WATER OBSERVATIONS			
MEASUREMENT	At Time of Drilling	At End of Drilling	After Drilling
DATE	4/5/2012		
DEPTH (ft.bgs.)	10		
REFERENCE			
STABILIZATION			

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION
0–2	SS-0-2	Split spoon	2.0	0.9	7 10 6 3			0'- 2' Light brown, fine to medium SAND, little fine to medium gravel, dry, no odor, no staining
2–5	AU-2-5	Auger	3.0	0.0				2'- 5' No core. Auger to 5' bg.
5–7	SS-5-7	Split spoon	2.0	1.0	5 21 50			5'- 7' Medium brown, fine to medium SAND, dry, no odor, no staining, rock in tip. Split spoon refusal at 6.25'. Augered to 10'.
7–10	AU-7-10	Auger	3.0	0.0				7'- 10' No core. Auger to 10' bg.
10–12	SS-10-12	Split spoon	2.0	0.8	9 70			10'- 10.8' Medium brown, fine to medium SAND, saturated, no odor, no staining. Refusal at 19'.
10.8–19	AU-12-19	Auger	7.0	0.0				10.8'- 19' Auger to top of bedrock.
19–52								19'- 52' BEDROCK. Gray gneiss.

WELL DIAGRAM



Notes: Book 4; Page 48,52

21 Griffin Road North
Windsor, CT 06095
Telephone: 860-298-9692
Fax: 860-298-6399

BORING/WELL NUMBER: **MW-27 (R)**

PROJECT INFORMATION		BORING/WELL INFORMATION			
Project Name:	Scofield Landfill Closure Well Installations	Boring Depth (ft):	52	Hole Diameter (in):	2-inches
Project Location:	Stamford, CT	Date Started:	4/5/12	Date Completed:	4/6/12
Project Number:	191277.000000.000000	Coordinate System:			
Client:	City of Stamford	North:	613091.23	East:	776886.46
TRC Eng./Geol:	Chris Carlson	Vertical Datum:		Ground Elevation:	276.1
Checked By:	Chris Carlson	Well Elevation (Top of Casing)	279.2 ft.		

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE TYPE	PENETRATION (FT.)	RECOVERY (FT.)	BLOW COUNTS	LITHOLOGY	◆ VOC SCREENING RESULTS (ppm) (20 40 60 80)	MATERIAL DESCRIPTION	WELL DIAGRAM
28–52	RC-19-52		33.0	0.0				19'- 52' BEDROCK. Gray gneiss.	2" PVC Riser (0-42'); Bentonite Seal (31'-40'); #1 Sand Filter Pack (40'-52'); 2" 10-slot PVC Screen (42'-52')

Refusal at 19.0 feet.
Bottom of borehole at 52.0 feet.

APPENDIX B

ROCK CORE PHOTO LOG

PHOTO 1: MW-11R.

PHOTO 2: MW-13R.

PHOTO 3: MW-14R.

PHOTO 4: MW-15R.

PHOTO 5: MW-16R.

PHOTO 6: MW-19R.

PHOTO 5: MW-21R.

PHOTO 6: MW-22R.

PHOTO 7: MW-23R.

PHOTO 8: MW-24R.

PHOTO 9: MW-25R.

APPENDIX C

LEACHATE SEEP PHOTO LOG

PHOTO 1: UNB-SP-1.

PHOTO 2: UNB-SP-1.

PHOTO 3: UNB-SP-3.

PHOTO 4: UNB-SP-4.

PHOTO 5: UNB-SP-5.

APPENDIX D

HELP MODEL INPUT FILES

Scofieldtown Landfill Closure
Existing Conditions HELP Input Matrix

Land Fill Area	Area		Impervious Area	Subarea modifications (acres)		Runoff Curve Number (RCN) (note 1)	Average Surface Slope	Average Surface Flow Distance	Surface Cover Condition (note 5)	Reference Soil Boring	HELP Layers (note 2)
	acres	RCN	acres	acres	RCN	RCN	%	feet			
Concrete Apron	0.3	55	7.7%	0	-	55	5%	91	Fair Grass	MW-3	Surface Layer (note 3): 4 feet loamy fine sand Barrier Layer: none Solid Waste Layer (note 4): 8 feet
Pond	0.6	Model by assuming pond is above static groundwater and flow is downward (unit gradient) and controlled by bottom sediment permeability, k, = 1X10-5 cms, head is average water depth. Use Darcy's equation Q=kiA where i=head and A= flow out area of pond. Infiltration is Q=leakage through pond bottom.							Water	MW-3	Not modeled with HELP
Lower Paved Area	1.8	75	0.0%	0.6	70	73	5%	200	Bare Gravel (note 3)	MW-3	Surface Layer (note 3):0.1 feet sand (note 4) Barrier Layer: 0.5 feet cracked, weathered bituminous pavement Solid Waste Layer (note 4): 10 feet
Park	2.6	55	12.0%	0.0	-	55	21%	171	Good Grass	MW-3, MW-12, MW-13	Surface Layer (note 3): 4 feet loamy fine sand. Barrier Layer: None Solid Waste Layer (note 4): 15 feet
Upper Paved Area	1.1	75	17.3%	0.0	-	75	1%	251	Bare Gravel (note 3)	MW-1	Surface Layer (note 3):0.1 feet sand (note 4) Barrier Layer: 0.5 feet cracked, weathered bituminous pavement Solid Waste Layer (note 4): 15 feet
Top	5.3	95	0.0%	2.2	74	86	3%	250	Compost, Bare Soil	MW-2, MW-6, MW-9, MW-14	Surface Layer (note 3): 0.5 feet compost Barrier Layer: 0.5 feet cracked, weathered bituminous pavement Solid Waste Layer (note 4): 32 feet
North Side Slope	3.1	70	0.0%	0.0	-	70	40%	115	Poor Grass Cover	MW-17, MW-18	Surface Layer (note 3):2 feet loamy fine sand Barrier Layer: None Solid Waste Layer (note 4): 15 feet
East Side Slope	1.9	55	0.0%	0.0	-	55	24%	100	Good Grass Cover	MW-13, MW-15	Surface Layer (note 3): 4 feet loamy fine sand Barrier Layer: None Solid Waste Layer (note 4): 5 feet

Notes:

1. The Runoff Curve Number is a weighted average of main area and subareas of distinctly different runoff characteristics after adjustment of main area RCN for impervious area (RCN=98).

2. Layers types and thickness are typical/average values for area.
3. Surface layer must be a vertical percolation layer.
4. Sand layer is "ghost" layer required by limits of model See Note 3.
5. Surface cover describes condition that relates to the Run Off Curve Number in Figure 8, HELP Engineering Documentation Version 3.

Scofieldtown Landfill Closure
Existing Conditions HELP Soil & Barrier Layer Properties

	Layer Name				
Input Properties	Surface Soil	Solid Waste	Sand over Pavement	Pavement	Compost
Description	Silty Sand (note 1)	Municipal Waste with Channeling (note 2)	Sand (note 1)	Cracked, Weatherd Bituminous Pavement (note 3)	High Organic Soil (note 1)
HELP Type	Vertical Percolation Layer	Vertical Percolation Layer	Vertical Percolation Layer	Soil Barrier Layer	Vertical Percolation Layer
HELP Soil #	5	19	1	NA	8
Total Porosity (vol/vol)	0.457	0.168	0.417	0.05	0.436
Field Capacity (vol/vol)	0.131	0.073	0.045	0.01	0.232
Wilting Point (vol/vol)	0.058	0.019	0.018	0.001	0.116
Sat. Hyd. Conductivity (cms)	$1X10^{-3}$	$1X10^{-3}$	$1X10^{-5}$	$1X10^{-3}$	$3.7X10^{-4}$
Subsurface Inflow	0	0	0	NA	0
Initial Mositure Content (%)	HELP calculates	HELP calculates	HELP calculates	NA	HELP calculates
Pinhole density	NA	NA	NA	NA	NA
Installation Defects	NA	NA	NA	NA	NA
Placement Quality	NA	NA	NA	NA	NA
Geotextile Transmissivity	NA	NA	NA	NA	NA

Notes:

1. Default Low Density Soil - Table 1, HELP Engineering Documentation for Ver. 3
2. Default Waste Charactoristics- Table 4, HELP Engineering Documentation for Ver. 4
3. Assuming an infiltration/precipitation ration of 50%, the effective permeability of the pavement is ~ 1X10-5 cms (van Ganse , CRR Report F 36/1981). Assume void ratio very low ~0.05, field capacity ~0.01, wilting point ~0.01

TRC

Job:	Scofield Landfill HELP Model	Project No.:	191277		
Description:	Estimate steady-state leakage from	Computed by:	DWA	Date:	6/17/2013
pond at landfill		Checked by:		Date:	

Problem: Estimate the leakage out of the pond that is contributing to leachate generation as part of the HELP modeling of the existing conditions overall leachate generation.

Given: Pond is 25,808 square feet in plan and has an outlet control structure with a lip elevation of 292.2 feet. Maximum depth is 285.5 feet. Pond is situated over MSW. Surrounding groundwater is above the bottom of the pond but below the outlet control structure. Pond is reported to be "full almost all the time".

Assumptions: 1. There is a "low permeability layer of sediment lining the bottom of the pond. 2. The groundwater gradient downs gradient of the pond is applicable all around the pond.
3. Bedrock confining layer at elevation 260 feet below pond.
4. Flow out of pond is controlled by low permeability sediment layer.
5. Flow is primarily out through the edges of the pond.

Use Darcy's Equation to estimate seepage out of pond with shallow confining layer to estimate seepage.

Q_h=kiA (Darcy's equation)

where: Q_h= horizontal flow rate

k= average permeability of the underlying soils

i= gradient

A= cross sectional area = depth of flow at edge of pond, D x perimeter of pond , p

k, permeability

Assume thin low permeability sediment say 12-inches, k= $1X10^{-5}$ cms fine grained sediment. Note this is 2 orders of magnitude below permeability of MSW.

k= 1.00E-05 cms
0.25808 feet per day 1 cms= 25808 feet per day

i, Gradient

TRC Figure 4 Groundwater contour map show the groundwater gradient to be about 50H:1V around pond.

i= 0.02 feet per foot

A, area

perimeter distance assuming pond is roughly triangular in shape = 650 feet

depth of pond= 6.7 feet

A= 4355 square feet

Q_h, horizontal flow rate

Substituting values

Q_h= 22 cubic feet per day This is reasonable for a pond "that is full all the time".

8205 cubic feet per year

Scofieldtown Landfill Closure
Existing Conditions HELP Results
Average Annual Leachate

	Area	Leachate		Leachate Volume
Land Fill Area	acres	inches/ac/year	% precipitation	cubic feet/year
Concrete Apron	0.3	15.07	42.8%	14726
Pond	0.6	NA	NA	8205
Lower Paved Area	1.8	22.02	62.5%	141552
Park	2.6	15.14	43.0%	142505
Upper Paved Area	1.1	22.69	64.4%	94527
Top	5.3	9.01	25.6%	173474
North Side Slope	3.1	14.67	41.6%	167256
East Side Slope	1.9	14.96	42.5%	100772
Total Area	16.7	14.4	40.9%	843017

Notes:

1. Total in/acres and % precipitation do not include the pond
2. Average Annual Precipitation= 35.24 inches

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******************************************************************************
******************************************************************************
**                                                                          **
**                                                                          **
**          HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                   **
**           HELP MODEL VERSION 3.07 (1 November 1997)                      **
**            DEVELOPED BY ENVIRONMENTAL LABORATORY                         **
**             USAE WATERWAYS EXPERIMENT STATION                            **
**         FOR USEPA RISK REDUCTION ENGINEERING LABORATORY                  **
**                                                                          **
**                                                                          **
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PRECIPITATION DATA FILE: C:\WHI\VHELP22\data\P1562.VHP_weather1.dat

TEMPERATURE DATA FILE: C:\WHI\VHELP22\data\P1562.VHP_weather2.dat

SOLAR RADIATION DATA FILE: C:\WHI\VHELP22\data\P1562.VHP_weather3.dat

EVAPOTRANSPIRATION DATA: C:\WHI\VHELP22\data\P1562.VHP_weather4.dat

SOIL AND DESIGN DATA FILE: C:\WHI\VHELP22\data\P1562.VHP\I_388658.inp

OUTPUT DATA FILE: C:\WHI\VHELP22\data\P1562.VHP\O_388658.prt

****

TITLE: Existing Conditions Top

****

NOTE: INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE

COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.

LAYER 1

TYPE 1 - VERTICAL PERCOLATION LAYER

MATERIAL TEXTURE NUMBER 5

THICKNESS = 15.24 CM

POROSITY = 0.4640 VOL/VOL

FIELD CAPACITY = 0.3100 VOL/VOL

WILTING POINT = 0.1870 VOL/VOL

INITIAL SOIL WATER CONTENT = 0.3092 VOL/VOL

EFFECTIVE SAT. HYD. COND. = 0.640000000000E-05 CM/SEC

NOTE: SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY 4.90

FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.

LAYER 2

TYPE 3 - BARRIER SOIL LINER

MATERIAL TEXTURE NUMBER 10

THICKNESS = 15.24 CM

POROSITY = 0.0500 VOL/VOL

FIELD CAPACITY = 0.0100 VOL/VOL

WILTING POINT = 0.0010 VOL/VOL

INITIAL SOIL WATER CONTENT = 0.0500 VOL/VOL

EFFECTIVE SAT. HYD. COND. = 0.500000000000E-04 CM/SEC

LAYER 3

TYPE 1 - VERTICAL PERCOLATION LAYER

MATERIAL TEXTURE NUMBER 19

THICKNESS = 975.36 CM

POROSITY = 0.1680 VOL/VOL

FIELD CAPACITY = 0.0730 VOL/VOL

WILTING POINT = 0.0190 VOL/VOL

INITIAL SOIL WATER CONTENT = 0.0730 VOL/VOL

EFFECTIVE SAT. HYD. COND. = 0.100000000000E-02 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS USER-SPECIFIED.

SCS RUNOFF CURVE NUMBER = 86.00

FRACTION OF AREA ALLOWING RUNOFF = 100.0 PERCENT

AREA PROJECTED ON HORIZONTAL PLANE = 0.4047 HECTARES

EVAPORATIVE ZONE DEPTH = 15.2 CM

INITIAL WATER IN EVAPORATIVE ZONE = 4.713 CM

UPPER LIMIT OF EVAPORATIVE STORAGE = 7.071 CM

LOWER LIMIT OF EVAPORATIVE STORAGE = 2.850 CM

INITIAL SNOW WATER = 0.000 CM

INITIAL WATER IN LAYER MATERIALS = 76.663 CM

TOTAL INITIAL WATER = 76.663 CM

TOTAL SUBSURFACE INFLOW = 0.00 MM/YR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM

Stamford CT

STATION LATITUDE = 41.29 DEGREES

MAXIMUM LEAF AREA INDEX = 4.00

START OF GROWING SEASON (JULIAN DATE) = 83

END OF GROWING SEASON (JULIAN DATE) = 296

EVAPORATIVE ZONE DEPTH = 6.0 INCHES

AVERAGE ANNUAL WIND SPEED = 12.00 MPH

AVERAGE 1ST QUARTER RELATIVE HUMIDITY = 65.00 %

AVERAGE 2ND QUARTER RELATIVE HUMIDITY = 69.00 %

AVERAGE 3RD QUARTER RELATIVE HUMIDITY = 74.00 %

AVERAGE 4TH QUARTER RELATIVE HUMIDITY = 70.00 %

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING

COEFFICIENTS FOR Stamford CT

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
3.00	3.00	3.00	3.00	3.00	3.00
3.00	3.00	3.00	3.00	3.00	3.00

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING

COEFFICIENTS FOR Stamford CT

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
35.20	32.60	42.20	49.50	63.10	69.00
78.30	78.50	69.80	55.30	44.80	32.00

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING

COEFFICIENTS FOR Stamford CT

AND STATION LATITUDE = 43.46 DEGREES

HEAD #1: AVERAGE HEAD ON TOP OF LAYER 2

DRAIN #1: LATERAL DRAINAGE FROM LAYER 1 (RECIRCULATION AND COLLECTION)

LEAK #1: PERCOLATION OR LEAKAGE THROUGH LAYER 2

LEAK #2: PERCOLATION OR LEAKAGE THROUGH LAYER 3

****

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 50

JAN/JUL FEB/AUG MAR/SEP APR/OCT MAY/NOV JUN/DEC

------- ------- ------- ------- ------- -------

PRECIPITATION

TOTALS	2.86	3.15	3.08	2.86	2.99	2.86
	2.72	2.53	2.70	2.98	3.34	3.18
STD. DEVIATIONS	1.96	2.14	2.01	2.12	2.00	2.34
	1.85	1.81	2.31	1.94	2.45	1.85

RUNOFF

TOTALS	1.484	1.209	1.139	0.482	0.471	0.443
	0.434	0.333	0.415	0.434	0.672	0.365
STD. DEVIATIONS	1.608	1.524	1.688	0.667	0.576	0.809
	0.740	0.569	0.757	0.718	1.003	0.721

EVAPOTRANSPIRATION

TOTALS	0.994	0.969	1.774	1.717	2.069	2.053
	1.922	1.776	1.602	1.452	1.167	0.846
STD. DEVIATIONS	0.385	0.409	0.482	0.856	1.078	1.053
	0.961	1.027	0.961	0.529	0.387	0.187

PERCOLATION/LEAKAGE THROUGH LAYER 2

TOTALS	1.1481	0.7197	0.9374	0.7236	0.6072	0.4081
	0.3854	0.2873	0.6321	0.8522	1.4312	0.8773
STD. DEVIATIONS	1.3019	1.0685	0.6766	0.8661	0.6013	0.5943
	0.5182	0.4094	0.9273	0.9810	1.3803	0.9853

PERCOLATION/LEAKAGE THROUGH LAYER 3

TOTALS	1.0569	0.6953	1.0181	0.8149	0.6231	0.4401
	0.3741	0.2641	0.5202	0.9205	1.2281	1.0548
STD. DEVIATIONS	1.1075	0.9856	0.8742	0.9420	0.6096	0.5862
	0.5080	0.4127	0.8237	0.9453	1.1499	1.1556

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 2

AVERAGES	0.0480	0.0301	0.0424	0.0367	0.0344	0.0221

0.0210 0.0166 0.0305 0.0431 0.0726 0.0362

STD. DEVIATIONS 0.0615 0.0483 0.0365 0.0489 0.0391 0.0419

0.0298 0.0261 0.0422 0.0538 0.0726 0.0447

****

****

AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 50

	INCHES		CU. FEET	PERCENT
PRECIPITATION	35.24	(6.489)	127924.2	100.00
RUNOFF	7.881	(3.5226)	28608.52	22.364
EVAPOTRANSPIRATION	18.341	(2.8355)	66575.10	52.043
PERCOLATION/LEAKAGE THROUGH LAYER 2	9.00988	(3.06479)	32705.142	25.56603
AVERAGE HEAD ON TOP	0.036	(0.012)		

OF LAYER 2

PERCOLATION/LEAKAGE THROUGH 9.01008 (3.02820) 32705.894 25.56662

LAYER 3

CHANGE IN WATER STORAGE 0.010 (1.8575) 34.71 0.027

****

****

PEAK DAILY VALUES FOR YEARS 1 THROUGH 50 and their dates (DDDYYYY)

	(INCHES)	(CU. FT.)	
PRECIPITATION	6.56	23812.28098	1830036
RUNOFF	5.166	18753.97950	30007
PERCOLATION/LEAKAGE THROUGH LAYER 2	1.711306	6211.90695	2660028
AVERAGE HEAD ON TOP OF LAYER 2	3.000		
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.500970	1818.48277	520033
SNOW WATER	6.25	22670.2511	440032

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.4640

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.1870

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****

FINAL WATER STORAGE AT END OF YEAR 50

LAYER	(INCHES)	(VOL/VOL)
1	2.1594	0.3599
2	0.3000	0.0500
3	28.0167	0.0730

SNOW WATER 0.184

Scofieldtown Landfill Closure
Capped Landfill HELP Input Matrix

Land Fill Area	Area		Impervious Area	Subarea Modifications		Runoff Curve Number (RCN) (note 1)	Average Surface Slope	Average Surface Flow Distance	Drain Layer Drainage Distance	Surface Cover Condition (note 5)	HELP Layers (note 2)
	acres	RCN	acres	acres	RCN	RCN	%	feet	Feet		
Paved Area	2.9	80	6.1%	0.4	-	79	4%	250	100	Bare sand (note 3 and 4)	0.1 feet Sand (note 3)
											0.25 feet Pavement
											1 foot Aggregate Base
											Geocomposite Drain Net
											Geomembrane
											0.5 feet Subbase
											8 feet Solid Waste Layer (note 2)
Pond	0.8	Model by assuming pond is above static groundwater and flow is downward (unit gradient) and controlled by defects in a geomembrane with a very low permeability. Head is average water depth. Assume stormwater detention pond is full 5 % of the time. Use Bernoulli's equation for flow rate, Q, for free flow through an opening. Infiltration is Q=leakage through pond bottom.									Not modeled with HELP
Top	6.1	55	0.0%	0	-	55	4%	490	150	Good Grass	0.5 feet Topsoil
											1.0 feet Support Soil
											Geocomposite Drain Net
											Geomembrane
											5 feet Subgrade Fill
											32 feet Solid Waste Layer (note 2)
											0.5 feet Topsoil
North Side Slope	4.4	55	0.0%	0	-	55	33%	160	160	Good Grass	1.0 feet Support Soil
											Geocomposite Drain Net
											Geomembrane
											1 foot Subgrade Fill
											15 feet Solid Waste Layer (note 2)
East Side Slope	2.1	55	0.0%	0	-	55	33%	100	100	Good Grass	0.5 feet Topsoil
											1.0 feet Support Soil
											Geocomposite Drain Net
											Geomembrane
											1 foot Subgrade Fill
											5 feet Solid Waste Layer (note 2)

Notes:

1. The Runoff Curve Number is a weighted average of main area and subareas of distinctly different runoff characteristics after adjustment of main area RCN for impervious area (RCN=98).
2. Layers types and thickness are typical/average values for area.
3. Surface layer must be a vertical percolation layer.
4. Sand layer is "ghost" layer required by limits of model. See Note 3.
5. Surface cover describes condition that relates to the Run Off Curve Number in Figure 8, HELP Engineering Documentation Version 3.

Scofieldtown Landfill Closure
Capped Landfill HELP Soil & Barrier Layer Properties

	Layer Name									
Input Properties	Topsoil	Vegetated Support Soil	Geocomposite Drain Net	Geomembrane	Subgrade Fill	Solid Waste	Existing "Surface" Soil	Sand over Pavement	Aggregate Base	Pavement
Description	Assume silty Sand, USCS=SM (notes 1 and 4)	USCS Classification GM, GC, SM, SC Assume SM (notes 1 and 4)	Bi or Tri Planner geocomposite Drain Net (notes 4 and 6)	40 mil LLDPE with Geotextile Underneath (notes 4 and 6)	Silty Sand, USCS=SM (notes 1 and 5)	Solid Waste (note 2)	Silty Sand, USCS=SM (note 1)	Sand , USCS=SP (note 1)	Free Draining Compacted Sand and Gravel, USCS=GP (note 4)	Cracked, Weathered Bituminous Pavement (note 3)
HELP Type	Vertical Percolation Layer	Vertical Percolation Layer	Drain Net (0.6 cm)	Geosynthetic Barrier Layer	Vertical Percolation Layer	Municipal Solid Waste with Channeling	Vertical Percolation Layer	Vertical Percolation Layer	Vertical Percolation Layer	Soil Barrier
HELP Soil #	5	5	34	36	4	19	5	1	21	NA
Total Porosity (vol/vol)	0.457	0.457	NA	NA	0.437	0.168	0.457	0.417	0.397	0.05
Field Capacity (vol/vol)	0.131	0.131	NA	NA	0.36	0.073	0.131	0.045	0.032	0.01
Wilting Point (vol/vol)	0.058	0.058	NA	NA	0.203	0.019	0.058	0.018	0.013	0.001
Sat. Hyd. Conductivity (cms)	$1X10^{-2}$	$1X10^{-3}$	$3.3X10^{+1}$	$4X10^{-13}$	$9X10^{-7}$	1X10-3	$1X10^{-3}$	$1X10^{-5}$	$3X10^{-1}$	$1X10^{-7}$
Subsurface Inflow	0	0	0	NA	NA	0	0	0	1	NA
Initial Moisture Content (%)	HELP calculates	HELP calculates	NA	NA	NA	HELP calculates	HELP calculates	HELP calculates	HELP calculates	NA
Pinhole density	NA	NA	NA	HELP default	NA	NA	NA	NA	NA	NA
Installation Defects	NA	NA	NA	HELP default	NA	NA	NA	NA	NA	NA
Placement Quality	NA	NA	NA	Good	NA	NA	NA	NA	NA	NA
Geotextile Transmissivity (cm^2/sec)	NA	NA	NA	0.3	NA	NA	NA	NA	NA	NA

Notes:

1. Default Characteristics - Table 1, HELP Engineering Documentation for Ver. 3
2. Default Characteristics- Table 4, HELP Engineering Documentation for Ver. 4
3. Assuming an infiltration/precipitation ration of 50 %, the effective permeability of the pavement is ~ 1X10-5 cms (van Ganse , CRR Report F 36/1981). Assume void ratio very low ~0.05, field capacity ~0.01, wilting point ~0.01
4. Per plans and specifications in Landfill Closure Plan, TRC, March 2011
5. Default Characteristics- Table 2, HELP Engineering Documentation for Ver. 4
6. Default Characteristics- Table 6, HELP Engineering Documentation for Ver. 5
7. USCS=Unified Soil Classification System

Scofieldtown Landfill Closure
Capped Landfill HELP Result
Average Annual Leachate

Average Annual Precipitation= 35.24 inches

	Area	Leachate		Leachate Volume
Land Fill Area	acres	inches/ac/year	% precp	cubic feet/year
Paved Area	2.9	0.046	0.1%	488
Pond	0.8	NA	NA	0
Top	6.1	0.00103	0.0%	23
North Side Slope	4.4	0.127	0.4%	2009
East Side Slope	2.1	0.0716	0.2%	539
Total Area	16.3	0.1	0.1%	3060

Notes:

1. Total in/acres and % precipitation do not include the pond
2. Average Annual Precipitation= 35.24 inches

TRC

Job:	Scofield Landfill HELP Model	Project No.:	191277		
Description:	Estimate steady-state leakage from	Computed by:	DWA	Date:	7/16/2013
detention pond at landfill		Checked by:		Date:	

Problem: Estimate the leakage out of the pond that is contributing to leachate generation as part of the HELP modeling of the existing conditions overall leachate generation.

Given: Detention pond is 34,595 square feet in plan. Assume pond has an outlet control structure with a lip elevation of 292 feet. Bottom elevation is 285 feet. Pond is situated over MSW. Surrounding groundwater is above the bottom of the pond but below the outlet control structure. Detention pond is assumed to be full infrequently. Assume 5% of the time full depth and rapid draining.

Assumptions: 1. There is a very low permeability geomembrane bottom liner in the pond. 2. The groundwater is below the bottom of the pond. 3. Bedrock confining layer at elevation 260 feet below pond. 4. Flow out of pond is controlled by defects in geomembrane. Assume 20 -2 mm diameter circular defects per acre in liner.

Use Bernoulli's Equation to estimate seepage out of pond . This is a conservative approach as it does not take underlying soil in contact with geomembrane into account.

$Q=C_B a(2gh)^{1/2}$ (Bernoulli's equation)

where: Q= flow rate

C_B= dimensionless coefficient related to edge of hole = 0.6 for sharp edge hole

a= hole area X 4

hole area= 1.57 mm^2 1.57E-05 ft^2

g= acceleration of gravity= 32 ft/s^2

h= liquid head over defect= assume depth/2= 2.5 feet

Substituting values

Q= 2.383E-03 cubic feet per day when full and draining

Q for year= 4.3E-02 cubic feet per year

Pond Area= 0.79 acres

Infiltration rate= 0.05 cubic feet per year

```
******************************************************************************
******************************************************************************
**                                                                          **
**                                                                          **
**          HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                   **
**           HELP MODEL VERSION 3.07 (1 November 1997)                      **
**            DEVELOPED BY ENVIRONMENTAL LABORATORY                         **
**             USAE WATERWAYS EXPERIMENT STATION                            **
**         FOR USEPA RISK REDUCTION ENGINEERING LABORATORY                  **
**                                                                          **
**                                                                          **
******************************************************************************
******************************************************************************


PRECIPITATION DATA FILE:    C:\WHI\VHELP22\data\P2478.VHP\_weather1.dat
TEMPERATURE DATA FILE:      C:\WHI\VHELP22\data\P2478.VHP\_weather2.dat
SOLAR RADIATION DATA FILE:  C:\WHI\VHELP22\data\P2478.VHP\_weather3.dat
EVAPOTRANSPIRATION DATA:    C:\WHI\VHELP22\data\P2478.VHP\_weather4.dat
SOIL AND DESIGN DATA FILE:  C:\WHI\VHELP22\data\P2478.VHP\I_389757.inp
OUTPUT DATA FILE:           C:\WHI\VHELP22\data\P2478.VHP\O_389757.prt


******************************************************************************

   TITLE:  Capped Landfill Top

******************************************************************************


   NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
          COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.


                        LAYER  1
                        --------

              TYPE 1 - VERTICAL PERCOLATION LAYER
                 MATERIAL TEXTURE NUMBER   5
       THICKNESS                =     15.24   CM
       POROSITY                 =      0.4570 VOL/VOL
       FIELD CAPACITY           =      0.1310 VOL/VOL
       WILTING POINT            =      0.0580 VOL/VOL
       INITIAL SOIL WATER CONTENT  =      0.1333 VOL/VOL
       EFFECTIVE SAT. HYD. COND.   =  0.100000000000E-02 CM/SEC
      NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  4.90
             FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.



                        LAYER  2
                        --------

              TYPE 1 - VERTICAL PERCOLATION LAYER
                 MATERIAL TEXTURE NUMBER   5
       THICKNESS                =     30.48   CM
       POROSITY                 =      0.4570 VOL/VOL
       FIELD CAPACITY           =      0.1310 VOL/VOL
       WILTING POINT            =      0.0580 VOL/VOL
       INITIAL SOIL WATER CONTENT  =      0.1881 VOL/VOL
       EFFECTIVE SAT. HYD. COND.   =  0.100000000000E-02 CM/SEC
```

```
                    LAYER  3
                    --------

          TYPE 2 - LATERAL DRAINAGE LAYER
            MATERIAL TEXTURE NUMBER  34
THICKNESS                =      0.60   CM
POROSITY                 =      0.8500 VOL/VOL
FIELD CAPACITY           =      0.0100 VOL/VOL
WILTING POINT            =      0.0050 VOL/VOL
INITIAL SOIL WATER CONTENT  =      0.0124 VOL/VOL
EFFECTIVE SAT. HYD. COND.   =   33.0000000000     CM/SEC
SLOPE                    =      4.00   PERCENT
DRAINAGE LENGTH          =     45.7    METERS


                    LAYER  4
                    --------

          TYPE 4 - FLEXIBLE MEMBRANE LINER
            MATERIAL TEXTURE NUMBER  36
THICKNESS                =      0.10   CM
POROSITY                 =      0.0000 VOL/VOL
FIELD CAPACITY           =      0.0000 VOL/VOL
WILTING POINT            =      0.0000 VOL/VOL
INITIAL SOIL WATER CONTENT  =      0.0000 VOL/VOL
EFFECTIVE SAT. HYD. COND.   =  0.400000000000E-12 CM/SEC
FML PINHOLE DENSITY      =      2.00   HOLES/HECTARE
FML INSTALLATION DEFECTS    =      4.00   HOLES/HECTARE
FML PLACEMENT QUALITY       =  3 - GOOD


                    LAYER  5
                    --------

         TYPE 1 - VERTICAL PERCOLATION LAYER
            MATERIAL TEXTURE NUMBER   4
THICKNESS                =    152.40   CM
POROSITY                 =      0.4370 VOL/VOL
FIELD CAPACITY           =      0.1050 VOL/VOL
WILTING POINT            =      0.0470 VOL/VOL
INITIAL SOIL WATER CONTENT  =      0.1049 VOL/VOL
EFFECTIVE SAT. HYD. COND.   =  0.170000000000E-02 CM/SEC


                    LAYER  6
                    --------

         TYPE 1 - VERTICAL PERCOLATION LAYER
            MATERIAL TEXTURE NUMBER  19
THICKNESS                =    975.36   CM
POROSITY                 =      0.1680 VOL/VOL
FIELD CAPACITY           =      0.0730 VOL/VOL
WILTING POINT            =      0.0190 VOL/VOL
INITIAL SOIL WATER CONTENT  =      0.0729 VOL/VOL
EFFECTIVE SAT. HYD. COND.   =  0.100000000000E-02 CM/SEC


        GENERAL DESIGN AND EVAPORATIVE ZONE DATA
        ----------------------------------------

NOTE:  SCS RUNOFF CURVE NUMBER WAS USER-SPECIFIED.
```

```
SCS RUNOFF CURVE NUMBER            =     77.00
FRACTION OF AREA ALLOWING RUNOFF    =    100.0    PERCENT
AREA PROJECTED ON HORIZONTAL PLANE  =      0.4047 HECTARES
EVAPORATIVE ZONE DEPTH             =     20.3    CM
INITIAL WATER IN EVAPORATIVE ZONE   =      2.326  CM
UPPER LIMIT OF EVAPORATIVE STORAGE  =      9.286  CM
LOWER LIMIT OF EVAPORATIVE STORAGE  =      1.179  CM
INITIAL SNOW WATER                 =      0.000  CM
INITIAL WATER IN LAYER MATERIALS    =     94.847  CM
TOTAL INITIAL WATER                =     94.847  CM
TOTAL SUBSURFACE INFLOW            =      0.00   MM/YR
```

EVAPOTRANSPIRATION AND WEATHER DATA

```
NOTE:  EVAPOTRANSPIRATION DATA WAS OBTAINED FROM
       Stamford            CT

STATION LATITUDE                    =  41.29 DEGREES
MAXIMUM LEAF AREA INDEX             =   4.00
START OF GROWING SEASON (JULIAN DATE)  =     83
END OF GROWING SEASON (JULIAN DATE)    =    296
EVAPORATIVE ZONE DEPTH              =   8.0  INCHES
AVERAGE ANNUAL WIND SPEED           =  12.00 MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY  =  65.00 %
AVERAGE 2ND QUARTER RELATIVE HUMIDITY  =  69.00 %
AVERAGE 3RD QUARTER RELATIVE HUMIDITY  =  74.00 %
AVERAGE 4TH QUARTER RELATIVE HUMIDITY  =  70.00 %
```

```
NOTE:  PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING
       COEFFICIENTS FOR    Stamford            CT

       NORMAL MEAN MONTHLY PRECIPITATION (INCHES)
```

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
3.00	3.00	3.00	3.00	3.00	3.00
3.00	3.00	3.00	3.00	3.00	3.00

```
NOTE:  TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING
       COEFFICIENTS FOR    Stamford            CT

       NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)
```

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
35.20	32.60	42.20	49.50	63.10	69.00
78.30	78.50	69.80	55.30	44.80	32.00

```
NOTE:  SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
       COEFFICIENTS FOR    Stamford            CT
         AND STATION LATITUDE  =  43.46 DEGREES
```

****

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 50

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC

```
                  -------  -------  -------  -------  -------  -------
 PRECIPITATION
 -------------
  TOTALS              2.86     3.15     3.08     2.86     2.99     2.86
                   2.72     2.53     2.70     2.98     3.34     3.18

  STD. DEVIATIONS       1.96     2.14     2.01     2.12     2.00     2.34
                   1.85     1.81     2.31     1.94     2.45     1.85

 RUNOFF
 ------
  TOTALS              0.838    0.753    0.680    0.088    0.064    0.080
                   0.095    0.053    0.083    0.077    0.146    0.141

  STD. DEVIATIONS       1.229    1.329    1.440    0.228    0.123    0.237
                   0.294    0.179    0.301    0.196    0.346    0.449

 EVAPOTRANSPIRATION
 ------------------
  TOTALS              0.947    0.952    1.777    1.657    1.935    1.889
                   1.816    1.583    1.495    1.350    1.074    0.806

  STD. DEVIATIONS       0.363    0.408    0.471    0.897    1.060    1.103
                   1.045    0.994    0.950    0.538    0.418    0.205

 LATERAL DRAINAGE COLLECTED FROM LAYER  3
 ----------------------------------------
  TOTALS              1.6256   1.1385   1.5447   1.3144   1.1509   1.0237
                   0.8524   0.7052   0.9904   1.3135   1.8715   1.3095

  STD. DEVIATIONS       1.5863   1.2379   0.8542   1.2088   0.8287   1.0414
                   0.7764   0.6064   1.2454   1.2835   1.6203   1.1895

 PERCOLATION/LEAKAGE THROUGH LAYER  4
 -------------------------------------
  TOTALS              0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
                   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001

  STD. DEVIATIONS       0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
                   0.0000   0.0000   0.0001   0.0001   0.0001   0.0001

 PERCOLATION/LEAKAGE THROUGH LAYER  6
 -------------------------------------
  TOTALS              0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
                   0.0000   0.0000   0.0000   0.0010   0.0000   0.0000

  STD. DEVIATIONS       0.0000   0.0000   0.0000   0.0000   0.0000   0.0000
                   0.0000   0.0000   0.0000   0.0073   0.0000   0.0000


-------------------------------------------------------------------------------
            AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)
-------------------------------------------------------------------------------


 DAILY AVERAGE HEAD ON TOP OF LAYER  4
 -------------------------------------
  AVERAGES            0.0011   0.0008   0.0010   0.0009   0.0007   0.0007
                   0.0006   0.0005   0.0007   0.0009   0.0013   0.0008

  STD. DEVIATIONS       0.0010   0.0009   0.0006   0.0008   0.0005   0.0007
                   0.0005   0.0004   0.0008   0.0008   0.0011   0.0008

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    AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS    1 THROUGH   50
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-------------------------------------------------------------------------------
                              INCHES          CU. FEET       PERCENT
                         --------------------  -------------  ---------
 PRECIPITATION                 35.24    (   6.489)     127924.2     100.00

 RUNOFF                        3.099   (  2.4050)      11247.94      8.793

 EVAPOTRANSPIRATION            17.281   (  2.8492)      62730.23     49.037

 LATERAL DRAINAGE COLLECTED     14.84052 (  4.05093)     53869.908   42.11080
   FROM LAYER  3

 PERCOLATION/LEAKAGE THROUGH     0.00126 (  0.00024)        4.576     0.00358
   LAYER  4

 AVERAGE HEAD ON TOP            0.001 (    0.000)
   OF LAYER  4

 PERCOLATION/LEAKAGE THROUGH     0.00103 (  0.00727)        3.731     0.00292
   LAYER  6

 CHANGE IN WATER STORAGE        0.020   (  1.8438)        72.42      0.057

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*******************************************************************************

            PEAK DAILY VALUES FOR YEARS    1 THROUGH   50       and their dates (DDDYYYY)
  ---------------------------------------------------------------------------
                                   (INCHES)      (CU. FT.)
                                  ----------   -------------
    PRECIPITATION                        6.56        23812.28098   1830036

    RUNOFF                               4.674       16966.65105     30007

    DRAINAGE COLLECTED FROM LAYER  3          1.78676       6485.79917   2660028

    PERCOLATION/LEAKAGE THROUGH LAYER  4       0.000063        0.22968    280018

    AVERAGE HEAD ON TOP OF LAYER  4           0.036

    MAXIMUM HEAD ON TOP OF LAYER  4           0.071

    LOCATION OF MAXIMUM HEAD IN LAYER  3
        (DISTANCE FROM DRAIN)              0.6 FEET

    PERCOLATION/LEAKAGE THROUGH LAYER  6       0.046392       168.39878   2740041

    SNOW WATER                           6.25        22670.2511    440032


    MAXIMUM VEG. SOIL WATER (VOL/VOL)                0.4036

    MINIMUM VEG. SOIL WATER (VOL/VOL)                0.0580


     ***  Maximum heads are computed using McEnroe's equations.  ***

         Reference:  Maximum Saturated Depth over Landfill Liner
                     by Bruce M. McEnroe, University of Kansas
                     ASCE Journal of Environmental Engineering
                     Vol. 119, No. 2, March 1993, pp. 262-270.

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FINAL WATER STORAGE AT END OF YEAR 50

LAYER	(INCHES)	(VOL/VOL)
1	1.2061	0.2010
2	2.6525	0.2210
3	0.0031	0.0133
4	0.0000	0.0000
5	6.2960	0.1049
6	27.9968	0.0729

SNOW WATER 0.184

****
****

APPENDIX E

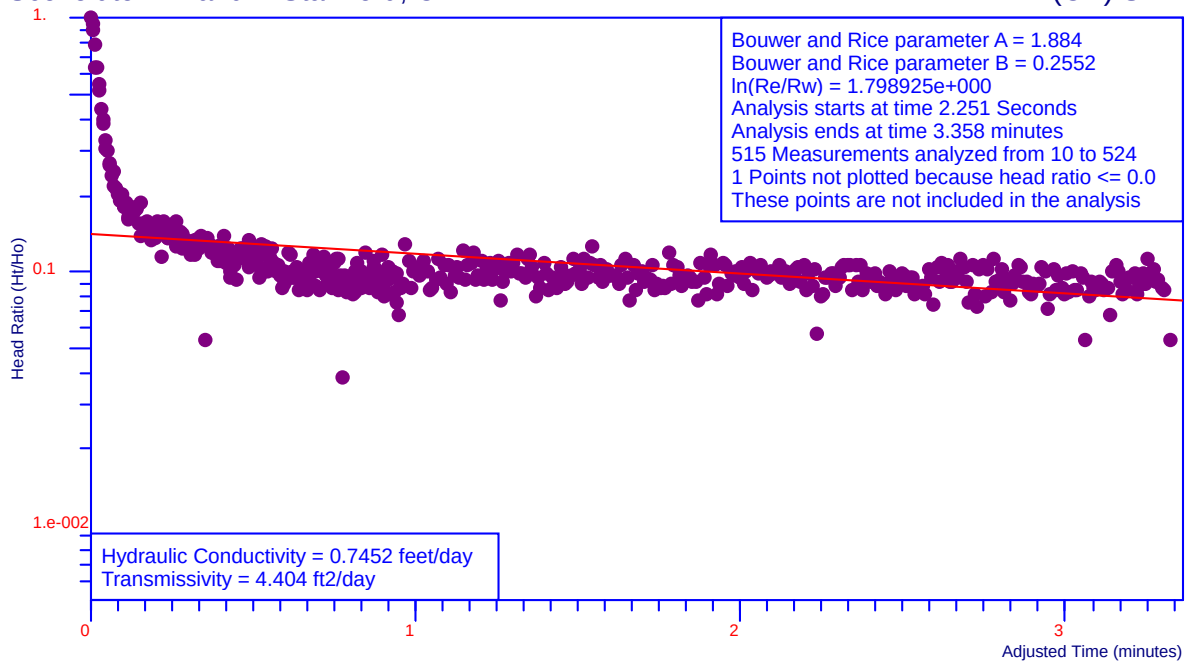
SLUG TEST SUMMARY TABLES & GRAPHS

Scofieldtown Landfill Slug Test 4/17/2013

Bouwer and Rice Graph

Scofieldtown Landfill Stamford, CT

MW-12(OB) SL-1



Project Number: 191277.0000.0000 for City of Stamford

Analysis by Starpoint Software

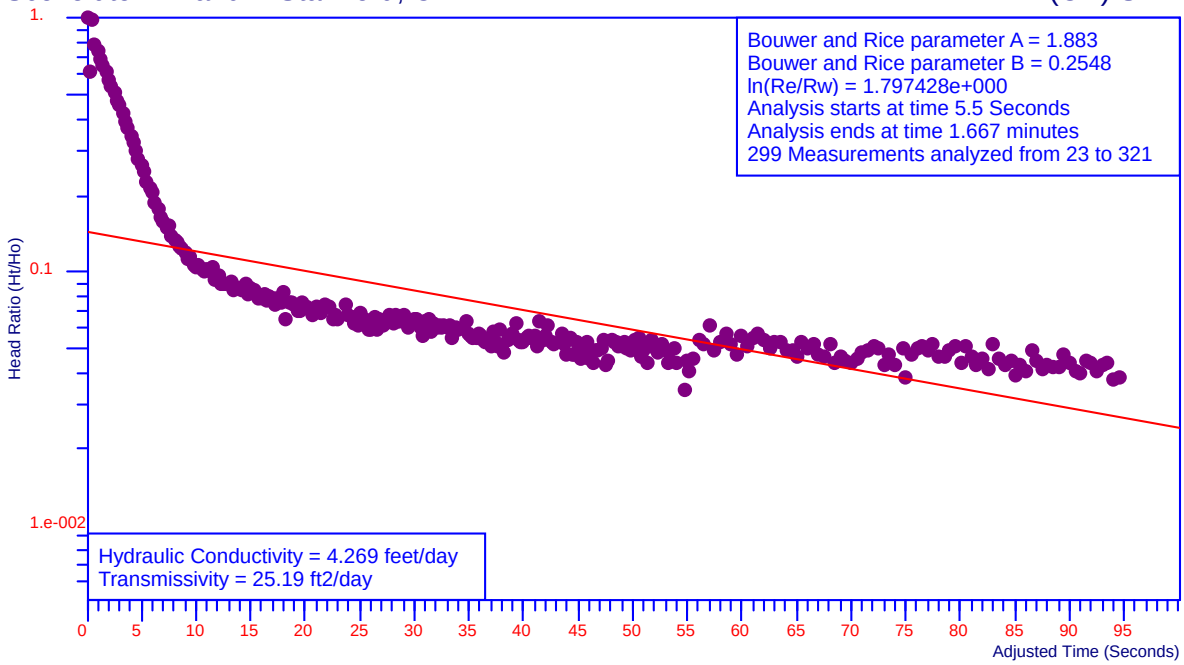
Ho is 0.579 feet at 2.251 Seconds

Scofieldtown Landfill Slug Test 4/17/2013

Bouwer and Rice Graph

Scofieldtown Landfill Stamford, CT

MW-12(OB) SL-2



Ho is 1.96 feet at 5.5 Seconds

Project Number: 191277.0000.0000 for City of Stamford

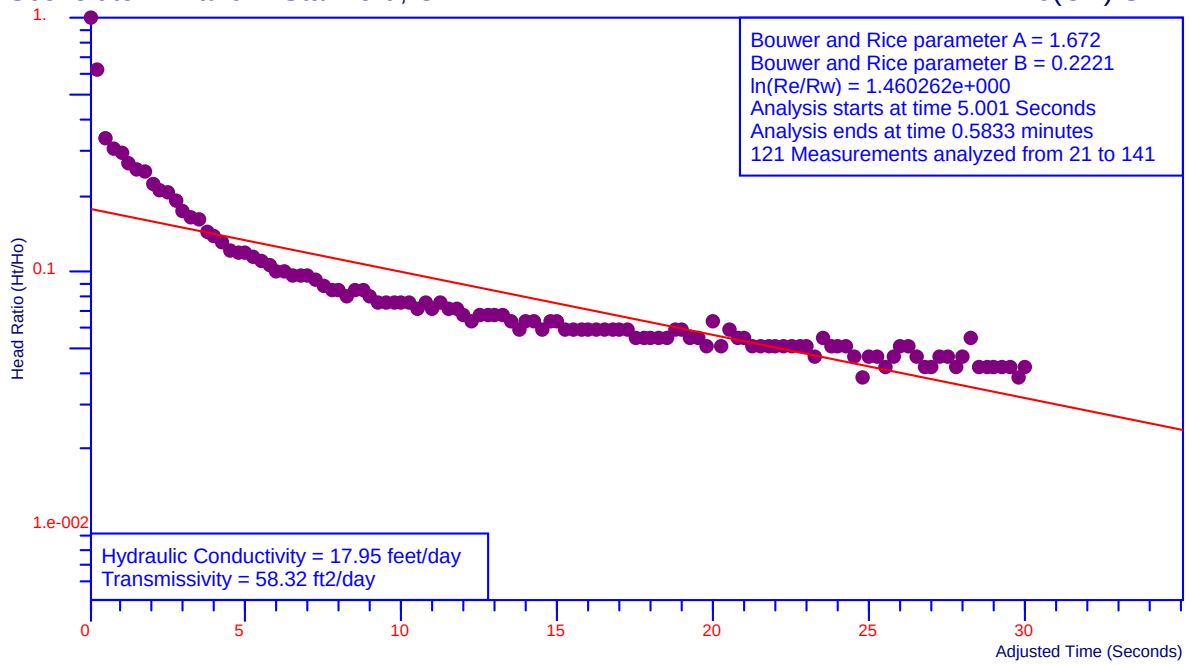
Analysis by Starpoint Software

Scofieldtown Landfill Slug Test 4/17/2013

Bouwer and Rice Graph

Scofieldtown Landfill Stamford, CT

MW-16(OB) SL-1



Project Number: 191277.0000.0000 for City of Stamford

Analysis by Starpoint Software

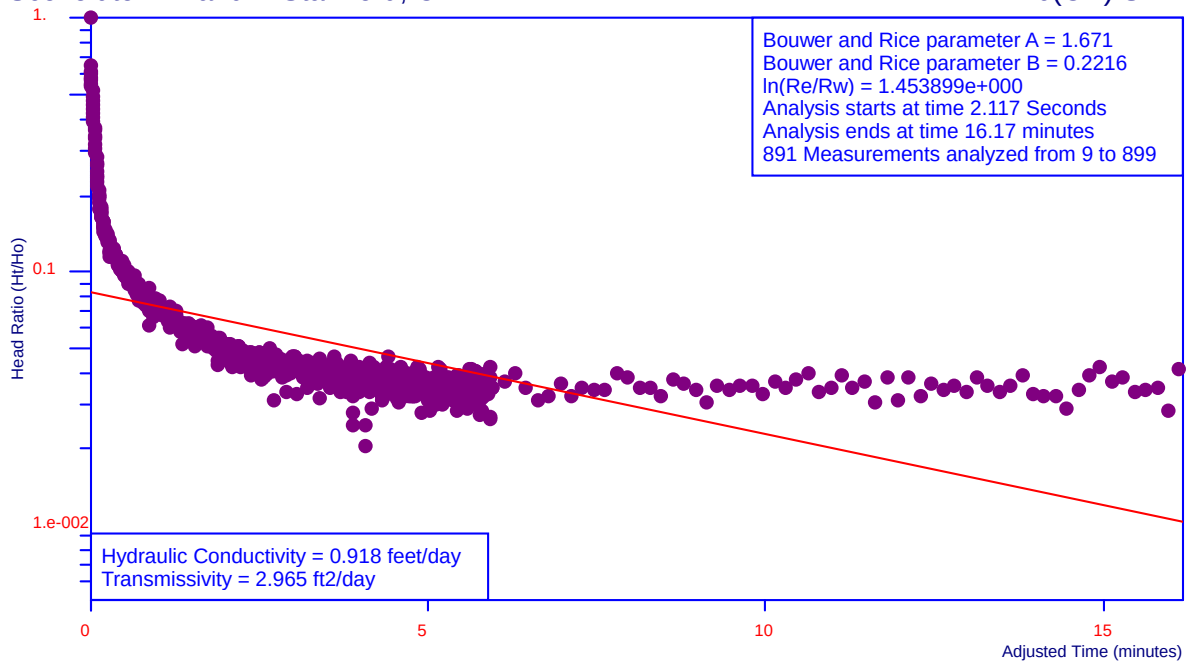
Ho is 2.37 feet at 5.001 Seconds

Scofieldtown Landfill Slug Test 4/17/2013

Bouwer and Rice Graph

Scofieldtown Landfill Stamford, CT

MW-16(OB) SL-2



Project Number: 191277.0000.0000 for City of Stamford

Analysis by Starpoint Software

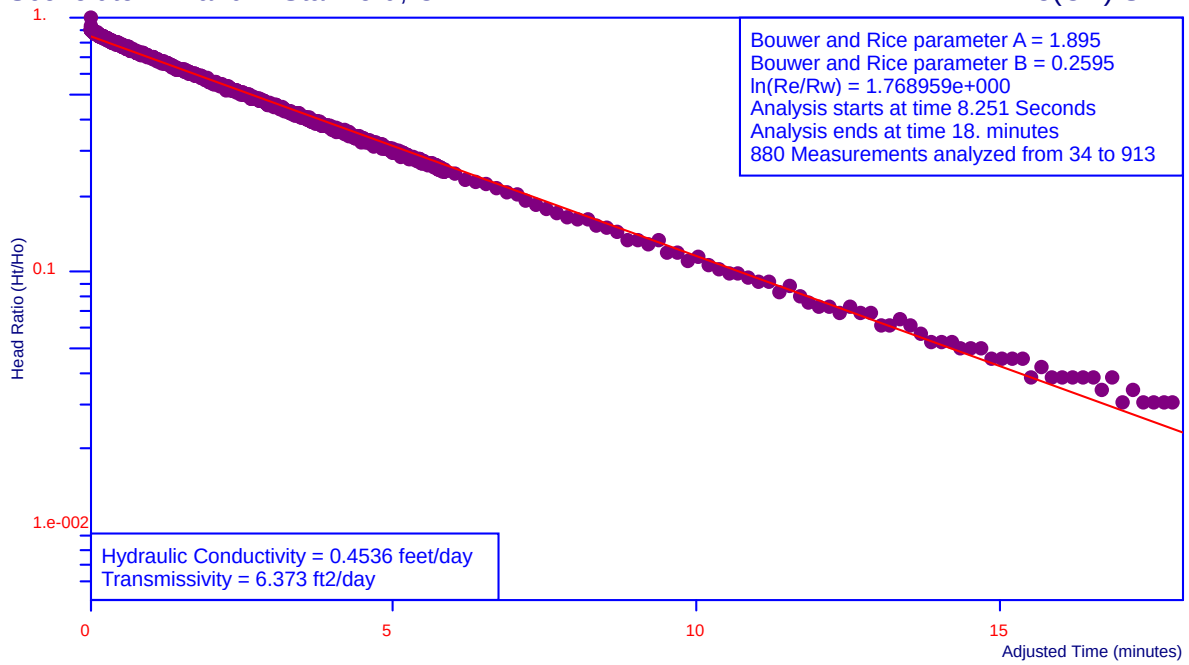
Ho is 2.397 feet at 2.117 Seconds

Scofieldtown Landfill Slug Test 4/17/2013

Bouwer and Rice Graph

Scofieldtown Landfill Stamford, CT

MW-18(OB) SL-1



Project Number: 191277.0000.0000 for City of Stamford

Analysis by Starpoint Software

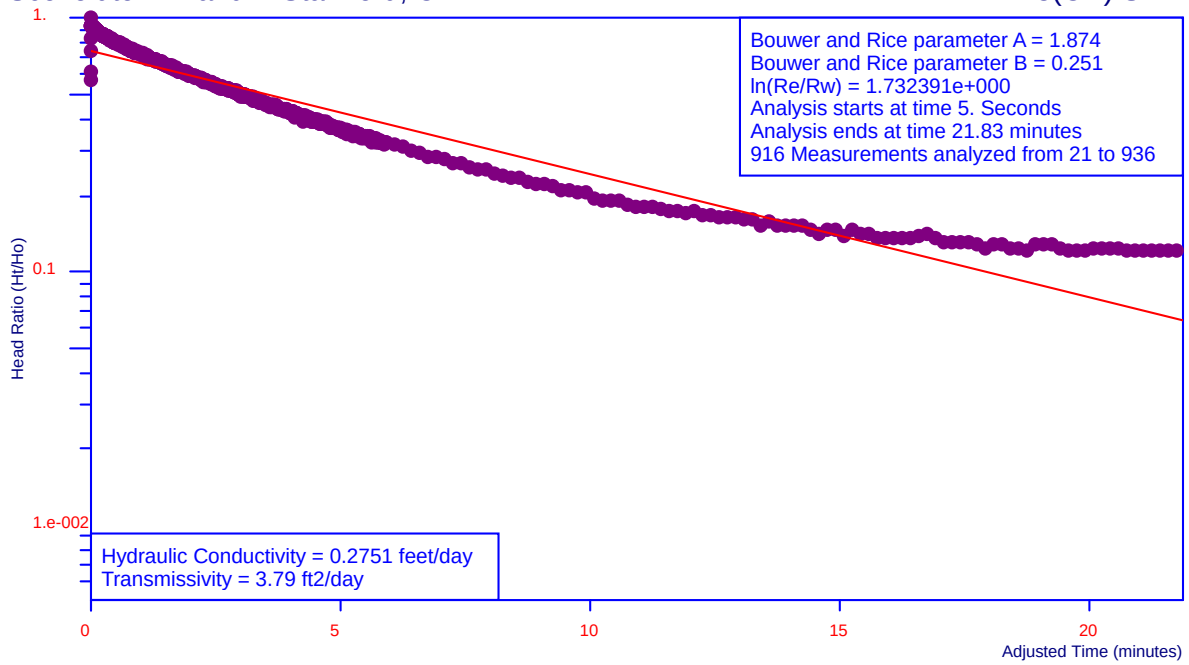
Ho is 2.63 feet at 8.251 Seconds

Scofieldtown Landfill Slug Test 4/17/2013

Bouwer and Rice Graph

Scofieldtown Landfill Stamford, CT

MW-18(OB) SL-2



Project Number: 191277.0000.0000 for City of Stamford

Analysis by Starpoint Software

Ho is 2.81 feet at 5. Seconds