



EA Engineering, P.C.  
EA Science and Technology

LOG OF SOIL BORING

Coordinates: Northing 1027450.399 Easting: 1084753.743  
Surface Elevation: 595.7  
Casing Below Surface: 565.7  
Reference Elevation: 598.19  
Reference Description: TOC

Job No. 1490710  
Client: NYSDEC  
Project: Lackawanna Former Incinerator Site  
Drilling Method: 4.25" hollow stem auger  
Sampling Method: 3" diameter split spoon  
Water Level:  
Time:  
Date:

Location: Lackawanna, NY  
Soil Boring Number: MW-02A  
Sheet 1 of 1  
Drilling  
Start  
Finish  
DATE: 10-29-12  
TIME: 10:50  
DATE: 10-29-12  
TIME: 16:00

Blow Counts (140-lb)	Ft. Driven/ Ft. Recvrd	Boring Diagram	PID (ppm)	Depth in Feet	USCS Log	Surface Conditions: Grass / topsoil Weather: Overcast, rain Temperature: 48F
	2/1		1.6	0		0.0' Topsoil: dark brown; fine SAND and GRAVEL, trace organics; wet.
				1		0.0'-2.0': Fill: dark brown to black; cinders, glass, SILT, ash, GRAVEL; moist.
	2/1		2.6	2		2.0'-3.0': Fill: dark brown to black; cinders, glass, SILT, ash, GRAVEL; moist.
				3		
	2/0.3		1.9	4		4.0'-4.3': Fill: dark brown to black; cinders, glass, SILT, ash, GRAVEL; moist.
				5		
	2/1		2.2	6		6.0'-7.0': Reddish brown; CLAY, some SILT; stiff; moist; iron stained fractures.
				7		
	2/2		0.7	8		8.0'-10.0': Reddish brown; CLAY, some SILT; stiff; moist; iron stained fractures.
				9		
	2/2		0.0	10		10.0'-12.0': Gray; CLAY, some SILT; stiff; moist; iron stained fractures.
				11		
	2/2		0.0	12		12.0'-14.0': Gray; CLAY, some SILT; stiff; moist; iron stained fractures; wet.
				13		
	2/2		0.0	14		14.0'-16.0': Gray; CLAY, some SILT; stiff; moist; iron stained fractures; wet.
				15		
	2/2		0.0	16		16.0'-12.0': Gray; CLAY, some SILT; stiff; moist; iron stained fractures; wet.
				17		
	2/2		0.0	18		
				19		
	2/2		0.0	20		20.0'-22.0': Gray; CLAY, some SILT; stiff; moist; iron stained fractures; saturated.
				21		
	2/2		0.0	22		22.0'-24.0': Gray; CLAY, some SILT; stiff; moist; iron stained fractures; saturated.
				23		
	2/2		0.0	24		24.0'-26.0': Gray; CLAY, some SILT; stiff; moist; iron stained fractures; wet.
				25		
	2/2		0.0	26		26.0'-28.0': Gray; CLAY, some SILT; stiff; moist; iron stained fractures; wet.
				27		
	2/2		0.0	28		28.0'-30.0': Gray; CLAY, some SILT; stiff; moist; iron stained fractures; wet.
				29		
						End of hole at 30' bgs.

Monitoring Well Construction Information	Soil Vapor Point Installation Information
Monitoring Well Diameter: 2 in Bottom of Monitoring Well: 30 ft bgs Stick Up or Flush Mount: Stick up Screen Interval: 20 To 30 ft bgs Riser Interval: 0 To 20 ft bgs Sand Pack Interval: 18 To 30 ft bgs Bentonite Seal: 15 To 18 ft bgs Grout Interval: 0 To 15 ft bgs	Depth of Soil Vapor Point: N/A ft Bottom of Tubing: N/A ft Top of Sand Pack: N/A ft Top of Bentonite Seal: N/A ft

Logged by: Robert Peterson	Date: 10-29-12
Drilling Contractor: GeoLogic NY, Inc.	Driller: Dave Lyons





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LOG OF SOIL BORING

Coordinates: Northing 1027162.282 Easting: 1084602.833  
Surface Elevation: 596.4  
Casing Below Surface: 566.4  
Reference Elevation: 596.14  
Reference Description: TOC

Job. No. 1490710  
Client: NYSDEC  
Project: Lackawanna Former Incinerator Site

Location:  
Lackawanna, NY

Drilling Method: 4.25" Hollow stem auger

Soil Boring Number:  
MW-03A

Sampling Method: 3" diameter split spoon

Sheet 1 of 1

Drilling			
Water Level:			
Time:			
Date:			

Blow Counts (140-lb)	Ft. Driven/ Ft. Recvrd	Boring Diagram	PID (ppm)	Depth in Feet	USCS Log	Surface Conditions: Gravel / topsoil
						Weather: Overcast
						Temperature: 48F
			0.0	0		0.0'-2.0': Fill: Black; GRAVEL, slag, and SILTY CLAY, trace organic matter; stiff; moist.
	2/2		0.1	1		
				2		2.0'-4.0': Large piece of slag stuck in split spoon. No recovery.
	2/0			3		
			0.0	4		4.0'-5.0': Brown-gray; SILT, trace CLAY; stiff; wet.
	2/2		0.0	5		5.0'-6.0': Brown-gray; CLAY, some SILT; moderate plasticity; wet.
				6		
				7		
				8		
				9		
	2/2			10		10.0'-12.0': Gray; CLAY and SILT; hard; moist.
				11		
				12		
				13		
				14		
	2/2			15		15.0'-17.0': Gray; CLAY, some SILT; moderate plasticity; hard; moist; laminations.
				16		
				17		
				18		
				19		
	2/2			20		20.0'-22.0': Gray; CLAY, trace SILT; moderate plasticity; soft; wet to saturated.
				21		
				22		
				23		
				24		
	2/2			25		25.0';27.0': Gray; CLAY; high plasticity; soft; saturated.
				26		
				27		
				28		28.0'-30.0': Gray; CLAY; high plasticity; soft; saturated.
				29		
						End of hole at 30' bgs.

Monitoring Well Construction Information	Soil Vapor Point Installation Information
Monitoring Well Diameter: 2 in	Depth of Soil Vapor Point: N/A ft
Bottom of Monitoring Well: 30 ft bgs	Bottom of Tubing: N/A ft
Stick Up or Flush Mount: Stick up	Top of Sand Pack: N/A ft
Screen Interval: 20 To 30 ft bgs	Top of Bentonite Seal: N/A ft
Riser Interval: 0 To 20 ft bgs	
Sand Pack Interval: 19 To 30 ft bgs	
Bentonite Seal: 16 To 19 ft bgs	
Grout Interval: 0 To 16 ft bgs	

Logged by: Robert Peterson  
Drilling Contractor: GeoLogic NY, Inc.

Date: 10-31-12  
Driller: Dave Lyons





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LOG OF SOIL BORING

Coordinates: Northing 1026893.482 Easting: 1084710.752  
Surface Elevation: 596.45  
Casing Below Surface: 566.45  
Reference Elevation: 596.22  
Reference Description: TOC

Job. No. 1490710 Client: NYSDEC  
Project: Lackawanna Former Incinerator Site  
Drilling Method: 4.25" Hollow stem auger  
Sampling Method: 3" diameter split spoon  
Water Level:   
Time:   
Date:

Location: Lackawanna, NY  
Soil Boring Number: MW-04  
Sheet 1 of 1  
Drilling  
Start Finish  
DATE: 11-2-12 DATE: 11-5-12  
TIME: 08:20 TIME: 10:30

Blow Counts (140-lb)	Ft. Driven/ Ft. Recvrd	Boring Diagram	PID (ppm)	Depth in Feet	USCS Log	Surface Conditions: Asphalt Weather: Overcast Temperature: 40F
				0		0'-0.5': Asphalt (1" thick), sub-base material
16	2/2			1		0.5'-2.0': Fill: Black; cinders, slag, brick, GRAVEL, medium SAND; wet; soft.
17			1.5			
6						
4			1	2		2.0'-4.0': Large piece of slag stuck in split spoon. No recovery.
8	2/2					
9			0.5	3		
8						
2			0.0	4		4.0'-6.0': Light brown-gray; SILT, trace CLAY, trace organics; stiff; moist; horizontal laminations.
3	2/2			5		
5						
6				6		
				7		
				8		
				9		
5			0.0	10		10.0'-12.0': Gray; SILT and CLAY; stiff; moist; laminations.
5	2/2			11		
17				12		
10				13		
				14		
3			0.0	15		15.0'-17.0': Gray; SILT and CLAY; stiff; moist; laminations.
3	2/2			16		
5				17		
6				18		
				19		
1			0.0	20		20.0'-22.0': Gray; SILT and CLAY; stiff; moist; laminations; saturated; soft.
4	2/2			21		
2				22		
2				23		
				24		
3			0.0	25		25.0'-27.0': Gray; SILT and CLAY; stiff; moist; laminations; saturated; soft.
3	2/2			26		
3				27		
3						
2			0.0	28		28.0'-30.0': Gray; SILT and CLAY; stiff; moist; laminations; saturated; soft.
3	2/2					
2				29		
2						End of hole at 30' bgs.

Monitoring Well Construction Information	Soil Vapor Point Installation Information
Monitoring Well Diameter: 2 in Bottom of Monitoring Well: 30 ft bgs Stick Up or Flush Mount: Stick up Screen Interval: 20 To 30 ft bgs Riser Interval: 0 To 20 ft bgs Sand Pack Interval: 18 To 30 ft bgs Bentonite Seal: 15 To 18 ft bgs Grout Interval: 0 To 15 ft bgs	Depth of Soil Vapor Point: N/A ft Bottom of Tubing: N/A ft Top of Sand Pack: N/A ft Top of Bentonite Seal: N/A ft

Logged by: Robert Peterson	Date: 11-5-12
Drilling Contractor: GeoLogic NY, Inc.	Driller: Dave Lyons





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LOG OF SOIL BORING

Coordinates: Northing 1027317.89 Easting: 1084807.567  
Surface Elevation: 596.33  
Casing Below Surface: 566.33  
Reference Elevation: 596.03  
Reference Description: TOC

Job. No. 1490710 Client: NYSDEC  
Project: Lackawanna Former Incinerator Site  
Drilling Method: 4.25" Hollow stem auger  
Sampling Method: 3" diameter split spoon  
Water Level:   
Time:   
Date:

Location: Lackawanna, NY  
Soil Boring Number: MW-05  
Sheet 1 of 1  
Drilling  
Start Finish  
DATE: 11-1-12 DATE: 11-2-12  
TIME: 08:20 TIME: 10:30

Blow Counts (140-lb)	Ft. Driven/ Ft. Recvrd	Boring Diagram	PID (ppm)	Depth in Feet	USCS Log	Surface Conditions: Grass / topsoil Weather: Overcast / rain Temperature: 48F
5	2/2		3.2	0		0'-1.5': Light brown; SILT and CLAY, some organics, trace glass and slag.
6			x	1		
7						
8						1.5'-2.0': Fill: Dark brown; glass, slag, wood, CLAY and SILT, GRAVEL; hard; moist.
7	2/2		1.3	2		2.0'-4.0': Large piece of slag stuck in split spoon. No recovery.
7			1.5			
9				3		3.0'-4.0': Light brown; SILT, trace CLAY, trace organics; stiff; moist.
12						
5	2/2		1.0	4		4.0'-6.0': Light brown; SILT, trace CLAY, trace organics; stiff; moist; laminations; oxidized.
6				5		
8						
11				6		
				7		
				8		
				9		
5	2/2		0.0	10		10.0'-12.0': Gray; SILT and CLAY; vertical laminations; hard; moderate plasticity; moist.
7				11		
9						
11				12		
				13		
				14		
				15		15.0'-17.0': Gray; SILT and CLAY; vertical laminations; hard; moderate plasticity; moist.
3	2/2		0.0	16		
3						
5				17		
6						
				18		
				19		
				20		20.0'-22.0': Gray; SILT and CLAY; vertical laminations; hard; moderate plasticity; moist.
10	2/2		0.0	21		
5						
6				22		
10						
				23		
				24		
				25		25.0';27.0': Gray; SILT and CLAY; moderate plasticity; saturated; soft.
W0H	2/2		0.0	26		
W0H						
W0H				27		
2						
	2/2			28		
				29		
W0H	2/2		0.0			
W0H						
W0H						
1						

End of hole at 30' bgs.

Monitoring Well Construction Information	Soil Vapor Point Installation Information
Monitoring Well Diameter: 2 in Bottom of Monitoring Well: 30 ft bgs Stick Up or Flush Mount: Stick up Screen Interval: 20 To 30 ft bgs Riser Interval: 0 To 20 ft bgs Sand Pack Interval: 17 To 30 ft bgs Bentonite Seal: 14 To 17 ft bgs Grout Interval: 0 To 14 ft bgs	Depth of Soil Vapor Point: N/A ft Bottom of Tubing: N/A ft Top of Sand Pack: N/A ft Top of Bentonite Seal: N/A ft

Logged by: Robert Peterson  
Drilling Contractor: GeoLogic NY, Inc.

Date: 11-1-12  
Driller: Dave Lyons





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LOG OF SOIL BORING

Coordinates: Northing 1027339.096 Easting: 1084566.429  
Surface Elevation: 595.07  
Casing Below Surface: 565.07  
Reference Elevation: 594.8  
Reference Description: TOC

Job. No. 1490710  
Client: NYSDEC  
Project: Lackawanna Former Incinerator Site  
Drilling Method: 4.25" Hollow stem auger  
Sampling Method: 3" diameter split spoon  
Water Level:  
Time:  
Date:

Location: Lackawanna, NY  
Soil Boring Number: MW-06  
Sheet 1 of 1  
Drilling  
Start  
Finish  
DATE: 10-31-12  
DATE: 11-1-12  
TIME: 08:20  
TIME: 10:30

Blow Counts (140-lb)	Ft. Driven/ Ft. Recvrd	Boring Diagram			PID (ppm)	Depth	USCS Log	Surface Conditions: Gravel	
						in		Weather: Overcast / rain	
						Feet		Temperature: 47F	
11	2/2			5.5	0		0'-2.0': Fill: Black; CLAY and SILT, slag, GRAVEL, organic matter; hard; moist.		
10					6.9		1		
10							4		2
8									
9	2/2		3.9	3					
11									
12									
12									
2	2/2					4	4.0'-6.0': Brown-gray; SILT and CLAY, trace organic matter; hard; moist.		
3									
6							5		
7									
8	2/2			6	6.0'-8.0': Brown-gray; SILT and CLAY, trace organic matter; hard; moist; laminated.				
11									
15					7				
22									
				8					
					9				
6	2/2					10	10.0'-11.0': Brown-gray; SILT and CLAY, trace organic matter; hard; moist; laminated.		
7									
9					11				
12									
						12			
					13				
	14								
					15	15.0'-17.0': Gray; CLAY, some SILT; hard; moist.			
3									
4						16			
7									
8					17				
						18			
	19								
					20	20.0'-22.0': Gray; CLAY; soft; saturated; high plasticity.			
1									
WOH						21			
1									
1					22				
						23			
	24								
					25	25.0'-27.0': Gray; CLAY; soft; saturated; high plasticity.			
WOH									
WOH						26			
WOH									
WOH					27				
						28			
2									
3	2/1						29		
12									
15									
End of hole at 30' bgs.									
Monitoring Well Construction Information						Soil Vapor Point Installation Information			
Monitoring Well Diameter: 2 in						Depth of Soil Vapor Point: N/A ft			
Bottom of Monitoring Well: 30 ft bgs						Bottom of Tubing: N/A ft			
Stick Up or Flush Mount: Stick up						Top of Sand Pack: N/A ft			
Screen Interval: 20 To 30 ft bgs						Top of Bentonite Seal: N/A ft			
Riser Interval: 0 To 20 ft bgs									
Sand Pack Interval: 17 To 30 ft bgs									
Bentonite Seal: 14 To 17 ft bgs									
Grout Interval: 0 To 14 ft bgs									
Logged by: Robert Peterson						Date: 10-31-12			
Drilling Contractor: GeoLogic NY, Inc.						Driller: Dave Lyons			





EA Engineering, P.C.  
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LOG OF SOIL BORING

Coordinates: Northing 1027450.337 Easting: 1084651.689  
Surface Elevation: 595.4103  
Casing Below Surface: 568.41032  
Reference Elevation: 595.15  
Reference Description: TOC

Job No. 1490710  
Client: NYSDEC  
Project: Lackawanna Former Incinerator Site

Location:  
Lackawanna, NY

Drilling Method: 4.25" Hollow stem auger

Soil Boring Number:  
MW-07

Sampling Method: 3" diameter split spoon

Sheet 1 of 1

Water Level:				Start		Finish	
Time:				DATE: 11-5-12		DATE: 11-5-12	
Date:				TIME: 08:20		TIME: 10:30	

Blow Counts (140-lb)	Ft. Driven/ Ft. Recvrd	Boring Diagram	PID (ppm)	Depth in Feet	USCS Log	Surface Conditions: Grass / Topsoil
						Weather: Overcast
						Temperature: 40F
4	2/1.5		0.0	0		0'-1.5': Topsoil: Grass, organic matter.
9						
14			1.2	1		
8	2/1					1.5': Fill: Glass, brick, slag, SILT and CLAY; soft; moist.
2			0.9	2		2.0'-4.0': Large piece of slag stuck in split spoon. No recovery.
2						
5	2/1		3.8	3		
7						
2			2.5	4		4.0'-4.5': Fill: Glass, brick, slag, SILT and CLAY; soft; moist.
2	2/1.5					4.5'-5.0': Gray; SILT, some CLAY; soft; moist.
3			0.0	5		
3						
1	2/1.5		0.0	6		6.0'-7.5': Light brown; SILT, some CLAY; hard; moist
2						
5				7		
8				8		
				9		
2	2/2		0.0	10		
3						
3				11		
4						
				12		
	2/2			13		
				14		
2	2/2		0.0	15		15.0'-17.0': Gray; CLAY and SILT; hard; moist; moderate plasticity.
2						
1				16		
2						
				17		
	2/2			18		
				19		
WOH	2/2		0.0	20		20.0'-22.0': Gray; CLAY, some SILT; soft; saturated; high plasticity.
1						
1				21		
2						
				22		
	2/2			23		
				24		
1	2/2		0.0	25		25.0'/27.0': Gray; CLAY, some SILT; soft; saturated; high plasticity; auger drilling became hard at 27'.
1						
1				26		
2						
				27		
14	2/1		0.0	28		
21						
23				29		
31						End of hole at 30' bgs.

Monitoring Well Construction Information	Soil Vapor Point Installation Information
Monitoring Well Diameter: 2 in	Depth of Soil Vapor Point: N/A ft
Bottom of Monitoring Well: 27 ft bgs	Bottom of Tubing: N/A ft
Stick Up or Flush Mount: Stick up	Top of Sand Pack: N/A ft
Screen Interval: 17 To 27 ft bgs	Top of Bentonite Seal: N/A ft
Riser Interval: 0 To 17 ft bgs	
Sand Pack Interval: 15 To 27 ft bgs	
Bentonite Seal: 12 To 15 ft bgs	
Grout Interval: 0 To 12 ft bgs	

Logged by: Robert Peterson  
Drilling Contractor: GeoLogic NY, Inc.

Date: 11-5-12  
Driller: Dave Lyons





EA Engineering, P.C.  
EA Science and Technology

LOG OF SOIL BORING

Coordinates: Northing 1027476.56 Easting: 1084456.249  
Surface Elevation: 593.561  
Casing Below Surface: 571.56096  
Reference Elevation: 593.42  
Reference Description: TOC

Job No. 1490710  
Client: NYSDEC  
Project: Lackawanna Former Incinerator Site

Location:  
Lackawanna, NY

Drilling Method: 4.25" Hollow stem auger

Soil Boring Number:  
MW-08

Sampling Method: 3" diameter split spoon

Sheet 1 of 1

Water Level:				Drilling	
Time:				Start	Finish
Date:				DATE: 11-6-12	DATE: 11-6-12
				TIME: 08:20	TIME: 10:30

Blow Counts (140-lb)	Ft. Driven/ Ft. Recvrd	Boring Diagram	PID (ppm)	Depth in Feet	USCS Log	Surface Conditions: Grass / Topsoil
						Weather: Mostly cloudy
						Temperature: 35F
3	2/1.5		6.7	0		0'-0.2': Topsoil: Dark brown; fine SAND and SILT, trace organic matter; soft; moist.
5						0.2'-1.5': Fill: Brown; glass, brick, wood, SILT and CLAY; loose; moist.
6				1		
7						
5	2/1		1	2		2.0'-4.0': Large piece of slag stuck in split spoon. No recovery.
3						
2				3		
1						
1	2/0.3		0.0	4		4.0'-4.3': Fill: Brown; glass, brick, metal fragments; loose; moist.
WOH						
WOH				5		
1						
4	2/2		0.0	6		6.0'-8.0': Brown; SILT/CLAY; hard; moist.
14						
19				7		
31						
				8		
				9		
2	2/2			10		10.0'-12.0': Gray; CLAY and SILT; hard; moist; moderate plasticity.
2						
2				11		
2						
				12		
				13		
				14		
				15		15.0'-17.0': Gray; CLAY and SILT; hard; soft; saturated; high plasticity.
1						
1	2/2			16		
2						
1				17		
				18		
				19		
WOH	2/2			20		20.0'-22.0': Gray; CLAY and SILT; hard; soft; saturated; high plasticity; drilling became hard at 22'.
WOH						
2				21		
3						
				22		
				23		
				24		
25				25		25.0';27.0': Till: CLAY and SILT, some fine SAND, trace GRAVEL.
17						
27	2/2			26		
36						
				27		End of hole at 27 ft bgs.
				28		
				29		

Monitoring Well Construction Information	Soil Vapor Point Installation Information
Monitoring Well Diameter: 2 in	Depth of Soil Vapor Point: N/A ft
Bottom of Monitoring Well: 22 ft bgs	Bottom of Tubing: N/A ft
Stick Up or Flush Mount: Stick up	Top of Sand Pack: N/A ft
Screen Interval: 12 To 22 ft bgs	Top of Bentonite Seal: N/A ft
Riser Interval: 0 To 12 ft bgs	
Sand Pack Interval: 10 To 22 ft bgs	
Bentonite Seal: 8 To 10 ft bgs	
Grout Interval: 0 To 8 ft bgs	

Logged by: Robert Peterson	Date: 11-6-12
Drilling Contractor: GeoLogic NY, Inc.	Driller: Dave Lyons