

**APPENDIX A**

**SOIL BORING / WELL CONSTRUCTION LOGS**



















**DRAFT**  
**SUBSURFACE**  
**INVESTIGATION LOG**

BORING NO. **EB-06**

Project No. **814.005-S**

PROJECT INFORMATION		DRILLING INFORMATION	
<b>Project:</b>	Franklin County Landfill Expansion Assessment	<b>Drilling Co:</b>	Northern Technical Services
<b>Client:</b>	County of Franklin Solid Waste Management Authority	<b>Driller:</b>	Chris Wheeler
<b>Site Location:</b>	Franklin County, NY	<b>Rig Type:</b>	Truck-mounted CME 55
<b>Job No:</b>	814.005-S	<b>Drilling Method(s):</b>	3 1/4" HSA
<b>Project Manager:</b>	Michael R. Brother	<b>Hammer Wt/Drop:</b>	140 lbs. 30"
<b>Logged By:</b>	Joshua G. Haugh	<b>Hammer Type:</b>	Safety hammer
<b>Dates Drilled</b>	10/4/2007-10/5/2007	<b>Borehole Diam:</b>	6" <b>Total Depth:</b> 17.5'
LOCATION INFORMATION		WELL INFORMATION	
<b>Horiz. Datum:</b>	NAD 1983 (FT) <b>Easting:</b> 532160.089200	<b>Ground Elevation:</b>	261.130000 <b>Screen Type/Diam:</b> N/A
<b>Vert. Datum:</b>	NAVD 1988 (FT) <b>Northing:</b> 2237238.487000	<b>TOC Elevation:</b>	N/A <b>Slot Size:</b> N/A

Barton & Loguidice, P.C. FRANKLIN COUNTY LANDFILL EXPANSION ASSESSMENT BORING NO: EB-06

Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction
1	SS		<b>TOPSOIL:</b> 6" of Brown SILT, little fine Sand; roots and organics; medium stiff ; grades to Brown fine SAND and SILT, some fine to medium Gravel (subangular), trace coarse Cobble fragments; loose, dry to slightly moist.	1	0-2	1.5	6-8-10-16	18	TOPSOIL	
2	SS		As above.	2	2-4	1.8	36-53-45-95	99		
3			<b>UPPER GLACIAL TILL:</b> Brown fine to (-) medium SAND, some fine to medium Gravel (subangular to angular), little Silt; matrix supported, weathered clasts; dense, dry.						UPPER GLACIAL TILL	Rods bouncing.
4	SS		Brown fine to (-) medium SAND, some fine to medium Gravel (subangular), trace Silt and Cobble fragments; matrix supported, occasional weathered clasts; very dense, dry.	3	4-6	1.8	39-53-82-100/5"	135		
5										
6	SS		No recovery.	4	6-8	0.0	50/2"			
7										
8	NX		<b>BOULDER:</b> Blue/Grey Dolostone; not flat-lying.	C-1	8.2-13.2	2.4			UPPER GLACIAL TILL	
9										
10										
11									UPPER GLACIAL TILL	Pull augers and spin casing to 12' for sample.
12	SS		Brown fine to medium SAND, some (+) fine to medium Gravel (subangular) and Rock fragments (angular), some (-) Silt; medium dense, wet.	5	12-14	0.5	27-53-100/3"			
13									BEDROCK	Rollerbit refusal at 13.4'
14	NX		<b>BEDROCK:</b> Blue/Grey Dolostone	C-2	13.5-18.5	5.0		86%		
15			One-inch thick mud seam @ ~17 ft, otherwise very competent							
16									BEDROCK	
17										
18										
19										
20										END OF BORING AT 17.5'

















































**DRAFT**  
**SUBSURFACE**  
**INVESTIGATION LOG**

BORING NO. EB-17

Project No. 814.005-S

PROJECT INFORMATION		DRILLING INFORMATION	
<b>Project:</b>	Franklin County Landfill Expansion Assessment	<b>Drilling Co:</b>	Northern Technical Services
<b>Client:</b>	County of Franklin Solid Waste Management Authority	<b>Driller:</b>	Chris Wheeler
<b>Site Location:</b>	Franklin County, NY	<b>Rig Type:</b>	Truck-mounted CME 55
<b>Job No:</b>	814.005-S	<b>Drilling Method(s):</b>	3 1/4" HSA / 4" Flush Joint Casing
<b>Project Manager:</b>	Michael R. Brother	<b>Hammer Wt/Drop:</b>	140 lbs, 30"
<b>Logged By:</b>	Joshua G. Haugh	<b>Hammer Type:</b>	Safety hammer
<b>Dates Drilled</b>	11/5/2007 - 11/7/2007	<b>Borehole Diam:</b>	6" <b>Total Depth:</b> 80.2'
LOCATION INFORMATION		WELL INFORMATION	
<b>Horiz. Datum:</b>	NAD 1983 (FT) <b>Easting:</b> 529028.29	<b>Ground Elevation:</b>	231.40 <b>Screen Type/Diam:</b> N/A
<b>Vert. Datum:</b>	NAVD 1988 (FT) <b>Northing:</b> 2233749.94	<b>TOC Elevation:</b>	N/A <b>Slot Size:</b> N/A

Barton & Loguidice, P.C. FRANKLIN COUNTY LANDFILL EXPANSION ASSESSMENT BORING NO: EB-17

Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction	
1	SS		<b>TOPSOIL:</b> Brown fine SAND and SILT, little fine Gravel (angular to subangular); occasional roots, organics; soft, moist.	1	0-2	1.4	3-3-4-3	7	TOP SOIL		
2	SS		<b>MARINE SILT UNIT:</b> Grey/Brown Clayey SILT, little fine Sand, little fine to medium Gravel (angular); mottled; soft, moist.	2	2-4	1.8	3-3-3-4	6	MARINE SILT UNIT		
3			Brown Clayey SILT, trace fine Sand; occasional mottled; cohesive, low plasticity to nonplastic; firm, moist.								
4	SS		Brown SILT & CLAY; occasional roots, oxidation features; low plasticity; firm, moist.	3	4-6	1.4	5-5-6-6	11			
5											
6	SS		Brown Silty CLAY; medium plastic; wet.	4	6-8	1.3	7-6-5-4	11			
7											
8	SS		Grey Silty CLAY; medium plastic; soft to firm; wet.	5	8-10	2.0	2-2-1-2	3			
9											
10	SS		Grey Silty CLAY; medium plastic; soft, wet.	6	10-12	2.0	1-1-1-1	2			
11											
12	SS		As above.	7	12-14	2.0	1-1-1-2	2			
13											
14	SS		As above; saturated.	8	14-16	2.0	1-1-1-1	2			
15											
16	SS		Grey Silty CLAY; occasional thin layer of Grey SILT; soft.	9	16-18	2.0	1-1-1-1	2			
17											
18	SS		<b>LOWER GLACIAL TILL:</b>	10	18-20	0.8	9-11-67-65	78			LOWER GLACIAL TILL
19			Grey Silty CLAY; little fine to medium Sand, little fine to medium Gravel; occasional thin layer of Grey Silt; soft to firm; saturated.								
20											

Spoon pounding on cobble.







**DRAFT**  
**SUBSURFACE**  
**INVESTIGATION LOG**

Boring No. **MW-20**

Project No. 814.005-S

PROJECT INFORMATION		DRILLING INFORMATION	
<b>Project:</b>	Franklin County Landfill Expansion Assessment	<b>Drilling Co:</b>	Northern Technical Services
<b>Client:</b>	County of Franklin Solid Waste Management Authority	<b>Driller:</b>	Chris Wheeler
<b>Site Location:</b>	Franklin County, NY	<b>Rig Type:</b>	Truck-mounted CME 55
<b>Job No:</b>	814.005-S	<b>Drilling Method(s):</b>	3 1/4" HSA
<b>Project Manager:</b>	Michael R. Brother	<b>Hammer Wt/Drop:</b>	140 lbs. 30"
<b>Logged By:</b>	Joshua G. Haugh	<b>Hammer Type:</b>	Safety hammer
<b>Dates Drilled</b>	11/07/2007 -11/08/2007	<b>Borehole Diam:</b>	6" <b>Total Dept</b> 19.0'
LOCATION INFORMATION		WELL INFORMATION	
<b>Horiz. Datum:</b>	NYSP NAD 1983 (FT) <b>Easting:</b> 533034.46	<b>Ground Elevation:</b>	250.23 <b>Screen Type/Diam:</b> PVC/2"
<b>Vert. Datum:</b>	NAVD 1988 (FT) <b>Northing:</b> 2237993.25	<b>TOC Elevation:</b>	253.31 <b>Slot Size:</b> 0.010"

Barton & Loguidice, P.C.		FRANKLIN COUNTY LANDFILL EXPANSION ASSESSMENT		BORING NO: MW-20						
Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction
1	SS		<b>TOPSOIL:</b> Brown SILT, little fine Sand; roots and organics observed; wet. @ 1.5' grades to Brown SILT and SAND (fine to medium), some fine Gravel (angular); matrix supported, re-worked.	1	0-2	1.6	4-4-8-9	12	TOPSOIL	<p>4" steel protective casing 2" PVC riser cement 00 choke sand bentonite plug 00 choke sand Spoon bouncing at 5.5' 00N filter sand Core ends on approximately 8" vertical fracture. Half recovered in first run and remainder retrieved in second run. 10-slot PVC screen 00 choke sand bentonite backfill</p>
2	SS		<b>UPPER GLACIAL TILL:</b> Brown SILT, some (+) fine to medium Sand, some fine to medium Gravel (angular); weathered clasts observed; matrix supported; stiff, moist.	2	2-4	1.2	11-13-34-33	47	UPPER GLACIAL TILL	
3										
4	SS		Brown SAND and GRAVEL, trace Silt; weathered clasts observed; matrix supported; very dense, slightly moist to dry.	3	4-5.5	1.0	46-56-50/2"			
5										
6	NX		<b>BEDROCK:</b> Blue/Grey Dolostone; highly horizontally and vertically fractured and sediment-filled from 5.5'-7.2' then moderately closely spaced fractures;	C1	5.5-10	4.5		39%		
7										
8										
9										
10	NX		As above with moderately spaced horizontal fractures.	C2	10-14	4.3		28%		
11			2' of saturation at approximately 10.2'							
12			4" of saturation at approximately 11.4'							
13			Sediment-filled vertical fracture at 12.5', saturated.							
14	NX		Vertical fracture 13.3'-14.0', unsaturated.	C3	14-19	4.8		94%		
15			As above; massive; widely spaced horizontal fractures with Silt and trace fine Sand sediment (wet) observed in fractures.							
16										
17										
18										
19										
20										END OF BORING AT 19.0'



















**DRAFT**  
**SUBSURFACE**  
**INVESTIGATION LOG**

BORING NO. **MW-23D**

Project No. **814.005-S**

PROJECT INFORMATION		DRILLING INFORMATION	
<b>Project:</b>	Franklin County Landfill Expansion Assessment	<b>Drilling Co:</b>	Northern Technical Services
<b>Client:</b>	County of Franklin Solid Waste Management Authority	<b>Driller:</b>	Chris Wheeler
<b>Site Location:</b>	Franklin County, NY	<b>Rig Type:</b>	ATV CME 850
<b>Job No:</b>	814.005-S	<b>Drilling Method(s):</b>	4 1/4" HSA / 4" Flush joint casing
<b>Project Manager:</b>	Michael R. Brother	<b>Hammer Wt/Drop:</b>	140 lbs, 30"
<b>Logged By:</b>	Diane M. Roskos	<b>Hammer Type:</b>	Safety hammer
<b>Dates Drilled</b>	11/26/2007 -11/29/2007	<b>Borehole Diam:</b>	8" <b>Total Depth:</b> 75.0'
LOCATION INFORMATION		WELL INFORMATION	
<b>Horiz. Datum:</b>	NAD 1983 (FT) <b>Easting:</b> 530775.67	<b>Ground Elevation:</b>	235.08 <b>Screen Type/Diam:</b> PVC/2"
<b>Vert. Datum:</b>	NAVD 1988 (FT) <b>Northing:</b> 2233607.93	<b>TOC Elevation:</b>	238.71 <b>Slot Size:</b> 0.010"

Barton & Loguidice, P.C. FRANKLIN COUNTY LANDFILL EXPANSION ASSESSMENT BORING NO: MW-23D

Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction
1	SS		<b>TOPSOIL:</b> A - Dark Brown very fine SAND, loose, dry, organics to 1.0'	1A	0-2	1.3'	2-3-4-4	7	MARINE SILT UNIT	4" steel protective casing 2" PVC riser cement cement grout Frequent millimeter size shell fragments found below 7.2' depth Some Shell fragments Gravel Seam Trace Shell Fragments Cement Bentonite Grout Switch to Flush Joint Casing
			<b>MARINE SILT UNIT:</b>	1B						
2	SS		B - Light Brown/Tan, very fine SAND, trace (+) Silt; frequent dark brown colored mottles to 1.0', loose, well-sorted, slightly moist	2A	2-4	1.5'	4-5-6-7	11		
3			A - Light Brown/Tan, very fine SAND, some (+) Silt, frequent rust-colored mottles, cohesive, nonplastic, loose, very moist B - Grey/Tan, SILT and SAND, occ. rust-colored mottles, well-sorted; soft, very moist	2B						
4	SS		A - Light Brown/Tan, very fine SAND, some (+) Silt, well-sorted, frequent (+) rust-colored mottles, laminated, cohesive, nonplastic, loose, moist	3A	4-6	1.5'	10-10-10-12	20		
5			B - Light Brown/Tan, SILT and very fine SAND, little rust-colored mottles, cohesive, nonplastic, soft, very moist	3B						
6	SS		C - Grey SILT and very fine SAND, cohesive, nonplastic, soft, very moist	3C						
7			Grey SAND and SILT, cohesive, nonplastic, loose, very moist	4	6-8	1.8'	12-13-15-18	28		
8	SS		A - Grey SAND, cohesive, nonplastic, loose, moist	5A	8-10	1.5'	3-5-4-3	9		
9				5B						
10	SS		B - Grey Silty CLAY, noncohesive, soft, very moist	6	10-12	1.8'	2-2-2-2	4		
11			Grey Clayey SILT, low plasticity, soft, wet, "sticky"							
12	SS		As above	7	12-14	2.0'	2-2-2-2	4		
13										
14	SS		As above	8	14-16	2.0'	2-1-2-1	3		
15										
16	SS		As above	9	16-18	2.0'	1-1-1-1	2%		
17										
18	SS		A - As above	10A	18-20	1.8'	8-13-10-21	23		
19			<b>REWORKED LOWER GLACIAL TILL:</b>							
20			B - Grey fine SAND, little fine GRAVEL (angular), trace (+) Silt; noncohesive, loose, moist changing to wet with depth	10B						

Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction
20	SS		<b>REWORKED LOWER GLACIAL TILL:</b>	11	20-22	<0.1'	13-12-13-14	25	REWORKED LOWER GLACIAL TILL	
21			Grey slurry of SILT and SAND, little fine to medium Gravel (angular)							
22	SS		<b>LOWER GLACIAL TILL:</b>	12	22-24	1.6'	28-37-78-92	115	LOWER GLACIAL TILL	Gravel Seam 12.0' to 12.5'
23			Grey SAND, some Silt, fine to medium Gravel (subangular), matrix supported, noncohesive, dense, moist							
24	SS		Grey fine SAND, some Silt, trace (+) fine to medium Gravel (angular to subangular), noncohesive, matrix supported, dense, moist	13	24-26	0.6'	56-100/4"			
25										
26	SS		Grey SAND, some Silt, trace (+) fine to medium Gravel (subangular, one - 2" gravel found, subrounded), matrix supported, noncohesive, medium dense, moist	14	26-28	0.6'	65-110/6"			
27										
28	SS		Grey SAND, some Silt, little fine to medium Gravel (angular to subangular), matrix supported, noncohesive, medium dense, moist	15	28-30	0.5'	72-100/2'			
29										
30	SS		Grey fine SAND, little Silt, little fine to medium Gravel (subangular), matrix supported, noncohesive, medium dense, moist	16	30-32	0.8'	93-100/3"			
31										
32	SS		Grey fine SAND, some (-) Silt, little (-) fine to medium Gravel (subangular), matrix supported, cohesive, nonplastic, medium dense, moist	17	32-34	0.6'	95-100/3"			
33										
34	SS		Grey fine SAND, little (+) Silt, little fine to medium Gravel (subangular to subrounded), matrix supported, cohesive, nonplastic, dense, moist	18	34-36	1.1'	62-102/6'			
35										
36	SS		Grey fine SAND, little Silt, little fine to medium Gravel (subangular), matrix supported, noncohesive, nonplastic, very dense, moist	19	36-38	1.0'	46-100/5"			
37										
38	SS		Grey fine SAND and SILT, little fine to medium Gravel (subangular), matrix supported, noncohesive, dense, moist Sample split vertically in spoon	20	38-40	1.35'	36-37-100/6"			
39										
40	SS		Grey SAND, some Silt, little (-) fine to medium Gravel (subangular), trace coarse Gravel (subrounded), matrix supported, noncohesive, dense, moist	21	40-42	1.1'	48-101/6"			
41										
42	SS		Grey SAND and SILT, little fine to coarse Gravel (subangular to subrounded), matrix supported, noncohesive, dense, moist	22	42-44	1.3'	42-68-100/4"			
43										
44	SS		Grey SAND and SILT, little (-) fine to medium Gravel (subrounded), matrix supported, low plasticity, dense, moist	23	44-46	1.7'	32-26-36-43	62		
45										
46	SS		Grey SAND and SILT, trace (+) fine to coarse Gravel (subrounded), matrix supported, low plasticity, medium dense, moist	24	46-48	1.9'	18-28-29-89	57		
47										
48	SS		Grey SAND and SILT, low plasticity, moist, medium dense	25	48-50	1.8'	20-21-40-50	61		
49										
50	SS		Grey SAND, some Silt, trace (+) fine to coarse Gravel (subrounded), coarse Gravel is subangular and lightly weathered, matrix supported, medium plasticity, medium dense, moist	26	50-52	1.7'	20-26-30-38	56		
51										
52	SS		Grey SAND and SILT, trace (+) fine to medium Gravel (subrounded), matrix supported, medium plasticity, medium dense, moist	27	52-54	2.0'	20-22-32-38	54		
53										
54	SS		Grey SAND, some Silt, trace fine Gravel (subangular to subrounded), matrix supported, medium plasticity, medium dense, moist	28	54-56	0.45'	42-70-100/3"			
55										
56										

Cement Bentonite Grout











**DRAFT**  
**SUBSURFACE**  
**INVESTIGATION LOG**

Boring No. **MW-24D**  
(ABANDONED)

Project No. 814.005-S

PROJECT INFORMATION	DRILLING INFORMATION
<b>Project:</b> Franklin County Landfill Expansion Assessment	<b>Drilling Co:</b> Northern Technical Services
<b>Client:</b> County of Franklin Solid Waste Management Authority	<b>Driller:</b> Chris Wheeler
<b>Site Location:</b> Franklin County, NY	<b>Rig Type:</b> Truck-mounted CME 55
<b>Job No:</b> 814.005-S	<b>Drilling Method(s):</b> 4 1/4" HAS / 4" Flush Joint C
<b>Project Manager:</b> Michael R. Brother	<b>Hammer Wt/Drop:</b> 140 lbs, 30"
<b>Logged By:</b> Diane M. Roskos / Joshua G. Haugh	<b>Hammer Type:</b> Safety hammer
<b>Dates Drilled:</b> 12/04/2007-12/10/2007	<b>Borehole Diam:</b> 8" <b>Total Depth:</b> 75.0'
LOCATION INFORMATION	WELL INFORMATION
<b>Horiz. Datum:</b> NAD 1983 (FT) <b>Easting:</b> -	<b>Ground Elevation:</b> - <b>Screen Type/Diam:</b> N/A
<b>Vert. Datum:</b> NAVD 1988 (FT) <b>Northing:</b> -	<b>TOC Elevation:</b> - <b>Slot Size:</b> N/A

Barton & Loguidice, P.C.      FRANKLIN COUNTY LANDFILL EXPANSION ASSESSMENT      BORING NO: MW-24D

Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction
1	SS		<b>TOPSOIL:</b> Dark Brown SILT and SAND, noncohesive, fine roots, soft, slightly moist	1	0-2	1.0'	2-3-3-2	6	TOP SOIL	MARINE SILT UNIT
2	SS		<b>MARINE SILT UNIT:</b> Grades @ 1.5' to Tan, fine SAND and SILT, noncohesive, loose, slightly moist, no. Joint Brown/Orange mottles.	2	2-4	1.8'	2-3-4-5	7		
3			Tan/Grey changing to Grey at 2.4', Clayey SILT, moderate plasticity, fine roots, medium, moist; Little rust-colored mottles found along length of thin roots							
4	SS		Grey Clayey SILT, moderate plasticity, stiff, moist Trace thin roots throughout, trace rust-colored mottles above 4.5'	3	4-6	1.8'	4-5-5-5	10		
5										
6	SS		Grey Clayey SILT, high plasticity, stiff, moist	4	6-8	1.7'	5-6-6-9	14		
7										
8	SS		Grey Clayey SILT, medium plasticity, stiff, very moist	5	8-10	1.8'	1-2-1-1	3		
9										
10	SS		As above	6	10-12	2.0'	1-1-1-1	2		
11										
12	SS		Grey Clayey SILT, moderate plasticity, medium, very moist	7	12-14	1.4'	1-1-1-1	2		
13										
14	SS		Grey Clayey SILT, moderate plasticity, soft, very moist	8	14-16	1.6'	1/12" - 1/12"	1		
15										
16	SS		As above	9	16-18	1.9'	1/12" - 1/12"	1		
17										
18	SS		As above;	10	18-20	2.0'	1/24"	0.5		
19										
20			Wet below 19.2'							

















**DRAFT**  
**SUBSURFACE**  
**INVESTIGATION LOG**

Boring No. **MW-25S**

Project No. 814.005-S

PROJECT INFORMATION		DRILLING INFORMATION	
<b>Project:</b>	Franklin County Landfill Expansion Assessment	<b>Drilling Co:</b>	Northern Technical Services
<b>Client:</b>	County of Franklin Solid Waste Management Authority	<b>Driller:</b>	Chris Wheeler
<b>Site Location:</b>	Franklin County, NY	<b>Rig Type:</b>	Truck-mounted CME 55
<b>Job No:</b>	814.005-S	<b>Drilling Method(s):</b>	4 1/4" HAS
<b>Project Manager:</b>	Michael R. Brother	<b>Hammer Wt/Drop:</b>	140 lbs. 30"
<b>Logged By:</b>	Joshua G. Haugh	<b>Hammer Type:</b>	Safety hammer
<b>Dates Drilled</b>	10/30/2007	<b>Borehole Diam:</b>	8" <b>Total Depth:</b> 19.0'
LOCATION INFORMATION		WELL INFORMATION	
<b>Horiz. Datum:</b>	NYSP NAD 1983 (FT) <b>Easting:</b> 529742.02	<b>Ground Elevation:</b>	257.72 <b>Screen Type/Diam:</b> N/A
<b>Vert. Datum:</b>	NAVD 1988 (FT) <b>Northing:</b> 2235214.73	<b>TOC Elevation:</b>	259.72 <b>Slot Size:</b> N/A

Barton & Loguidice, P.C.		FRANKLIN COUNTY LANDFILL EXPANSION ASSESSMENT							BORING NO: MW-25S	
Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction
1			<b>TOPSOIL:</b> Dark Brown SAND and SILT, some fine Gravel (subangular), occasional roots and rock fragments; slightly moist.	1	0-2	2.0	4-4-5-5	9	TOPSOIL	4" steel protective casing 2" PVC riser cement
2			Brown SAND, little fine to medium Gravel (angular to subangular); occasionally mottled; moist.	2	2-4	1.4	9-17-30-31	47		
3			<b>UPPER GLACIAL TILL:</b> Light Brown/Tan fine SAND, little (+) fine to coarse Gravel (coarse around 2.5', subangular to subrounded); medium dense, moist.							Sample descriptions outside of screen interval adapted from MW-25D boring log.
4			Brown/Tan medium SAND and SILT, some (-) fine to medium Gravel (angular, subrounded); highly weathered Gravel, occasionally mottled; matrix supported; dense, moist.	3	4-6	1.8	46-68-100/4"		UPPER GLACIAL TILL	
5			Brown/Tan fine SAND and SILT, little fine to medium Gravel (subangular); matrix supported, very weathered, occasionally mottled, faint layering observed(?); dense, slightly moist.	4	6-8	0.8	26-100/2"			bentonite plug
6										00 choke sand 5.2'-6.0'
7										Bony augering observed 0-8'. Grey cuttings observed at 7.8'.
8	SS		<b>LOWER GLACIAL TILL:</b>	1	8-10	0.8	44-100/4"			Begin sampling MW-25S.
9			Grey fine SAND and SILT, some fine to medium Gravel (subangular, faceted) and Cobble fragments; matrix supported, low plasticity; medium dense, slightly moist.							
10	SS		Grey fine to medium SAND and SILT, some fine to medium Gravel (subangular and faceted to subrounded), trace Cobble fragment; matrix supported; dense, slightly moist.	2	10-12	0.5	100/6"			
11										Switch to flush joint casing.
12	SS		3" of Cobble fragments at top of sample. Grey fine to medium SAND and SILT, some fine to medium Gravel, trace Cobble fragments.	3	12-14	1.4	22-37-32-62		LOWER GLACIAL TILL	10-slot PVC screen
13			At 13.0' above grades to Grey fine to (-) medium SAND and SILT, some (+) medium fine Gravel (subangular, faceted); matrix supported, noncohesive; medium dense, moist to wet.							
14	SS		Grey fine to (-) medium SAND and SILT, some medium to fine Gravel (subangular, multifaceted); matrix supported; medium dense to dense, slightly moist to moist.	4	14-16	1.6	22-56-27-100/0"			00N filter sand
15										
16	SS		As above; medium dense, moist.	5	16-18	0.8	26-32-100/3"			
17										
18										
19										00 choke sand
20										END OF BORING AT 19.0'













**DRAFT  
SUBSURFACE  
INVESTIGATION LOG**

BORING NO. **MW-27D**

Project No. **814.005-S**

PROJECT INFORMATION		DRILLING INFORMATION	
<b>Project:</b>	Franklin County Landfill Expansion Assessment	<b>Drilling Co:</b>	Northern Technical Services
<b>Client:</b>	County of Franklin Solid Waste Management Authority	<b>Driller:</b>	Chris Wheeler
<b>Site Location:</b>	Franklin County, NY	<b>Rig Type:</b>	Truck-mounted CME 55
<b>Job No:</b>	814.005-S	<b>Drilling Method(s):</b>	4 1/4" HSA / 4" Flush joint casing
<b>Project Manager:</b>	Michael R. Brother	<b>Hammer Wt/Drop:</b>	140 lbs, 30"
<b>Logged By:</b>	Diane M. Roskos	<b>Hammer Type:</b>	Safety hammer
<b>Dates Drilled</b>	10/18/2007 -10/22/2007	<b>Borehole Diam:</b>	8" <b>Total Depth:</b> 40.25'
LOCATION INFORMATION		WELL INFORMATION	
<b>Horiz. Datum:</b>	NAD 1983 (FT) <b>Easting:</b> 532405.85	<b>Ground Elevation:</b>	254.28 <b>Screen Type/Diam:</b> PVC/2"
<b>Vert. Datum:</b>	NAVD 1988 (FT) <b>Northing:</b> 2236596.27	<b>TOC Elevation:</b>	255.61 <b>Slot Size:</b> 0.010"

Barton & Loguidice, P.C.		FRANKLIN COUNTY LANDFILL EXPANSION ASSESSMENT						BORING NO: MW-27D			
Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction	
1	SS		<b>BACKFILL:</b> Brown SAND and SILT, little fine to medium Gravel (angular to subrounded), matrix supported, little rust-colored mottles, trace dark brown mottles, cohesive, nonplastic, moist Increasing Sand percentage with depth At approximately 1.0' depth Quartzite fragments (subangular, moderately weathered)	1	0-2	1.3'	4-11-6-8	17	BACKFILL	4" steel protective casing 2" PVC riser cement	
2	SS		Brown SAND, some (+) Silt, little (+) fine to medium Gravel (subangular), low to medium plasticity, matrix supported, little orange-colored mottles, medium dense, slightly moist increasing to moist with depth	2	2-4	1.1'	6-5-5-5	10		bentonite cement grout	
3											
4	SS		Brown SILT and SAND, little fine to medium Gravel (angular to subrounded), matrix supported, trace rust-colored mottles (only found in bottom 0.2' of sample), low plasticity, medium, moist	3	4-6	1.1'	5-5-6-5	11			
5											
6	SS		Brown SAND, some Silt, little fine to medium Gravel (angular to subangular), matrix supported, medium dense, moist	4	6-8	0.6'	5-6-7-8	13			bentonite cement grout
7											
8	SS		A - Brown fine SAND, some Silt, little fine Gravel (angular to subangular), matrix supported, medium dense, moist B - SHALE, highly fractured, heavily weathered, angular, no matrix C - Red/Orange, SILT, medium, moist	5A	8-10	0.5'	6-7-9-9	16			
9				5B							
10				5C							
11	SS		A - Brown SAND, some (-) SILT, little fine Gravel (subangular, highly weathered), non- to low plasticity, matrix supported, medium dense, moist B - Brown green hue, SILT, little (-) fine Gravel (angular to subangular, some highly weathered), cohesive, nonplastic, matrix supported, stiff, moist	6A	10-12	0.9'	10-8-9-8	17			Layer of fractured & weathered rock at 11.0'
12				6B							
13	SS		<b>MARINE SILT UNIT:</b> A - Light Brown green hue, Clayey SILT, little (+) orange-colored mottles, stiff, moist	7A	12-14	1.3'	12-22-22-17	44	MARINE SILT UNIT	Interface between 7A & 7B is sharp and at a 45° angle	
14				7B					WORKING MARINE SILT UNIT		
15	SS		<b>REWORKED UPPER GLACIAL TILL:</b> B - Brown / Dark Red, SAND, some fine to medium Gravel (subangular), matrix supported, loose, slightly moist	8A	14-16	1.3'	12-9-10-12	19	UPPER GLACIAL TILL		
16				8B					UPPER GLACIAL TILL	Switch to Flush Joint Casing Rock Cuttings	
17	SS		Poor Recovery	9	16-18	<0.1'	12-15-4-6	19			
18										bentonite cement grout	
19	SS		<b>LOWER GLACIAL TILL:</b> A - Grey SAND, some fine to medium Gravel (angular to subangular), matrix supported, cohesive, nonplastic, medium dense, moist B - Grey SILT AND SAND, little (-) fine to medium Gravel (angular to subangular), low plasticity, matrix supported, stiff, moist	10A	18-20	0.5'	57-17-100/0"		LOWER GLACIAL TILL		
20				10B							





**DRAFT**  
**SUBSURFACE**  
**INVESTIGATION LOG**

BORING NO. **MW-27S**

Project No. **814.005-S**

PROJECT INFORMATION		DRILLING INFORMATION	
<b>Project:</b>	Franklin County Landfill Expansion Assessment	<b>Drilling Co:</b>	Northern Technical Services
<b>Client:</b>	County of Franklin Solid Waste Management Authority	<b>Driller:</b>	Chris Wheeler
<b>Site Location:</b>	Franklin County, NY	<b>Rig Type:</b>	Truck-mounted CME 55
<b>Job No:</b>	814.005-S	<b>Drilling Method(s):</b>	4 1/4" HAS
<b>Project Manager:</b>	Michael R. Brother	<b>Hammer Wt/Drop:</b>	140 lbs. 30"
<b>Logged By:</b>	Diane M. Roskos	<b>Hammer Type:</b>	Safety hammer
<b>Dates Drilled</b>	10/22/2007	<b>Borehole Diam:</b>	8" <b>Total Depth:</b> 25.5'
LOCATION INFORMATION		WELL INFORMATION	
<b>Horiz. Datum:</b>	NAD 1983 (FT) Easting: 532406.36	<b>Ground Elevation:</b>	254.50 <b>Screen Type/Diam:</b> PVC/2"
<b>Vert. Datum:</b>	NAVD 1988 (FT) Northing: 2236589.71	<b>TOC Elevation:</b>	256.25 <b>Slot Size:</b> 0.010"

Barton & Loguidice, P.C. FRANKLIN COUNTY LANDFILL EXPANSION ASSESSMENT BORING NO: MW-27S

Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction
1			<b>BACKFILL:</b> Brown SAND and SILT, little fine to medium Gravel (angular to subrounded), matrix supported, little rust-colored mottles, trace dark brown mottles, cohesive, nonplastic, moist Increasing Sand percentage with depth At approximately 1.0' depth Quartzite fragments (subangular, moderately weathered)	1	0-2	1.3'	4-11-6-8	17	BACKFILL	4" steel protective casing 2" PVC riser cement  bentonite cement grout  Sample Descriptions outside of screen interval adapted from MW-27D Boring Log
2			Brown SAND, some (+) Silt, little (+) fine to medium Gravel (subangular), low to medium plasticity, matrix supported, little orange-colored mottles, medium dense, slightly moist increasing to moist with depth	2	2-4	1.1'	6-5-5-5	10		
3			Brown SILT and SAND, little fine to medium Gravel (angular to subrounded), matrix supported, trace rust-colored mottles (only found in bottom 0.2' of sample), low plasticity, medium, moist	3	4-6	1.1'	5-5-6-5	11		
4			Brown SAND, some Silt, little fine to medium Gravel (angular to subangular), matrix supported, medium dense, moist	4	6-8	0.6'	5-6-7-8	13		
5			A - Brown fine SAND, some Silt, little fine Gravel (angular to subangular), matrix supported, medium dense, moist	5A	8-10	0.5'	6-7-9-9	16		
6			B - SHALE, highly fractured, heavily weathered, angular, no matrix	5B						
7			C - Red/Orange, SILT, medium, moist	5C						
8			A - Brown SAND, some (-) SILT, little fine Gravel (subangular, highly weathered), non- to low plasticity, matrix supported, medium dense, moist	6A	10-12	0.9'	10-8-9-8	17		
9			B - Brown green hue, SILT, little (-) fine Gravel (angular to subangular, some highly weathered), cohesive, nonplastic, matrix supported, stiff, moist	6B						
10			<b>MARINE SILT UNIT:</b> A - Light Brown green hue, Clayey SILT, little (+) orange-colored mottles, stiff, moist	7A	12-14	1.3'	12-22-22-17	44		
11			<b>REWORKED UPPER GLACIAL TILL:</b> B - Brown / Dark Red, SAND, some fine to medium Gravel (subangular), matrix supported, loose, slightly moist	7B					REWORKED UPPER GLACIAL TILL	
12			<b>UPPER GLACIAL TILL:</b> A - Brown SAND, some Silte, some fine to coarse Gravel (angular to subangular), medium dense, moist.		14-15			19	UPPER GLACIAL TILL	
13	SS		No Recovery Washings from augers, spoon full of water	1	15-17	0.0'	12-14-16-16		UPPER GLACIAL TILL	
14			A - Brown fine SAND and SILT, little fine to medium Gravel (subrounded), trace coarse Gravel (subrounded), matrix supported, medium dense, moist	2A	17-19	1.2'	12-12-11-12	23	UPPER GLACIAL TILL	00 Choke Sand  Bentonite Plug  00 Choke Sand
15			<b>LOWER GLACIAL TILL:</b> B - Grey SAND and SILT, some fine to medium Gravel, subangular, cohesive, nonplastic, loose to medium dense, moist	2B						
16	SS		Grey fine SAND and SILT, little fine to medium Gravel (subangular), matrix supported, low to medium plasticity, medium dense, moist; changing to SILT and SAND, some fine to medium GRAVEL (subangular), cohesive, nonplastic, soft, wet	3	19-21	1.0'	7-8-16-16	24	LOWER TILL UNIT	10-Slot PVC Screen  Cobble in shoe  0 Filter Sand













**DRAFT**  
**SUBSURFACE**  
**INVESTIGATION LOG**

BORING NO. **MW-29D**

Project No. **814.005-S**

<b>PROJECT INFORMATION</b>				<b>DRILLING INFORMATION</b>			
<b>Project:</b> Franklin County Landfill Expansion Assessment				<b>Drilling Co:</b> Northern Technical Services			
<b>Client:</b> County of Franklin Solid Waste Management Authority				<b>Driller:</b> Chris Wheeler			
<b>Site Location:</b> Franklin County, NY				<b>Rig Type:</b> Truck-mounted CME 55			
<b>Job No:</b> 814.005-S				<b>Drilling Method(s):</b> 4 1/4" HSA / 4" Flush joint casing			
<b>Project Manager:</b> Michael R. Brother				<b>Hammer Wt/Drop:</b> 140 lbs. 30"			
<b>Logged By:</b> Diane M. Roskos				<b>Hammer Type:</b> Safety hammer			
<b>Dates Drilled:</b> 10/15/2007 -10/17/2007				<b>Borehole Diam:</b> 8"		<b>Total Depth:</b> 67.6'	
<b>LOCATION INFORMATION</b>				<b>WELL INFORMATION</b>			
<b>Horiz. Datum:</b> NAD 1983 (FT)		<b>Easting:</b> 532320.53		<b>Ground Elevation:</b> 239.81		<b>Screen Type/Diam:</b> PVC/2"	
<b>Vert. Datum:</b> NAVD 1988 (FT)		<b>Northing:</b> 2234347.99		<b>TOC Elevation:</b> 241.31		<b>Slot Size:</b> 0.010"	

Barton & Loguidice, P.C.			FRANKLIN COUNTY LANDFILL EXPANSION ASSESSMENT						BORING NO: MW-29D	
Depth	Sample Type	USCS	Description	Sample No.	Sample Int.	Recovery	Blows Per 6"	N or RQD %	Lithology	Notes / Well Construction
1	SS		<b>TOPSOIL:</b> Dark Brown fine SAND and SILT, trace fine Gravel (subangular), organics and roots to 0.5', worm, loose, dry to slightly moist At approximately 1.0' depth color change to light brown with no organics	1	0-2	1.2'	2-7-8-15	15	TOPSOIL	<p>4" steel protective casing 2" PVC riser cement bentonite cement grout Faint Horizontal Laminations</p>
2	SS		<b>MARINE SILT UNIT:</b> Grey Clayey SILT, trace fine to medium Gravel (subangular), matrix supported, some (+) orange/brown mottles, stiff, moist	2	2-4	1.2'	40-21-11-16	33	MARINE SILT UNIT	
3			Grey Clayey SILT, trace medium Gravel (subangular), matrix supported, some (+) orange/brown mottles, stiff, moist							
4	SS		Grey Clayey SILT, trace fine to medium Sand, trace fine Gravel, little orange/brown mottles, stiff, moist	3	4-6	1.6'	14-16-21-47	37	MARINE SILT UNIT	
5										
6	SS		<b>LOWER GLACIAL TILL:</b> Grey fine SAND, some fine to medium Gravel, little (+) Silt (re-worked till); grades to SAND, little fine Gravel, matrix supported, loose, wet	4	6-8	0.6'	30-27-34-40	61		
7										
8	SS		Grey SAND, some (+) fine to medium Gravel (angular), little Silt; matrix supported, medium dense, very moist	5	8-10	0.8'	21-34-16-18	50		
9										
10	SS		Same as previous sample except wet	6	10-12	1.0'	14-16-100/2"			
11										
12	SS		Grey SAND, little (+) fine to medium Gravel; little Silt; weathered clasts, matrix supported, medium dense, moist	7	12-14	1.0'	19-36-40-100/4"			
13										
14	SS		Grey SAND and SILT, some (+) fine Gravel (angular to subangular), matrix supported, low plasticity, dense, moist	8	14-16	0.4'	100/3"			
15										
16	SS		Grey SILT, little Sand, little (-) fine Gravel (subangular), matrix supported, low plasticity, very stiff, moist	9	16-18	0.9'	44-100/5"			
17										
18	SS		Grey SILT and SAND, little (-) fine Gravel (angular), matrix supported, low plasticity, very stiff, moist	10	18-20	0.45'	122/6"			
19										
20										Switch to Flush Joint Casing





