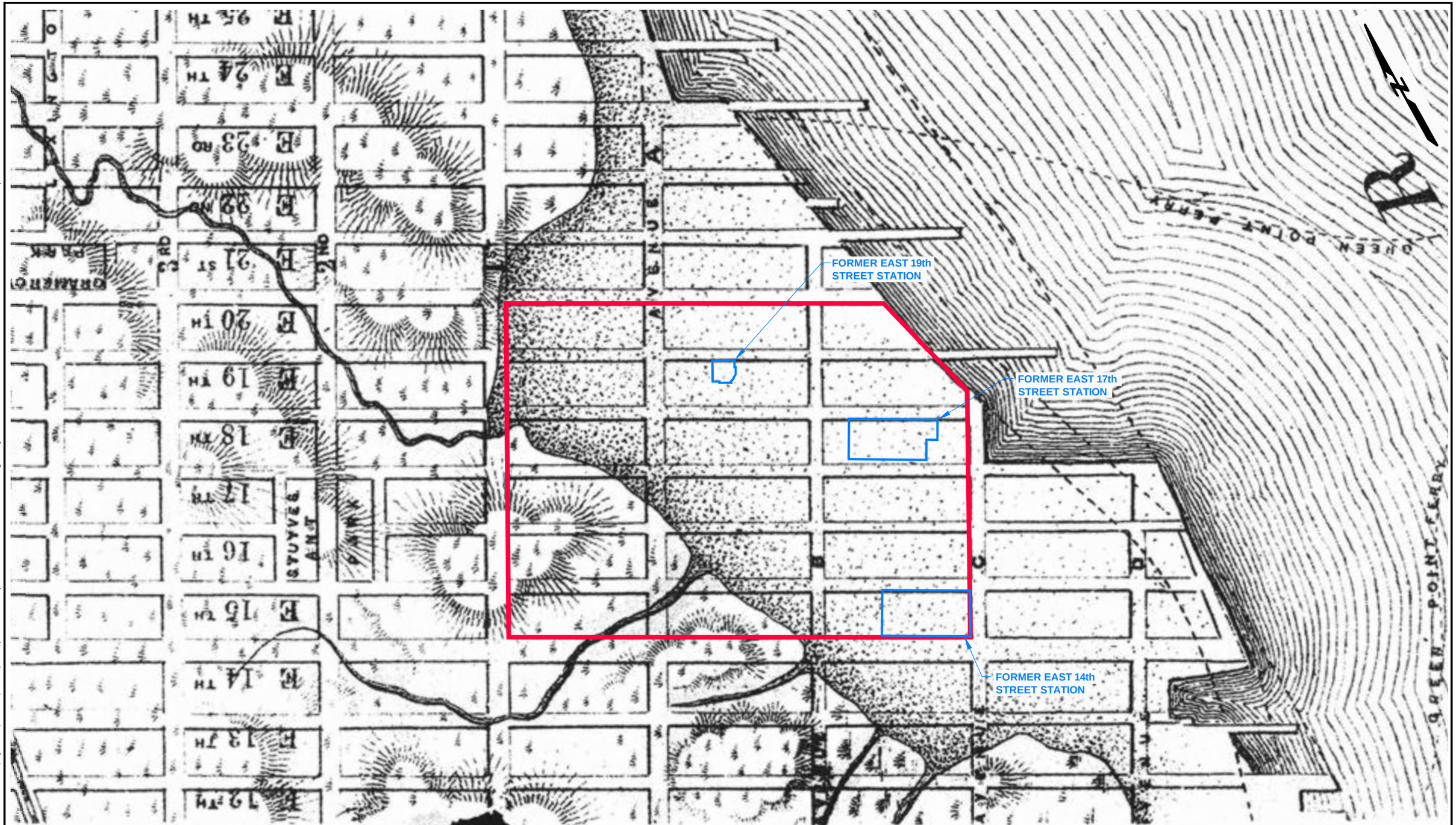
Appendix A

Historic Site Maps



SOURCES:

1. 1815 SACKERSDORF MAP.
2. *FIGURE 2: SITE PLAN AND MGP FACILITIES*, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.

AECOM

0 400 800

SCALE, FEET

CONSOLIDATED EDISON OF NEW YORK INC. STUYVESANT TOWN FORMER MGP SITES 01869-164-270			**SITE WITH HISTORIC 1815 SHORELINE**
DATE: 01/13/09	DRWN: RCW/WFD		**APPENDIX A** | **FIGURE 1**

File: F:\PROJECTS\Consolidated Edison NY\StyTown\01869\CADD\RI Report 12-08\01869-164-270-HS-01.dwg Layout: 1815 User: WarrenR Plotted: Jan 13, 2009 - 9:21pm Xref's:

File: F:\PROJECTS\Consolidated Edison NY\StuyTown\01869\CADD\RI Report 12-08\01869-164-270-HS-01.dwg Layout: 1897 User: WarrenR Plotted: Jan 13, 2009 - 9:26pm Xref's:

FORMER EAST 19th STREET STATION

FORMER EAST 17th STREET STATION

FORMER EAST 14th STREET STATION

SOURCES:

1. 1897 BROMLEY MAP (PLATE 15, MANHATTAN).
2. *FIGURE 2: SITE PLAN AND MGP FACILITIES*, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.

0 250 500

SCALE, FEET

AECOM

CONSOLIDATED EDISON OF NEW YORK INC. STUYVESANT TOWN FORMER MGP SITES 01869-164-270			**SITE WITH HISTORIC 1897 SHORELINE**
DATE: 01/13/09	DRWN: RCW/WFD		**APPENDIX A** **FIGURE 2**

Appendix B

Boring and Well Construction Logs

ENSR/AECOM Soil Boring Logs

AECOM
78 Main Street
Nyack, NY 10960
Phone: (845) 348-1520
Fax: (845) 348-1190

Boring/Well Log Legend

Project: Stuyvesant Town Former MGP Stations

Project #: 01869-164

Client: Consolidated Edison

Location: Manhattan, New York

E-Logs by: J. Shackford

Lithology	Description	Lithology	Description
	No Recovery		Sand
	Clay		Sand and Clay
	Clay and Sand		Sand and Silt
	Clayey Sand		Sandy Silt
	Clay and Silt		Schist
	Cobbles/ Cobblestone/ Boulder		Silt
	Concrete		Silt and Clay
	Fill		Silt and Sand
	Mica		Topsoil
	Peat		Weathered Schist

Abbreviations

bgs : below ground surface

c : coarse

f : fine

Fe : Iron

ft: feet

H2S : hydrogen suldfide

HCLO : hydrocarbon-like odor

HSA : hollow stem auger

lt : light

m : medium

MGP : manufactured gas plant

MGPO : manufactured gas plant-like odor

NAVD88 : North American Vertical Datum 1988

NLO : naphthalene-like odor

NY : New York

N/A : not applicable

NR : not recorded

OLM : oil-like material

PEC : Paragon Environmental Construction, Inc.

PLO : petroleum-like odor

SAA : same as above

TLM : tar-like material

TLO : tar-like odor

tr : trace

vf : very fine

VP : very poor

USCS : United Soil Classification System

GW : well-graded gravel

GP : poorly-graded gravel

GM : silty gravels

GC : clayey gravels

SW : well-graded sands

SP : poorly-graded sands

SM : silty sands

SC : clayey sands

ML : inorganic silts and very fine sands

CL : inorganic clays of low plasticity

OL : organic silts and silty clays of low plasticity

MH : inorganic elastic silts

CH : inorganic clays of high plasticity

OH : organic clays of medium to high plasticity

PT : peat and other highly organic soils

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Boring Log

Boring ID: ST14SB09

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/21/2008 Depth: 5'

Start Date: 5/21/2008 End Date: 5/23/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 11 Total Depth (ft): 45'

Location: Manhattan, New York

Northing: 990645.716 Easting: 204947.908
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 9.539'

Water Level (ft bgs): 10'

Logged by: M. Stepanova, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	0.0	Moist	N/A	0		(0-0.5' bgs) - COBBLESTONES; FILL	
					SP			(0.5-1' bgs) - Loose brown-yellow m-f grained SAND, few roots, tr rounded pebbles; FILL; moist; no odor or visible impact	
1' - 2'	N/A	N/A	0.0	Moist				(1-2' bgs) - Loose brown TOPSOIL, some Bricks and Cobbles, few roots, tr gravel and pebbles; FILL; moist; no odor but a few pieces of coal	
2' - 3'	N/A	N/A	0.0	Moist				(2-3' bgs) - Loose brown f grained SAND, some Organics, few Pebbles and Bricks, tr clay and gravel; FILL; moist; no odor or visible impact	
3' - 4'	N/A	N/A	0.0	Moist	SW			(3-4' bgs) - Loose dark brown f grained SAND, tr clay, gravel, and pebbles; FILL; no odor or visible impact	
4' - 5'	N/A	N/A	0.0	Moist				(4-5' bgs) - Loose lt brown f grained SAND, some Cobbles and brick, tr gravel and pebbles; FILL; no odor or visible impact 5' bgs: END PRE-CLEAR	
5' - 6'	0.8'/1' 80%	2 3	4.5	Moist		5		(5-5.4' bgs) - Lt brown m-f grained SAND, tr bricks; FILL; no odor or visible impact	
					SM			(5.4-6' bgs) - Brown f grained SAND and SILT; FILL; no odor or visible impact	
6' - 8'	0.8'/2' 40%	2 3 4 4 n = 7	NR	Moist	SP			(6-6.4' bgs) - Brown m grained SAND, some Mica; FILL; no odor or visible impact	
					SM			(6.4-8' bgs) - Brown f grained SAND and SILT, weathered Schist in core tip; FILL; no odor or visible impact	
8' - 10'	0.4'/2' 20%	2 4 4 3 n = 8	11.3	Moist	N/A			(8-10' bgs) - WEATHERED SCHIST with mica; FILL; no odor or visible impact	
10' - 12'	0.75'/2' 37.5%	2 2 4 2 n = 6	7.7	Wet	SM	10		(10-10.4' bgs) - Brown f grained SAND and SILT; FILL; wet; no odor or visible impact	
								(10.4-12' bgs) - WEATHERED SCHIST with mica; FILL; wet; no odor or visible impact	
12' - 14'	0.6'/2' 30%	3 3 5 5 n = 8	12.0	Wet	N/A			(12-14' bgs) - WEATHERED SCHIST and brown SILT; FILL; wet; no odor or visible impact	
14' - 16'	1'/2' 50%	2 2 3 7	4.4	Wet		15		(14-16' bgs) - Brown m grained SAND, some c-grained Sand, little mica and weathered schist; FILL; wet; slight PLO from 14-15' bgs but no visible impact	

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Boring Log

Boring ID: ST14SB09

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/21/2008 Depth: 5'

Start Date: 5/21/2008 End Date: 5/23/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 11 Total Depth (ft): 45'

Location: Manhattan, New York

Northing: 990645.716 Easting: 204947.908
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 9.539'

Water Level (ft bgs): 10'

Logged by: M. Stepanova, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
		n = 5			S	15			
16' - 18'	0.8'/2' 40%	5 5 2 2 n = 7	1.5	Wet	N/A ML			(16-16.4' bgs) - WEATHERED SCHIST; FILL; no odor or visible impact (16.4-18' bgs) - Brown SILT, tr mica; no odor or visible impact	
18' - 20'	0.8'/2' 40%	2 1 1 1 n = 2	1.0	Moist	CL			(18-20' bgs) - Lt brown SILT and CLAY, tr mica, and f grained sand; no odor or visible impact	Analytical sample ST14SB09 (18-20)
20' - 22'	0.6'/2' 30%	1 1 1 1 n = 2	4.0	Wet	SP	20		(20-22' bgs) - Brown m-c grained SAND, some Mica; no odor or visible impact	
22' - 24'	1.4'/2' 70%	2 17 15 12 n = 32	8.9 7.7 146.2	Wet	SM CL SM			(22-22.3' bgs) - M-f grained SAND and SILT, tr mica; MGPO but no visible impact (22.3-22.8' bgs) - Gray CLAY and SILT, tr c grained sand; MGPO but no visible impact (22.8-23.3' bgs) - Black f grained SAND and SILT; MGPO and staining	Analytical sample ST14SB09 (22-24)
24' - 26'	2'/2' 100%	2 3 4 4 n = 7	22.42 732	Wet	SP SM ML	25		(23.3-24' bgs) -Brown f-m grained SAND and SILT, tr brick; no odor or visible impact (24-24.5' bgs) - Brown m-f grained SAND, some Mica; no odor or visible impact	
26' - 28'	1.1'/2' 55%	4 4 4 8 n = 8	92.4	Wet	CL			(24.5-24.7' bgs) - Black m-c grained SAND and SILT; MGPO and staining (24.7-26' bgs) - Stiff laminated red-brown SILT; no odor or visible impact	
28' - 30'	1.1'/2' 55%	8 9 11 11 n = 20	13.6 3.6 5.6	Wet	SCL SC			(26-26.5' bgs) - Gray-brown CLAY, tr gravel, wet; slight MGPO but no visible impact (26.5-28' bgs) - Lt brown CLAY, tr mica; slight MGPO from 26.5-27.2' bgs but no visible impact (28-28.3' bgs) - Lt brown CLAY; slight MGPO but no visible impact	
						30			

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Boring Log

Boring ID: ST14SB09

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/21/2008 Depth: 5'

Start Date: 5/21/2008 End Date: 5/23/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 11 Total Depth (ft): 45'

Location: Manhattan, New York

Northing: 990645.716 Easting: 204947.908
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 9.539'

Water Level (ft bgs): 10'

Logged by: M. Stepanova, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
30' - 32'	1.7'/2' 85%	2 2 2 2 n = 4	28.8	Wet	ML / SP	30		(28.3-28.5' bgs) - Black m-f grained SAND; MGPO with staining (28.5-30' bgs) - Brown m-f grained SAND and CLAY; no odor or visible impact	
32' - 34'	1.1'/2' 55%	8 10 11 15 n = 21	28.6	Wet	CL			(30-30.6' bgs) - Brown SILT, some f grained SAND; slight MGPO but no visible impact (30.6-32' bgs) - Brown-black m-f grained SAND, tr mica; MGPO but no visible impact (32-32.25' bgs) - Black-brown m-f grained SAND; very slight odor but no visible impact	
34' - 36'	1.1'/2' 55%	8 9 6 6 n = 15	7.8	Wet	SW	35		(32.25-34.3' bgs) - Laminated red-brown and olive-brown CLAY , little Mica, tr gravel; no odor or visible impact (34.3-36' bgs) - Brown f grained SAND, some Mica, tr gravel; no odor or visible impact	Analytical sample ST14SB09 (34-36)
36' - 38'	0.7'/2' 35%	5 10 13 18 n = 23	5.2	Wet	CL			(36-38' bgs) - Lt brown CLAY, little Mica, tr gravel; no odor or visible impact	
38' - 40'	1.8'/2' 90%	10 14 16 18 n = 30	19.6	Wet	SP			(38-40' bgs) - Brown m-f grained SAND, some Mica, tr c grained sand; no odor or visible impact	
40' - 42'	1'/2' 50%	6 5 9 11 n = 14	16	Wet	SC	40		(40-42.25' bgs) - Stiff CLAY and m grained SAND, some Mica, tr white clay and gravel; no odor or visible impact	
42' - 44'	0.5'/2' 25%	7 10 14 7 n = 24	1.6	Wet	CL			(42.25-44' bgs) - White CLAY, some Mica; no odor or visible impact	Analytical sample ST14SB09 (42-45)
44' - 45'	1.1'/2' 55%	7 8 50/0.08'	2.6	Wet	SC	45		(44-45' bgs) - Brown-olive CLAY and SAND, some Mica, Schist in core tip; no odor or visible impact 45' bgs: END OF BORING	

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Boring Log

Boring ID: ST14SB10

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/27/2008 Depth: 5'

Start Date: 5/27/2008 End Date: 5/29/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 12 Total Depth (ft): 41'

Location: Manhattan, New York

Northing: 204815.301 Easting: 990666.647
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 8.521'

Water Level (ft bgs): 10'

Logged by: J. DeBoer, S. Jain, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	N/A	Moist	N/A	0		(0-0.3' bgs) - CONCRETE; FILL; no odor or visible impact	
								(0.3-1' bgs) - Brown f-c grained SAND, some Gravel; FILL; no odor or visible impact	
1' - 2'	N/A	N/A	N/A	Moist				(1-2' bgs) - Brown m-c grained SAND, layer of concrete debris from 1-1.2' bgs, some Gravel, tr cobbles; FILL; no odor or visible impact	
2' - 3'	N/A	N/A	N/A	Moist	SW			(2-4' bgs) - M grained SAND, some Silt and Cobbles, tr gravel; FILL; no odor or visible impact	
3' - 4'	N/A	N/A	N/A	Moist					
4' - 5'	N/A	N/A	N/A	Moist				(4-5' bgs) - Dark and lt brown m grained SAND, some Clay, tr gravel, piece of brick in core tip; FILL; no odor or visible impact	
5' - 6'	N/A	N/A	N/A	Moist	N/A	5		(5-6' bgs) - BRICKS and SLAG; FILL; no odor or visible impact	
6' - 8'	1.2'/2' 60%	16 8 5 4 n = 13	0.0	Moist	SW			(6-6.1' bgs) - Loose to moderately dense brown SAND, some Silt; FILL; no odor or visible impact	
								(6.1-8' bgs) - Tan m grained SAND; FILL; no odor or visible impact	

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NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 8.521'

Water Level (ft bgs): 10'

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SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
					SP				
8' - 10'	1.8'/2' 90%	2 2 3 2 n = 5	0.7	Moist	SW			(8-9.2' bgs) - Multi-color SAND, some Silt and brick at 8.2' bgs; FILL; no odor or visible impact	
					SP			(9.2-10' bgs) - SAND and BRICK; FILL; no odor but coal at 9.8' bgs	
10' - 12'	0.8'/2' 40%	1 1 1 1 n = 2	0.6	Wet	SW SP N/A	10		(10-10.3' bgs) - Brown f grained SAND, some Silt and Organics; FILL; no odor or visible impact (10.3-10.4' bgs) - Tan m grained SAND; FILL; no odor or visible impact (10.4-12' bgs) - ASPHALT-like material; FILL	Analytical sample ST14SB10 (10-14)
12' - 14'	0.9'/2' 45%	2 2 2 1 n = 4	0.9	Wet				(12-14' bgs) - Dark brown m grained SAND, little Silt; FILL; no odor or visible impact	

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Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 12 Total Depth (ft): 41'

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Surface Elevation (ft NAVD88): 8.521'

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Logged by: J. DeBoer, S. Jain, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
14' - 16'	0.7'/2' 35%	2 2 1 1 n = 3	0.4	Wet	SW	15		(14-16' bgs) - Dark brown m grained SAND, some c grained Sand, f grained Gravel, Organics, and brick fragments; FILL; no odor or visible impact	
16' - 18'	1.7'/2' 85%	2 3 17 18 n = 20	0.9	Wet	M			(16-16.3' bgs) - Dense gray vf-grained SAND, some Silt; FILL; no odor or visible impact	
					SW			(16.3-16.4' bgs) - COBBLES and SLAG material; FILL; no odor or visible impact	
								(16.4-19.2' bgs) - Dark brown m-grained SAND, some c-grained Sand, some Gravel, some organic material, some brick fragments, little silt; FILL; no odor or visible impact	
18' - 20'	2'/2' 100%	10 18 24 37 n = 46	0.8	Moist					Analytical sample ST14SB10 (18-20)
					CL			(19.2-19.4' bgs) - Gray CLAY, some Silt, slight MGPO, no visible impact	
					SW			(19.4-19.6' bgs) - Brown vf-grained SAND, some Silt, no odor or visible impact	
20' - 22'	2'/2' 100%	29 19 17 17 n = 36	0.5	Wet		20		(19.6-20' bgs) - Red-brown f-grained SAND, some Silt, Pyrite flakes, no odor or visible impact	Analytical sample ST14SB10 (20-24)
					CL			(20-20.3' bgs) - Loose dark brown m-grained SAND, some Silt, little Gravel, no odor or visible impact	
								(20.3-21' bgs) - Gray-brown SILT, some Clay, very wet, slight MGPO, no visible impact	

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E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/27/2008 Depth: 5'

Start Date: 5/27/2008 End Date: 5/29/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 12 Total Depth (ft): 41'

Location: Manhattan, New York

Northing: 204815.301 Easting: 990666.647
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 8.521'

Water Level (ft bgs): 10'

Logged by: J. DeBoer, S. Jain, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
					SP			(21-22' bgs) - F-grained SAND, rock fragments (21.8-22'), no odor or visible impact	
22' - 24'	2'/2' 100%	10 17 19 15 n = 36	0.5	Wet	SW			(22-23.3' bgs) - Loose dark brown f-c-grained SAND, some Silt, some brick fragments (23.2'), no odor or visible impact	
					SP			(23.3-23.5' bgs) - M-dense lt. brown vf-grained SAND, no odor or visible impact	
					CL			(23.5-24' bgs) - Dense red-brown SILT, some Clay, no odor or visible impact	
24' - 26'	2'/2' 100%	6 11 18 21 n = 29	0.4	Wet	SW	25		(24-25.3' bgs) - Dark brown f-c-grained SAND, some brick (24.6'), wood pieces (25'), no odor or visible impact	
					OL			(25.3-25.8' bgs) - Brown SILT with high organic content, some Clay, no odor or visible impact	
					CL			(25.8-26' bgs) - Dense lt. brown CLAY, no odor or visible impact	
26' - 28'	1.8'/2' 90%	23 17 34 50/.3 n = 51	0.4	Wet	SW			(26-27.2' bgs) - Very loose brown CLAY, some Silt, some Sand, some Gravel, no odor or visible impact	
					SM			(27.2-27.5' bgs) - Firm gray SILT to f-grained SAND, no odor or visible impact	
								(27.5-27.6' bgs) - Gray COBBLES, no odor or visible impact	

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Project: Stuyvesant Town Former MGPs
E.14th Street Station
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Client: Consolidated Edison

Pre-Clear Date: 5/27/2008 Depth: 5'

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Location # 12 Total Depth (ft): 41'

Location: Manhattan, New York

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NY State Plane - Long Island Lambert

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SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
28' - 30'	1.3'/2' 65%	17 37 50/0.4' n = 37	0.3	Wet	SW			(27.6-30' bgs) - Dense dark brown m grained SAND, some Silt, with 0.5-1" rock fragments from 29.6-30' bgs; no odor or visible impact	
30' - 32'	2'/2' 100%	23 34 44 49 n = 78	0.1	Wet	ML	30		(30-31.4' bgs) - Very loose brown-tan SILT, some Sand, and f grained Gravel, very wet; no odor or visible impact	
					SW			(31.4-32' bgs) - Very dense dark brown m grained SAND, some Silt and 0.5-1" Rock fragments; no odor or visible impact	
32' - 34'	2'/2' 100%	38 42 47 50 n = 89	0.2	Wet	SW			(32-32.7' bgs) - Moderately dense dark brown f-c grained SAND, little Silt; no odor or visible impact	
					SP			(32.7-33.3' bgs) - Dense dark brown f grained SAND; no odor or visible impact	
					SW			(33.3-34' bgs) - Moderately dense m-f grained SAND, little Silt, very soft white material in core tip; no odor or visible impact	
34' - 36'	2'/2' 100%	7 11 42 54 n = 53	0.2	Wet	SP	35		(34-35.7' bgs) - Dense dark brown f grained SAND grading to c grained SAND with depth; no odor or visible impact	

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Boring Log

Boring ID: ST14SB10

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/27/2008 Depth: 5'

Start Date: 5/27/2008 End Date: 5/29/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 12 Total Depth (ft): 41'

Location: Manhattan, New York

Northing: 204815.301 Easting: 990666.647
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 8.521'

Water Level (ft bgs): 10'

Logged by: J. DeBoer, S. Jain, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
					CL	35		(35.7-36' bgs) - Very soft white material, no odor or visible impact	
36' - 38'	1.5'/2' 75%	44 21 17 19 n = 38	0.0	Wet	SW			(36-38' bgs) - Soft SLOUGH brown f-m grained SAND, some c grained Sand and Silt; no odor or visible impact	
38' - 40'	2'/2' 100%	7 11 29 17 n = 40	0.1	Wet	CL			(38-38.4' bgs) - Very soft white material; no odor or visible impact	Analytical sample ST14SB10 (38-40)
								(38.4-39.5' bgs) - Dense brown c-f grained SAND, little Silt, few pebbles; no odor or visible impact	
					N/A			(39.5-40' bgs) - Blue grading to green possible WEATHERED ROCK; no odor or visible impact	
40' - 41'	1'/1' 100%	27 59	0.0	Wet	SP/CL	40		(40-40.1' bgs) - Moderately dense gray f grained SAND; no odor or visible impact	
					SP			(40.1-40.4' bgs) - Red CLAY, little Silt; no odor or visible impact	
					CL			(40.4-40.7' bgs) - Moderately dense gray f grained SAND; no odor or visible impact	
								(40.7-41' bgs) - Brown CLAY, little Silt; no odor or visible impact 41' bgs: Refusal - END OF BORING	

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Boring Log

Boring ID: ST14SB11

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 6/24/2008 Depth: 5.5'

Start Date: 6/24/2008 End Date: 6/25/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 13 Total Depth (ft): 44'

Location: Manhattan, New York

Northing: Easting:
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88):

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, G. Kirkwood

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	0.0	Moist	N/A	0		(0-0.3' bgs) - CONCRETE; FILL; no odor or visible impact	
1' - 2'	N/A	N/A	0.3	Moist	SW			(0.3-1' bgs) - SLAG material, pieces of brick; FILL; no odor but ash-like material and cinders	
2' - 3'	N/A	N/A	3.8	Moist	SM			(1-2' bgs) - Brown m-f grained SAND with layer of slag at 1.2' bgs; FILL; no odor but cinders at 1.3' bgs	
3' - 4'	N/A	N/A	0.8	Moist				(2-3' bgs) - Brown-tan f-m grained SAND and SILT, little Gravel; FILL; no odor or visible impact	
4' - 5'	N/A	N/A	0.0	Moist				(3-4' bgs) - Lt brown f-m grained SAND and SILT, some Gravel; FILL; no odor but little cinders	
5' - 6'	0.9'/1' 90%	3 4	0.0	Moist	N/A SM	5		(4-5' bgs) - Brown-black SAND and SILT, some Gravel; FILL; no odor but tr cinders	
6' - 8'	0.4'/2' 20%	4 4 3 5 n = 7	0.0	Moist	N/A			(5-5.6' bgs) - Brown Soil with piece of brick; FILL; moist; no odor or visible impact 5.5' bgs: END OF PRE-CLEAR	
								(5.6-5.8' bgs) - Brown f-vf grained SAND, tr silt; FILL; no odor or visible impact	
								(5.8-8' bgs) - Dark brown m-f grained SAND; FILL; slight sweet odor and moderate PLO starting at 6' bgs with piece of coal	
8' - 10'	0.5'/2' 25%	3 3 2 2 n = 5	34.8	Moist	SW			(8-10' bgs) - Dark brown f-vf grained SAND, tr pebbles; FILL; moist; moderate PLO but no visible impact	Analytical sample ST14SB11 (8-10)
10' - 12'	0.8'/2' 40%	2 2 3 2 n = 5	0.0	Wet	SM	10		(10-10.3' bgs) - Dark brown vf grained SAND and GRAVEL, tr pebbles; FILL; wet; organic odor but no visible impact	
								(10.3-12' bgs) - Dark brown f-vf grained SAND and SILT, lighter colored material at 10.5' and 10.7' bgs; FILL; slight organic odor but no visible impact	Analytical sample ST14SB11 (11-13)
12' - 14'	1.3'/2' 65%	2 2 3 2 n = 5	0.0	Wet	SW			(12-14.2' bgs) - Dark brown SAND and GRAVEL, some Pebbles, piece of brick in core tip; FILL; no odor or visible impact	
14' - 16'	1.2'/2' 60%	1 1 1 1	0.0	Wet	OH	15		(14.2-15.25' bgs) - Soft gray CLAY; FILL; slight organic odor but no visible impact	

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Boring Log

Boring ID: ST14SB11

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 6/24/2008 Depth: 5.5'

Start Date: 6/24/2008 End Date: 6/25/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 13 Total Depth (ft): 44'

Location: Manhattan, New York

Northing: Easting:
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88):

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, G. Kirkwood

SAMPLE									
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS	Depth (ft)	Lithology	Lithologic Description	Comments
		n = 2			CL	15		(15.25-16' bgs) - Gray SILTY CLAY; FILL; no odor or visible impact	
16' - 18'	1.8'/2' 88%	2 2 2 2 n = 4	0.0	Wet	GC CL			(16-16.3' bgs) - Very soft dark gray CLAY and GRAVEL; FILL; slight organic odor but no visible impact (16.3-18' bgs) - Moderately firm gray CLAY; FILL; no odor or visible impact	
18' - 20'	2'/2' 100%	1 1 1 3 n = 2	0.0	Wet	OL SM			(18-19.3' bgs) - Soft gray SILT and CLAY, tr wood and gravel; FILL; wet; organic odor but no visible impact (19.3-20' bgs) - Gray f grained SAND and SILT, wet; no odor or visible impact	
20' - 22'	2'/2' 100%	9 15 16 18 n = 31	0.0	Wet	SW SP	20		(20-20.3' bgs) - Dark gray vf grained SAND and SILT; no odor or visible impact (20.3-20.6' bgs) - Gray vf grained SAND, tr silt, few pebbles, moist; organic odor but no visible impact	Analytical sample ST14SB11 (20-23)
22' - 24'	2'/2' 100%	5 8 11 11 n = 19	0.0	Wet	SM SP SM SW			(20.6-22' bgs) - Brown f-vf grained SAND, moist; no odor or visible impact (22-22.3' bgs) - Very soft vf grained SAND and SILT; no odor or visible impact (22.3-22.7' bgs) - Brown vf grained SAND, wet; no odor or visible impact	
24' - 26'	1.7'/2' 85%	5 7 8 10 n = 15	0.0	Wet	SW	25		(22.7-23.3' bgs) - Very soft vf grained SAND and SILT; no odor or visible impact (23.3-26' bgs) - Brown vf-grained SAND, tr silt; organic odor starting at 24- bgs, but no visible impact	
26' - 28'	2'/2' 100%	7 6 6 8 n = 12	0.0	Wet	SM SW SW ML			(26-26.3' bgs) - Very soft brown vf grained SAND and SILT; no odor or visible impact (26.3-26.9' bgs) - Red-brown vf grained SAND, tr silt, wet; organic odor but no visible impact	Analytical sample ST14SB11 (26-28)
28' - 30'	2'/2' 100%	5 7 7 9 n = 14	0.0	Wet	SW ML			(26.9-27' bgs) - Brown SILT and CLAY, moist; no odor or visible impact (27-27.4' bgs) - Red-brown vf grained SAND, tr silt; no odor or visible impact	
					SW	30		(27.4-27.7' bgs) - Brown SILT and CLAY, moist; no odor or visible impact	

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Boring Log

Boring ID: ST14SB11

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 6/24/2008 Depth: 5.5'

Start Date: 6/24/2008 End Date: 6/25/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 13 Total Depth (ft): 44'

Location: Manhattan, New York

Northing: Easting:
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88):

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, G. Kirkwood

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
30' - 32'	1.4'/2' 70%	5 7 7 9 n = 14	0.0	Wet	OL SW	30		(27.7-28' bgs) - Red-brown vf grained SAND, tr silt; no odor or visible impact (28-28.8' bgs) - Brown vf grained SAND, some Silt; no odor or visible impact	
32' - 34'	1.9'/2' 95%	8 11 17 50/4" n = 28	0.0	Wet	CL SP			(28.8-29.7' bgs) - Soft brown SILT and CLAY; no odor or visible impact (29.7-30' bgs) - Brown vf grained SAND, some Silt; organic odor but no visible impact (30-30.4' bgs) - Soft brown SILT and CLAY; organic odor but no visible impact	
34' - 36'	2'/2' 100%	8 10 11 14 n = 21	0.0	Wet	SW GW	35		(30.4-32' bgs) - Moderately soft alternating red, gray SAND, SILT and CLAY; organic odor but no visible impact (32-32.9' bgs) - Soft brown SILT and CLAY, wet; no odor or visible impact	
36' - 38'	0.8'/2' 40%	23 28 35 38 n = 63	0.0	Wet	SM SW			(32.9-34.2' bgs) - Brown vf grained SAND, some Silt and Mica, rock at 33.6' bgs; organic odor from 34-34.2' bgs but no visible impact (34.2-34.3' bgs) - Loose brown m grained SAND; organic odor but no visible impact	
38' - 40'	N/A	17 21 24 20 n = 45	N/A	Wet				(34.3-35.1' bgs) - Red-brown vf grained SAND, some Silt, layer of m grained sand at 34.8' bgs; no odor or visible impact (35.1-36' bgs) - Very soft/loose brown SAND and GRAVEL; no odor or visible impact	
40' - 42'	0.8'/2' 40%	10 14 18 21 n = 32	0.0	Wet		40		(36-36.7' bgs) - Soft brown f grained SAND and SILT, tr gravel; no odor or visible impact (36.7-40' bgs) - Moderately dense red-brown vf grained SAND, some Silt and Mica; organic odor but no visible impact	Analytical sample ST14SB11 (40-44)
42' - 44'	0.9'/2' 45%	18 24 27 32 n = 51	0.0	Wet				(40-44' bgs) - Dense brown vf grained SAND and SILT, wet; no odor or visible impact 44' bgs: Refusal - END OF BORING	

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Boring Log

Boring ID: ST14SB12

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/22/2008 Depth: 5'

Start Date: 5/22/2008 End Date: 5/30/2008

Contractor: PEC

Operator: J. Bailey

Drill Rig Type: Truck-Mounted

Method: Direct Push

Location # 10 Total Depth (ft): 48'

Location: Manhattan, New York

Northing: 205058.053 Easting: 991121.053
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 6.649'

Water Level (ft bgs): 6'

Logged by: M. Stepanova, J. Shackford

SAMPLE									
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS	Depth (ft)	Lithology	Lithologic Description	Comments
0' - 1'	N/A	N/A	0.0	Moist	N/A	0		(0-0.5' bgs) - COBBLESTONES; FILL	
								(0.5-1' bgs) - Loose yellow f-m grained SAND, tr gravel; FILL; moist; no odor or visible impact	
1' - 2'	N/A	N/A	0.0	Moist	SW			(1-2' bgs) - Loose dark brown TOPSOIL, some m-f grained SAND, tr gravel and pebbles, few bricks, pieces of terracotta pipe; FILL; moist; no odor or visible impact	
2' - 3'	N/A	N/A	0.3	Moist				(2-5' bgs) - Loose dark brown f-m grained SAND, some organic material, roots, gravel, and pebbles; FILL; moist; no odor or visible impact	
3' - 4'	N/A	N/A	0.5	Moist					
4' - 8'	1.7'/4' 42.5%	N/A	0.3	Wet		5		5' bgs: END OF PRECLEAR	
								(5-8' bgs) - Moderately dense brown m-c-f grained SAND changing to black at 4.95' bgs, tr gravel; FILL; wet at 6' bgs, no odor or visible impact	
8' - 12'	1'/4' 25%	N/A	0.0	Wet	SP	10		(8-12' bgs) - Loose brown c-m-f grained SAND, some m-c-grained Gravel, plant matter at 8.54' bgs; FILL; wet; no odor or visible impact	
12' - 16'	1.6'/4' 40%	N/A	0.0	Wet	GW			(12-12.45' bgs) - Loose brown m-f grained SAND, wet; no odor or visible impact	
								(12.45-13.5' bgs) - Loose brown c grained GRAVEL, some c-m grained Sand, wet; no odor or visible impact	
						15		(13.5-13.6' bgs) - Very soft lt gray to white f-vf grained SAND and SILT, possible weathered rock; no odor or visible impact	
16' - 20'	2.5'/4' 62.5%	N/A	0.0	Wet	GP			(13.6-20.2' bgs) - Loose to moderately dense dark brown m-c grained angular GRAVEL and m-f grained SAND, shell fragment at 20.2' bgs; no odor or visible impact	

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Boring Log

Boring ID: ST14SB12

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/22/2008 Depth: 5'

Start Date: 5/22/2008 End Date: 5/30/2008

Contractor: PEC

Operator: J. Bailey

Drill Rig Type: Truck-Mounted

Method: Direct Push

Location # 10 Total Depth (ft): 48'

Location: Manhattan, New York

Northing: 205058.053 Easting: 991121.053
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 6.649'

Water Level (ft bgs): 6'

Logged by: M. Stepanova, J. Shackford

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
						20			
20' - 24'	3.2'/4' 80%	N/A	0.0	Wet	SW			(20.2-24' bgs) - Loose to moderately dense gray m-f grained SAND changing to brown at 21.65' bgs, wet; no odor or visible impact	
24' - 28'	NR	N/A	0.0	Wet		25		(24-28' bgs) - Red-brown m-f grained SAND, few c grained Gravel fragments; no odor or visible impact	Analytical sample ST14SB12 (24-28)
28' - 32'	NR	N/A	0.0	Wet	SM	30		(28-34.7' bgs) - Very dense red-brown f-vf grained SAND, some Silt; no odor or visible impact	
32' - 36'	3.25'/4' 81.3%	N/A	0.0	Wet					

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Boring Log

Boring ID: ST14SB12

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/22/2008 Depth: 5'

Start Date: 5/22/2008 End Date: 5/30/2008

Contractor: PEC

Operator: J. Bailey

Drill Rig Type: Truck-Mounted

Method: Direct Push

Location # 10 Total Depth (ft): 48'

Location: Manhattan, New York

Northing: 205058.053 Easting: 991121.053
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 6.649'

Water Level (ft bgs): 6'

Logged by: M. Stepanova, J. Shackford

SAMPLE									
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS	Depth (ft)	Lithology	Lithologic Description	Comments
					CH	35		(34.7-35' bgs) - Stiff gray CLAY and SILT with layers of red-brown Clay; no odor or visible impact	
								(35-36' bgs) - Stiff red-brown vf grained SAND, SILT and CLAY; no odor or visible impact	
36' - 40'	3.7'/4' 92.5%	N/A	0.0	Wet				(36-48' bgs) - Dense red-brown vf grained SAND, SILT and CLAY with gray Clay laminae throughout, stiffens with depth; no odor or visible impact	
40' - 44'	3.7'/4' 92.5%	N/A	0.0	Wet	SC	40			
44' - 48'	3.7'/4' 92.5%	N/A	--	Wet		45		48' bgs: END OF BORING	Analytical sample ST14SB12 (44-48)

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Boring Log

Boring ID: ST14SB13

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 4/30/2008 Depth: 5'

Start Date: 4/30/2008 End Date: 5/13/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 5 Total Depth (ft): 50'

Location: Manhattan, New York

Northing: 205265.035 Easting: 990969.285
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 9.452'

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, K. Kachel, C. Basinski

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	2.5	Dry	SM	0		(0-1' bgs) - F grained SAND and SILT, tr gravel and organic material; FILL; no odor or visible impact	
1' - 2'	N/A	N/A	0.6	Dry				(1-2' bgs) - Brown SAND and SILT, tr gravel; FILL; no odor or visible impact	
2' - 3'	N/A	N/A	0.9	Dry				(2-3' bgs) - Lt brown SAND, some Silt, tr gravel; FILL; no odor or visible impact	
3' - 4'	N/A	N/A	0.9	Dry	ML			(3-4' bgs) - Brown SILT, some Sand, tr concrete, brick fragments, and gravel; FILL; no odor or visible impact	
4' - 5'	N/A	N/A	1.4	Dry				(4-5' bgs) - Brown-black SILT, some Sand, Concrete fragments and Gravel; FILL; no odor or visible impact 5' bgs: END OF PRE-CLEAR	
5' - 6'	0.3'/1' 30%	1 2	0.4	Moist	SM	5		(5-6' bgs) - Dark brown m-f grained SAND and SILT, tr f grained angular gravel; FILL; no odor or visible impact	
6' - 8'	0.5'/2' 25%	5 7 12 50/.4' n=19	0.4	Moist				(6-8' bgs) - Concrete fragments; FILL; no odor or visible impact	
8' - 10'	0.6/2' 30%	4 3 4 3 n=7	3.0	Moist				(8-10' bgs) - Dark brown f-vf grained SAND and SILT, tr clay, f grained angular gravel, and brick fragments; FILL; no odor or visible impact	
10' - 12'	1'/2' 50%	3 5 8 12 n=13	0.6	Moist		10		(10-12' bgs) - Black m-f grained SAND and SILT, tr clay; FILL; no odor or visible impact	
12' - 14'	0'/2' 0%	14 8 7 7 n=15	--	N/A				(12-14' bgs) - NO RECOVERY	
14' - 16'	0.5'/2' 25%	2 1 2 2	2.2	Wet		15		(14-16' bgs) - Dark brown m-f grained SAND, tr silt and c-m grained angular gravel; FILL; no odor or visible impact	

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Boring Log

Boring ID: ST14SB13

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 4/30/2008 Depth: 5'

Start Date: 4/30/2008 End Date: 5/13/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 5 Total Depth (ft): 50'

Location: Manhattan, New York

Northing: 205265.035 Easting: 990969.285
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 9.452'

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, K. Kachel, C. Basinski

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
		n=3				15			
16' - 18'	1.3'/2' 65%	2 2 3 5 n=5	0.8	Wet	SP			(16-17' bgs) - Black c grained SAND and f-vf grained GRAVEL, tr brick and shell fragments; FILL; no odor or visible impact (17-18' bgs) - Black c grained SAND and c-m grained angular GRAVEL, tr shell fragments; FILL; no odor or visible impact	
18' - 20'	0.3'/2' 15%	5 4 4 4 n=8	0.7	Wet	SC			(18-20' bgs) - Dark brown vf grained SAND and CLAY, tr silt, m grained subangular gravel, and brick fragments; FILL; no odor or visible impact	
20' - 22'	0.6/2' 30%	3 3 2 2 n=5	0.8	Wet	SM	20		(20-22' bgs) - Black c-m grained SAND, some vf grained angular Gravel and shell fragments, tr silt; no odor or visible impact	
22' - 24'	0.3'/2' 15%	2 2 2 2 n=4	14.3	Wet	CH			(22-24' bgs) - Black CLAY, tr m-f grained sand; NLO from 20-22.3' bgs but no visible impact	
24' - 26'	0.5'/2' 25%	5 6 8 12 n=14	1.5	Wet	SM	25		(24-28' bgs) - Dark grayish brown vf grained SAND and SILT; no odor or visible impact	Analytical Sample ST14SB13 (24-28)
26' - 28'	2'/2' 100%	10 5 8 12 n=13	1.5	Wet					
28' - 30'	1.2'/2' 60%	7 14 19 22 n=33	0.9	Wet		30		(28-30' bgs) - Dark grayish brown vf grained SAND and SILT, tr clay; no odor or visible impact	

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Boring Log

Boring ID: ST14SB13

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 4/30/2008 Depth: 5'

Start Date: 4/30/2008 End Date: 5/13/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 5 Total Depth (ft): 50'

Location: Manhattan, New York

Northing: 205265.035 Easting: 990969.285
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 9.452'

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, K. Kachel, C. Basinski

SAMPLE									
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS	Depth (ft)	Lithology	Lithologic Description	Comments
30' - 32'	1.1'/2' 55%	7 4 9 15 n=13	0.6	Wet	ML	30		(30-36' bgs) - Dark brown SILT and vf grained SAND, tr clay; no odor or visible impact	Analytical Sample ST14SB13 (30-32)
32' - 34'	1.2'/2' 60%	10 12 35 22 n=47	0.7	Wet					
34' - 36'	0.8'/2' 40%	17 22 36 32 n=58	0.6	Moist		35			
36' - 38'	2'/2' 100%	12 22 32 47 n=54	0.6	Moist				(36-38' bgs) - Dark reddish brown SILT, tr clay and vf grained sand; no odor or visible impact	
38' - 40'	1.3'/2' 65%	3 3 5 7 n=8	0.6	Moist	CL SP			(38-38.7' bgs) - Dark gray CLAY; no odor or visible impact (38.7-40' bgs) - Dark gray to dark reddish brown m grained SAND; no odor or visible impact	
40' - 42'	1'/2' 50%	4 4 7 5 n=11	0.7	Moist		40		(39.2-40' bgs) - Dark gray CLAY; no odor or visible impact (40-44' bgs) - Dark gray and brown CLAY; no odor or visible impact	
42' - 44'	0.9'/2' 45%	5 6 7 7 n=13	0.6	Moist	CL				
44' - 46'	2'/2' 100%	10 14 17 19	1.1	Moist		45		(44-46' bgs) - Dark brown and dark brownish gray f-vf grained SAND and SILT; no odor or visible impact	

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Boring Log

Boring ID: ST14SB13

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 4/30/2008 Depth: 5'

Start Date: 4/30/2008 End Date: 5/13/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 5 Total Depth (ft): 50'

Location: Manhattan, New York

Northing: 205265.035 Easting: 990969.285
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 9.452'

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, K. Kachel, C. Basinski

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
		n=31				45			
46' - 48'	1.3'/2' 65%	14 23 32 43 n=55	1.1	Moist	ML			(46-46.3' bgs) - Dark reddish brown SILT and vf grained SAND, tr clay; no odor or visible impact (46.3-50' bgs) - Dark reddish brown SILT with gray Clay layers; no odor or visible impact	
48' - 50'	2'/2' 100%	22 27 28 41 n=55	0.7	Moist		50		50' bgs: END OF BORING	Analytical Sample ST14SB13 (49-50)

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Boring ID: ST14SB16

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 6/23/2008 Depth: 5'

Start Date: 6/23/2008 End Date: 6/24/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 16 Total Depth (ft): 50'

Location: Manhattan, New York

Northing: 205076.516 Easting: 990414.097
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 11.244'

Water Level (ft bgs): 8.5'

Logged by: G. Kirkwood, E. Vivaudou

SAMPLE									
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS	Depth (ft)	Lithology	Lithologic Description	Comments
0' - 1'	N/A	N/A	N/A	Moist	N/A / SP	0		(0-0.3' bgs) - COBBLESTONES; FILL	PID readings from 0-20' bgs not recorded due to moisture content.
								(0.3-0.8' bgs) - Lt brown m grained SAND; FILL; moist; no odor or visible impact	
1' - 2'	N/A	N/A	N/A	Moist	SW			(0.8-2.3' bgs) - Red-brown m-f grained SAND, tr organic material, brick fragments and angular and rounded pebbles, some roots and large piece of metal from 1-2' bgs; FILL; moist; no odor or visible impact	
2' - 3'	N/A	N/A	N/A	Moist					
3' - 4'	N/A	N/A	N/A	Moist				(2.3-5' bgs) - BRICKS and brown f-vf-grained SAND, some brick fragments, tr gravel, mortar, and pebbles, piece of slag material; FILL; moist, no odor or visible impact	
4' - 5'	N/A	N/A	N/A	Moist				(5' bgs) - END OF PRE-CLEAR	
5' - 6'	0.5'/1' 50%	6 8	N/A	Moist		5		(5-6' bgs) - Lt brown f-vf grained SAND, brick fragments; FILL; moist; no odor or visible impact	
6' - 8'	0.4'/2' 20%	4 6 7 3 n = 13	N/A	Moist	N/A			(6.2-8.2' bgs) - BRICK; FILL	
8' - 10'	0.6'/2' 30%	3 3 2 3 n = 5	N/A	Wet	SW			(8.2-10' bgs) - Lt brown f-vf grained SAND, brick fragments; FILL; water table at 8.5'; no odor or visible impact	
10' - 12'	NR	2 3 2 3 n = 5	N/A	N/A	N/A	10		(10-12' bgs) - NO RECOVERY	
12' - 14'	2'/2' 100%	4 3 10 7 n = 13	N/A	Wet	SW			(12-12.3' bgs) - Loose brick fragments and brown f grained SAND; FILL; wet; no odor or visible impact	
								(12.3-12.6' bgs) - Moderately dense dark brown vf grained SAND and SILT; FILL; organic odor but no visible impact	
14' - 16'	1.2'/2' 60%	2 2 4 5	N/A	Wet				(12.6-14' bgs) - Very soft dark brown m-f grained SAND, tr angular and rounded pebbles; FILL; wet; no odor or visible impact	
						15			

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Boring Log

Boring ID: ST14SB16

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 6/23/2008 Depth: 5'

Start Date: 6/23/2008 End Date: 6/24/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 16 Total Depth (ft): 50'

Location: Manhattan, New York

Northing: 205076.516 Easting: 990414.097
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 11.244'

Water Level (ft bgs): 8.5'

Logged by: G. Kirkwood, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
		n = 6				15		(14-15.1' bgs) - Moderately soft vf grained SAND and SILT, dark brown layer at 15.1' bgs; FILL; no odor or visible impact	
16' - 18'	2'/2' 100%	2 3 5 5 n = 8	N/A	Wet				(15.1-16' bgs) - Brown v-vf grained SAND, tr silt; FILL; no odor or visible impact (16-17.3' bgs) - Moderately soft brown vf grained SAND and SILT, tr gravel from 18-20' bgs, moderately firm from 18.6-20' bgs; FILL; organic odor from 17.3-19.4' bgs but no other odor or visible impact	
18' - 20'	1.4'/2' 70%	3 3 5 6 n = 8	N/A	Wet	SM				
20' - 22'	1'/2' 50%	4 4 17 14 n = 21	2.3	Wet	CL SP	20		(20-20.3' bgs) - Soft lt brown vf grained SAND and SILT, few pebbles; FILL; wet; no odor or visible impact (20.3-20.6' bgs) - Lt gray CLAY; organic odor but no visible impact	PID readings from 20-50' bgs measured on core.
22' - 24'	2'/2' 100%	6 12 17 15 n = 29	0.0	Wet	CL SP SM			(20.6-22' bgs) - Brown f grained SAND; no odor or visible impact (22-22.3' bgs) - Brown m-f grained SAND; no odor or visible impact (22.3-22.7' bgs) - Moderately soft gray CLAY; no odor or visible impact	Analytical sample ST14SB16 (22-24)
24' - 26'	1.8'/2' 90%	3 6 9 14 n = 15	N/A	Wet	SP	25		(22.7-23.6' bgs) - Brown f grained SAND; no odor or visible impact (23.6-24' bgs) - Stiff red-brown vf grained SAND and SILT; no odor or visible impact (24-24.6' bgs) - Gray f-vf grained SAND; no odor or visible impact	
26' - 28'	1.6'/2' 80%	6 9 12 11 n = 21	0.0	Wet				(24.6-34' bgs) - Moderately dense red vf grained SAND, tr silt and mica, moderately soft from 32-32.3' and 33-34' bgs, and soft from 32.3-33' bgs; very slight organic odor from 26-27.8' bgs, but no other odor or visible impact	
28' - 30'	1.9'/2' 95%	5 7 7 8 n = 14	0.0	Wet	SW	30			

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Boring Log

Boring ID: ST14SB16

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 6/23/2008 Depth: 5'

Start Date: 6/23/2008 End Date: 6/24/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 16 Total Depth (ft): 50'

Location: Manhattan, New York

Northing: 205076.516 Easting: 990414.097
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 11.244'

Water Level (ft bgs): 8.5'

Logged by: G. Kirkwood, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
30' - 32'	1.4'/2' 70%	3 5 6 7 n = 11	0.0	Wet		30			
32' - 34'	2'/2' 100%	8 11 14 17 n = 25	0.0	Wet					
34' - 36'	2'/2' 100%	2 3 4 8 n = 7	0.0	Wet	SM	35		(34-36' bgs) - Soft from 34-34.6' bgs to m-soft from 34.6-36' bgs red SAND and SILT with gray layer at 33.6' bgs; no odor or visible impact	
36' - 38'	N/A	7 8 11 15 n = 19	N/A	N/A	N/A			(36-38' bgs) - NOT RECORDED	
38' - 40'	2'/2' 100%	6 9 9 12 n = 18	N/A	Wet	CL SM			(38-38.6' bgs) - Soft red-brown CLAY; no odor or visible impact (38.6-40' bgs) - Soft to moderately soft red vf grained SAND and SILT; no odor or visible impact	
40' - 42'	2'/2' 100%	3 3 3 2 n = 6	0.0	Wet	CL SM	40		(40-40.5' bgs) - Soft red SILT and vf grained SAND; very slight MGPO but no visible impact (40.5-41.2' bgs) - Moderately firm red CLAY and vf grained SAND; no odor or visible impact (41.2-43.3' bgs) - Moderately firm red SILT and vf grained SAND; no odor or visible impact	
42' - 44'	2'/2' 100%	2 2 6 8 n = 8	0.0	Wet	SM SP			(43.3-44' bgs) - Gray f-vf grained SAND, tr silt; no odor or visible impact	
44' - 46'	2'/2' 100%	5 7 7 9	0.0	Wet	SP	45		(44-45.4' bgs) - Brown-red vf grained SAND, layer of gray sand at 45.3' bgs; no odor or visible impact	

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Boring Log

Boring ID: ST14SB16

Project: Stuyvesant Town Former MGPs
E.14th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 6/23/2008 Depth: 5'

Start Date: 6/23/2008 End Date: 6/24/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 16 Total Depth (ft): 50'

Location: Manhattan, New York

Northing: 205076.516 Easting: 990414.097
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 11.244'

Water Level (ft bgs): 8.5'

Logged by: G. Kirkwood, E. Vivaudou

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
		n = 14				45		(45.4-46' bgs) - Brown-red vf grained SAND, tr mica; no odor or visible impact	
46' - 48'	2'/2' 100%	3 6 6 7 n = 12	0.0	Wet	CL			(46-47.1' bgs) - Lt brown CLAY and vf grained SAND, layer of gray sand at 47' bgs; no odor or visible impact	
					SW			(47.1-48' bgs) - Brown vf grained SAND, layer of gray sand at 47.9' bgs, some Silt; no odor or visible impact	
48' - 50'	2'/2' 100%	3 4 6 5 n = 10	0.0	Wet	CL			(48-49' bgs) - Lt brown CLAY, some Silt; no odor or visible impact	Analytical sample ST14SB16 (48-50)
					SP	50		(49-50' bgs) - Brown vf grained SAND; no odor or visible impact 50' bgs: END OF BORING	

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Boring Log

Boring ID: ST17SB07

Project: Stuyvesant Town Former MGPs
E.17th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/9/2008 Depth: 6'

Start Date: 5/9/2008 End Date: 5/18/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 5 Total Depth (ft): 36'

Location: Manhattan, New York

Northing: 205817.719 Easting: 991152.634
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 10.75'

Water Level (ft bgs): 10'

Logged by: B. Ergezen, J. Shackford

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	0.5	Moist	SW	0		(0-1' bgs) - Loose dark brown c-f grained SAND, some Organics and c-f Gravel; FILL; no odor or visible impact	
1' - 2'	N/A	N/A	0.4	Moist	SP/GP			(1-2' bgs) - Loose light brown m-f grained SAND, some c-f gravel; FILL; no odor or visible impact	
2' - 3'	N/A	N/A	1.1	Moist				(2-3' bgs) - Loose light brown m-f grained SAND, some m-f grained Gravel; FILL; no odor or visible impact	
3' - 4'	N/A	N/A	1.8	Moist	SP			(3-4' bgs) - Loose grayish brown m-f grained SAND, some c-f grained Gravel and bricks; FILL; no odor but some coal	
4' - 5'	N/A	N/A	1.8	Moist	SW			(4-5' bgs) - Loose dark brown c-f grained SAND, some c-f grained Gravel, Cobbles, and Brick, tr rootlets; FILL; no odor or visible impact	
5' - 6'	N/A	N/A	2.1	Moist		5		(5-6.2' bgs) - Loose dark brown c-f grained SAND, some c-f-grained Gravel, rootlets, and mica, large brick fragments from 6-6.2' bgs; FILL; no odor or visible impact	
6' - 8'	0.3'/2' 15%	50/0.18'	1.0	Dry	SP			(6.2-8' bgs) - Gray rock and concrete fragmants; FILL; no odor or visible impact	
8' - 10'	0.9'/2' 45%	11 44 14 10 n = 54	1.0	Moist				(8-8.43' bgs) - Dark brown c-f grained SAND, tr rootlets; FILL; no odor or visible impact	
10' - 12'	1.5'/2' 58%	14 14 7 5 n = 21	1.6	Wet	SM	10		(8.43-10' bgs) - Brown-gray c-f grained SAND, green root and plant matter at 8.62' bgs; FILL; no odor or visible impact	
12' - 14'	0.8'/2' 40%	5 6 8 10 n = 14	1.2	Wet				(10-10.15' bgs) - Brown c-f grained SAND; FILL; no odor or visible impact	
14' - 16'	0.95'/2' 48%	3 5 3 5 n = 8	0.9	Wet	SP	15		(10.15-10.21' bgs) - Black m-f grained SAND; FILL; slight burnt odor with clinker-like material	
								(10.21-12.68' bgs) - F grained SILTY SAND, some soft brown-gray Clay; FILL; no odor but slight staining at 12.2' bgs	
								(12.68-14' bgs) - Brown vf-f grained SAND with large rock; FILL; no odor or visible impact	
								(14-16' bgs) - Loose brown-gray vf-m grained SAND; FILL; slight burnt odor with tr black staining from 14.1-14.14', 14.35-14.36', 14.5', and 14.6' bgs	

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Boring Log

Boring ID: ST17SB07

Project: Stuyvesant Town Former MGPs
E.17th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/9/2008 Depth: 6'

Start Date: 5/9/2008 End Date: 5/18/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 5 Total Depth (ft): 36'

Location: Manhattan, New York

Northing: 205817.719 Easting: 991152.634
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 10.75'

Water Level (ft bgs): 10'

Logged by: B. Ergezen, J. Shackford

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
16' - 18'	0.9'/2' 45%	1 1 2 2 n = 3	0.6	Wet	GP / SP			(16'-16.2' bgs) - Loose dark brown m-grained GRAVEL and c-m grained SAND; FILL; no odor or visible impact (16.2-18' bgs) - Soft dark brown-light brown m-c grained SAND, tr brick fragments; FILL; slight organic-like odor but no visible impact	
18' - 20'	2'/2' 100%	1 1 3 2 n = 4	0.8	Wet	GP			(18-20' bgs) - Loose dark brown-gray m-c grained GRAVEL, some m grained SAND; no odor or visible impact	
20' - 22'	1.2'/2' 60%	8 2 1 1 n = 3	0.7	Wet	SM	20		(20-20.4' bgs) - Very loose brown m-c grained SAND; no odor or visible impact (20.4-20.9' bgs) - Soft black vf grained SAND and SILT, tr clay; very slight organic-like odor but no visible impact	
22' - 24'	2'/2' 100%	1 1 1 1 n = 2	1.6	Wet	GP			(20.9-22.45' bgs) - Loose m-f grained GRAVEL and SAND; no odor or visible impact (22.45-24' bgs) - Soft dark gray-black SILTY CLAY, tr rootlets; slight organic-like odor but no visible impact	
24' - 26'	1.05'/2' 53%	1 1 1 1 n = 2	10.1	Wet	OL	25			
26' - 28'	2'/2' 100%	1 1 1 5 n = 2	10.2	Wet	OL			(26-28' bgs) - Soft dark gray-black SILTY CLAY; organic-like odor and slight MGPO but no visible impact	Analytical Sample ST17SB01 (26-28)
28' - 30'	1.6'/2' 80%	2 7 10 8 n = 17	1.1	Wet				(28-28.84' bgs) - Very loose brown m-f grained SAND, tr rootlets; no odor or visible impact (28.84-32' bgs) - Loose red-brown f-m-grained SAND; slight MGPO and black staining from 31.05-31.3' bgs	
30' - 32'	1.8'/2' 90%	4 3 3	1.2	Wet		30			

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Boring Log

Boring ID: ST17SB07

Project: Stuyvesant Town Former MGPs
E.17th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/9/2008 Depth: 6'

Start Date: 5/9/2008 End Date: 5/18/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 5 Total Depth (ft): 36'

Location: Manhattan, New York

Northing: 205817.719 Easting: 991152.634
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 10.75'

Water Level (ft bgs): 10'

Logged by: B. Ergezen, J. Shackford

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
		5 n = 6			SP				Analytical Sample ST17SB01 (31-32)
32' - 34'	2'/2' 100%	4 5 8 13 n = 13	0.8	Wet				(32-36' bgs) - Loose f-vf grained SAND; no odor or visible impact	Analytical Sample ST17SB01 (32-34)
34' - 36'	2'/2' 100%	16 19 22 27 n = 41	0.8	Wet		35		36' bgs: END OF BORING	

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Boring Log

Boring ID: ST17SB08

Project: Stuyvesant Town Former MGPs
E.17th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/23/2008 Depth: 5.8'

Start Date: 5/23/2008 End Date: 5/28/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 7 Total Depth (ft): 36'

Location: Manhattan, New York

Northing: 205471.434 Easting: 990942.625
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 11.012'

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, G. Kirkwood

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	0.0	Moist	N/A	0		(0-0.25' bgs) - TOPSOIL, grass, and roots; FILL; no odor or visible impact	
1' - 2'	N/A	N/A	0.1	Moist	SW			(0.25-1' bgs) - Loose dark brown m-f grained SAND, tr rootlets and pebbles; FILL; moist; no odor or visible impact	
2' - 3'	N/A	N/A	0.0	Moist				(1-2' bgs) - Loose brown f-vf grained SAND, tr gravel, pebbles, and cobbles; FILL; no odor or visible impact	
3' - 4'	N/A	N/A	0.0	Moist	N/A			(2-3.3' bgs) - Loose brown-gray f-vf grained SAND, some Bricks and Cobbles, little Silt, Gravel, and Mortar; FILL; moist; no odor, but little ash from 2-3' bgs	
4' - 5'	N/A	N/A	0.0	Moist	SW			(3.3-4' bgs) - Brown m-f-grained SAND, SLAG material, some metal, glass, and bricks; FILL; moist; no odor or visible impact	
5' - 6'	N/A	N/A	0.0	Moist		5		(4-5' bgs) - Loose brown-gray vf grained SAND, some slate, angular white rock fragments, little glass, pieces of ceramic and incinerator material, few fragments of black material from 4.5-5' bgs; FILL; strong MGPO in fragments of black material, very slight odor throughout, little ash and coal	
6' - 8'	0'/2' 0%	7 24 37 32 n = 61	--	Moist	N/A			(5-6' bgs) - Loose f grained SAND, glass fragments at 5' bgs, some brick fragments and white rock fragments, metal object at 5.8' bgs; FILL; no odor or visible impact 5.8' END OF PRECLEAR	
8' - 10'	1'/2' 50%	10 7 5 8 n = 12	3.8	Moist	SW			(6-8' bgs) - NO RECOVERY (8-8.5' bgs) - White QUARTZ; FILL; no odor or visible impact	
10' - 12'	0.5'/2' 25%	14 8 2 2 n = 10	3.8	Wet		10		(8.5-10' bgs) - Brown f-m grained SAND, little wood and gravel, tr bricks; FILL; no odor or visible impact (10-12' bgs) -Brown f-m grained SAND and SILT, tr gravel; FILL; no odor or visible impact	
12' - 14'	0.75'/2' 37.5%	2 2 4 1 n = 6	0.0	Wet	SM			(12-17.8' bgs) - Brown SAND and SILT, some pyrite; FILL; no odor or visible impact	
14' - 16'	0.75'/2' 37.5%	1 1 1 1 n = 2	1.7	Wet		15			Analytical sample ST17SB08 (14-18)

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Boring Log

Boring ID: ST17SB08

Project: Stuyvesant Town Former MGPs
E.17th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/23/2008 Depth: 5.8'

Start Date: 5/23/2008 End Date: 5/28/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 7 Total Depth (ft): 36'

Location: Manhattan, New York

Northing: 205471.434 Easting: 990942.625
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 11.012'

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, G. Kirkwood

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
16' - 18'	2'/2' 100%	1 1 2 1 n = 3	0.0	Wet					
18' - 20'	1.25'/2' 62.5%	2 2 2 2 n = 4	0.0	Wet	P			(17.8-18' bgs) - PEAT; FILL; no odor or visible impact	
20' - 22'	0.75'/2' 37.5%	3 3 2 2 n = 5	0.1	Wet	SM	20		(18-22' bgs) - Black SAND and SILT, Pyrite, tr ceramic debris and organics; FILL; no odor or visible impact	
22' - 24'	0.25'/2' 12.5%	2 2 3 3 n = 5	8.1	Wet	CL			(22-24.25' bgs) - Black SILT and CLAY, tr pyrite; FILL; no odor or visible impact	Analytical sample ST17SB08 (22-26)
24' - 26'	0.75'/2' 37.5%	2 3 5 6 n = 8	2.8	Wet	SM CL	25		(24.25-26' bgs) - Gray SILT, some Clay, tr ceramic debris; FILL; no odor or visible impact	
26' - 28'	2'/2' 100%	6 4 10 7 n = 14	0.0	Wet	SP			(26-28' bgs) - Brown-gray f grained SAND; FILL; slight organic odor but no visible impact	
28' - 30'	2'/2' 100%	10 15 17 19 n = 32	2.3	Wet	SW SP			(28-28.75' bgs) - Brown-black f grained SAND, tr brick; FILL; no odor or visible impact (28.75-30' bgs) - Gray-tan f-m grained SAND; no odor or visible impact	
30' - 32'	2'/2' 100%	6 9 10	0.3	Wet	SP	30		(30-31.2' bgs) - Brown-black to brown-tan f-m grained SAND; no odor or visible impact	

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Boring Log

Boring ID: ST17SB08

Project: Stuyvesant Town Former MGPs
E.17th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/23/2008 Depth: 5.8'

Start Date: 5/23/2008 End Date: 5/28/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 7 Total Depth (ft): 36'

Location: Manhattan, New York

Northing: 205471.434 Easting: 990942.625
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 11.012'

Water Level (ft bgs): 10'

Logged by: E. Vivaudou, G. Kirkwood

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
		6 n = 19			ML			(31.2-34' bgs) - Gray SILT, tr mica; no odor or visible impact	
32' - 34'	0.75'/2' 37.5%	16 10 11 11 n = 21	1.0	Wet	ML				Analytical sample ST17SB08 (32-36)
34' - 36'	0.9'/2' 46%	15 17 19 24 n = 36	0.0	Wet	SM SP	35		(34-34.4' bgs) - Gray SILT and f grained SAND; no odor or visible impact (34.4-36' bgs) - Brown-gray m-c grained SAND; no odor or visible impact 36' bgs: END OF BORING	

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Boring Log

Boring ID: 17WVSB01

Project: Stuyvesant Town Former MGPs
E.17th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 5/6/2008 Depth: 5'

Start Date: 5/6/2008 End Date: 5/16/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 6 Total Depth (ft): 8.1'

Location: Manhattan, New York

Northing: 205592.919 Easting: 990940.687
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 10.687'

Water Level (ft bgs): NOT ENCOUNTERED

Logged by: M. Stepanova, K. Kachel, J. Shackford

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	N/A	N/A	N/A	0		(0-0.6' bgs) - ASPHALT (0.6-1' bgs) - CONCRETE; FILL	
1' - 2'	N/A	N/A	0.0	Dry				(1-1.4' bgs) - Brown SOIL, tr cobbles and pebbles; FILL; dry; no odor or visible impact (1.4-1.9' bgs) - Hard, black, brittle material; FILL; moderate MGPO but no visible impact	
2' - 3'	N/A	N/A	1.4	Dry				(1.9-2.5' bgs) - Loose brown m-f grained SAND, tr gravel, and tr bricks from 2-2.5' bgs; FILL; dry; no odor or visible impact	
3' - 4'	N/A	N/A	1.0	Moist				(2.5-4' bgs) - Loose dark gray-brown m-f grained SAND, tr gravel, pieces of brick; FILL; MGPO with cinders and ash to 3' bgs, no odor or visible impact from 3-4' bgs	
4' - 5'	N/A	N/A	1.2	Moist				(4-5' bgs) - Loose dark gray-brown m-f grained SAND, tr gravel, with rock at 4.3' bgs; FILL; MGPO but no visible impact 5' bgs: END OF PRECLEAR	
5' - 6'	0.3'/0.2' 15%	5 8	N/A	Moist	SW	5		(5-6' bgs) - Slough material; FILL	
6' - 8'	0.55'/2' 27.5%	5 7 8 12 n = 15	N/A	Moist				(6-8' bgs) - Dark brown-black m-vf grained SAND, tr silt, brick, and concrete; FILL; slight burnt odor from 6-6.55' bgs but no visible impact	
8' - 8.1'	0.1'/2' 5%	50/1"	N/A	Moist				(8-10' bgs) - Brown m-grained SAND, tr c-grained sand, some m-grained gravel, brick; FILL; no odor or visible impact 8.1' bgs: END OF BORING	Utility Encountered

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Boring Log

Boring ID: 17WVSB02

Project: Stuyvesant Town Former MGPs
E.17th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 4/30/2008 Depth: 5'

Start Date: 5/12/2008 End Date: 5/15/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: Direct Push and 4.25" HSA

Location # 8 Total Depth (ft): 30'

Location: Manhattan, New York

Northing: 205423.983 Easting: 990843.17
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 11.074'

Water Level (ft bgs): 9.8'

Logged by: E. Vivaudou, K. Kachel, J. Shackford

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	0.9	Moist	SP	0		(0-1' bgs) - Brown f-c grained SAND, some roots; FILL; no odor or visual impact	
1' - 2'	N/A	N/A	4.2	Moist	SW			(1-2' bgs) - Tan c-f grained SAND; FILL; no odor or visual impact	
2' - 3'	N/A	N/A	4.8	Moist	SC			(2-3' bgs) - Brown f grained SAND and CLAY, tr mica; FILL; no odor or visual impact	
3' - 4'	N/A	N/A	1.2	Moist	SW			(3-4' bgs) - Brown c-f grained SAND and SILT; FILL; no odor or visual impact	
4' - 5'	N/A	N/A	2.0	Moist	SC			(4-5' bgs) - Brown f grained SAND and CLAY, tr gravel; FILL; no odor or visual impact	
5' - 8'	1.3'/2' 65%	N/A	N/A	Moist	SM	5		(5-8' bgs) - Moderately dense brown SAND, some Silt, tr clay and f grained rounded gravel; FILL; no odor or visible impact	
8' - 12'	2.4'/4' 60%	N/A	0.0	Wet				(8-12' bgs) - Moderately dense brown SAND, some Silt, tr clay and f grained, rounded gravel; FILL; wet at 9.8' bgs; no odor, but some coal fragments at 8.8' bgs	
12' - 16'	2.1'/4' 53%	N/A	0.0	Wet		10		(12-16' bgs) - Loose brown SAND and fine angular GRAVEL; FILL; slight HCLO and possible light gray staining from 13.2-14.1' and 16-20' bgs	
16' - 20'	0.6'/4' 15%	N/A	0.0	Wet	SP	15			

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Boring Log

Boring ID: 17WVSB02

Project: Stuyvesant Town Former MGPs
E.17th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: 4/30/2008 Depth: 5'

Start Date: 5/12/2008 End Date: 5/15/2008

Contractor: PEC

Operator: D. Warris

Drill Rig Type: Truck-Mounted

Method: Direct Push and 4.25" HSA

Location # 8 Total Depth (ft): 30'

Location: Manhattan, New York

Northing: 205423.983 Easting: 990843.17
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 11.074'

Water Level (ft bgs): 9.8'

Logged by: E. Vivaudou, K. Kachel, J. Shackford

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
20' - 23.5'	1.7'/3.5' 49%	N/A	0.0 36.1	Wet	ML	20		(20-23.5' bgs) - Black SILT and CLAY, tr rootlets, light gray Sand layer from 21.3-21.4' bgs, wood fragments and leather material in geoprobe shoe; FILL; moderate NLO but no visual impact	
23.5' - 24'	0.5'/0.5' 100%	3		Wet				(23.5-24' bgs) - Black SILT and CLAY, tr rootlets; FILL; moderate NLO and slight organic-like odor but no visual impact	Geoprobe refusal at 23.5' bgs
24' - 26'	0.9'/2' 45%	18 34 17 22 n=51	3.3	Wet	SP	25		(24-26' bgs) - Loose brown m-c grained SAND, some Gravel; no odor or visual impact	
26' - 28'	0.4'/2' 20%	14 17 17 20 n=34	3.4	Wet				(26-26.1' bgs) - Wood fragment in gray SILTY SAND; no odor or visual impact (26.1-28.25' bgs) - Gray f-vf grained gray SAND, tr c-grained Sand and wood fragments, no wood fragments below 28' bgs; no odor or visual impact	
28' - 30'	2'/2' 100%	12 11 17 10 n=28	1.5	Wet		30		28.25-30' bgs) - Moderately dense m-f grained SAND; no odor or visual impact 30' bgs: END OF BORING	Analytical Sample 17WVSB02 (28-30)

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Boring Log

Boring ID: 19WVSB01

Project: Stuyvesant Town Former MGPs
E.19th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: Not Recorded Depth: 5'

Start Date: Not Recorded End Date: 5/13/2008

Contractor: PEC

Operator: J. Bailey

Drill Rig Type: Truck-Mounted

Method: Direct Push

Location # 2 Total Depth (ft): 26'

Location: Manhattan, New York

Northing: 206442.489 Easting: 990344.335
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 10.029'

Water Level (ft bgs): 4'

Logged by: M. Stepanova, K. Kachel

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	NR	Moist	Unknown	0		(0-4' bgs) - Not Recorded	
1' - 2'	N/A	N/A	NR	Moist					
2' - 3'	N/A	N/A	NR	Moist					
3' - 4'	N/A	N/A	NR	Moist					
4' - 8'	1.3'/4' 32.5%	N/A	0.0	Wet	GW	5		(4-4.6' bgs) - Red SAND and GRAVEL, brick fragments; FILL; wet; no odor or visible impact (4.6-8.2' bgs) - Dense dark gray SAND and GRAVEL; FILL; slight HCLO and staining from 4.6-5.3' bgs 5' bgs: END PRE-CLEAR	Analytical sample 19WVSB01 (4-8)
8' - 12'	1.8'/4' 45%	N/A	0.0	Wet	SW N/ SW	10		(8.2-9.2' bgs) - Soft gray to lt gray f grained SAND, tr silt; FILL; slight HCLO and possible staining throughout (9.2-9.5' bgs) - Red brick fragments; FILL (9.5-12' bgs) - Green-gray f grained SAND, tr silt; FILL; wet; no odor or visible impact	
12' - 16'	2.2'/4' 55%	N/A	0.0	Wet	SP SW SP	15		(12-13' bgs) - Loose dark green-gray f grained SAND; FILL; wet; no odor or visible impact (13-14.3' bgs) - Dark gray-black SAND and GRAVEL, some wood and shell fragments; FILL; slight fuel-like odor but no visible impact (14.3-16' bgs) - Loose dark gray-black f-c grained SAND, tr shell fragments, wet; slight fuel-like odor from 13.3-14.2' bgs but no visible impact	Analytical sample 19WVSB01 (12-16)
16' - 20'	0'/4' 0%	N/A	NR	Wet				(16-20' bgs) - No Recovery	

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Boring Log

Boring ID: 19WVSB01

Project: Stuyvesant Town Former MGPs
E.19th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: Not Recorded Depth: 5'

Start Date: Not Recorded End Date: 5/13/2008

Contractor: PEC

Operator: J. Bailey

Drill Rig Type: Truck-Mounted

Method: Direct Push

Location # 2 Total Depth (ft): 26'

Location: Manhattan, New York

Northing: 206442.489 Easting: 990344.335
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 10.029'

Water Level (ft bgs): 4'

Logged by: M. Stepanova, K. Kachel

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
					NR				
20' - 26'	3.7'/4' 92.5%	N/A	0.0	Wet	CH	20		(20-26' bgs) - Soft, high plasticity dark green-gray CLAY, some plant material, tr shell fragments, moist; moderate to strong H2S-like odor from 20-23.7' bgs but no visible impact	Analytical sample 19WVSB01 (20-26)
						25		26' bgs: END OF BORING	

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Boring Log

Boring ID: 19WVSB02

Project: Stuyvesant Town Former MGPs
E.19th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: Not Recorded Depth: 5'

Start Date: Not Recorded End Date: 5/14/2008

Contractor: PEC

Operator: J. Bailey

Drill Rig Type: Truck-Mounted

Method: Direct Push

Location # 3 Total Depth (ft): 24'

Location: Manhattan, New York

Northing: 206191.244 Easting: 990599.185
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 12.168'

Water Level (ft bgs): 7'

Logged by: M. Stepanova, K. Kachel

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	NR	Moist	Unknown	0		(0-4' bgs) - Not Recorded	
1' - 2'	N/A	N/A	NR	Moist					
2' - 3'	N/A	N/A	NR	Moist					
3' - 4'	N/A	N/A	NR	Moist					
4' - 8'	1'/4' 25%	N/A	0.0	Moist	GW	5		(4-4.5' bgs) - Dense gray SAND and f grained angular GRAVEL; FILL; dry; no odor or visible impact (4.5-8' bgs) - Dense red-brown f-c grained SAND, brick fragments, little angular Gravel; FILL; moist to wet at 7' bgs; no odor or visible impact 5' bgs: END OF PRECLEAR	
8' - 12'	2.7'/4' 67.5%	N/A	0.3	Wet				(8-9.5' bgs) - Dense gray SAND and f grained angular GRAVEL; FILL; moist; fuel-like odor from 8.7-10.7' bgs but no visible impact	Analytical sample 19WVSB02 (8-10)
					SP	10		(9.5-13.3' bgs) - Loose green-gray f grained SAND; FILL; wet; no odor, OLM with sheen and staining from 9.5-10.7' bgs	Analytical sample 19WVSB01 (10-12)
12' - 16'	2.1'/4' 52.5%	N/A	NR	Wet					
					SW	15		(13.3-20' bgs) - Moderately dense dark gray f-c grained SAND, little f grained rounded Gravel; FILL; moderate fuel-like odor and staining from 13.3-13.6' bgs, slight fuel-like odor from 13.6-14.1' bgs, and moderate fuel oil-like odor and tr sheen from 16-16.6' bgs	
16' - 20'	0.6'/4' 15%	N/A	0.0	Wet					

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Boring Log

Boring ID: 19WVSB02

Project: Stuyvesant Town Former MGPs
E.19th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: Not Recorded Depth: 5'

Start Date: Not Recorded End Date: 5/14/2008

Contractor: PEC

Operator: J. Bailey

Drill Rig Type: Truck-Mounted

Method: Direct Push

Location # 3 Total Depth (ft): 24'

Location: Manhattan, New York

Northing: 206191.244 Easting: 990599.185
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 12.168'

Water Level (ft bgs): 7'

Logged by: M. Stepanova, K. Kachel

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
20' - 24'	3.7'/4' 92.5%	N/A	0.0	Wet	SC / CH	20		(20-20.2' bgs) - Loose brown f-m grained SAND, pyrite from 20.1-20.2' bgs, wet; no odor or visible impact (20.2-24' bgs) - Soft, high plasticity dark green-gray CLAY, shell fragments; slight H2S-like odor from 20.2-23.7' bgs but no visible impact 24' bgs: END OF BORING	Analytical sample 19WVSB01 (23-24)

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Boring Log

Boring ID: 19WVSB03

Project: Stuyvesant Town Former MGPs
E.19th Street Station
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: Unknown Depth: 5'

Start Date: 5/21/2008 End Date: 5/21/2008

Contractor: PEC

Operator: R. Baldoze

Drill Rig Type: Truck-Mounted

Method: 4.25" HSA

Location # 4 Total Depth (ft): 12.5'

Location: Manhattan, New York

Northing: 206058.542 Easting: 990828.305
NY State Plane - Long Island Lambert

Surface Elevation (ft NAVD88): 12.152'

Water Level (ft bgs): Unknown

Logged by: E. Vivaudou, K. Kachel

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	0.0	Dry	SW	0		(0-0.3' bgs) - Black-brown SAND; FILL; no odor or visible impact	Hand augered 5' - 8.6' bgs
1' - 2'	N/A	N/A	0.0	Moist				(0.3-1' bgs) - Lt brown m-f grained SAND, some Silt and Gravel; FILL; no odor or visible impact	
2' - 3'	N/A	N/A	0.0	Moist				(1-3' bgs) - Lt brown m-f grained SAND, some Silt, tr gravel; FILL; no odor or visible impact	
3' - 4'	N/A	N/A	0.0	Moist				(3-4' bgs) - Brown m-f grained SAND, some Gravel, mortar, and brick, wood chunks at 3.5' bgs; FILL; no odor or visible impact	
4' - 5'	N/A	N/A	0.0	Dry				(4-5' bgs) - Brown m-c grained SAND, some Gravel, little brick; FILL; no odor or visible impact	
5' - 7'	N/A	N/A	0.0 0.0	Moist		5		(5-6' bgs) - Brown f-c grained SAND, tr f grained gravel, brick at 5.5' bgs; FILL; moist; no odor or visible impact (6-7' bgs) - Brown f-c grained SAND, tr f grained gravel, rock fragments from 7-7.5' bgs; FILL; moist; no odor or visible impact	
7' - 8'	N/A	N/A	N/A	Moist	N/A			(7-8' bgs) - No Recovery	
8' - 10'	0.6'/2' 30%	8 8 4 3 n = 12	0.0	Moist	GW			(8-8.3' bgs) - Brown f-c grained SAND and f grained GRAVEL; FILL; no odor or visible impact (8.3-12' bgs) - CONCRETE and red BRICK fragments; FILL; no odor or visible impact 8.6' bgs: END OF PRE-CLEAR	
10' - 12'	0.7'/2' 35%	2 7 8 14 n = 15	0.0	Moist	N/A	10			
12' - 12.5'	0.5'/2' 25%	50/0.3'	0.0	Moist				(12-12.4' bgs) - CONCRETE; FILL; no odor or visible impact (12.4-12.5' bgs) - Dark gray CINDERS; FILL; no odor but some ash-like material 12.5' bgs: END OF BORING	

AECOM
78 Main Street
Nyack, NY 10960
Phone: (845) 348-1520
Fax: (845) 348-1190

Boring Log

Boring ID: A4WVSB01

Project: Stuyvesant Town Former MGPs
Water Valve Borings
Project #: 01869-164

Client: Consolidated Edison

Pre-Clear Date: Unknown Depth: 5'

Start Date: Unknown End Date: 5/14/2008

Contractor: PEC

Operator: J. Bailey

Drill Rig Type: Truck-Mounted

Method: Direct Push

Location # 1 Total Depth (ft): 20'

Location: Manhattan, New York

Northing: 206188.21 Easting: 989891.021
NY State Plane - Long Island Lambert

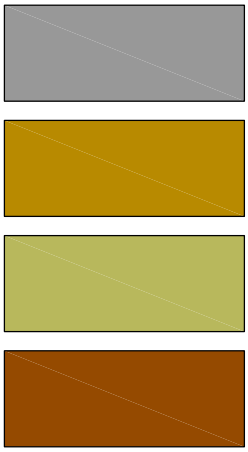
Surface Elevation (ft NAVD88): 15.136'

Water Level (ft bgs): 16'

Logged by: M. Stepanova, K. Kachel

SAMPLE						Depth (ft)	Lithology	Lithologic Description	Comments
Sample ID	Total Recovery	Blowcounts (per 6")	PID (ppm)	Moisture	USCS				
0' - 1'	N/A	N/A	Unk	Moist	Unk	0		(0-4' bgs) - Not Recorded	
1' - 2'	N/A	N/A	Unk	Moist					
2' - 3'	N/A	N/A	Unk	Moist					
3' - 4'	N/A	N/A	Unk	Moist					
4' - 5'	2.5'/4' 62.5%	N/A	0.1	Moist	SW	5		(4-5' bgs) - Loose to m-dense brown f-c grained SAND, tr f grained rounded gravel; FILL; no odor or visible impact 5' bgs: END OF PRECLEAR	
5' - 8'								(5-8.5' bgs) - Loose to m-dense brown f-c grained SAND, tr f grained rounded gravel; FILL; no odor but lt staining from 5.5' -5.7'	
8' - 12'	1.3'/4' 32.5%	N/A	4.8	Moist	N/A	10		(8.5-8.6' bgs) - Loose tan m-c grained SAND; FILL; wet; no odor or visible impact (8.6-12' bgs) - Red BRICK fragments; FILL; dry; no odor or visible impact	Analytical sample A4WVSB01 (8-12)
12' - 16'	2.5'/4' 62.5%	N/A	0.1	Moist	SW	15		(12-12.5' bgs) - Dense gray f-c grained angular SAND and f grained angular GRAVEL; FILL; moist; no odor or visible impact (12.5-12.9' bgs) - Red BRICK fragments; FILL; wet; no odor or visible impact (12.9-17.3' bgs) - Moderately dense brown f-c grained SAND, tr silt; FILL; wet; no odor or visible impact	
16' - 20'	3.4'/4' 85%	N/A	0.0	Wet	SP	20		(17.3-18.6' bgs) - Moderately dense brown f grained SAND, tr silt; FILL; wet; no odor or visible impact (18.6-20' bgs) - Dense brown f-c grained SAND, tr f grained rounded gravel and pyrite; FILL; no odor or visible impact 20' bgs: END OF BORING	Analytical sample A4WVSB01 (16-20)

GEI Soil Boring Logs



NOTE:

VISUAL IMPACT COLOR SCHEME IS UNIQUE TO THE BORING LOGS AND IS DIFFERENT FROM VISUAL IMPACT COLOR SCHEME SHOWN WITHIN THE FIGURES AND PLATES OF THE REPORT.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT TOWN FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**BORING LOG VISUAL IMPACT COLOR KEY**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

I:\GEI\CON_ED\STUYVESANT\060660\Interim RI\Figures\ Stuyvesant-boring log legend.dwg \Sep 10, 2007

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 1 of 4
ST14SB01

GROUND SURFACE ELEVATION (FT): 5.55 **LOCATION:** Inside Ave C Garage #5 (Btwn Cols 431 & 433)
NORTHING: 205125.53 **EASTING:** 990807.55 **TOTAL DEPTH (FT):** 39.80
DRILLED BY: Aquifer Drilling & Testing, Inc. / Scott Przybylski **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: April Krause **DATE START / END:** 3/28/2006 - 3/28/2006
DRILLING DETAILS: Direct Push / 54LT Propane Geoprobe
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0							0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW CONCRETE SURFACE; soil-gas point installed (ST14SV01).
5	S-1	3.0	26	2					5 - 8.5 SILTY SAND WITH GRAVEL (SM); ~70% sand; fine, ~15% fines, ~15% gravel, wet, brown and blackish gray, FILL, minor ash content, slight black staining.
	S-2	4.0	48						8.5 - 11 SILTY SAND (SM); ~70% sand; medium, ~30% fines, wet, dark brown and black, FILL.
10									

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
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BORING LOG
PAGE 2 of 4
ST14SB01

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
10				1.8					11 - 14.5 NARROWLY GRADED SAND WITH SILT (SP-SM); ~70% sand; fine, <15% fines, <15% fine gravel, dry, brown and dark brown, FILL, porcelain pieces.
	S-3	4.0	16						
				2.7				ST14SB01 (12-16)	14.5 - 16 SILTY CLAY (CL-ML); moist to wet, brown and gray, sample collected from bottom 8 inches of recovery.
15									
	S-4	4.0	24						16 - 18 SILTY CLAY (CL-ML); moist to wet, brown and gray.
				3			SLO		18 - 20 CLAYEY ORGANIC SOIL (OL); moderate sulfur-like odor, dry, PEAT, grades to silty fine sand, slight black staining.
20	S-5	4.0	34.8	2.5					20 - 24 SILTY SAND (SM); ~75% sand; fine, ~15% silt, <5% mica, <5% medium sand, wet, brown and gray.

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
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CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 3 of 4
ST14SB01

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
25	S-6	4.0	34	4.1				ST14SB01 (24-28)	24 - 28 SILT WITH SAND (ML); wet, gray.
30	S-7	4.0	48	61.2			PLO	ST14SB01 (28-32)	28 - 31 SILTY CLAY (CL-ML); varved, strong petroleum-like odor, wet, gray.
									31 - 33.5 SILTY SAND (SM); moderate petroleum-like odor, wet, gray.
	S-8	4.0	14				PLO		

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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CITY/STATE: Manhattan, New York
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BORING LOG

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ST14SB01

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
									33.5 - 34.5 CLAYEY SILT (MH); varved, wet, brownish gray.
				37			PLO		34.5 - 36 SILT WITH SAND (ML); moderate petroleum-like odor, wet, little mica, slight gray/black staining.
35	S-9	3.8	46	26.5				ST14SB01 (36-39.8)	36 - 39.8 SANDY SILT (ML); wet, brownish gray.
									Refusal at 39.8 feet. Bottom of borehole at 39.8 feet.

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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455 Winding Brook Dr
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CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
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BORING LOG
PAGE 1 of 1
ST14SB02

GROUND SURFACE ELEVATION (FT): 5.77 **LOCATION:** Inside Ave C Garage #5 (Btwn Cols 416 & 418)
NORTHING: 205063.18 **EASTING:** 990921.6 **TOTAL DEPTH (FT):** 3.90
DRILLED BY: Aquifer Drilling & Testing, Inc. / Scott Przybylski **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: April Krause **DATE START / END:** 3/29/2006 - 3/29/2006
DRILLING DETAILS: Direct Push / 54LT Propane Geoprobe
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN FT.	SAMPLE INFO: REC IN.	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0	S-1	3.9	28.8		ST14SB02 (0-0.2)	0 - 3.9 FILL, MANUAL AND VACTRON CLEARANCE TO 3.9 FT BELOW CONCRETE; soil-gas point installed, but compromised.

Refusal at 3.9 feet.
Bottom of borehole at 3.9 feet.

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 1 of 8
ST14SB03

GROUND SURFACE ELEVATION (FT): 6.47 **LOCATION:** Ave C and E 15th St
NORTHING: 204923.07 **EASTING:** 991045.72 **TOTAL DEPTH (FT):** 85.50
DRILLED BY: Aquifer Drilling & Testing, Inc. / Bernie Cruz **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: Ryan McGuire **DATE START / END:** 4/13/2006 - 4/14/2006
DRILLING DETAILS: Hollow Stem Auger/Mud Rotary / Track Mounted CC-55
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0									0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW CONCRETE SURFACE; soil-gas point installed (ST14SV03).
5	S-1	2.0	0	2-2-3-4					5 - 7 1.5" piece of coarse gravel stuck in tip of spoon caused NO RECOVERY.
	S-2	2.0	5	2-3-3-3					7 - 9 WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); fine to medium, rounded, max. size 1 in., wet.
	S-3	2.0	14	1-0-1-0					9 - 10.1 NARROWLY GRADED SAND WITH SILT (SP-SM); ~75% sand; medium, <15% gravel, ~10% fines, wet, light brown.
10									

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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PROJECT NAME: Stuyvesant Town RI
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BORING LOG
PAGE 2 of 8
ST14SB03

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
10									10.1 - 11 WIDELY GRADED SAND WITH SILT (SW-SM); coarse, wet, black, with organics (wood) and fill material.
	S-4	2.0	6	1-0-1-1	0.4				11 - 13 NARROWLY GRADED SAND WITH SILT (SP-SM); <15% gravel, wet, dark brown.
	S-5	2.0	18	4-4-6-7	0.7			ST14SB03 (13-15)	13 - 15 WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); wet, black.
15	S-6	2.0	6	2-2-2-3	0.6				15 - 17.75 WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); wet, light brown, oyster shells.
	S-7	2.0	18	1-1-1-2	1.3				17.75 - 19 SANDY LEAN CLAY (CL); dark gray, strips of fabric.
	S-8	2.0	10	5-5-6-7	1.2				19 - 21 WIDELY GRADED SAND (SW); coarse, red and gray.
20	S-9	2.0	12	WOR-WOR-3-4	0.6				21 - 22.3 CLAY (CL); dark gray and black.

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
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BORING LOG
PAGE 3 of 8
ST14SB03

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
									22.3 - 23 NARROWLY GRADED SAND (SP); ~85% sand; medium, <15% gravel.
	S-10	2.0	12	13-15-17-17	0.9				23 - 25 NARROWLY GRADED SAND (SP); ~85% sand; medium, <15% gravel, red and gray, quartz.
25	S-11	2.0	20	5-6-4-5	0.9				25 - 25.4 NARROWLY GRADED SAND (SP); ~95% sand; fine, <5% fines, gray. 25.4 - 28.2 CLAYEY SAND (SC); ~85% sand; ~15% fines.
	S-12	2.0	20	12-12-8-7	0.6				28.2 - 28.3 CLAYEY SILT (ML); olive. 28.3 - 29.7 WIDELY GRADED SAND (SW); medium, multi-colored.
	S-13	2.0	18	5-6-5-5	0.7				29.7 - 30.7 CLAY (CL); lensed, olive and brown, lean clay to sand layers, weathered stone, black with mica, schisty at 30.7.
30									30.7 - 31.3 SILTY SAND (SM); fine.
	S-14	2.0	20	8-9-10-5	1.2				31.3 - 32.3 SANDY LEAN CLAY (CL); layered, olive and brown.
									32.3 - 33 NARROWLY GRADED SAND WITH CLAY (SP-SC); fine, light brown.
	S-15	2.0	18	2-3-2-5					33 - 33.4 CLAYEY SAND (SC).

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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CITY/STATE: Manhattan, New York
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BORING LOG
PAGE 4 of 8
ST14SB03

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
									33.4 - 38.5 NARROWLY GRADED SAND WITH CLAY (SP-SC); fine, brown.
35	S-16	2.0	18	10-9-7-7	7.6			ST14SB03 (35-37)	
	S-17	2.0	16	WOR-WOR-5-5					
									38.5 - 45 NARROWLY GRADED SAND (SP); ~95% sand; ~5% clay.
40	S-18	2.0	22	WOR-WOR-4-4	0.5				
	S-19	2.0	22	3-5-7-6	1.4				
	S-20	2.0	12	4-4-5-4	3.3				
45									

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GEI Consultants, Inc.
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BORING LOG
PAGE 5 of 8
ST14SB03

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
45	S-21	2.0	18	2-2-3-3	2.4				45 - 47 NARROWLY GRADED SAND WITH CLAY (SP-SC); brown, 46.7-47 slight odor.
	S-22	2.0	20	5-7-9-8	13.0				47 - 49 NARROWLY GRADED SAND WITH CLAY (SP-SC); layered, brownish gray.
50	S-23	2.0	16	5-5-6-6	9.5				49 - 51 NARROWLY GRADED SAND (SP); fine, brown and gray, slight odor.
	S-24	2.0	20	12-11-8-10	4.4				51 - 54.8 NARROWLY GRADED SAND (SP); lensed, fine, brown, with lenses of black and white medium sand.
	S-25	2.0	20	4-4-5-6	2.8		PLO		54.8 - 55 NARROWLY GRADED SAND (SP); medium, slight petroleum-like odor, gray and reddish orange.
55	S-26	0.6	12	7-6-8-20	3.3			ST14SB03 (55-57)	55 - 56.3 NARROWLY GRADED SAND WITH CLAY (SP-SC); fine, gray, slight odors.
									56.3 - 57 WIDELY GRADED SAND (SW); medium coarse,

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 6 of 8
ST14SB03

DEPTH FT.	SAMPLE INFORMATION					STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)				
									moderate odors.
	S-27	2.0	12	12-17-23-36	0.6				57 - 67 WIDELY GRADED SAND (SW); coarse, <15% rounded stone, multi colored.
	S-28	2.0	19	30-30-30-33	0.4				
60									
	S-29	2.0	10	15-12-17-20	0.2				
	S-30	2.0	18	15-18-20-21	0.2				
65	S-31	2.0	12	11-13-21-16	0.4				
	S-32	2.0	20		0.3				67 - 70.5 WIDELY GRADED SAND (SW); ~85% sand; medium to coarse, <15% rock fragments, max. size 0.25 in., gray and black, trace quartz.

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ENVIRONMENTAL BORING LOG STR1 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG

ST14SB03

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	S-33	2.0	24	15-14-18-20	1.1				
70									70.5 - 73 WIDELY GRADED SAND (SW); fine to medium, with mica.
	S-34	2.0	14	20-20-20-20	0.4			ST14SB03 (71-73)	
	S-35	2.0	12	28-26-30-19	0				73 - 75 NARROWLY GRADED SAND (SP); fine to medium, moist, gray, mica.
75	S-36	2.0	16	31-23-27-21	0.2				75 - 80.4 NARROWLY GRADED SAND (SP); fine, moist, gray.
	S-37	2.0	15	24-26-28-30					
	S-38	2.0	17.5	30-32-35-39					
80									

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BORING LOG
PAGE 8 of 8
ST14SB03

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
80									80.4 - 81 SILTY SAND WITH GRAVEL (SM); low plasticity, ~65% sand; fine to medium, ~20% silty fines, ~15% subangular gravel, gray.
	S-39	2.0	16	12-19-19-20					81 - 81.75 NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand; ~10% silty fines, ~10% rounded gravel, max. size 1 in., moist, gray.
									81.75 - 82.25 NARROWLY GRADED SAND (SP); ~95% sand; fine, <5% fines, gray.
									82.25 - 83 SILTY SAND WITH GRAVEL (SM); low plasticity, ~65% sand; fine, ~20% silty fines, ~15% gravel, gray.
	S-40	2.0	24	14-17-21-50/6	0			ST14SB03 (84-86)	83 - 84.5 NARROWLY GRADED SAND (SP); ~95% sand; fine, <5% fines, moist, gray.
									84.5 - 84.7 SILTY SAND WITH GRAVEL (SM); low plasticity, ~75% sand; ~15% gravel, ~10% silty fines, gray.
85	S-41	0.5	6	NA	0				84.7 - 85 NARROWLY GRADED SAND (SP); ~85% sand; fine, ~10% gravel, <5% fines, moist, gray, crushed peice of bedrock at bottom of sample.
									85 - 85.5 NARROWLY GRADED SAND (SP); ~90% sand; fine, ~10% subangular gravel, max. size 1 in., crushed bedrock at bottom of sample.
									Refusal at 85.5 feet.
									Bottom of borehole at 85.5 feet.

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
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Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 1 of 6
ST14SB04

GROUND SURFACE ELEVATION (FT): 6.99 **LOCATION:** Ave C and E 14th St ST14MWDD01
NORTHING: 204808.75 **EASTING:** 990943.98 **TOTAL DEPTH (FT):** 57.00
DRILLED BY: Aquifer Drilling & Testing, Inc. / Tony Palomegue **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: April Krause **DATE START / END:** 4/11/2006 - 4/12/2006
DRILLING DETAILS: Hollow Stem Auger / Track Mounted CC-55
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
0		5.0							ST14SB04 (2-4)	0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW CONCRETE SURFACE; soil-gas point installed (ST14SV04).	
5	S-1	2.0	3	2-2-2-1	0.5					5 - 7 WIDELY GRADED SAND (SW); fine to medium, moist to wet, brown and black, FILL, cinder and clinker.	
	S-2	2.0	8	4-3-3-3	0.7					7 - 8 WIDELY GRADED SAND (SW); ~85% sand; fine to medium, moist to wet, brown, FILL, ~15% brick and gravel.	
										8 - 9 SILTY SAND (SM); ~95% sand; fine, ~5% coarse gravel, moist to wet, black, FILL.	
	S-3	2.0	0	WOR-WOR-1-1	0.0			PLO		9 - 11 WIDELY GRADED SAND (SW); ~80% sand; ~20% fine gravel, slight petroleum-like odor, moist, brown, FILL, plastic, hair, in shoe.	
10											

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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Glastonbury, CT 06033

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PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 2 of 6
ST14SB04

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
10								PLO			
	S-4	2.0	14	WOR-WOR-WOR-1	0.9					11 - 11.6 NARROWLY GRADED GRAVEL (GP); wet, black. 11.6 - 13 SILTY SAND (SM); ~90% sand; fine, ~5% coarse gravel, wet, black, FILL, ~5% shells, slightly cohesive, soft.	
	S-5	2.0	0	2-2-1-1						13 - 15 NO RECOVERY.	
15	S-6	2.0	24	1-1-1-1	1.9 1.3			OLO	ST14SB04 (15-17)	15 - 16.6 CLAY (CL); ~10% silt, gray, FILL, soft. 16.6 - 17 CLAYEY SILT (ML); layered, ~5% fine sand, moderate organic-like odor, yellowish brown, FILL, organics (peat).	
	S-7	2.0	8	2-3-5-8	0.6			PLO		17 - 19 NARROWLY GRADED SAND (SP); ~95% sand; medium, ~5% silt, slight petroleum-like odor, wet, brown and gray, FILL, gray stained.	
	S-8	2.0	18	7-8-8-10	1.1			PLO		19 - 21 WIDELY GRADED SAND (SW); ~95% sand; fine to medium, ~5% silt, moderate petroleum-like odor, wet, brown and gray, FILL, gray stained.	
20	S-9	2.0	18	2-2-2-2						21 - 23 WIDELY GRADED SAND (SW); ~95% sand; fine to medium, ~5% silt, wet, brown and	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 3 of 6
ST14SB04

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
										gray, FILL, very soft, loose.	
	S-10	2.0	24	8-8-9-10	2.2					23 - 25.4 WIDELY GRADED SAND (SW); ~95% sand; fine to medium, ~5% silt, wet, brown and gray, FILL, wood pieces.	
25	S-11	2.0	18	5-5-6-5	1.7					25.4 - 26.3 CLAY (CL); ~10% silt, reddish brown, FILL, soft to medium.	
										26.3 - 27 CLAYEY SILT (ML); varved, reddish brown and gray, slightly friable.	
	S-12	2.0	24	7-10-13-13						27 - 28.33 CLAYEY SILT (ML); varved, wet, reddish brown and gray, very soft.	
										28.33 - 28.8 CLAYEY SILT (ML); varved, reddish brown and gray, moderately pliable (more clay than above).	
	S-13	2.0	19	8-7-6-7	2.6					28.8 - 29 NARROWLY GRADED SAND (SP); coarse.	
30										29 - 29.7 CLAYEY SILT (ML); varved, reddish brown and gray, moderately pliable (more clay than 27' interval).	
										29.7 - 31 NARROWLY GRADED SAND (SP); ~95% sand; coarse, ~5% silt, wet.	
	S-14	2.0	24	15-13-17-15	5.5					31 - 41 WIDELY GRADED SAND (SW); ~95% sand; medium to coarse, ~5% silt, wet, very faint odor.	
	S-15	2.0	18	2-3-2-5	1.3						

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants

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CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
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BORING LOG
PAGE 4 of 6
ST14SB04

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
35	S-16	2.0	24	15-10-8-8	2.8						
	S-17	2.0	24	12-11-10-9	5.4						
40	S-18	2.0	24	7-5-8-11	1.6						
	S-19	2.0	17	7-7-8-13	1.3					41 - 43 WIDELY GRADED SAND (SW); ~95% sand; medium to coarse, ~5% silt, wet, very faint odor, varved silty clay lenses along side of spoon (possibly sluff).	
	S-20	2.0	15	9-11-10-9	3.0					43 - 45 NARROWLY GRADED SAND (SP); ~95% sand; coarse, ~5% silt, wet, brown and gray.	
45											

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
PAGE 5 of 6
ST14SB04

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
45	S-21	2.0	18	7-5-7-11	6.4					45 - 46.3 NARROWLY GRADED SAND (SP); ~95% sand; coarse, ~5% silt, wet, brown.	
								NLO		46.3 - 47 NARROWLY GRADED SAND (SP); ~95% sand; coarse, ~5% silt, slight naphthalene-like odor, wet, black.	
	S-22	2.0	16	7-9-12-12	2.7			NLO		47 - 49 NARROWLY GRADED SAND (SP); ~95% sand; coarse, ~5% silt, moderate naphthalene-like odor, wet, black, very slight sheen in water in spoon.	
	S-23	2.0	18	5-6-7-6	3.5			NLO		49 - 50.6 NARROWLY GRADED SAND (SP); ~95% sand; coarse, ~5% silt, slight naphthalene-like odor, wet, black to dark gray.	
50					6.8					50.6 - 51 SILTY CLAY (CL); gray.	
	S-24	2.0	24	14-15-17-19	3.5					51 - 53 NARROWLY GRADED SAND (SP); ~80% sand; medium, ~15% mica, ~5% silt, dark gray and white, compact.	
	S-25	2.0	14	7-6-7-50/1				NLO	ST14SB04 (53-55)	53 - 54.5 WIDELY GRADED SAND (SW); fine to medium, slight naphthalene-like odor, gray, odor is in tip of spoon.	
55										54.5 - 55 Black and white, SCHIST fragments, angular cobbles, striated. 55 - 57 Drive and wash to 57' to confirm bedrock.	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc. 455 Winding Brook Dr Glastonbury, CT 06033	CLIENT: Consolidated Edison Co. of NY, Inc. PROJECT NAME: Stuyvesant Town RI CITY/STATE: Manhattan, New York GEI PROJECT NUMBER: 060660	BORING LOG PAGE 6 of 6 ST14SB04

DEPTH FT.	SAMPLE INFORMATION					STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)						
										Bottom of borehole at 57.0 feet.	

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PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
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BORING LOG
PAGE 1 of 5
ST14SB05/MWDD02

GROUND SURFACE ELEVATION (FT): 8.37 **LOCATION:** E 14th St (Btwn 625 & 635 E 14th St)
NORTHING: 204884.44 **EASTING:** 990762.08 **TOTAL DEPTH (FT):** 49.50
DRILLED BY: Aquifer Drilling & Testing, Inc. / Tony Palomegue **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: Serkan Talip **DATE START / END:** 4/17/2006 - 4/17/2006
DRILLING DETAILS: Hollow Stem Auger / Track Mounted CC-55
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
0		5.0								0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW BRICK SURFACE; soil-gas point installed (ST14SV05).	
5	S-1	2.0	6	1-2-4-4	2.8					5 - 7.7 SILTY SAND WITH GRAVEL (SM); ~60% sand; ~25% gravel, ~15% silty fines, brick fragments, dry, light brown to brown, FILL.	
	S-2	2.0	14	2-5-5-7	6.2					7.7 - 8 Dry, FILL, CRUSHED ROCK.	
							PLO			8 - 9 WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand; fine to medium, <15% silty fines, slight petroleum-like odor, dry, blackish brown, FILL, black staining.	
	S-3	2.0	8	1-1-1-2	4.2					9 - 11 WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand; ~10% silty fines, ~5%	
10											

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
PAGE 2 of 5
ST14SB05/MWDD02

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
10										gravel, moist to wet, brown, FILL, brick and crushed rock.	
	S-4	2.0	4	2-3-3-3	NA					11 - 13 WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand; ~10% silty fines, moist, brown, FILL.	
	S-5	2.0	7	10-10-7-4	NA					13 - 17 Rock fragments, FILL, CRUSHED ROCK.	
15	S-6	2.0	6	12-10-8-7	NA						
	S-7	2.0	7	2-3-5-8	2.3			NLO		17 - 19 SILTY SAND (SM); ~85% sand; ~15% silt, slight naphthalene-like odor, brown, FILL.	
	S-8	2.0	12	29-22-12-15	16.6			NLO	ST14SB05 (19-21)	19 - 19.8 WIDELY GRADED SAND (SW); medium to coarse, moderate naphthalene-like odor, moist, gray, FILL.	
20								NLO		19.8 - 20.5 SILTY SAND WITH GRAVEL (SM); ~55% sand; ~25% gravel, ~20% silt, strong naphthalene-like odor, moist, blackish brown, FILL, wood chips, black staining, FILL-like material.	
	S-9	2.0	9	10-11-13-14				NLO		20.5 - 21 WIDELY GRADED SAND WITH GRAVEL (SW); moist, brown, FILL, fragments of	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 3 of 5
ST14SB05/MWDD02

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
					50.5			NLO NLO		sandstone. 21 - 22 SILTY SAND WITH GRAVEL (SM); ~70% sand; ~15% gravel with rock fragments, ~15% fines, moderate naphthalene-like odor, gray, FILL.	
	S-10	2.0	12	9-9-11-9	28.6			NLO NLO	ST14SB05 (23-25)	22 - 23 WIDELY GRADED SAND (SW); ~95% sand; medium to coarse, ~5% fines, moderate naphthalene-like odor, brown, fragments of sandstone. 23 - 23.7 SILTY SAND (SM); ~75% sand; ~25% fines, moderate naphthalene-like odor, gray, black staining.	
25	S-11	2.0	24	7-5-8-10	113			NLO NLO	ST14SB05 (25-27)	23.7 - 25 SILTY SAND WITH GRAVEL (SM); ~65% sand; well rounded, ~20% gravel, ~15% fines, moderate naphthalene-like odor, light brown. 25 - 26.6 SILTY SAND (SM); ~75% sand; ~25% fines, moderate naphthalene-like odor, wet, black, petroleum mixed odor, blebs, sheen visible.	
	S-12	2.0	14	9-9-8-7	25.9			NLO		26.6 - 27 SILT (ML); low plastic, ~90% fines; ~10% sand, slight naphthalene-like odor, moist, red and gray, alternating colored layers. 27 - 29 SANDY LEAN CLAY (CL); medium plasticity, ~70% fines; ~30% sand, slight naphthalene-like odor, moist, red and gray, alternating colored layers, pockets of fine sand, veins of tar.	
30	S-13	2.0	16	4-6-4-7	7.4			NLO NLO		29 - 30.5 SANDY LEAN CLAY (CL); medium plasticity, ~70% fines; ~30% sand, moderate naphthalene-like odor, moist, red and gray, alternating colored layers.	
	S-14	2.0	8	11-9-10-10	8.6			NLO NLO		30.5 - 31 SILTY SAND (SM); ~75% sand; ~25% silty fines, moderate naphthalene-like odor, dry, brown, pieces of rock. 31 - 32.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~85% sand; medium to coarse, ~10% rock fragments, ~5% fines, slight naphthalene-like odor, dry. 32.5 - 33 SANDY LEAN CLAY (CL); medium plasticity, ~30% sand, slight naphthalene-like odor, dry, red.	
	S-15	2.0	3	10-9-11-	6.8			NLO			

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 4 of 5
ST14SB05/MWDD02

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
				15				NLO		33 - 35 WIDELY GRADED SAND (SW); ~85% sand; medium to coarse, ~10% rock fragments, ~5% fines, moderate naphthalene-like odor, dry, brown.	
35	S-16	2.0	0	12-11-11-13				NLO		35 - 37 Slight naphthalene-like odor, NO RECOVERY, rock in spoon tip.	
	S-17	2.0	4	24-19-16-15	5.1					37 - 39.5 SANDY LEAN CLAY (CL); medium plasticity, ~30% sand, red.	
	S-18	2.0	14	20-21-19-23	7.5						
40										39.5 - 42.5 NARROWLY GRADED SAND WITH GRAVEL (SP); ~75% sand; fine, ~20% gravel, ~5% fines, slight naphthalene-like odor, moist, light brown and gray, cohesive, mica.	
	S-19	2.0	12	18-20-22-19				NLO			
										42.5 - 43 SANDY LEAN CLAY WITH GRAVEL (CL); low plasticity, ~70% fines; ~15% gravel, ~15% sand, moist, red, greenish-black rock at tip of spoon.	
	S-20	2.0	16	24-25-18-22				NLO		43 - 44.8 NARROWLY GRADED SAND (SP); ~95% sand; fine, ~5% fines, slight naphthalene-like odor, moist, light brown to black, crushed bedrock at bottom of spoon.	
45											

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

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PROJECT NAME: Stuyvesant Town RI
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BORING LOG
PAGE 5 of 5
ST14SB05/MWDD02

DEPTH FT.	SAMPLE INFORMATION					STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)						
45	S-21	2.0	12	NA	NA					44.8 - 45 SANDY LEAN CLAY WITH GRAVEL (CL); low plasticity, ~70% fines; ~15% gravel, ~15% sand, moist, gray. 45 - 47 CLAYEY SAND WITH GRAVEL (SC); ~50% sand; fine, ~25% gravel, ~25% fines, faint undetermined odors.	
	S-22	2.0	12	NA	NA				ST14SB05 (48-49)	47 - 49 CLAYEY SAND WITH GRAVEL (SC); ~50% sand; fine, ~25% gravel, ~25% fines, crushed bedrock at bottom of spoon.	
										Refusal at 49.5 feet. Bottom of borehole at 49.5 feet.	

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GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 1 of 6
ST14SB06

GROUND SURFACE ELEVATION (FT): 5.48 **LOCATION:** Ave C and E 15th St ST14MWDD03
NORTHING: 204845.63 **EASTING:** 991127.3 **TOTAL DEPTH (FT):** 58.00
DRILLED BY: Aquifer Drilling & Testing, Inc. / Bernie Cruz **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: April Krause **DATE START / END:** 5/4/2006 - 5/11/2006
DRILLING DETAILS: Hollow Stem Auger/Mud Rotary
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
0		5.0								0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW CONCRETE SURFACE.	
5	S-1	2.0	9	2-2-2-5	5.4					5 - 5.9 SILTY SAND WITH GRAVEL (SM); ~30% gravel, brown, FILL.	
										5.9 - 8.6 SILTY SAND (SM); fine, strong petroleum-like odor, wet, FILL, black stained and oil-like coating.	
	S-2	2.0	12	4-3-50/5				PLO			
										8.6 - 9 FILL, PORCELAIN AND WOOD.	
10	S-3	2.0	12	14-10-17-39	4.6					9 - 10 SILTY GRAVEL (GM); low plasticity, <5% clay, wet, light gray, FILL, oil-like product sheen.	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
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BORING LOG
PAGE 2 of 6
ST14SB06

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
10								PLO		10 - 11 Strong petroleum-like odor, wet, black, FILL, organics, wood brick, rock fragments, gravel, petroleum coating and sheen.	
	S-4	2.0	12	12-6-4-50/5	1.8					11 - 13 WIDELY GRADED SAND (SW); wet, brown and gray, FILL, brick and rock fragments bottom 3", slight stain and sheen, faint odor.	
	S-5	2.0	5	49-50/1						13 - 13.4 SANDY ORGANIC SOIL (OL); wet, gray, FILL.	
								PLO		13.4 - 15 Moderate petroleum-like odor, spoon refusal, likely on solid wood.	
15	S-6	2.0	17	5-25-27-12						15 - 16.33 WIDELY GRADED SAND (SW); mottled, gravel, brick fragments, organics, wet, brown and yellow, FILL, wood.	
								CrLO		16.33 - 17 Strong creosote-like odor, wet, FILL, SOILD WOOD.	
	S-7	2.0	10	20-20-48-13	7.4					17 - 18 WIDELY GRADED SAND (SW); ~95% sand; medium to coarse, ~5% silt, wet, brown, FILL.	
										18 - 19 ORGANIC SOIL (OL); wet, FILL, wood.	
	S-8	2.0	4	4-3-1-5	2.5					19 - 20 Wet, FILL, BRICK, GRAVEL, WOOD.	
20										20 - 21 SILTY SAND (SM); medium plasticity, fine, ~5% clay, wet, brown and gray, FILL, minor gray/black stained.	
	S-9	2.0	18	17-12-16-17						21 - 21.66 SAND (SW); wet, FILL, wood, slight sheen in spoon (possible wash).	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 3 of 6
ST14SB06

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
								TLO		21.66 - 22 WIDELY GRADED SAND (SW); strong tar-like odor, wet, brown, sheen, tar blebs and staining. 22 - 23 WIDELY GRADED SAND (SW); wet, brown.	
	S-10	2.0	24	12-16-14-12				TLO	ST14SB06-2 (24-25)	23 - 24.75 WIDELY GRADED SAND (SW); strong tar-like odor, wet, brown, tar coating and sheen.	
25	S-11	2.0	17	8-12-18-20				TLO		24.75 - 25.66 NARROWLY GRADED SAND (SP); coarse, strong tar-like odor, wet, tar saturated. 25.66 - 27 NARROWLY GRADED SAND (SP); fine, <5% gravel, reddish brown, micaceous.	
	S-12	2.0	19	17-19-33-33						27 - 28.6 CLAY WITH SAND (CL); varved, fine sand, gray and reddish brown, alternating layers, dense (minor tar staining possibly from spoon passing thru tar material above). 28.6 - 29 NARROWLY GRADED SAND (SP); medium, reddish brown and purple, micaceous.	
	S-13	2.0	8.5	4-5-5-2						29 - 31.6 NARROWLY GRADED SAND WITH GRAVEL (SP); ~75% sand; coarse, ~25% medium gravel, wet, brown.	
30	S-14	2.0	14.5	12-15-20-25					ST14SB06-2 (31-33)	31.6 - 33 SILT WITH SAND (ML); varved, fine sand, gray and reddish brown, micaceous.	
	S-15	2.0	13	11-11-	0.5					33 - 35 NARROWLY GRADED	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants

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455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
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BORING LOG
PAGE 4 of 6
ST14SB06

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
				10-14						SAND (SP); varved, fine, wet, red to brown, micaceous.	
35	S-16	2.0	18	9-14-32-36	0.5				ST14SB06-2 (35-37)	35 - 37 NARROWLY GRADED SAND (SP); varved, fine, moist to wet, red to brown, micaceous, 0.5-1" thick lenes of gray sandy silt with ~15% clay.	
	S-17	2.0	18	11-13-19-20	0.4					37 - 43 NARROWLY GRADED SAND (SP); varved, fine, moist, red to brown, micaceous, 0.5-1" thick lenes of gray sandy silt with ~15% clay (more silt than above).	
40	S-18	2.0	19	10-14-14-15	0.5						
	S-19	2.0	18	5-12-15-20	0.7						
	S-20	2.0	12	6-14-16-16	0.9					43 - 47 NARROWLY GRADED SAND (SP); varved, fine, moist, red to brown, micaceous, thinner lenes of gray sandy silt with ~15% clay (less silt than above).	
45											

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
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PROJECT NAME: Stuyvesant Town RI
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BORING LOG
PAGE 5 of 6
ST14SB06

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
45	S-21	2.0	10	13-10-12-30	0.4						
	S-22	2.0	3	20-22-38-38	0.8					47 - 49 NARROWLY GRADED SAND (SP); fine, <15% silt, wet, reddish brown and olive gray, micaceous.	
50	S-23	2.0	17	16-25-30-29	0.9					49 - 53 NARROWLY GRADED SAND (SP); layered, fine, <10% silt, wet, reddish brown and olive gray.	
	S-24	2.0	19	25-40-25-26	0.7						
	S-25	2.0	16	7-11-15-18	0.5				ST14SB06-2 (53-55)	53 - 56 SILTY SAND (SM); varved, fine, wet, brown and olive gray, rock fragments 55-56.	
55	S-26	1.0	12	9-50/1							
	S-27	2.0	15	35-5-8-10				PLO	ST14SB06-2 (56-57)	56 - 57.33 SAND WITH GRAVEL (SW); slight petroleum-like odor.	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG

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ST14SB06

DEPTH FT.	SAMPLE INFORMATION					STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)						
								PLO	ST14SB06-2 (57-58)	57.33 - 58 SILTY SAND (SM); varved, fine, ~15% clay, reddish brown and gray.	
										Bottom of borehole at 58.0 feet.	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 1 of 5
ST14SB08

GROUND SURFACE ELEVATION (FT): 5.73 **LOCATION:** Ave C and E 14th St ST14MWD05/DD05
NORTHING: 204701.51 **EASTING:** 991046.09 **TOTAL DEPTH (FT):** 51.00
DRILLED BY: Aquifer Drilling & Testing, Inc. / Jerry Heller **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: Serkan Talip **DATE START / END:** 5/2/2006 - 5/3/2006
DRILLING DETAILS: Hollow Stem Auger
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
0		5.0								0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW CONCRETE SURFACE.	
5	S-1	2.0	7	WOH-2-1-20				PLO		5 - 6 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand; medium to coarse, ~15% subrounded gravel, ~5% fines, brick fragments, dry, brown, FILL. 6 - 7 SILTY SAND (SM); non plastic, ~85% sand; fine, ~15% fines, slight petroleum-like odor, dry, brown to olive, FILL, black staining, piece of wood at end of spoon.	
	S-2	2.0	8	15-5-3-3				NLO		7 - 9 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand; medium to coarse, ~25% gravel, ~5% fines, brick fragments, slight naphthalene-like odor, wet, light brown to brown, FILL, piece of wood at end of spoon.	
10	S-3	2.0	13	12-5-30-50/2				CLO		9 - 11 Moderate chemical-like odor, moist, purpleish brown, FILL, pieces of wood (possible purifier material?) through out spoon, possible creosote-like	

NOTES:

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 2 of 5
ST14SB08

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
10								CLO		odor.	
	S-4	2.0	0	7-4-1-2	9.5					11 - 13 NO RECOVERY (WASH).	
	S-5	2.0	10	1-2-2-2	10.6					13 - 14.2 SILT WITH SAND (ML); low plastic, ~5% gravel, ~25% sand, max. size 0.125 in., moist, gray, FILL.	
										14.2 - 15 SILTY SAND (SM); non plastic, ~80% sand; fine, ~20% silty fines, wet, brown, FILL.	
15	S-6	2.0	12	1-2-3-3						15 - 17.75 NARROWLY GRADED SAND (SP); ~95% sand; fine, ~5% fines, wet, brown and gray, FILL.	
	S-7	2.0	21	5-7-7-7	28.6					17.75 - 18.5 NARROWLY GRADED SAND (SP); ~95% sand; medium, ~5% fines, wet, brown to gray, FILL.	
										18.5 - 19 NARROWLY GRADED SAND (SP); fine, wet, gray, FILL.	
	S-8	2.0	0	7-5-5-5						19 - 21 NO RECOVERY (WASH).	
20											
	S-9	2.0	6	6-7-8-12	8.6					21 - 23 SILT WITH SAND (ML); low plasticity, ~40% fine sand, moist to wet, reddish brown, FILL,	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG

ST14SB08

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
										pieces of wood.	
	S-10	2.0	0	8-12-14-10						23 - 25 NO RECOVERY (WASH with a piece of 3/4" subrounded shale).	
25	S-11	2.0	10	10-10-15-15	18.3					25 - 27 SANDY SILT (ML); low plasticity, ~30% fine sand, dry, reddish brown to gray.	
	S-12	2.0	12	15-8-12-20					ST14SB08 (27-29)	27 - 29 SANDY SILT (ML); low plasticity, ~30% fine sand, wet to moist, reddish brown to gray.	
	S-13	2.0	16	6-15-31-30						29 - 31 SANDY SILT (ML); ~30% fine sand, moist, reddish brown to gray.	
30	S-14	2.0	10	14-14-20-36						31 - 32.8 SANDY SILT (ML); ~30% sand, moist, reddish brown to gray.	
	S-15	2.0	22	11-14-	1.8					32.8 - 33 WIDELY GRADED SAND (SW); ~95% sand;	

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 4 of 5
ST14SB08

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
				18-22						medium to coarse, ~5% fines, moist, olive gray. 33 - 34.5 NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand; medium, ~10% silty fines, moist to wet, gray.	
35	S-16	2.0	16	10-13-19-22					ST14SB08 (35-37)	34.5 - 34.7 WIDELY GRADED SAND (SW); ~85% sand; medium to coarse, ~10% gravel, ~5% silty fines, gray. 34.7 - 35 NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand; medium, ~10% silty fines, ~5% gravel, dry, gray. 35 - 35.7 NARROWLY GRADED SAND (SP); ~95% sand; medium, ~5% silty fines, gray.	
	S-17	2.0	24	15-17-25-30						35.7 - 37 WIDELY GRADED SAND (SW); ~95% sand; medium to coarse, ~5% fines, gray. 37 - 39 NARROWLY GRADED SAND (SP); ~85% sand; medium, ~10% gravel, ~5% fines, olive gray.	
40	S-18	2.0	10	12-36-30-15	2.7					39 - 40.4 WIDELY GRADED SAND (SW); ~80% sand; fine to medium, ~10% subrounded gravel, ~10% silty fines, moist, brown. 40.4 - 41 Pieces of rock, some crushed.	
	S-19	2.0	12	9-14-18-20	1.1			NLO		41 - 48 WIDELY GRADED SAND (SW); medium to coarse, slight naphthalene-like odor, moist to wet, olive.	
	S-20	2.0	22	8-8-14-15	5.8				ST14SB08 (43-45)		
45											

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
PAGE 5 of 5
ST14SB08

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
45	S-21	2.0	24	22-17-26-39	0.6			NLO			
	S-22	2.0	21	11-13-29-33	0.8					48 - 48.4 WIDELY GRADED SAND (SW); fine to medium, brown. 48.4 - 48.9 SILT (ML); ~10% fine sand, reddish brown and olive. 48.9 - 49 SILTY SAND (SM); ~15% silty fines, olive. 49 - 49.5 WIDELY GRADED SAND (SW); medium to coarse, olive. 49.5 - 50 SILT WITH SAND (ML); layered, ~20% medium sand, reddish brown, and medium to coarse olive SAND.	
	S-23	2.0	24	8-15-25-33	0.3					50 - 50.8 SILTY SAND (SM); ~20% silt, olive and reddish brown. 50.8 - 51 NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand; medium, ~10% silty fines. Bottom of borehole at 51.0 feet.	
50									ST14SB08 (50-51)		

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ENVIRONMENTAL BORING LOG STRI 14TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 1 of 4
ST17SB01

GROUND SURFACE ELEVATION (FT): 11.75 **LOCATION:** Ave C Loop (Btwn 626 & 628 E 20th St)
NORTHING: 205856.73 **EASTING:** 991042.53 **TOTAL DEPTH (FT):** 35.00
DRILLED BY: Aquifer Drilling and Testing / Tony Palomegue **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: Lynn Willey and Ryan McGuire **DATE START / END:** 3/20/2006 - 3/22/2006
DRILLING DETAILS: Hollow Stem Auger / Track Mounted CC-55
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0							ST17SB01 (0-0.2)	0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW GROUND SURFACE; soil-gas point installed (ST17SV01).
5	S-1	2.0	12	4-12-13-8	0					5 - 5.9 SAND WITH GRAVEL (SP); ~50% sand; fine, ~25% gravel, dry, brown, FILL, ~25% fill (pieces of glass).
										5.9 - 7.3 NARROWLY GRADED SAND (SP); ~70% sand; medium, ~30% brick fragments, dry, FILL, refusal at 7.3', continue in new location on 3/22/06 with Lynn Willey logging.
	S-2	2.0	4	8-50/1	0 2.1					7.3 - 9 SILTY SAND (SM); homogeneous, ~70% sand; fine to medium, ~15% silt, max. size 1.5 in., damp, black and tan, FILL, ~15% fill (brick, coal, slag, ash).
10	S-3	2.0	12	5-4-7-4	0.9					9 - 11 SILTY SAND (SM); homogeneous, ~80% sand; fine to coarse, ~20% silt, dry, brown and tan, FILL, pieces of brick and coarse gravel.

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG

ST17SB01

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
10										
	S-4	2.0	5	7-3-2-2	0.5					11 - 15 SILTY SAND (SM); homogeneous, ~85% sand; fine, ~15% silt, moist, brown, FILL, brick and coarse sand in shoe.
	S-5	2.0	1	3-4-3-3						
15	S-6	2.0	5	2-2-5-2	0.5					15 - 17 SILT (ML); homogeneous, ~10% coarse gravel, coarse sand, max. size 0.75 in., wet, brown, FILL.
	S-7	2.0	4	3-2-2-2	0.5					17 - 19 SILTY SAND (SM); homogeneous, ~80% sand; fine to coarse, ~15% silt, ~5% gravel, wet, black, FILL.
	S-8	2.0	24	WOR-6-2-2	0.4					19 - 19.9 SILTY SAND (SM); homogeneous, ~85% sand; fine to coarse, ~15% silt, wet, black, FILL.
20										19.9 - 20.9 CLAY (CL); ~5% fine sand, ~5% roots, gray, FILL.
	S-9	2.0	22	WOR-WOR-2-2	0.6					20.9 - 21 WIDELY GRADED SAND (SW); homogeneous, ~95% sand; fine to medium, ~5% silt, wet, gray and black, FILL, glass.

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

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PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
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BORING LOG
PAGE 3 of 4
ST17SB01

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
										21 - 23 CLAY (CL); medium plasticity, ~5% fine sand, moist, FILL.
	S-10	2.0	24	2-2-3-4	1.1			PLO	ST17SB01 (23.5-25)	23 - 23.5 NARROWLY GRADED SAND (SP); ~85% sand; ~5% silt, <5% roots, slight petroleum-like odor, wet, black to gray, FILL, ~5-10% porcelain fragments and tin metal. 23.5 - 25 FAT CLAY (CH); high plasticity, wet, black, ~5% shell fragments.
25	S-11	2.0	18	WOR-WOR-WOR-WOR	8.2			PLO		25 - 27 FAT CLAY (CH); lensed, high plasticity, <5% fine sand, slight petroleum-like odor, wet, black.
	S-12	2.0	22	WOR-WOR-2-3	8.2			PLO NLO TLO		27 - 28.4 FAT CLAY (CH); high plasticity, slight petroleum-like odor, moist, black. 28.4 - 28.8 FAT CLAY (CH); high plasticity, moderate naphthalene-like odor, moist, black. 28.8 - 29 FAT CLAY (CH); high plasticity, moderate tar-like odor, moist, black, trace black coal tar stained around grass and fine sand.
	S-13	2.0	22	WOR-WOR-3-4	0			PLO PLO		29 - 30.1 FAT CLAY (CH); high plasticity, moderate petroleum-like odor, moist, black. 30.1 - 31 NARROWLY GRADED SAND (SP); ~95% sand; medium, ~5% silt, slight petroleum-like odor, wet, gray and brown.
30	S-14	2.0	13	6-6-9-7	1.8				ST17SB01 (31-33)	31 - 33 NARROWLY GRADED SAND (SP); homogeneous, ~95% sand; fine, ~5% silt, ~5% mica, wet, light brown.
	S-15	2.0	8	2-2-3-3	0					33 - 35 NARROWLY GRADED SAND (SP); ~95%

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
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GEI PROJECT NUMBER: 060660

BORING LOG

ST17SB01

DEPTH FT.	SAMPLE INFORMATION					STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)					
										sand; fine, <5% silt, wet, brown.
35										Bottom of borehole at 35.0 feet.

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
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BORING LOG
PAGE 1 of 3
ST17SB02

GROUND SURFACE ELEVATION (FT): 9.47 **LOCATION:** Ave C Loop (Btwn 628 E 20th & 315 Ave C)
NORTHING: 205788.29 **EASTING:** 991166.65 **TOTAL DEPTH (FT):** 31.00
DRILLED BY: Aquifer Drilling and Testing / Tony Palomegue **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: April Krause and Lynn Willey **DATE START / END:** 3/20/2006 - 3/24/2006
DRILLING DETAILS: Hollow Stem Auger / Track Mounted CC-55
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0						ST17SB02 (0-0.2)	0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW GROUND SURFACE; soil-gas point installed (ST17SV02).
								ST17SB02 (2-4)	
5	S-1	2.0	18	1-1-2-2	0.0				5 - 5.8 SILTY SAND (SM); ~60% sand; fine, ~40% silt, dry, brown, FILL.
									5.8 - 6.4 NARROWLY GRADED SAND (SP); ~100% sand; medium, dry, tan, FILL.
									6.4 - 9 NARROWLY GRADED SAND (SP); ~95% sand; fine, ~5% silt, dry, brown, FILL, refusal at 9', continue in new location on 3/24/06 with April Krause logging.
	S-2	2.0	16	4-4-3-2	NA				
	S-3	2.0	9	15-5-3-2	0.6				9 - 11 SILT WITH SAND (ML); ~15% fine sand, coal, moist, brown, FILL, gray and black staining.
10									

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG

ST17SB02

DEPTH FT.	SAMPLE INFORMATION					STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)				
10									
	S-4	2.0	6	1-3-2-1	0.2				11 - 13 SILTY SAND (SM); ~60% sand; fine to medium, ~40% silt, FILL.
	S-5	2.0	14	WOR-2-2-1	NA				13 - 15 SILT (ML); wet, gray and black, FILL, wood, brick.
15	S-6	2.0	12	WOR-1-2-3	0.2				15 - 16 SILT (ML); ~40% clay, black and gray, FILL, wood, brick.
									16 - 17 SILTY SAND (SM); ~85% sand; fine, ~15% silt, organics, wet, grayish brown and black, FILL.
	S-7	2.0	6	3-7-3-7	0.4				17 - 19 NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand; fine, ~10% silt, ~5% clay, wet, brown and gray, FILL.
	S-8	2.0	0	4-1-1-1					19 - 21 NO RECOVERY, running sands while drilling.
20									
	S-9	2.0	0	3-1-1-1					21 - 23 NO RECOVERY, running sands while drilling.

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ENVIRONMENTAL BORING LOG STR1 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 3 of 3
ST17SB02

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	S-10	2.0	0	6-4-3-4					23 - 25 NO RECOVERY, running sands while drilling.
25	S-11	2.0	14	2-2-2-2	3.4			ST17SB02 (25-27)	25 - 29 FAT CLAY (CH); high plasticity, ~35% silt, slight organic-like odor, wet, black and gray, FILL, metal shards and strips.
	S-12	2.0		2-2-4-5	NA		OLO		
	S-13	2.0	22	7-6-9-11	1.9				29 - 29.9 FAT CLAY (CH); high plasticity, ~35% silt, wet, black and gray, FILL, metal shards and strips, slight undetermined odors.
30					1.0			ST17SB02 (30-31)	29.9 - 30.4 NARROWLY GRADED SAND (SP); homogeneous, fine, wet, reddish brown, gray stained. 30.4 - 31 NARROWLY GRADED SAND (SP); fine, <5% mica, wet, reddish brown.
									Bottom of borehole at 31.0 feet.

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 1 of 5
ST17SB03/MWDD03

GROUND SURFACE ELEVATION (FT): 11.01 **LOCATION:** Ave C Loop (Btwn 10 & 15 Stuy Oval)
NORTHING: 205666.06 **EASTING:** 991054.94 **TOTAL DEPTH (FT):** 53.00
DRILLED BY: Aquifer Drilling and Testing / Tony Palomegue **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: Lynn Willey **DATE START / END:** 3/23/2006 - 3/23/2006
DRILLING DETAILS: Hollow Stem Auger / Track Mounted CC-55
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
0		5.0						ST17SB03 (0-0.2)	0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW CONCRETE SURFACE; soil-gas point installed (ST17SV03).	
								ST17SB03 (2-4)		
5	S-1	2.0	7	2-3-2-4	0.5				5 - 6.33 FILL, BACKFILL, bentonite and sand.	
									6.33 - 7 Red, FILL, BRICK FRAGMENTS, angular, coarse.	
	S-2	2.0	19	12-11-13-11	0.7			ST17SB03 (8-9)	7 - 7.5 NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand; fine, ~10% silt, ~5% gravel, moist, brown to gray, FILL. 7.5 - 9 WIDELY GRADED SAND (SW); ~60% sand; fine to medium, ~20% brick fragments, ~10% coarse gravel, ~5% silt, moist, dark brown to gray, FILL, ~5% ash.	
	S-3	2.0	2	1-1-2-2	0.8				9 - 11 WIDELY GRADED SAND (SW); homogeneous, ~95% sand; fine to coarse, ~5% silt, moist, brown to dark brown, FILL.	
10										

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG

ST17SB03/MWDD03

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
10										
	S-4	2.0	18	2-2-3-4	0.6				11 - 13 WIDELY GRADED SAND WITH SILT (SW-SM); homogeneous, ~85% sand; fine to medium, ~10% silt, ~5% fine gravel, wet, brown and gray, FILL, mottled.	
	S-5	2.0	0	1-1-1-2					13 - 15 NO RECOVERY.	
15	S-6	2.0		2-2-2-2	1.7				15 - 17 SILT (ML); homogeneous, low plasticity, ~10% fine sand, ~5% fine gravel, wet, brown, FILL.	
	S-7	2.0	1	3-2-2-2	0.7				17 - 19 SILT (ML); homogeneous, medium plasticity, wet, brown, FILL.	
	S-8	2.0	16	2-2-2-2	0.6				19 - 21 NARROWLY GRADED SAND (SP-SM); ~80% sand; fine, ~10% silt, brown and black, FILL, ~10% glass, wood chips, roots, ash.	
20	S-9	2.0	7	5-5-6-1					21 - 23 SILTY SAND (SM); low plasticity, ~70% sand; fine, ~30% silt, wet, dark brown, FILL.	

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BORING LOG
PAGE 3 of 5
ST17SB03/MWDD03

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	S-10	2.0	18	6-6-4-3	0.7				23 - 24 GRAVELLY SILT (ML); homogeneous, angular, wet, brown to gray, FILL.	
									24 - 25 SILTY SAND (SM); ~85% sand; fine, ~15% silt, wet, black, FILL, brick in shoe of spoon.	
25	S-11	2.0	14	3-3-4-5	0.6				25 - 25.8 NARROWLY GRADED GRAVEL (GP); homogeneous, ~100% gravel; coarse, angular, wet, black, FILL.	
									25.8 - 27 WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand; fine to medium, ~10% silt, wet, brown, FILL, red coarse brick fragments in bottom.	
	S-12	2.0	12	3-4-5-6	1.7				27 - 28 NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand; fine, ~10% silt, brick fragments, brown, FILL.	
									28 - 29 SILTY SAND (SM); homogeneous, low plasticity, ~85% sand; fine, ~15% silt, wet, gray.	
	S-13	2.0	18	3-3-3-4	4.9		TLO		29 - 29.3 CLAY (CH); homogeneous, high plasticity, moderate tar-like odor, black.	
30									29.3 - 29.9 SILTY SAND (SM); homogeneous, low plasticity, ~70% sand; fine, ~25% silt, ~5% fine gravel, wet, gray.	
									29.9 - 31 NARROWLY GRADED SAND (SP); ~95% sand; fine, ~5% silt, wet, brown.	
	S-14	2.0	14	7-7-7-9	0.6				31 - 33 NARROWLY GRADED SAND (SP); homogeneous, ~95% sand; fine, ~5% mica, wet, brown.	
	S-15	2.0	14	5-5-9-8	0.6				33 - 37 NARROWLY GRADED SAND	

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 4 of 5
ST17SB03/MWDD03

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
									(SP); homogeneous, ~95% sand; fine, ~5% silt, wet, brown.	
35	S-16	2.0	16	5-7-6-8	0.5					
	S-17	2.0	20	5-5-6-7	0.9				37 - 38.2 WIDELY GRADED SAND WITH SILT (SW-SM); homogeneous, ~85% sand; fine to coarse, ~10% silt, ~5% fine gravel, max. size 0.25 in., wet, brown. 38.2 - 39 CLAY WITH SAND (CL); homogeneous, medium plasticity, ~15% fine sand, wet, reddish brown.	
	S-18	2.0	18	4-4-4-4	0.8				39 - 39.5 WIDELY GRADED SAND (SW); homogeneous, ~95% sand; fine to coarse, ~5% silt, wet, brown. 39.5 - 41 SILT (ML); stratified, non plastic, wet, reddish brown, fine sand layers, micaceous silt.	
40	S-19	2.0	16	5-5-6-7	0.7				41 - 43 SILT (ML); homogeneous, ~5% fine sand, mica, wet, brown.	
	S-20	2.0	17	2-2-2-2	0.8				43 - 45 ELASTIC SILT (MH); varved, high plasticity, wet, brown, fine sand layers.	
45										

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
PAGE 5 of 5
ST17SB03/MWDD03

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
45	S-21	2.0	22	5-4-4-3	0.8				45 - 46.1 SILT WITH SAND (ML); varved, low plasticity, ~15% fine sand, wet, reddish brown.	
									46.1 - 47 SILTY SAND (SM); homogeneous, ~85% sand; fine, ~15% silt, wet, brown.	
	S-22	2.0	16	6-6-7-7	0.8				47 - 47.8 SILTY SAND (SM); layered, ~85% sand; fine, ~15% silt, wet, brown, with 1/4" layers of gray clay.	
									47.8 - 49 WIDELY GRADED SAND (SW); homogeneous, ~95% sand; fine to medium, ~5% silt, ~5% mica, wet, reddish brown.	
	S-23	2.0	8	5-4-3-3	1.0				49 - 49.6 SANDY CLAY (CL); medium plasticity, wet.	
50									49.6 - 51 WIDELY GRADED SAND (SW); homogeneous, ~95% sand; fine to medium, ~5% silt, wet, reddish brown.	
	S-24	2.0	19	18-25-26-16	0.7			ST17SB03 (51-52)	51 - 51.9 NARROWLY GRADED SAND (SP); homogeneous, ~85% sand; fine, <5% silt, ~10% mica, wet, brown to reddish brown.	
									51.9 - 52.4 CLAY (CL); varved, medium plasticity, moist, reddish brown to gray, fine sand varves.	
									52.4 - 53 SILT (ML); non plastic, mica, moist, reddish brown.	
									Bottom of borehole at 53.0 feet.	

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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Glastonbury, CT 06033

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PROJECT NAME: Stuyvesant Town RI
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BORING LOG
PAGE 1 of 5
ST17SB04/MWDD04

GROUND SURFACE ELEVATION (FT): 11.49 **LOCATION:** Ave C Loop (Btwn 285 &287 Ave C)
NORTHING: 205644.67 **EASTING:** 990952.71 **TOTAL DEPTH (FT):** 51.00
DRILLED BY: Aquifer Drilling and Testing / Tony Palomegue **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: Ryan McGuire **DATE START / END:** 3/21/2006 - 3/21/2006
DRILLING DETAILS: Hollow Stem Auger / Track Mounted CC-55
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
0		5.0							ST17SB04 (0-0.2)	0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW GROUND SURFACE; soil-gas point installed (ST17SV04).	
									ST17SB04 (2-4)		
5	S-1	2.0	10	NR	0.0					5 - 6.8 FILL, BACKFILL from soil gas point.	
	S-2	2.0	8	NR	NA					6.8 - 7 NARROWLY GRADED SAND (SP); medium, brown, FILL, with wood particles. 7 - 9 NARROWLY GRADED SAND (SP); ~95% sand; medium, ~5% silt, moist, brown, FILL, with wood particles.	
	S-3	2.0	0	4-2-1-1						9 - 11 NO RECOVERY.	
10											

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
PAGE 2 of 5
ST17SB04/MWDD04

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
10											
	S-4	2.0	0	NR						11 - 13 NO RECOVERY.	
	S-5	2.0	4	1-1-1-1	0.0					13 - 15 SILTY SAND (SM); homogeneous, ~80% sand; fine, ~15% silt, <5% brick fragments, wet, gray, FILL, red brick in shoe of spoon.	
15	S-6	2.0		WOR-WOR-1-1	12.3					15 - 17 NARROWLY GRADED SAND WITH SILT (SP-SM); homogeneous, ~90% sand; fine, ~10% silt, brick fragments, wet, gray, FILL, nodule of clay/silt.	
	S-7	2.0	24	3-3-4-2	0.2					17 - 17.4 NARROWLY GRADED SAND (SP); ~95% sand; fine, ~5% fine gravel, wet, dark gray, FILL. 17.4 - 19 NARROWLY GRADED SAND (SP); ~95% sand; fine, ~5% silt, wet, dark gray, FILL.	
	S-8	2.0	6	3-3-3-4	0.0					19 - 21 NARROWLY GRADED SAND (SP); ~95% sand; fine, ~5% silt, wet, dark gray, FILL, crushed brick and 1 1/2" crushed angular stone.	
20											
	S-9	2.0	10	2-1-1-1	0.0					21 - 22.6 NARROWLY GRADED SAND (SP); fine, wet, gray, FILL.	

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
PAGE 3 of 5
ST17SB04/MWDD04

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
										22.6 - 25 NARROWLY GRADED SAND (SP); fine, wet, gray, FILL, with pockets of darker sand.	
	S-10	2.0	4	WOR-WOR-WOR-1	0.0						
25	S-11	2.0	9	NR	1.7					25 - 26.6 NARROWLY GRADED SAND (SP); fine, wet, gray, FILL.	
					22.4			NLO		26.6 - 27 NARROWLY GRADED SAND (SP); fine, moderate naphthalene-like odor, wet, gray, FILL, black staining, glass pieces.	
	S-12	2.0	18	8-4-3-50/1	497			TLO	ST17SB04 (27-29)	27 - 28.3 NARROWLY GRADED SAND (SP); fine, moderate tar-like odor, gray, FILL, veins of black stained silt.	
								TLO		28.3 - 29 NARROWLY GRADED SAND (SP); fine, moderate tar-like odor, black, FILL, rounded stone pieces, stained, taffy-like coal tar, piece of metal, brick and a bolt in tip.	
	S-13	2.0	20	NR						29 - 29.8 NARROWLY GRADED SAND (SP); fine, wet, gray, FILL.	
30					837					29.8 - 30.5 NARROWLY GRADED SAND (SP); fine, gray, FILL, veins of black stained fine sand.	
								TLO		30.5 - 30.7 Moderate tar-like odor, FILL, metal pieces, steel, felt (2").	
	S-14	2.0	12	9-11-10-12				PLO		30.7 - 31 WIDELY GRADED SAND (SW); medium to coarse, brown, FILL, grading to medium sand with 40% silt and gravel.	
										31 - 31.8 NARROWLY GRADED GRAVEL (GP); coarse, brick fragments, slight petroleum-like odor, wet, red, FILL.	
	S-15	2.0	22	6-9-12-8	6.7			PLO		31.8 - 33 NARROWLY GRADED SAND (SP); homogeneous, ~80%	

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
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BORING LOG
PAGE 4 of 5
ST17SB04/MWDD04

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
								PLO		sand; fine, ~15% mica, ~5% silt, wet, gray, FILL. 33 - 35 NARROWLY GRADED SAND (SP); homogeneous, ~95% sand; fine, ~5% silt, slight petroleum-like odor, wet, gray, FILL, refusal at 35', continue in new location on 3/21/06 with Lynn Willey logging.	
35	S-16	2.0	18	5-7-5-9	5.4			NLO		35 - 36.1 WIDELY GRADED SAND (SW); homogeneous, ~90% sand; fine to medium, <5% silt, ~5% fine rounded gravel, slight naphthalene-like odor, wet, gray, FILL, small hair-like particles. 36.1 - 37 ELASTIC SILT (MH); varved, low plasticity, ~15% clayey fines, fine sand, mica, reddish brown, FILL.	
	S-17	2.0	13	8-7-7-10	2.6			NLO		37 - 39 ELASTIC SILT (MH); varved, low plasticity, ~15% clayey fines, slight naphthalene-like odor, moist, FILL, striated with fine sand layers.	
40	S-18	2.0	7	5-7-9-4	NA			NLO		39 - 41 SILT (ML); ~10% fine sand, ~10% mica, slight naphthalene-like odor, wet, reddish brown, FILL, rope with moderate coal tar-like odor in bottom.	
	S-19	2.0		5-7-9-11	97.6 4.5					41 - 43 ELASTIC SILT (MH); homogeneous, medium plasticity, <5% coarse sand, wet, reddish brown, FILL.	
	S-20	2.0	11	5-7-6-6	1.3					43 - 45 ELASTIC SILT (MH); homogeneous, medium plasticity, reddish brown to gray, FILL, piece of rope (?), <5% wood particles.	
45											

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 5 of 5
ST17SB04/MWDD04

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
45	S-21	2.0	16	5-4-3-3	2.4					45 - 46.4 SILT (ML); homogeneous, low plasticity, ~10% fine sand, wet, brown to reddish brown, FILL.	
										46.4 - 47 SILTY SAND (SM); laminated, wet, brown to gray, FILL.	
	S-22	2.0	13	5-7-5-9	1.8					47 - 48.5 ELASTIC SILT (MH); homogeneous, medium plasticity, <5% fine sand, wet, brown.	
										48.5 - 49 NARROWLY GRADED SAND (SP); homogeneous, fine, wet, brown.	
	S-23	2.0	16	5-6-7-4	2.1				ST17SB04 (49-51)	49 - 50.2 ELASTIC SILT (MH); homogeneous, <5% fine sand, <5% roots, wet, brown.	
50										50.2 - 51 WIDELY GRADED SAND (SW); homogeneous, fine to coarse, ~5% silt, wet, brown.	
										Bottom of borehole at 51.0 feet.	

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ENVIRONMENTAL BORING LOG STR1 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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Glastonbury, CT 06033

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PROJECT NAME: Stuyvesant Town RI
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BORING LOG
PAGE 1 of 5
ST17SB05

GROUND SURFACE ELEVATION (FT): 6.09 **LOCATION:** E 18th & Ave C (completed as MWS05/D05/DD05)
NORTHING: 205526.36 **EASTING:** 991381.31 **TOTAL DEPTH (FT):** 51.00
DRILLED BY: Aquifer Drilling and Testing / Jerry Heller **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: April Krause **DATE START / END:** 4/24/2006 - 4/24/2006
DRILLING DETAILS: Hollow Stem Auger / Track Mounted DC-50
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0						ST17SB05 (0-0.2)	0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW BRICK SURFACE; soil-gas point installed (ST17SV05).
								ST17SB05 (2-4)	
5	S-1	2.0	2	9-26-5-10	0.2			ST17SB05-2 (5-7)	5 - 7 WIDELY GRADED SAND (SW); brick fragments, wet, brown, FILL, black staining at tip.
	S-2	2.0	2	14-18-10-7	0.2				7 - 11 WIDELY GRADED SAND (SW); brick fragments, wet, brown and gray, FILL, wood.
10	S-3	2.0	4	6-2-2-6	NA				

WELL CONSTRUCTION DETAILS

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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PROJECT NAME: Stuyvesant Town RI
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BORING LOG
PAGE 2 of 5
ST17SB05

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
10										
	S-4	2.0	5	9-4-3-2	0.2				11 - 13 NARROWLY GRADED GRAVEL (GP); ~70% gravel; fine, ~30% silt, brick fragments, wet, black and gray, FILL.	
	S-5	2.0	6	4-4-3-4	NA				13 - 13.3 FILL, brick and wood. 13.3 - 14 SILTY SAND (SM); fine, brown, FILL. 14 - 15 SANDY SILT (ML); gray and black, FILL, wood.	
15	S-6	2.0	16	4-2-3-7	NA				15 - 15.9 GRAVEL (GW); ~30% sand, silt, brick fragments, FILL, very loose. 15.9 - 20 SANDY SILT (ML); fine sand, <5% coarse sand, wet, brown and gray, FILL, wood.	
	S-7	2.0	6	7-4-3-3	1.4					
	S-8	2.0	24	3-2-2-1	2.9					
20									20 - 21 CLAY (CL); moist to dry, gray, FILL, pliable.	
	S-9	2.0	15	2-2-3-2	NA				21 - 26.5 SILTY CLAY (CL); ~15% organics, wet, gray, FILL, pliable, 1.5" sandstone at 26.5.	

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
PAGE 3 of 5
ST17SB05

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	S-10	2.0	24	3-3-4-6	NA					
25	S-11	2.0	24	10-10-24-22	1.7		NLO	ST17SB05 (25-27)	26.5 - 27 WIDELY GRADED SAND (SW); ~95% sand; fine to coarse, ~5% fines, slight naphthalene-like odor, moist, FILL, not cohesive, light brown to olive sand lens.	
	S-12	2.0	24	WOH-4-3-4	2.0		NLO	ST17SB05 (27-29)	27 - 29 SILTY CLAY (CL); slight naphthalene-like odor, gray, FILL, porcelain pieces in middle.	
30	S-13	2.0	24	2-4-23-17	2.3		NLO		29 - 30.5 SILTY CLAY (CL); lensed, high plasticity, wet, black and dark gray, FILL, wood and cloth.	
	S-14	2.0	6	4-WOH-WOH-12	1.6				30.5 - 30.8 SILTY CLAY (CL); lensed, high plasticity, slight naphthalene-like odor, wet, black and dark gray, brown sandy lenses. 30.8 - 31 NARROWLY GRADED SAND (SP); medium, wet, light brown and gray. 31 - 33 WIDELY GRADED SAND (SW); fine to medium, brown.	
	S-15	2.0	24	10-9-10-	2.3				33 - 37 NARROWLY GRADED SAND	

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
PAGE 4 of 5
ST17SB05

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
				25					(SP); lensed, medium, wet, brown, gray clay lenses.	
35	S-16	2.0	24	26-35-27-10	19.4			ST17SB05-2 (35-37)		
	S-17	2.0	18	WOH/3"-2-3-2	24.2			ST17SB05-2 (37-39)	37 - 40.9 WIDELY GRADED SAND (SW); fine to medium, wet, brown.	
40	S-18	2.0	24	5-14-9-9	NA					
	S-19	2.0	24	3-4-9-13	NA				40.9 - 45 ELASTIC SILT (MH); ~20% clay, wet, reddish brown.	
	S-20	2.0	24	WOH-WOH-5-8	NA					
45										

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG

PAGE 5 of 5

ST17SB05

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
45	S-21	2.0	24	24-20-20-20	1.7				45 - 46.8 SILT (ML); varved, <20% clay, ~15% gravel, wet, reddish brown.	
	S-22	2.0	17	3-5-7-10	NA				46.8 - 48.6 SILTY SAND (SM); fine, gray, loose.	
	S-23	2.0	12	14-20-20-18	NA			ST17SB05 (49-51)	48.6 - 51 NARROWLY GRADED SAND (SP); medium, olive, silty fine sand lenses.	
50									Bottom of borehole at 51.0 feet.	

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ENVIRONMENTAL BORING LOG STR1 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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455 Winding Brook Dr
Glastonbury, CT 06033

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PROJECT NAME: Stuyvesant Town RI
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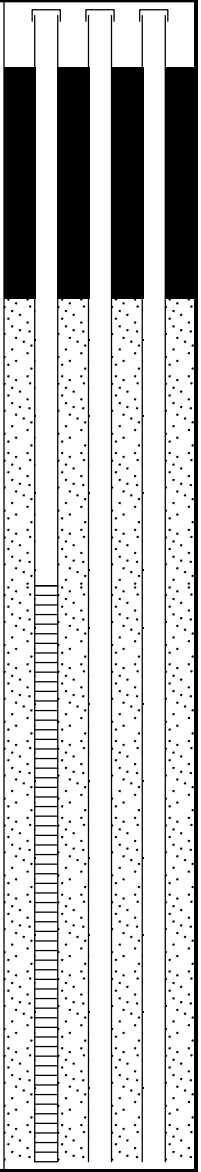
BORING LOG
PAGE 1 of 5
ST17SB06

GROUND SURFACE ELEVATION (FT): 6.41 **LOCATION:** E 17th and Ave C (compl. as MWS06/D06/DD06)
NORTHING: 205369.95 **EASTING:** 991296.5 **TOTAL DEPTH (FT):** 51.00
DRILLED BY: Aquifer Drilling and Testing / Bernie Cruz **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: April Krause **DATE START / END:** 5/16/2006 - 5/18/2006
DRILLING DETAILS: Hollow Stem Auger / Track Mounted DK-527
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0						ST17SB06 (0-0.2)	0 - 5 FILL, MANUAL AND VACTRON CLEARANCE TO 5 FEET BELOW BRICK SURFACE; soil-gas point installed (ST17SV06).
								ST17SB06 (2-4)	
5	S-1	2.0	8	24-21-22-6	0.7				5 - 6 NARROWLY GRADED SAND (SP); coarse, brown and white, FILL.
									6 - 7 WIDELY GRADED SAND WITH GRAVEL (SW); brick fragments, dry, FILL, rock and concrete, dense.
	S-2	2.0	10	1-2-2-1	0.6				7 - 7.4 NARROWLY GRADED SAND (SP); coarse, wet, brown and white, FILL.
									7.4 - 9 SILTY SAND (SM); fine, ~25% silt, ~5% coarse sand, wet, gray, FILL, low to medium cohesive.
	S-3	2.0	0	3-2-2-1					9 - 11 SILTY SAND (SM); fine, brick fragments, wet, grayish brown, FILL, no recovery, logged from shoe.
10									



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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
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BORING LOG
PAGE 2 of 5
ST17SB06

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
10										
	S-4	2.0	1	1-2-1-1	1.3				11 - 15 SILTY SAND (SM); fine, moderate petroleum-like odor, wet, grayish brown, FILL, brick and cobble in shoe, refusal at 13', offset to second location.	
	S-5	2.0	1	5-1-1-1	0.6		PLO			
15	S-6	2.0	7	4-2-2-4	0.7				15 - 15.9 WIDELY GRADED GRAVEL (GW); brick fragments, wet, FILL, pieces of porcelain. 15.9 - 17 NARROWLY GRADED SAND (SP); fine, black, FILL.	
	S-7	2.0	8	8-4-3-3	0.7				17 - 19 WIDELY GRADED SAND WITH GRAVEL (SW); ~85% sand; fine to medium, ~15% coarse gravel, wet, grayish brown, FILL.	
	S-8	2.0	1	2-8-10-10					19 - 21.7 WIDELY GRADED GRAVEL (GW); cobbles, brick fragments, wet, gray, FILL.	
20	S-9	2.0	12	7-10-7-7	NA					

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
PAGE 3 of 5
ST17SB06

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
									21.7 - 23 SILTY SAND (SM); ~85% sand; fine, ~15% silt, mica, wet, black, FILL.	
	S-10	2.0	4	9-8-6-5	0.6				23 - 26.25 WIDELY GRADED SAND WITH GRAVEL (SW); ~5% cobbles, gray, FILL.	
25	S-11	2.0	8	4-8-12-11	0.7					
									26.25 - 27 WIDELY GRADED SAND (SW); ~95% sand; fine to medium, <5% silt, wet, brown, FILL.	
	S-12	2.0	12	2-6-11-14	NA			ST17SB06 (27-29)	27 - 29 WIDELY GRADED GRAVEL WITH SAND (GW); ~15% fine sand, cobbles, brown, FILL, porcelain, brick, loose.	
	S-13	2.0		7-9-9-10	0.7			ST17SB06 (29-31)	29 - 32 WIDELY GRADED SAND (SW); ~95% sand; fine to medium, <5% silt, wet, brown.	
30	S-14	2.0	10	6-10-14-15	0.7					
									32 - 32.4 WIDELY GRADED SAND (SW); ~95% sand; fine to coarse, <5% silt, brown.	
									32.4 - 33 WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand; fine to medium, ~10% silt, brown.	
	S-15	2.0	10	8-10-10-	0.6					

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

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BORING LOG
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ST17SB06

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
				9					33 - 35.6 NARROWLY GRADED SAND WITH SILT (SP-SM); laminated, ~85% sand; medium, mica, <10% silt, <5% clay, wet, brown, coarse sand lenses.	
35	S-16	2.0	24	10-12-15-13	0.7			ST17SB06 (35-36.5)		
								ST17SB06 (36.5-37)	35.6 - 37 NARROWLY GRADED SILTY SAND (SM); varved, fine, mica, moist to wet, reddish brown, silty clay lenses.	
	S-17	2.0	11	10-10-8-7	0.8				37 - 39 NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand; medium, <10% silt, wet, brown.	
	S-18	2.0	24	10-10-13-12	0.8				39 - 40.5 WIDELY GRADED SAND (SW); medium to coarse, wet, brown, coarse sand lenses.	
40									40.5 - 41 NARROWLY GRADED SILTY SAND (SM); varved, fine, mica, moist to wet, reddish brown, silty clay lenses.	
	S-19	2.0	20	4-3-4-6	0.8				41 - 41.7 NARROWLY GRADED SAND (SP); medium, brown, coarse sand lenses.	
									41.7 - 43 SANDY SILT (ML); lensed, medium plasticity, fine sand, reddish brown, gray clay and silty clay lenses.	
	S-20	2.0	18	7-6-6-6	1.2				43 - 48.8 SILTY SAND (SM); laminated, low plasticity, fine, ~10% mica, reddish brown, gray clay laminations.	
45										

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NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR
CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG

PAGE 5 of 5

ST17SB06

DEPTH FT.	SAMPLE INFORMATION					STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)					
45	S-21	2.0	8	13-10-7-7	NA					
	S-22	2.0	12	13-12-11-16	NA					
	S-23	2.0	14	9-16-2-29	NA				48.8 - 49 NARROWLY GRADED SAND WITH SILT (SP-SM); medium, brown and white. 49 - 51 NARROWLY GRADED SAND WITH SILT (SP-SM); homogeneous, medium sand, <15% rock fragments, brown and olive.	
50								ST17SB06 (50-51)		

Bottom of borehole at 51.0 feet.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)

ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET

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ENVIRONMENTAL BORING LOG STRI 17TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 1 of 4
ST19SB-01

GROUND SURFACE ELEVATION (FT): 14.07 **LOCATION:** E 20th St Loop (Btwn 522 & 524 E 20th St)
NORTHING: 206265.53 **EASTING:** 990554 **TOTAL DEPTH (FT):** 40.00
DRILLED BY: Aquifer Drilling and Testing / Tony Palomegue **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY East Zone
LOGGED BY: Ryan McGuire **DATE START / END:** 3/17/2006 - 3/17/2006
DRILLING DETAILS: Hollow Stem Auger / Track Mounted CC-55
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		6.0						ST19SB01 (0-0.2)	0 - 6 FILL, MANUAL AND VACTRON CLEARANCE TO 6 FEET BELOW CONCRETE SURFACE; soil-gas point installed (ST19SV01).
								ST19SB01 (2-4)	
5	S-1	2.0	5	18-24-6-4	0				
									6 - 7 FILL, red brick and concrete fragments.
	S-2	2.0	7	5-5-6-3	NA				7 - 9 NARROWLY GRADED SAND WITH GRAVEL (SP); ~55% sand; fine, ~35% brick fragments, ~10% rounded fine to coarse gravel, light brown, FILL.
	S-3	2.0	4	3-2-2-1	0				9 - 11 WIDELY GRADED SAND (SW); ~100% sand; fine to medium, moist, brown, FILL.
10									

NOTES:

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ENVIRONMENTAL BORING LOG STRI 19TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG
PAGE 2 of 4
ST19SB-01

DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
10									
	S-4	2.0	7	5-3-2-2	0				11 - 12.7 WIDELY GRADED SAND (SW); ~100% sand; fine to medium, moist, brown, FILL.
									12.7 - 13 NARROWLY GRADED SAND (SP); fine, moist, black and gray, FILL.
									13 - 14 NO RECOVERY, rod dropped from 13' to 14'.
	S-5	2.0	15	1-2-2-2	0.4			ST19SB01 (14-16)	14 - 14.9 CLAYEY SAND WITH GRAVEL (SC); ~50% sand; fine to medium, ~30% clayey fines, ~20% gravel, moist, dark brown, FILL.
15									14.9 - 16 WIDELY GRADED SAND (SW); ~5% gravel, moist, light brown, FILL.
	S-6	2.0	20	1-1-1-1	0				16 - 16.6 SILTY SAND (SM); ~60% sand; fine, ~40% silt, moist, dark brown, FILL.
									16.6 - 18 WIDELY GRADED SAND WITH SILT (SW-SM); ~75% sand; fine to medium, ~20% silt, ~5% gravel, moist, FILL.
	S-7	2.0	4	WOR-WOR-1-1	0				18 - 20 WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand; fine to medium, ~10% silt, moist, brown, FILL.
20	S-8	2.0	12	3-2-2-1	0				20 - 21.33 SANDY SILT WITH GRAVEL (ML); ~65% fines; ~20% fine to medium sand, ~15% rounded fine to coarse gravel, wet, light brown, FILL.
									21.33 - 22 SANDY SILT (ML); ~70% fines; ~30% fine sand,

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ENVIRONMENTAL BORING LOG STRI 19TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG

ST19SB-01

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
									wet, brown, FILL.
	S-9	2.0	6	1-3-5-2	NA				22 - 26 CLAYEY SILT (ML); low plasticity, slight organic-like odor, wet, black, FILL, wood and concrete fragments.
	S-10	2.0	2	3-1-1-1	NA		OLO		
25									
	S-11	2.0	7	1-1-3-3	NA		OLO		26 - 28 CLAYEY SILT (MH); high plasticity, slight organic-like odor, wet, black to gray, FILL.
	S-12	2.0	4	1-1-1-4	0		OLO		28 - 30 SILTY SAND WITH GRAVEL (SM); coarse gravel, slight organic-like odor, black, FILL, red brick stuck in tip.
30									
	S-13	2.0	4	5-32-8-6	0.2				30 - 32 SILT (ML); black, FILL, with weathered rock fragments.
	S-14	2.0	24	18-22-26-19	0				32 - 33.2 GRAVEL WITH SILT AND SAND (GP-GM); ~50% gravel; fine, ~40% sand, ~10% silt, wet, black to gray, FILL.

NOTES:

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ENVIRONMENTAL BORING LOG STRI 19TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Dr
Glastonbury, CT 06033

CLIENT: Consolidated Edison Co. of NY, Inc.
PROJECT NAME: Stuyvesant Town RI
CITY/STATE: Manhattan, New York
GEI PROJECT NUMBER: 060660

BORING LOG

PAGE 4 of 4

ST19SB-01

DEPTH FT.	SAMPLE INFORMATION					STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC IN.	Blows (/6 in.)	PID (ppm)				
									33.2 - 34 SAND (SW); dry, gray, FILL, pockets of coarse gravel.
	S-15	2.0	12	11-12-13-8	0				34 - 35 SAND (SW); dry, gray, FILL, with wood pieces.
35									35 - 40 NARROWLY GRADED SAND (SP); coarse, slight organic-like odor, wet.
	S-16	2.0	8	6-8-7-11			OLO		
	S-17	2.0	8	9-8-6-7				ST19SB01 (38-40)	
40									Bottom of borehole at 40.0 feet.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)

ppm = PARTS PER MILLION
IN. = INCHES
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ENVIRONMENTAL BORING LOG STR1 19TH ST STATION.GPJ GEI CONSULTANTS.GDT 1/4/07

Haley & Aldrich Soil Boring Logs

HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH001

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 2
Start February 19, 2004
Finish February 27, 2004
Driller R. Gause/K. Kegal
H&A Rep.P. Falce/A. Murphy
Elevation 4.31
Datum Manhattan Borough
Location See Plan
N 0
E 20

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.6		-CONCRETE-										
	0.0	G1 0	0.0 4.0			SW/ SM	Well-graded SAND with silt and gravel (SW/SM), no odor, moist, mps=1 in.	5	10	15	25	25	20				
	0.0				1.5												
	4.7				2.0	SW/ SM	Brown, well-graded SAND with silt and gravel (SW/SM), no odor, moist, mps=3 in.	10	15	15	20	20	20				
	5.4				2.5			10	15	15	20	25	15				
						SW/ SM	Dark gray, well-graded SAND with silt and gravel (SW/SM), mps = 3 in., moist, slight organic/petroleum-like odor.		5	15	25	30	25				
						SM	Location moved 4.0 ft. west Dark gray, silty SAND (SM), slight petroleum-like odor, moist, mps = 0.5										
		G2 48	4.0 8.0		5.0												
5	6.0					SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Gray to brown, sandy SILT with gravel (SM), mps = 1.25 in., no structure, very slight naphthalene-like odor, moist at bottom, wet at top. -FILL-		5	5	20	20	50				
		G3 0	8.0 12.0	NO WELL INSTALLED			No Recovery										
10																	
	4.2	G4 12	12.0 16.0			ML	Gray to brown sandy SILT (ML), mps = 0.5 in., no structure, no odor, wet -FILL-										
15																	
	7.0	G5 24	16.0 18.8		17.0	ML	Similar to above, except occasional wood fragments, moist, mps = 0.08 in.				5	20	75				
	25.5					ML	Black, sandy SILT (ML), mps=0.25 in., no structure, naphthalene-like odor, moist, 40% red brick debris, occasional wood fragments and root fragments -FILL-			5	5	15	75				
					18.8		Refusal on brick at 18.8 ft. BOTTOM OF EXPLORATION AT 18.8 FT.										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/27/04	NA	NA	NA	8.0	4.0

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

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

Summary
Overburden (lin. ft.) 18.8
Rock Cored (lin. ft.) -
Samples G5
Boring No. 14GH001

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No14GH001

File No29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
							Note: Borehole backfilled with drill cuttings and sand upon completion and concrete patched. Sample "14GH001-00" collected from 0-0.2 ft. Sample "14GH001-07" collected from 5.0-7.0 ft. Sample "14GH001-19" collected from 17.0-18.7 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 14GH001

HALEY & ALDRICH

TEST BORING REPORT

Boring No. 14GH002

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No 29455-011
Sheet No. 1 of 2
Start February 23, 2004
Finish February 27, 2004
Driller M. Smith
H&A Rep. P. Falce/A. Murphy
Elevation 4.44
Datum Manhattan Borough
Location See Plan
N 0
E 40

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-CONCRETE-										
	455	G1 18	0.0 4.0			SM	Dark gray, silty SAND with gravel (SM), mps = 4 in., brick fragments, wood, slight petroleum-like odor, moist	10	10	15	20	15	30				
							12 x 8 in. boulder at 1.0 ft.										
	0.7	G2 28	4.0 8.0		5.0	SM	Dark gray, silty SAND with gravel (SM), petroleum-like odor, moist, brick fragments and whole bricks, mps = 4 in.	10	10	15	20	15	30				
5	2.0					ML	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.					15	85				
							Dark gray, sandy SILT (ML), mps = 0.08 in., no structure, no odor, moist to wet, 0.5 in. piece of brick at 8.0 ft., with few wood fragments throughout										
		G3 25	8.0 12.0	NO WELL INSTALLED		ML	Similar to G2, except with gravel, mps = 0.25 in., wet		15	5	5	15	60				
							-FILL-										
10																	
	17.2	G4 40	12.0 16.0			ML	Dark gray, sandy SILT (ML), mps = 0.08 in., no structure, no odor, moist to wet, 0.5 in. piece of brick at 8.0 ft., with few wood fragments throughout					15	85				
	0.0				13.0	SM	Dark gray, silty SAND (SM), mps = 0.50 in., no structure, no odor, moist, 50% 0.06 in. particles of red brick		5	5	15	50	25				
					14.0	ML	-FILL-		15	5	5	15	60				
15					15.5		Similar to G3, except with gravel and with wood and few scallop shells										
					16.0	SP	-FILL-			10	15	75					
	0.0	G5 -	16.0 20.0			SM	Dark gray to black, poorly-graded SAND (SP), no structure, no odor, moist, with 50% red brick, mps = 0.80 in.			10	20	60	10				
							Dark gray, silty SAND (SM), mps=0.08 in., no structure, no odor, moist										
							-LACUSTRINE-										
							Note: Aceteate liner jammed in barrel sample.										
20					20.0												

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/27/04	NA	NA	NA	8.0	4.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30.0
Rock Cored (lin. ft.) -
Samples G8
Boring No. 14GH002

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14GH002
File No 29455-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	223	G6 15	20.0 24.0			ML	Brown, SILT with sand (ML), mps=0.08 in., no structure, strong naphthalene-like odor, dry					10	90				
	273	G7 -	24.0 27.0			ML	Similar to G6					10	90				
25							Note: Acetate liner jammed in barrel sample.										
		G8 -	27.0 30.0			ML	Similar to G6 -GLACIAL LACUSTRINE-					10	90				
							Note: Acetate liner jammed in barrel sample.										
30					30.0		BOTTOM OF EXPLORATION AT 30.0 FT.										
							Note: Borehole backfilled with drill cuttings and sand upon completion and concrete patched.										
							Sample "14GH002-00FP" collected from 0-0.2 ft. Sample "14GH002-02" collected from 0.0-2.0 ft. Sample "14GH002-04" collected from 2.0-4.0 ft. Sample "14GH002-07" collected from 5.0-7.0 ft. Sample "14GH002-14" collected from 12.0-14.0 ft. Sample "14GH002-30" collected from 28.0-30.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. **14GH002**

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TEST BORING REPORT

Boring No.14GH003

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 2
Start February 24, 2004
Finish March 2, 2004
Driller K. Kegal
H&A Rep.P. Falce/J. O'Brien
Elevation 4.54
Datum Manhattan Borough
Location See Plan
N 0
E 60

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0																	
	1.1	G1 16	0.0 4.0		0.6		-CONCRETE-										
						SM	Brown, silty SAND with gravel (SM), no odor, moist to wet, bricks, concrete fragments, mps = 5 in.	5	10	15	25	25	20				
					2.0												
						GP	Section of broken clay tile pipe, encountered at 2 in. below grade, light water flow intially noted, then stopped.	20	30	15	20	15					
							Brown, poorly-graded gravel with SAND (GP), brick pieces, porcelain, copper wire, no odor, wet, mps = 5 in.										
		G2 28	4.0 8.0		4.5												
5						SM	Dark gray, silty SAND (SM), slight organic odor, wet, mps = 0.25 in.	5	5	15	15	30	30				
						SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.			5	15	45	35				
							Dark brown, silty SAND (SM), white ceramic pieces, no structure, dry, slight solvent-like odor										
	1.0	G3 18	8.0 12.0	NO WELL INSTALLED		SM	Dark brown, silty SAND with gravel (SM), no structure, wet, musty-like odor	5	20	15	25	15	20				
							-FILL-										
10																	
	7.0	G4 26	12.0 16.0			SM	Gray, silty SAND (SM), slightly bonded, wet, organic odor, trace brick			5	25	40	30				
					14.0												
15																	
	1.0	G5 32	16.0 20.0			SM	Brown, silty SAND (SM), slighty bonded, moist, slight musty odor					55	45				
							-FILL-										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/2/04	NA	0	-	12.0	8.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 23.0
Rock Cored (lin. ft.) -
Samples G6
Boring No. 14GH003

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14GH003
File No 29455-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G6 23	20.0 23.0			ML	Brown sandy SILT (ML) -FILL-			5	5	35	55				
					23.0		Refusal at 23.0 ft. BOTTOM OF EXPLORATION AT 23.0 FT. Note: Borehole backfilled with drill cuttings and sand upon completion and concrete patched. Sample "14GH003-00" collected from 0-0.2 ft. Sample "14GH003-08" collected from 6.0-8.0 ft. Sample "14GH003-15" collected from 13.0-15.0 ft. Sample "14GH003-23" collected from 21.0-23.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 14GH003

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH004

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 2
Start February 23, 2004
Finish February 25, 2004
Driller M. Smith/ K. Kegal
H&A Rep. P. Falce/A. Murphy
Elevation 4.47
Datum Manhattan Borough
Location See Plan
N 0
E 80

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		G1 26	0.0 4.0	NO WELL INSTALLED	0.6		-CONCRETE-										
						SM	Brown, silty SAND with gravel (SM), brick pieces, mps = 4 in., no odor, moist.	10	10	20	20	15	25				
	14.7				3.3	SM	Dark gray, silty SAND (SM), mps=0.5 in, moist, slight petroleum-like odor, brick and concrete pieces.	5	5	20	25	25	20				
5	4.4	G2 26	4.0 8.0		5.0	OL/ OH	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Dark gray to black, silty SAND (OL/OH), mps=0.08 in., no structure, organic odor, wet.				40	40	20				
	6.0					OL/ OH	Dark gray, SILT with sand (OL/OH), mps = 0.08 in., no structure, organic odor present, wet.					10	90				
		G3 24	8.0 12.0				-FILL-										
10		G4 0	12.0 16.0				No Recovery										
15		G5 0	16.0 20.0				No Recovery										
							-FILL-										
20																	

Water Level Data						Sample Identification	Well Diagram	Summary
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water	O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon G Geoprobe	Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal	Overburden (lin. ft.) 30.0 Rock Cored (lin. ft.) - Samples G7 Boring No. 14GH004
2/25/04	NA	NA	NA	8.0	5.0			

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 14GH004
File No. 29455-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	188	G6 28	20.0 26.0			ML	Gray, SILT with sand (ML), mps = 0.08 in., no structure, no odor, moist					5	95				
							NOTE: Drill action indicates strata change at 24.0 ft. overdrove sampler to 26.0 ft.										
							-FILL-										
					24.0		Clear, light brown, free-phase product with naphthalene-like odor										
25	4026				25.0	ML	Brown, SILT with sand (ML), mps = 0.08 in., no structure, strong naphthalene-like odor, soil saturated with free-phase product from 25.0 ft. to 25.5 ft.					10	90				
	1760	G7 28	26.0 30.0			ML	Similar to above, soil saturated with free-phrase product, naphthalene-like odor at 27.0 and 28.0 ft.					15	85				
							-GLACIAL LACUSTRINE-										
30					30.0		BOTTOM OF EXPLORATION AT 30 FT.										
							Notes: Borehole backfilled with drill cuttings and sand upon completion and concrete patched.										
							Sample "14GH004-00" collected from 0-0.2 ft.										
							Sample "14GH004-07" collected from 5.0-7.0 ft.										
							Sample "14GH004-12" collected from 10.0-12.0 ft.										
							Sample "14GH004-26" collected from 24.0-26.0 ft.										
							Sample "14GH004-30" collected from 28.0-30.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. **14GH004**

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 14GH005

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No 29455-011
Sheet No. 1 of 2
Start February 13, 2004
Finish March 1, 2004
Driller M. Smith/ K. Kegal
H&A Rep. P. Falce/A. Murphy
Elevation 4.47
Datum Manhattan Borough
Location See Plan
N 0
E 100

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		G1 22	0.0 4.0		0.6		-CONCRETE-										
						SM	Gray-brown, silty SAND and gravel (SM), moist, 10% brick pieces, 2 x 3 in. piece of Tar-Like Material, mps = 3 in. -FILL-	10	15	10	25	20	20				
		G2 33	4.0 8.0														
5	4.0					SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Brown, silty SAND (SM), moist		10	15	20	25	30				
						SM	Brown-gray, silty SAND with gravel (SM), trace brick, moist, no structure, no odor.	5	10	15	20	25	25				
		G3 31	8.0 12.0	NO WELL INSTALLED		SM	Brown-gray, silty SAND with gravel (SM), no structure, no odor, wet, mps = 0.25 in.	10	5	10	25	25	25				
	0.8				9.5												
10						ML	Gray-brown, sandy SILT (ML), no structure, no odor, wet, mps = 0.75 in. -FILL-			10	5	30	55			M	
	0.0				12.0												
		G4 -	12.0 16.0			SM	Brown to black, silty SAND (SM), no structure, no odor, wet mps = 0.5 in. Note: Sample slid out of acetate liner		5	10	15	30	40			M	
15																	
	453	G5 -	16.0 20.0			SM	Brown, silty SAND (SM), slightly bonded, slight petroleum-like odor, moist, mps = 0.13 in. -FILL- Note: Actetate liner jammed in barrel sample			5	15	60	20				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/1/04	NA	NA	NA	12.0	8.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 26.5
Rock Cored (lin. ft.) -
Samples G7
Boring No. 14GH005

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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TEST BORING REPORT

Boring No 14GH005

File No 29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	1134	G6 -	20.0 24.0			SM	Brown, silty SAND (SM), slightly bonded, strong naphthalene-like odor, dry. -FILL-					60	40				
	1607	G7 -	24.0 26.5			SM	Brown, silty SAND (SM), slightly bonded, moist, strong naphthalene-like odor.					60	40				
25					26.0												
					26.5	SM	Brown, silty SAND (SM), no structure, trace brick, naphthalene-like odor, mps=0.25 in. -FILL-		10	15	35	15	25				
							Refusal at 26.5 ft. BOTTOM OF EXPLORATION AT 26.5 FT.										

Note: Borehole backfilled with drill cuttings and sand upon completion and concrete patched.

Sample "14GH005-00" collected from 0-0.2 ft.
Sample "14GH005-07" collected from 5.0-7.0 ft.
Sample "14GH005-18" collected from 16.0-18.0 ft.
Sample "14GH005-27" collected from 25.0-26.5 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 14GH005

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH006

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 2
Start February 12, 2004
Finish March 8, 2004
Driller M. Smith/ K. Kegal
H&A Rep.P. Falce
Elevation 4.41
Datum Manhattan Borough
Location See Plan
N 0
E 120

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		G1 0	0.0 4.0	NO WELL INSTALLED	0.7		-CONCRETE-										
	0.0					SW	Boulder immediately under slab, mps = 10 in. Brown, well-graded SAND with gravel (SW), moist to wet, no odor, 40% brick	5	10	20	25	35	5				
		G2 40	4.0 8.0		3.9	SM	Boulder at 3.9 ft. Bottom of Hand Excavation/Vac-Truck Exploration at 3.9 ft. Note: Could not pass obstruction at 3.9 ft with Geoprobe. New location at 2.5 ft. east of original cleared to 5.0 ft. -FILL- Brown to dark-gray silty SAND (SM), mps = 1 in.			15	25	35	25				
5	1.6																
	3.9	G3 48	8.0 12.0			SM	Brown to dark gray, silty SAND with gravel (SM), moist, slight petroleum-like or organic odor, black staining, brick and wood pieces from 11.0 to 12.0 ft., mps = 1.5 in.	5	10	15	25	25	20				
10																	
	1.7	G4 36	12.0 16.0			SM	Dark gray, silty SAND with gravel (SM), moist, light petroleum-like odor, mps = 0.75 in., brick and wood pieces. -FILL-	5	15	10	20	30	20				
15					16.0												
	83.1	G5 16	16.0 20.0			SM	Similar to above, except black/staining, Ash-Like Material, naphthalene-like odor										
20					20.0												

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/8/04	10:30	0	-	-	7

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

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

Summary	
Overburden (lin. ft.)	21.0
Rock Cored (lin. ft.)	-
Samples	G6
Boring No.	14GH006

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14GH006

File No 29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20		G6 4	20.0 21.0		21.0	SM	Similar to above -FILL-										
							Refusal at 21.0 ft. BOTTOM OF EXPLORATION AT 21.0 FT. Note: Borehole backfilled with drill cuttings and sand upon completion and concrete patched. Sample "14GH006-00" collected from 0-0.2 ft. Sample "14GH006-07" collected from 5.0-7.0 ft. Sample "14GH006-15" collected from 13.0-15.0 ft. Sample "14GH006-20" collected from 18.0-20.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 14GH006

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH007

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 1
Start February 23, 2004
Finish February 26, 2004
Driller M. Smith/ K. Kegal
H&A Rep.P. Falce/A. Murphy
Elevation 4.22
Datum Manhattan Borough
Location See Plan
N 0
E 140

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2]; structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		G1	0.0	NO WELL INSTALLED	0.7		-CONCRETE-										
	3.0		4.0			SW	Brown, well-graded SAND with gravel (SW), brick and concrete pieces, mps=4 in., no odor, moist.	5	10	25	30	25	5				
					2.0	SM	Dark gray, silty SAND with gravel (SM), mps = 3 in., no odor, moist, brick and concrete pieces.	10	15	15	20	15	25				
		G2	4.0			SM	Brown, silty SAND (SM), brick and concrete pieces, mps=1 in., no odor, moist.		5	15	25	30	25				
5	2.4	48	8.0		5.0	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Brown, silty SAND (SM) with gravel, mps = 1.25 in., no structure, no odor, wet to 6 ft. then moist.	5	5	5	15	45	25				
		G3	8.0			SM	Similar to above, except mps = 1.5 in., moist.	5	5	10	10	45	25				
			12.0				Note: Acetate liner jammed in sample barrel										
10																	
	270	G4	12.0			SM	Similar to above, except mps = 2 in. Black silty SAND with Oil-Like Material in sampler tip, probable residual product, strong naphthalene-like odor.	10	10	10	25	25	20				
		30	15.0				-FILL-										
15	598				15.0	SM	Refusal at 15.0 ft BOTTOM OF EXPLORATION AT 15.0 FT.										
							Note: Borehole backfilled with drill cuttings and sand upon completion and concrete patched.										
							Sample "14GH007-00" collected from 0-0.2 ft. Sample "14GH007-07" collected from 5.0-7.0 ft. Sample "14GH007-15" collected from 13.0-15.0 ft.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/26/04	NA	NA	NA	8.0	4.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples G4
Boring No. 14GH007

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH008

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 1
Start February 20, 2004
Finish February 26, 2004
Driller M. Smith/ K. Kegal
H&A Rep.P. Falce/A. Murphy
Elevation 4.49
Datum Manhattan Borough
Location See Plan
N 0
E 160

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0																	
	1.7	G1 17	0.0 4.0		0.6		-CONCRETE-										
						SW-SM	Brown, well-graded SAND with silt and gravel (SW/SM), no odor, dry.	10	10	15	20	25	20				
	2.7				2.5	SW	Gray-brown , well-graded SAND with gravel (SW), slight petroleum-like odor, moist, mps = 2 in.	10	15	15	25	30	5				
		G2 48	4.0 8.0		4.2	SM	Boulder on west side of hole, mps = 10 in.		15	5	10	40	30				
5							Bottom of Hand Excavation/Vac-Truck Exploration at 4.2 ft.										
	34.58			NO WELL INSTALLED		SM	Brown to gray, silty SAND with gravel (SM), mps = 0.25 in., no structure, no odor, moist										
		G3 -	8.0 11.0				Similar to above, except brown.		15	5	10	40	30				
							Acetate liner jammed in sample barrel.										
10							-FILL-										
					11.0		Refusal on red brick at 11.0 ft. BOTTOM OF EXPLORATION AT 11.0 FT.										
							Note: Borehole backfilled with drill cuttings and sand upon completion and concrete patched.										
							Sample "14GH008-00" collected from 0-0.2 ft. Sample "14GH008-06" collected from 4.0-6.0 ft. Sample "14GH008-11" collected from 9.0-11.0 ft.										

Water Level Data

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

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 11.0
Rock Cored (lin. ft.) -
Samples G3
Boring No. 14GH008

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH009

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 1
Start February 10, 2004
Finish February 27, 2004
Driller M. Smith/ K. Kegal
H&A Rep.P. Falce/A. Murphy
Elevation 4.10
Datum Manhattan Borough
Location See Plan
N 0
E 180

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.7		-CONCRETE-										
	2.3	G1 22	0.0 4.0		1.0	SW	Dark gray, well-graded SAND with gravel (SW), mps = 4 in., no odor,	10	20	30	20	15	5				
					1.5	SP	moist, brick fragments.	5	10	20	30	30	5				
						SM	Gray, poorly-graded SAND (SP), mps = 5 in., slight petroleum-like odor, moist.	10	15	20	30	15	10				
							Gray to brown, silty SAND with gravel (SM), mps = 5 in., no odor. -FILL-										
	0.0	G2 27	4.0 8.0		4.2	SP	Bottom of Hand Excavation/Vac-Truck Exploration at 4.2 ft. on boulder Brown to gray, poorly-graded SAND with gravel (SP), mps=0.50 in., no structure, no odor, moist.	10	15	10	60	5					
5						SP	Similar to above, except mps = 1.25 in., gravel is mica based rock.	15	20	15	45	5					
		G3 41	8.0 12.0	NO WELL INSTALLED		SP	Similar to above.	15	20	15	45	5					
10						SP	Similar to above.		5	5	15	75					
	3.0	G4 33	12.0 15.0			SP	Similar to above, except dark gray in macro core tip with slight naphthalene-like odor in sampler tip. -FILL-		5	5	15	75					
15					15.0		Refusal at 15.0 ft. BOTTOM OF EXPLORATION AT 15.0 FT.										

Note: Borehole backfilled with drill cuttings and sand upon completion and concrete patched.

Sample "14GH009-00" collected from 0-0.2 ft.
Sample "14GH009-02FP" collected from 1.0-1.5 ft.
Sample "14GH009-07" collected from 5.0-7.0 ft.
Sample "14GH009-15" collected from 13.0-15.0 ft.

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/12/04	13:30	0.25	-	4.2	3.5
2/12/04	13:45	0.5	-	4.2	3.25
2/12/04	14:00	0.75	-	4.2	3.1

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.0
Rock Cored (lin. ft.) -
Samples G4
Boring No. 14GH009

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH010

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 2
Start March 17, 2004
Finish March 17, 2004
Driller J. Hodge/K. Kegal
H&A Rep.P. Falce
Elevation 7.61
Datum Manhattan Borough
Location See Plan
N 0
E 200

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	-	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	-	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0	G1 0	0.0 4.0	NO WELL INSTALLED	0.3		-CONCRETE-										
	0.0				0.6	SP SM	Black to brown, poorly-graded SAND (SP), no odor, moist, mps = .012 in., Clinker-Like Material and brick fragments	10	5	25	35	30	5				
							Light brown, silty SAND with gravel (SM), no odor, moist, 15-20% brick, mps = 5 in.		10	15	20	25	20				
		G2 38	4.0 8.0														
5	0.5					SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.	5	10	15	20	25	20				
							Brown, silty SAND with gravel (SM), no odor, moist, mps = 0.5 in.										
							-FILL-										
		G3 36	8.0 12.0			SM	Same as above, wet.	5	10	15	20	25	20				
10																	
	0.3	G4 14	12.0 14.0		12.0	ML	Gray to red-brown, sandy SILT (ML), no odor, wet. -FILL-				10	15	75				
	0.3	G5 12	14.0 16.0			ML	Gray sandy SILT (ML), no odor, wet.				10	15	75				
15																	
		G6 0	16.0 18.0				No Recovery. Problem with discreet sampler.										
	114	G7 4	18.0 19.0		18.0	SM	Dark gray, silty SAND with gravel (SM), wet, naphthalene-like odor, brick & mortar fragments in sampler tip, mps = 2 in.										
					19.0		-FILL- Refusal at 19.0 ft.										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/17/04	14:00	0	-	-	8

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

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

Summary	
Overburden (lin. ft.)	19.0
Rock Cored (lin. ft.)	-
Samples	G7
Boring No.	14GH010

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14GH010

File No 29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
							BOTTOM OF EXPLORATION AT 19.0 FT.										
							Note: Borehole backfilled with drill cuttings and sand upon completion and concrete patched.										
							Changed to discreet sampler at 12 ft.										
							Sample "14GH010-00" collected from 0-0.2 ft. Sample "14GH010-02" collected from 0-2.0 ft. Sample "14GH010-04" collected from 2.0-4.0 ft. Sample "14GH010-08" collected from 6.0-8.0 ft. Sample "14GH010-16" collected from 14.0-16.0 ft. Sample "14GH010-19" collected from 18.0-19.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 14GH010

HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH011

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 2
Start March 16, 2004
Finish March 17, 2004
Driller M. Mede/K. Kegel
H&A Rep.A. Murphy/P. Falce
Elevation 6.75
Datum Manhattan Borough
Location See Plan
N 0
E 220

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0		G1 -	0.0 4.0	NO WELL INSTALLED	0.5		-ASPHALT-										
						SP-SM	Gray to brown, poorly graded SAND with silt and gravel (SP-SM), mps 3 in., no structure, no odor, dry	10	10	20	50	10					
					2.0												
						SM	Brown, silty SAND with gravel (SM), mps 3.5 in., no structure, no odor, 20% red brick debris	10	10	20	30	30					
		G2 18	4.0 8.0														
5	5.1					SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Brown silty SAND with gravel (SM), no odor, moist, brick fragments, mps = 0.25 in.	10	15	5	15	35	20				
	5.1					SM	Gray, silty SAND with gravel (SM), no odor, moist, mps = 1.0 in., possible weathered cobbles	10	15	15	25	30	5				
	5.2	G3 12	8.0 12.0			SM	Brown to gray, silty SAND (SM), no odor, wet -FILL-		5	20	25	30	20				
10																	
	11.5	G4 4	12.0 14.0			SM	Gray, silty SAND with gravel (SM), no odor, wet, weathered cobbles, ash, brick fragments, mps = 0.25 in.										
	0.0	G5 16	14.0 16.0		14.0	ML	Gray, SILT with gravel (ML), wet, no odor, mps = 0.25, brick fragments	5	5			10	80				
15					16.0												
		G6 8	16.0 18.0			SM	Gray, silty SAND (SM), no odor, wet, mps = .015 in., brick fragments -FILL-				30	40	30				
		G7 0	18.0 20.0				No Recovery										
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/17/04	10:20	0	-	-	8

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

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

Summary: Overburden (lin. ft.) 21.0; Rock Cored (lin. ft.) -; Samples G8; Boring No. 14GH011

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14GH011

File No 29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	9.2	G8 6	20.0 21.0		21.0	SM	Black, silty SAND with gravel (SM), black staining, sheen, weathered petroleum-like odor, wet	5	10	15	20	30	20				
							-FILL-										
							Refusal at 21 ft. BOTTOM OF EXPLORATION AT 21.0 FT.										
							Notes: Borehole back filled with drill cuttings and sand upon completion and concrete patched.										
							Changed to discreet sampler at 12 ft.										
							Sample "14GH011-00" collected from 0-0.2 ft. Sample "14GH011-08" collected from 6.0-8.0 ft. Sample "14GH011-16" collected from 14.0-16.0 ft. Sample "14GH011-21" collected from 20.0-21.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. **14GH011**

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH012

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 2
Start March 14, 2004
Finish March 16, 2004
Driller J. Meyers/K. Kegel
H&A Rep.P. Falce
Elevation 5.94
Datum Manhattan Borough
Location See Plan
N 0
E 240

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.1	G1 -	0.0 4.0	NO WELL INSTALLED	0.5		COBBLESTONES										
	0.3					SP	Light brown, poorly-graded SAND (SP), moist, no odor, mps = .125 in.				50	45	5				
						SP	Light brown, poorly-graded SAND with gravel (SP), moist, no odor, cobbles and brick, mps = 10 in.	10	15	20	20	30	5				
		G2 14	4.0 8.0		5.0												
5	0.0					SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Brown, silty SAND with gravel (SM), no odor, moist, mps = 1 in.	5	15	15	25	40	15				
	0.0					SM	PID = 0.0 ppm Gray, silty SAND with gravel (SM), weathered cobbles/boulders, no odor, moist mps = 1.2 in.	5	10	10	15	30	30				
	0.0	G3 20	8.0 12.0			SM	Gray, silty SAND with gravel (SM), weathered cobbles/boulders, no odor, wet, mps = 1.0 in.	5	10	10	15	30	30				
10							-FILL-										
		G4 0	12.0 14.0				No Recovery, rock fragments in tip of sampler										
	0.3	G5 5	14.0 16.0			SM	Gray, silty SAND with gravel (SM), weathered cobbles/boulders, slight organic odor, wet	5	10	10	15	30	30				
15																	
	8.5	G6 5	16.0 17.0			SM	Same as above, naphthalene-like odor	5	10	10	15	30	30				
					17.0		-FILL-										
							Refusal at 17.0 ft. BOTTOM OF EXPLORATION AT 17.0 FT.										
							Notes: Borehole backfilled with drill cuttings and sand upon completion. Cobble stones were then placed back into position.										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/16/04	10:30	0	-	-	8

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

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

Summary	
Overburden (lin. ft.)	17.0
Rock Cored (lin. ft.)	-
Samples	G6
Boring No.	14GH012

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14GH012

File No 29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
							Changed to discreet sampler at 12 ft. Sample "14GH012-00" collected from 0-0.2 ft. Sample "14GH012-02" collected from 0-2.0 ft. Sample "14GH012-04" collected from 2.0-4.0 ft. Sample "14GH012-07" collected from 5.0-7.0 ft. Sample "14GH012-17" collected from 16.0-17.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. **14GH012**

HALEY & ALDRICH

TEST BORING REPORT

Boring No. 14MWS02/ 14GH013

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc.

File No 29455-011
Sheet No. 1 of 2
Start March 16, 2004
Finish March 18, 2004
Driller J. Kamenicek/L. Adams
H&A Rep. A. Murphy/B. Tarbell
Elevation 7.19
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: CME 75 Truck Mounted
Inside Diameter (in.)	4 1/14	1 3/8	-	Bit Type: -
Hammer Weight (lb.)	-	140	-	Drill Mud: -
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.3		-CONCRETE-										
						SP	Brown, poorly-graded SAND with gravel (SP), mps = 3 in., no structure, no odor, no PID readings due to snow, moist to wet at top due to wet saw used to cut through sidewalk, dry below, 5% red brick debris	5	10	10	40	35				
					5.0												
5		S1	5.0 7.0			SP-SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Loose, light brown/brown, poorly-graded SAND with silt (SP-SM), mps = 0.5 in., occasional lense of gray crushed stone with mica flakes, stratified brown/light brown color, no odor, moist.		5	10	15	60	10				
		S2	7.0 9.0			SP-SM	Similar to above, except with some mica flakes in black fine grained soil. -FILL-										
					9.0												
		S3	9.0 11.0			SM	Very loose, gray, silty SAND (SM), mps = 0.5 in., no structure, no odor, wet at 9.4 ft., a Cinder-Like Material at 9.0 ft.		5	10	15	50	20				
10		S4	11.0 13.0			SM	Similar to above except with a 5 in. pocket of fine to medium grained soil with brown and dark brown mottling, mps = 0.5 in.										
		S5	13.0 15.0			SM	Very loose, brown and gray silty SAND (SM), mps = 0.25 in., brown with gray mottling, no odor, wet -FILL-		5		10	50	35				
15		S6	15.0 17.0			SM	Similar to above										
		S7	17.0 19.0			SM	Similar to above										
		S8	19.0 21.0			SM	Similar to above except a 2 in. pocket of black stained SM soil with a strong naphthalene-like odor.										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/18/04	NA	0	25.0	27.0	9.4

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 27
Rock Cored (lin. ft.) -
Samples S11
Boring No. 14MWS02/ 14GH013

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14MWS02/ 14GH013
File No 29455-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20					20.3												
					20.5	SM	Black stained soil with naphthalene-like odor										
		S9	21.0 22.8				Very loose, gray brown, silty SAND (SM), mps = 0.25 in., contained black stained silty sand with naphthalene-like odor, Tar-Like Material in tip of spoon, brown oily sheen from stained soil. Trace wood fibers in											
					22.2		Tar-Like Material in spoon.										
					22.8		Tar-Like Material in tip of spoon, black stained soil and oily sheen.										
		S10	22.8 25.0			SM	Black stained fine grain soil silty SAND (SM), mps = 1.0 in. brick fragments, 1.0 in. in tip of spoon.										
							-FILL-										
25					25.0												
		S11	25.0 27.0			SM	Medium dense, brown silty SAND (SM), mps = 1.0 in., mottled brown and tan color, Tar-Like Material interbedded in spoon, strong naphthalene-like odor, wet, 20% Tar-Like Material.			5	20	60	15				
					26.8		-GLACIAL LACUSTRINE-										
					27.0	CL	Tan, lean CLAY (CL), no odor or staining observed. Could not auger past 25.0 ft. for next sample interval (auger refusal)					15	85				
							-GLACIAL LACUSTRINE-										

BOTTOM OF EXPLORATION AT 27.0 FT.

Notes: Drill cuttings placed in drums. Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 14MWS02" for complete well details.

Sample "14GH013-00" collected from 0-0.2 ft.
Sample "14GH013-07" collected from 5.0-7.0 ft.
Sample "14GH013-I5" collected from 13.0-15.0 ft.
Sample "14GH013-23" collected from 22.0-23.0 ft.

Note: Due to weather conditions no PID readings were obtained at this location.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 14MWS02/ 14GH013

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.14GH014

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc./ Fenley & Nicol Environmental, Inc.

File No29455-011
Sheet No. 1 of 2
Start March 9, 2004
Finish March 12, 2004
Driller M. Jones/K. Kegel
H&A Rep.S. Brousseau/P. Falce
Elevation 5.68
Datum Manhattan Borough
Location See Plan
N 0
E 260

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		-COBBLESTONES-										
	0.0	G1 -	0.0 4.0			SP	Light brown, poorly-graded SAND (SP), moist, no odor, mps = .025 in.				50	45	5				
	0.0					SP	Light brown, poorly-graded SAND with gravel (SP), moist, no odor, cobbles, brick, mps = 3 in.	10	15	20	20	30	5				
		G2 0	4.0 8.0														
5					5.0		Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.										
							No recovery, brick and rock fragments in tip of sampler										
	0.0	G3 18	8.0 12.0	NO WELL INSTALLED		SM	Dark gray, silty SAND (SM), no odor, mps = 0.05 in., wet -FILL-			20	30	30	20				
10					12.0		Note: Change to discreet sampler										
	0.3	G4 12	12.0 14.0			ML	Gray, silty with SAND (ML), wet, slight organic odor, mps = 0.05 in. -FILL-					10	90				
	0.3	G5 18	14.0 16.0		14.0	SM	Brown to dark gray, silty SAND (SM), wet slight organic odor, mps = 0.25 in., shells and ash			20	30	30	20				
15	0.3				15.0	OL/OH	-FILL-						100				
	0.1	G6 14	16.0 18.0			OL/OH	Gray to black, organic SILT (OL/OH), wet, slight organic odor, mps = 0.05 in.						100				
							Gray to black, organic SILT (OL/OH), slight organic odor, wet, shell pieces, mps = 0.1 in.										
		G7 0	18.0 20.0				No Recovery -ORGANIC DEPOSIT-										
20					20.0												

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/12/04	09:45	0	-	-	6

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G12
Boring No. 14GH014

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No14GH014

File No29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	0.5	G8 18	20.0 22.0		21.0	SM	Gray, silty SAND (SM), wet, slight organic odor, mps = 0.05 in. -GLACIAL LACUSTRINE-					60	40				
	35.5					ML	Dark gray, SILT (ML), wet, naphthalene-like odor, mps = 0.05 in.						100				
	12	G9 20	22.0 24.0			ML	Gray to brown, SILT (ML), naphthalene-like odor, mps = 0.05 in.						100				
	9.0																
	10	G10 18	24.0 26.0			ML	Brown, SILT (ML), wet (loose), naphthalene-like odor, mps = 0.05 in.						100				
25																	
	65	G11 20	26.0 28.0			ML	Same as above						100				
	27	G12 20	28.0 30.0			ML	Same as above, with few black stained lenses -GLACIAL LACUSTRINE-						100				
30					30.0		BOTTOM OF EXPLORATION AT 30.0 FT.										

Notes: Borehole backfilled with drill cuttings and sand upon completion. Cobble stones were then placed back into position.

Sample "14GH014-00" collected from 0-0.2 ft.
Sample "14GH014-10" collected from 8.0-10.0 ft.
Sample "14GH014-18" collected from 16.0-18.0 ft.
Sample "14GH014-28" collected from 26.0-28.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. **14GH014**

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 14MWD01/ 14PH001

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc.

File No 29455-011
Sheet No. 1 of 2
Start February 25, 2004
Finish March 16, 2004
Driller R. Gause/L. Adams
H&A Rep. A. Murphy/B. Tarbell
Elevation 5.53
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: CME 75 Truck Mounted
Inside Diameter (in.)	4 1/14	1 3/8	-	Bit Type: -
Hammer Weight (lb.)	-	140	-	Drill Mud: -
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		SOD										
						SP	Brown, poorly-graded SAND with gravel (SP), mps = 1 in., no structure, no odor, dry.	5	10	10	15	50					
					2.0												
						SP	Brown to black, poorly-graded SAND with gravel (SP), mps= 2 in., no structure, no odor, dry, 10% Cinder-Like Material and coal, 5% brick	5	5	10	30	50					
					3.0												
						SP	Yellow to light brown, poorly-graded SAND with gravel (SP), mps = 2 in., no structure, no odor, dry.	5	10	20	30	35					
5					5.0												
		G1 7	5.0 7.0			SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Very loose, brown, silty SAND (SM), mps 0.5 in., no structure, no odor, dry, 5% brick particles, occasional crushed concrete pocket 2 in.				20	60	15				
		G2 9	7.0 9.0			SM	Similar to above, except without concrete pocket -FILL-										
		G3 6	9.0 11.0		9.7	SM SP	Very loose, black, silty SAND (SM), mps 0.2 in. no structure, gas-like odor, moist Very loose, brown, poorly-graded SAND with gravel (SP), no structure, no odor, wet.			5	10	50	35				
10		G4 4	11.0 13.0		12.0												
					13.0	CL	Very soft, black, silty CLAY (CL), mps = 0.5 in., frequent pockets of brown coarse sand, frequent wood fibers and chips, no odor.				10	20	70	M	M	M	M
		G5 18	13.0 15.0			CL	Very soft, gray, silty CLAY (CL), mps = 0.1 in., varved layers consisting of fine to medium sand and silty with clay, gray to brown mottling, petroleum-like odor, wet.					25	75	N	M	M	M
15		G6 12	15.0 17.0			CL	Similar to above. -GLACIAL LACUSTRINE-										
		G7 16	17.0 19.0			CL	Similar to above.										
		G8 11	19.0 21.0			CL	Stiff, gray, lean CLAY (CL), mps = 0.1 in., occasional 3 in. pocket of black brown fine grained soil with 25% organics from 19.3 to 19.6 ft.				10	20	70	N	M	M	M
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/16/04	NA	0	9.0	11.0	10.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 31
Rock Cored (lin. ft.) -
Samples S13

Boring No. 14MWD01/ 14PH001

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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TEST BORING REPORT

Boring No. 14MWD01/ 14PH001
File No. 29455-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
		G9 24	21.0 23.0			CL	Similar to above, except no organics -GLACIAL LACUSTRINE-										
					23.0												
		G10 15	23.0 25.0			MH	Stiff, gray, elastic SILT with sand (MH), mps = 0.25 in. occasional brick piece, no odor wet.				15	15	70				
25		G11	25.0 27.0			MH	Similar to above. -GLACIAL LACUSTRINE-										
		G12	27.0 29.0			MH	Similar to above.										
		G13	29.0 31.0			MH	Similar to above.										
30																	
					34.5		BOTTOM OF EXPLORATION AT 34.5 FT.										

Notes: Drill cuttings placed in drums. Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report I4MWD01" for complete well details.

Sample "14PH001-00" collected from 0-0.2 ft.
Sample "14PH001-02" collected from 0-2.0 ft.
Sample "14PH001-04" collected from 2.0-4.0 ft.
Sample "14PH001-07" collected from 5.0-7.0 ft.
Sample "14PH001-15FP" collected from 13.0-15.0 ft.
Sample "14PH001-31" collected from 29.0-31.0 ft.

Note: Due to weather conditions no PID readings were obtained at this location.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler

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

Boring No. 14MWD01/ 14PH001

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 14PH002

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Fenley & Nicol Environmental, Inc.

File No 29455-011
Sheet No. 1 of 2
Start March 9, 2004
Finish March 10, 2004
Driller M. Ryan/K. Kegel
H&A Rep. S. Brousseau/P. Falce
Elevation 5.13
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-COBBLESTONES-										
	0.2	G1 -	0.0 4.0		0.6	SM	Brown, silty SAND with gravel (SM) dry, no odor, mps = 4 in., 30-40% brick	10	15	15	15	30	15				
		G2 6	4.0 8.0		5.0		Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.										
5						SP	Brown, poorly-graded SAND with gravel (SP), wood fibers in tip of sampler	10	15	15	30	25	5				
							-FILL-										
		G3 0	8.0 12.0	NO WELL INSTALLED			Obstruction at 8 ft. wood										
10							Push through obstruction to 12 ft. with point.										
		G4 0	12.0 16.0				No Recovery										
15																	
		G5 1	16.0 18.0														
	19.3					ML	Dark gray, wet silt with SAND (ML), slight petroleum-like or organic odor, wood fibers, brick pieces.			10	10	10	70				
	0.3	G6 18	18.0 20.0			ML	Gray, sandy SILT (ML), wet, slight ash-like odor, mps = 0.05 in.				10	25	65				
							-FILL-										
20					20.0												

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/10/04	10:15	0	0	0	7

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

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

Summary
Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G11
Boring No. 14PH002

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14PH002

File No 29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	0.9	G7 24	20.0 22.0			ML	Gray to red/brown, sandy SILT (ML), wet, slight organic-like odor, mps = 0.5 in.										
	0.6	G8 20	22.0 24.0			ML	Red/brown, sandy SILT (ML), wet, slight organic-like odor, mps = 0.05 in.										
		G9 0	24.0 26.0				No Recovery. Sampler plug malfunctioned allowing silt/slurry into sampler. Driller could not recover sample.										
25	0.4	G10 22	26.0 28.0			ML	Red/brown, sandy SILT (ML), wet, slight organic-like odor, mps = 0.05 in., moist										
	0.8	G11 18	28.0 30.0			ML	Same as above, moist, no odor										
							-GLACIAL LACUSTRINE-										
30					30.0		BOTTOM OF EXPLORATION AT 30.0 FT.										

Notes: Borehole backfilled with drill cuttings and sand upon completion. Cobblestones were then placed back into position.

Changed to discreet sampler at 16 ft.

Sample "14PH002-00" collected from 0-0.2 ft.
Sample "14PH002-07" collected from 5.0-7.0 ft.
Sample "14PH002-20" collected from 18.0-20.0 ft.
Sample "14PH002-30" collected from 28.0-30.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size

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

Boring No. **14PH002**

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 14PH003

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Fenley & Nicol Environmental, Inc.

File No 29455-011
Sheet No. 1 of 2
Start March 8, 2004
Finish March 9, 2004
Driller M. Ryan/K. Kegel
H&A Rep. P. Falce
Elevation 5.12
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.50	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		-COBBLESTONES-										
	0.4	G1 -	0.0 4.0			SM	Light brown, silty SAND (SM), no odor, dry, mps = 0.25 in.			15	20	45	20				
					1.5												
	0.0					SP-SM	Brown, poorly-graded SAND with silt and gravel (SP-SM), 25% brick, mps = 4 in., no odor, moist	10	15	15	25	25	10				
		G2 20	4.0 8.0														
5	0.8				5.0	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Layered brown to orange to gray silty SAND (SM), moist, no odor, brick fragments, mps = 0.75 in. -FILL-		5	15	30	25	25				
		G3 0	8.0 12.0	NO WELL INSTALLED			No Recovery. Sampler contained washed-in soils, with brick and coal pieces.										
10																	
	0.3	G4 10	12.0 16.0			SM	Layered brown to black, silty SAND with gravel SM, wet, no odor -FILL-	5	15	15	20	25	20				
	0.8						Gray to white ash, solid 1 in. thick layer in sampler, wet no odor										
15	1.3					SM	Black silty SAND with gravel (SM), wet, no odor, with brick pieces.	5	15	10	20	30	20				
		G5 0	16.0 20.0				No recovery - sampler wet with 1.5 in. piece or slag in tip -FILL-										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/9/04	14:15	0	-	-	7

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 27
Rock Cored (lin. ft.) -
Samples G7
Boring No. 14PH003

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14PH003

File No 29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	0.3	G6 48	20.0 24.0			SM	Gray to brown silty SAND with gravel (SM), no odor, wet -GLACIAL LACUSTRINE-	5	15	20	25	25	15				
	0.4				22.0	ML	Brown, sandy SILT (ML), wet, no odor				10	15	75				
	0.3	G7 36	24.0 27.0			ML	Brown, sandy SILT (ML), no odor, moist -GLACIAL LACUSTRINE-										
25					27.0		Refusal at 27.0 ft. BOTTOM OF EXPLORATION AT 27.0 FT. Notes: Borehole backfilled with drill cuttings and sand upon completion. Cobblestones were then placed back into position. Sample "14PH003-00" collected from 0-0.2 ft. Sample "14PH003-07" collected from 5.0-7.0 ft. Sample "14PH003-16" collected from 14.0-16.0 ft. Sample "14PH003-27" collected from 25.0-27.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 14PH003

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 14MWS01

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc.

File No 29455-011
Sheet No. 1 of 1
Start February 25, 2004
Finish March 16, 2004
Driller R. Gause/L. Adams
H&A Rep. A. Murphy/B. Tarbell
Elevation 5.64
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: CME 75 Truck Mounted
Inside Diameter (in.)	4 1/14	1 3/8	-	Bit Type: -
Hammer Weight (lb.)	-	140	-	Drill Mud: -
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		-SOD-										
						SP	Brown, poorly-graded SAND with gravel (SP), mps = 2.5 in., no structure, no odor, dry, 5% brick debris, 5% oyster shells and 5% Cinder-Like Material	5	10	15	20	50					
							-FILL-										
5					5.0		Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.										
							See Test Boring Report 14MWD01/14PH001 for soil descriptions from 5.0 to 19.0 ft.										
10																	
15																	
					19.0		Notes: Drill cuttings placed in drums. Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 14MWS01" for complete well details.										
							BOTTOM OF EXPLORATION AT 19.0 FT.										

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

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

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

Summary
Overburden (lin. ft.) 19
Rock Cored (lin. ft.) -
Samples
Boring No. 14MWS01

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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TEST BORING REPORT

Boring No.14MWD02

Project Former Con Edison Manufactured Gas Plants Within Stuyvesant Town 14th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling And Testing, Inc.

File No29455-011
Sheet No. 1 of 2
Start March 23, 2004
Finish March 25, 2004
Driller J. Meyers/V. Champagne
H&A Rep.P. Falce
Elevation 6.39
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: CME LC - 60 ATV Mounted
Inside Diameter (in.)	4 1/14	1 3/8	-	Bit Type: -
Hammer Weight (lb.)	-	140	-	Drill Mud: -
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: - Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		-COBBLESTONE-										
	0.0				1.0	SP	Light brown, poorly-graded SAND (SP), no odor, moist, mps = 0.012 in.		5	30	35	25	5				
	0.0					SM	Light brown, silty SAND with gravel (SM), no odor, moist, mps = 4 in., 30-40% brick.	10	15	15	20	20	20				
							-FILL-										
					4.0		Refusal at 4 ft. on mortared brick. Bottom of Hand Excavation/Vac-Truck Exploration at 4.0 ft. Augered through refusal.										
5							See Test Boring Reports 14GH011 and 14GH012 for soil descriptions from 4.0 to 34.5 ft.										
10																	
15																	
20																	

Water Level Data

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

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 34.5
Rock Cored (lin. ft.) -
Samples -
Boring No. 14MWD02

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 14MWD02

File No 29455-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
25																	
30																	
					34.5		BOTTOM OF EXPLORATION AT 34.5 FT. Notes: Drill cuttings placed in drums. Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 14MWD02" for complete well details.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 14MWD02

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17CY001

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 1
Start February 4, 2004
Finish February 11, 2004
Driller D. Gregorio/B. Cruz
H&A Rep. A. Murphy/H. Klein
Elevation 10.09
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Davey Drill DK 527 ATV Mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: -
Hammer Weight (lb.)	-	140	-	Drill Mud: -
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Rope Cathead/Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		-COBBLESTONES-										
	0.0					SP	Yellow to light brown, poorly-graded SAND with gravel (SP), mps = 2 in., no structure, no odor, moist; approximately 10% brick.	5	5	10	60	20					
	0.0				2.0	SP	Brown, poorly-graded SAND with gravel (SP), mps = 2 in., no structure, no odor, moist; approximately 5% brick.	5	10	5	60	15	5				
	0.0				4.0		-FILL-										
						SP	Similar to above, except no brick; approximately 5% oyster shells and glass.	5	10	5	60	15	5				
5	1.0	S1 12	5.0 7.5		5.0	SM	-FILL- Bottom of Hand Excavation/Vac-Truck Exploration at 5.4 ft. NOTE: Drove spoon 30" at 5ft. Dense, red-brown, silty SAND (SM), mps = 1 in., no odor, moist, approximately 10% brick and mortar. Some black staining visible in bottom of spoon. Layer of mortar approximately 1.5 in., thick.		5	10	10	50	25				
	0.9	S2 13	7.5 9.0	NO WELL INSTALLED	7.5	SM	Loose, brown to yellow-brown, silty SAND (SM), mps = 1 in., no odor, moist to wet, approximately 5% brick and Coal-Like Material. Black staining near Coal-Like Material.		5	10	10	45	30				
	0.6	S3 2	9.0 11.0		9.0	SM	Very loose, brown, silty SAND (SM), mps = 0.5 in., no odor, wet, approximately 10% brick pieces at top of spoon.		5	5	10	55	25				
10					11.0		-FILL-										
							BOTTOM OF EXPLORATION AT 11.0 FT.										

Notes: Borehole backfilled with drill cuttings and sand upon completion.
Cobblestones were then placed back into position.
Sample "17CY001-00" collected from 0 - 0.2 ft.
Sample "17CY001-02" collected from 0 - 2.0 ft.
Sample "17CY001-04" collected from 2.0 - 4.0 ft.
Sample "17CY001-11" collected from 9.0 - 11.0 ft.

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/11/2004	NA	NA	9.0	11.0	9.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 11.0
Rock Cored (lin. ft.) -
Samples S3
Boring No. 17CY001

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17CY002

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 1
Start February 19, 2004
Finish February 25, 2004
Driller D. Gregorio/M. Mede
H&A Rep.H. Klein/P. Falce
Elevation 18.69
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Wire Winch Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0		0.0 5.0		1.0	SM	Dark brown, silty SAND (SM), mps = 4 in., no odor, moist.										
						SM	-TOPSOIL- Brown, silty SAND (SM), mps = 10 in., no odor, moist. Approximately 15% brick, less than 5% Coal-Like Material. No observable staining or PID readings. -FILL-										
5	0.0	S1 10	5.0 7.0			SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Medium dense, brown, silty SAND (SM), mps = 0.1 in., no odor, moist, Brick and asphalt pieces in spoon tip.				25	35	40				
	0.1	S2 9	7.0 9.0	NO WELL INSTALLED	7.0	SM	Dense, brown, silty SAND (SM), no odor, moist, mps = 0.1 in. NOTE: Approximately 75% of sample contains brick and concrete pieces.				25	40	35				
	0.1	S3 6	9.0 11.0		9.0	SM	-FILL- Medium dense, brown, silty SAND with gravel (SM), mps=1.37 in., slight petroleum-like odor, dry, mps = 2 in. Approximately 2% probable asphalt pieces, 50% brick, and concrete.	5	10	20	30	10	25				
10	0.0	S4 2	11.0 13.0		11.0	SM	Similar to above.										
	0.0	S5 4	13.0 15.0		13.0	SM	Medium dense, brown, silty SAND with gravel (SM), no structure, no odor, dry. Approximately 50% red brick. -FILL-	5	10	15	15	20	35				
15		S6 0	15.0 15.8		15.0		No Recovery NOTE: Auger refusal at 16.5 ft due to an obstruction.										
					16.5		BOTTOM OF EXPLORATION AT 16.5 FT. NOTES: Borehole backfilled with drill cuttings and sand upon completion. Sample "17CY002-00" collected from 0-0.2 ft. Sample "17CY002-11" collected from 9.0-11.0 ft.										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
-NOT ENCOUNTERED-					

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 16.5
Rock Cored (lin. ft.) -
Samples S6
Boring No. 17CY002

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17CY003

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 2
Start February 5, 2004
Finish February 26, 2004
Driller D. Gregorio/M.Mede
H&A Rep.A. Murphy/P. Falce
Elevation 17.19
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Winch/Downhole hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0			NO WELL INSTALLED		SP	Brown, poorly-graded SAND with gravel (SP), mps = 3 in., no structure, no odor, dry. Approximately 10% brick, occasional wire, roots and concrete.	20	20	10	50					
					5.0		Similar to above except 25% bricks and 3 in., long terra cotta tile (right angle). Slab of mica, approximately 1.5' long and 2.5 in. thick, mps = 6 in.										
5	1.7	S1 11	5.0 7.0			SM	Bottom of Hand Excavation/Vac-Truck Exploration at 4.0 ft. -FILL-		5	10	30	20	35				
					7.0		Dense, brown, silty SAND (SM), mps = 1.37 in., dry, no odor. Greater than 50% brick and concrete.										
	1.7	S2 13	7.0 9.0			SP-SM	Dense, brown to dark brown, poorly-graded SAND with gravel (SP-SM), mps = 1.37 in., dry, no odor. Greater than 50% brick and concrete.	5	15	15	25	30	10				
	1.9	S3 8	9.0 11.0		9.0	SM	Medium dense, brown, silty SAND (SM), mps = 1.37 in., moist, no odor, 2" brick followed by 2" asphalt in spoon tip, slight petroleum-like odor in asphalt.										
10	1.7	S4 6	11.0 13.0		11.0	SM	Dense, dark brown, silty SAND (SM), mps = 1.37 in., no odor, dry approximately 75% brick and concrete pieces. -FILL-			25	25	25	25				
		S5 0	13.0 15.0		13.0		No recovery - pushed brick piece in tip.										
15	1.8	S6 8	15.0 17.0		15.0	SM	Medium dense, brown, silty SAND with gravel (SM), mps = 1.37 in., no odor, tip wet. Approximately 50% brick.	10	10	15	25	20	20				
		S7 12	17.0 19.0		17.0	SM	Same as above. -FILL-										
	2.1				18.0	SM	Medium dense, gray to black silty SAND (SM), mps = 0.1 in., wet, organic odor present.			10	20	30	40				
	1.8	S8 12	19.0 21.0			SM	Same as above, except loose										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/26/2004	11:00	0	15.0	17.0	16.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 31.0
Rock Cored (lin. ft.) -
Samples S13
Boring No. 17CY003

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

CON ED_TB3_PG1 USCSLIB4.GLB USCSTB+CORE4.GDT G:\DATA\29\29455_29462_29463\GINT LOGS\29462-011 AQUIFER.GPJ Apr 12, 05

HALEY & ALDRICH

TEST BORING REPORT

Boring No 17CY003
File No 29462-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20							-GLACIAL LACUSTRINE-										
	1.7	S9 18	21.0 23.0			SM	Loose, gray, silty SAND (SM), mps = 0.25 in., slight organic odor, wet.	5	5	20	20	20	30				
		S10 0	23.0 25.0				No recovery; spoon wet.										
25	1.9	S11 15	25.0 27.0			SM	Medium dense, gray, silty SAND with gravel (SM), mps = 0.25 in., wet. Brick and concrete pieces present.	5	15	15	20	30	15				
	1.8	S12 13	27.0 29.0		27.0	SM	Same as above.										
	1.8	S13 18	29.0 31.0		29.0	SM	Same as above, except loose.										
30							-GLACIAL LACUSTRINE-										
					31.0		BOTTOM OF EXPLORATION AT 31.0 FT.										

NOTES: Borehole backfilled with drill cuttings and sand upon completion.

Sample "17CY003-00" collected from 0-0.2 ft.
Sample "17CY003-02" collected from 0.0-2.0 ft.
Sample "17CY003-04" collected from 2.0-4.0 ft.
Sample "17CY003-011" collected from 9.0-11.0 ft.
Sample "17CY003-17" collected from 15.0-17.0 ft.
Sample "17CY003-23" collected from 21.0-23.0 ft.
Sample "17CY003-31" collected from 29.0-31.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. 17CY003

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17CY004

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 2
Start February 4, 2004
Finish February 13, 2004
Driller D. Gregorio/ M. Mayer
H&A Rep.A. Murphy/W. Graham
Elevation 10.41
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S		Rig Make & Model: CME 75 Truck mounted
Inside Diameter (in.)	3.25	1 3/8		Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing:
				Hoist/Hammer: Winch/Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0					SP	Brown, poorly-graded SAND with gravel (SP), mps = 2 in., no structure, no odor, moist.	5	10	10	50	30	5				
5	0.0	S1 10	5.5 7.0		5.5	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.5 ft. Medium dense, light brown silty SAND with gravel (SM), mps = 1.37 in., no structure, no odor.	10	10	15	30	20	15				
	0.0	S2 8	7.0 9.0	NO WELL INSTALLED	7.0	SP	-FILL- Loose, dark brown, poorly-graded SAND and gravel (SP), mps = 1.37 in., no structure, no odor.	10	10	20	45	10	5				
	0.0	S3 5	9.0 11.0		9.0	SM	-FILL- Same as S1.										
10	0.0	S4 1	11.0 13.0		11.0	SP	Same as S2 except Moderately wet.										
	0.0	S5 10	13.0 15.0		13.0	SP	Same as S2 except Medium dense.										
15	1.7	S6 5	15.0 17.0		15.0	SP	Same as S2.										
	0.2	S7 5	17.0 19.0		17.0	SP	Same as S2, except Medium dense.										
	0.0	S8 6	19.0 21.0		19.0	SP	Same as S2 except Dense, 10 % red brick fragments.										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/13/2004	NA	NA	11.0	13.0	11.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 31.0
Rock Cored (lin. ft.) -
Samples S13
Boring No. 17CY004

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 17CY004
File No 29462-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	0.6	S9 10	21.0 23.0			SP	Same as S2, except Medium dense. -FILL-										
	0.0	S10 10	23.0 25.0		23.0	SP	Same as S2, except Medium dense.										
25	0.0	S11 12	25.0 27.0		25.0	SP	Same as S2, except very dense, 20% red brick fragments, naphthalene-like odor, thin section of Tin-Like Material at approximately 26.5 ft., black staining from 26.0-26.5 ft.										
	2.7	S12 13	27.0 29.0		27.0	SP-SM	Loose, dark brown, poorly-graded SAND, mps = 0.13 in., no structure, slight naphthalene-like odor.				80	15	5				
	0.0	S13 5	29.0 31.0		29.0	SP-SM	Same as S12. -FILL-										
30					31.0		BOTTOM OF EXPLORATION AT 31.0 FT.										

NOTES: Borehole backfilled with drill cuttings and sand upon completion.

Sample "17CY004-00" collected from 0-0.2 ft.
Sample "17CY004-11" collected from 9.0-11.0 ft.
Sample "17CY004-17" collected from 15.0-17.0 ft.
Sample "17CY004-30" collected from 29.0-30.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 17CY004

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17CY005

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 1
Start February 4, 2004
Finish March 3, 2004
Driller D. Gregorio/ M. Mede
H&A Rep. A. Murphy/J. O'Brien
Elevation 10.66
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S		Rig Make & Model: Mobile B-47 truck mounted
Inside Diameter (in.)	4.25	1 3/8		Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing:
				Hoist/Hammer: Wire Winch Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0		0.0 5.0	NO WELL INSTALLED		SP	Brown, poorly graded SAND with gravel (SP), mps=3.0 in., no structure, no odor, moist, 5% brick, 5% concrete debris. -FILL-	10	5	15	45	20	5				
5	0.0	S1 13	5.0 7.0		5.0	SP	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Loose, brown silty SAND with gravel, pieces of brick, no structure, no odor, dry. -FILL-	5	10	10	35	15	25				
	0.0	S2 6	7.0 9.0		7.0	SP	Loose, dark brown, silty SAND with gravel, brick pieces, no structure, no odor,moist.	20	10	5	20	15	30				
10	0.2	S3 9	9.0 11.0		9.0	SP	Medium, black and white to brown silty SAND, with gravel (weathered schist), brick pieces, no structure, no odor, dry. -FILL-	15	10	20	30	15	10				
					11.0		BOTTOM OF EXPLORATION AT 11.0 FT.										

NOTES: Borehole backfilled with drill cuttings and sand upon completion.

Sample "17CY005-00" collected from 0-0.2 ft.
Sample "17CY005-11" collected from 9.0-11.0 ft.

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/3/2004	NA	NA	9.0	11.0	NE

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 11.0
Rock Cored (lin. ft.) -
Samples S3
Boring No. 17CY005

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17CY006

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 2
Start February 6, 2004
Finish March 2, 2004
Driller D. Gregorio/ M. Mede
H&A Rep.S. Brousseau/P. Falce
Elevation 9.64
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Wire Winch Downhole hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.3		-TOPSOIL-										
	0.6				0.5	SM	Gray brown silty SAND (SM), mps = 0.6 in., no odor, moist. Trace roots, frost to 1.0 ft.			5	20	45	30				
						SM	Brown silty SAND (SM), mps = 2.0 in., no odor, moist. Approximately 5% tile and concrete.			10	20	40	30				
	0.8				2.2	SM	Dark brown, silty SAND with gravel (SM), mps = 6 in., no odor, moist. 10% brick, tan concrete and cobble. Tan concrete was encountered from 3.3-3.8 ft.	5	15	20	20	15	15				
							-FILL-										
5	0.5	S1 8	5.0 7.0	NO WELL INSTALLED	5.0	GW-GM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Loose, orange to brown, well-graded GRAVEL with silt and sand (GW-GM), mps = 1.25 in., no odor, moist. Weathered boulder.	20	30	15	15	10	10				
		S2 3	7.0 9.0		7.0	GW-GM	Same as S1 except Medium dense, mps = 1 in.	25	25	15	15	10	10				
	0.4	S3 3	9.0 11.0		9.0	GW-GM	Same as S1 except Medium dense, mps = 1 in., no odor, wet.	25	20	20	15	10	10				
10	0.3	S4 20	11.0 13.0		11.0	ML	Loose gray to brown SILT with sand (ML), mps = 0.1 in., wet, no odor, boulders.			5	5	10	80				
							-FILL-										
		S5 16	13.0 15.0		13.0	SP-SM	Medium dense, brown to dark gray, poorly-graded SAND with silt (SP-SM) mps = 1.25 in., no odor, over weathered cobbles, brick fragments.		5	5	40	30	10				
15		S6 14	15.0 17.0		15.0	SW-SM	Brown, medium dense, well-graded SAND with silt (SW-SM), mps = 0.25 in., no odor, wet. Brick fragments.		5	25	35	25	10				
	0.2	S7 18	17.0 19.0		17.0	SW-SM	Same as S6, except mps = 0.1 in., slight organic odor, brick fragments.										
	0.3	S8 16	19.0 21.0		19.0	SW-SM	Medium dense, brown, well-graded SAND with silt and gravel (SW-SM), mps = 0.5 in., slight organic odor, wet, brick fragments.	5	15	15	25	30	10				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/02/2004	09:30	0	-	-	11.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 28.6
Rock Cored (lin. ft.) -
Samples S12
Boring No. 17CY006

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 17CY006
File No 29462-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
		S9 16	21.0 23.0			SW-SM	Same as S8 except mps = 0.75 in., staining in 3 in. tip of spoon, brick fragments. -FILL-										
					23.0												
	10.6	S10 14	23.0 25.0			SW-SM	Loose, brown to black, well-graded SAND with silt, black staining at tip, naphthalene-like odor. Wood fibers present.										
25	102	S11 14	25.0 25.5			SW-SM	Very dense, brown to black, well-graded SAND with silt, mps = 1.25 in., wet sheen. Black staining and naphthalene-like odor in bottom 6 in., of spoon. Brick fragments present. 1 3/8" diameter disk of fibrous Tar-Like Material.	0	10	20	20	30	20				
	48.6	S12 16	27.0 28.5		27.0		NOTE: Spoon refusal at 25 ft.6 in., augered to 27'. Same as S11 except mps = 1.25 in., 30% brick pieces.										
					28.5												
					28.6		NOTE: Spoon refusal at 28.5 ft. Augered 1" additional. Refusal at 28 ft 7 in.. Split spoon contained washed in soils, pulverized brick in spoon tip. No recovery. -FILL-										
							BOTTOM OF EXPLORATION AT 28.6 FT.										

NOTES: Borehole backfilled with drill cuttings and sand upon completion.

Sample "17CY006-00" collected from 0-0.2 ft.
Sample "17CY006-11" collected from 9.0-11.0 ft.
Sample "17CY006-21" collected from 19.0-21.0 ft.
Sample "17CY006-26" collected from 25.0-25.5 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 17CY006

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 17MWDO3/ 17CY007

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 2
Start January 30, 2004
Finish February 17, 2004
Driller J. Kamenicek /B. Cruz
H&A Rep. A. Murphy/H. Klein
Elevation 10.09
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Davey Drill DK 527 ATV Mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing:
				Hoist/Hammer: Rope Cathead/Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0					SP	Brown, poorly-graded SAND with gravel (SP), mps = 3 in., no structure, no odor, dry.	5	10	15	60	5	5				
					4.2		Bottom of Hand Excavation/Vac-Truck Exploration at 4.2 ft. on cobbles										
5	0.4	S1 22	5.0 7.0			SM	NOTE: Sample collected from spoon used to punch through auger refusal layer. No blow counts recorded. Augers advanced to 8 ft.	5	5	10	10	50	20				
					7.0		Dark brown black silty SAND (SM), mps = 1.37 in., no odor moist. Approximately 10% brick, 5% Ash-Like Material, 5% Cinder-Like Material. Brown fill material in top 10 in. of spoon.										
	4.6	S2 16	8.0 10.0			SM	-FILL- Medium dense, dark gray to black, silty SAND (SM), mps = 1 in., no odor, moist, approximately 5% brick, 10% Ash-Like Material, 5% of Coal-Like Material.		5	15	15	50	15				
10	5.4	S3 8	10.0 12.0		10.0	SM	Loose, brown to gray, silty SAND (SM), mps = 0.5 in., slight petroleum-like odor in tip of spoon, moist to wet. Odor observed in gray material at bottom of spoon, less than 5% staining in spoon tip.		5	10	10	60	15				
	15.6	S4 -	12.0 14.0		12.0	SM	Loose, gray, silty SAND (SM), mps = 1 in., petroleum-like odor, wet, no visible staining. Odor throughout spoon with strongest odor from tip.		5	10	10	60	15				
	91.2	S5 14	14.0 16.0		14.0	SM	Same as S4 except stronger petroleum-like odor, visible staining approximately 15%.		5	10	10	40	35				
15	10	S6 11	16.0 18.0		16.0	SM	Loose, dark gray-brown to black, silty SAND (SM), mps = 0.5 in., petroleum-like odor, wet. Bottom 3 in. of spoon consists of very wet, black, silty sand. Approximately staining throughout 25% of spoon.		5	5	5	55	30				
	9.7	S7 6	18.0 20.0		18.0	SM	Loose, dark gray, silty SAND (SM), mps = 0.5 in., slight petroleum-like odor, very wet. Approximately 40% staining with 20% mortar and brick.		10	15	15	40	20				
20					20.0												

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/16/2004	NA	NA	10.0	12.0	10.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 35.0
Rock Cored (lin. ft.) -
Samples S13

Boring No. 17MWDO3/ 17CY007

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 17MWDO3/ 17CY007
File No 29462-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	5.4	S8	20.0 22.0			SM	-FILL- Same as S7, except 15% wood chips/organics observed 4 in., from bottom of spoon. Tighter, sandy material in bottom of spoon. Staining throughout 50%.										
					22.0												
	4.7	S9 10	22.0 24.0			SM	Same as S8, except approximately 5% medium dense brick with gravel and Cinder-Like Material, very slight petroleum-like odor.	5	10	10	10	40	25				
					24.0												
	1.9	S10 8	24.0 26.0			SM	Very loose, dark gray to black, silty SAND (SM). -FILL-										
25					26.0												
	5.3	S11 24	26.0 28.0			SP-SM	Medium dense, dark gray to black, poorly-graded SAND with silt (SP-SM), mps = 1 in.		5	5	5	75	10				
					27.0	CL	-GLACIAL LACUSTRINE- Stiff, black, sandy lean CLAY (CL), naphthalene-like odor, wet, approximately 5% organics.					30	70				
		S12 20	28.0 30.0		28.0	SP	Top 8 in., same as top of (S11) except loose, slight to no odor, middle 4 in. moves to coarse SAND, mps = 0.03 in. with a strong petroleum-like odor, wet.		10	20	15	50	5				
	5.8				29.0	SM				5	5	50	40				
					29.5	SP-SM	Bottom of layer grades into a silty SAND, product visible in dark rust stain color, sheen visible on spoon.			10	10	70	10				
30	1.9	S13 20	30.0 32.0		30.0	SP-SM	Bottom of spoon, gray, poorly-graded SAND with silt, mps = 0.03 in., no discernible odor, no staining, product or sheen present, wet.				10	85	5				
					32.0		Loose, gray, poorly-graded SAND (SP), mps = 0.03 in., slight petroleum-like odor, wet. Some spots of sheen in top portion of spoon (less than 5%). Spoon grades from coarser material into finer silty sand at bottom of spoon. NOTE: Approximately 5 ft of running sands inside auger after advancing to 32 ft below ground surface. No sample taken. -GLACIAL LACUSTRINE-										
35					35.0		BOTTOM OF EXPLORATION AT 35 FT. NOTE: Drill cuttings placed in drums. Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 17MWD03" for complete well detail. Sample "17CY007-00" collected from 0 - 0.2 ft. Sample "17CY007-02" collected from 0.2 - 2.0 ft. Sample "17CY007-04" collected from 2.0 - 4.0 ft. Sample "17CY007-10" collected from 8.0 - 10.0 ft. Sample "17CY007-16FP" collected from 14.0 - 16.0 ft. Sample "17CY007-30" collected from 28.0 - 30.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 17MWDO3/ 17CY007

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17CY008

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 1
Start January 29, 2004
Finish February 9, 2004
Driller J. Kamenicek / B. Cruz
H&A Rep. A. Murphy/H. Klein
Elevation 8.87
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Davey Drill DK 527 ATV Mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Rope Cathead/Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0		0.0 5.0	NO WELL INSTALLED		SP	Light Brown to brown, poorly-graded SAND with gravel (SP), mps = 4 in., no structure, no odor, dry.	5	10	20	50	10	5				
					2.5		Same as above, except dark brown. Encountered concrete obstruction concrete. Moved 2 feet west.	5	10	20	50	10	5				
							-FILL-										
5	0.7	S1 4	5.0 7.0		5.0	GP	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Dark gray, poorly-graded GRAVEL with sand (GP), mps = 0.5 in., no odor, moist, possible fill. Spoon consisted of two 1.5 in diameter rocks with sand in the middle of the two rocks.	60		5	10	25					
	0.4	S2	7.0 9.0		7.0	SM	Medium dense, brown, silty SAND (SM), mps = 1.5 in., no odor, moist. Small brick pieces (approximately 5% of spoon). Some dark staining (approximately 5%) on layer 2 inches from bottom of spoon.	5		10	10	35	40				
	0.4	S3 18	9.0 11.0		9.0 9.5	SM	Medium dense, brown, silty SAND (SM), mps = 1.25 in., no odor,	5	10	10	5	40	30				
	0.4				10.0	ML	moist to wet, 25% has slight black stain.										
10	0.4				10.4	SM	Yellow to orange, SILT with sand (ML), mps = 1/16 in., no odor, moist, black swirling throughout 4 in. "orange" silt layer (~35% of layer).					60	40				
	0.5				11.0		Light gray, silty SAND (SM), 4 in. thick layer, mps = 1/64 in., no odor, moist, staining at extents of gray sand layer (10% of layer). Silty SAND with 60% brick in bottom of spoon, 30% black staining, no odor.										
							-FILL-										
							BOTTOM OF EXPLORATION AT 11.0 FT.										

NOTES: Borehole backfilled with drill cuttings and sand upon completion.

Sample "17CY008-00" collected from 0 - 0.2 feet
Sample "17CY008-02" collected from 0 - 2.0 feet.
Sample "17CY008-04" collected from 2 - 4.0 feet.
Sample "17CY008-11" collected from 9 - 11.0 feet.

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
		-NOT ENCOUNTERED-			

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 11.0
Rock Cored (lin. ft.) -
Samples S3
Boring No. 17CY008

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17CY009

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 1
Start January 27, 2004
Finish February 9, 2004
Driller J. Kamenicek / B. Cruz
H&A Rep.S. Brousseau/H. Klein
Elevation 7.55
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Davey Drill DK 527 ATV Mounted
Inside Diameter (in.)	3.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Rope Cathead/Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0						SM	Gray, silty SAND (SM), trace of glass and brick fragments, mps = 1.0 in., no odor, dry.	5	5	10	30	30	20				
					1.0	SM	Gray to brown, silty SAND (SM), approximately 5% glass, coal, brick tile, and Clinker-like Material, mps = 4.0 in., no odor, dry. NOTE: Refusal at 4.2 ft. on concrete block (dimensions of 0.7'x1.0'x2') Moved 1.0' southwest, same description with concrete block mps = 9"x7"x4". Concrete foundation found 2'8" from building wall. Move 3.0' west, same sample description except asphalt present, mps = 7"x9"x13" concrete block.	5	5	10	30	30	20				
5	0.4	S1 6	5.0 7.0		5.0	SP-SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Loose, brown, poorly-graded SAND with silt (SP-SM), mps = 1.25 in., no odor, moist, trace of Ash-Like Material in bottom of spoon.		5	10	10	65	10				
	2.3	S2 21	7.0 9.0	NO WELL INSTALLED	7.0	SM	-FILL- Medium dense, brown, silty SAND (SM), mps = 1 in., no odor, moist, trace of Coal-Like Material and brick.		5	10	5	50	30				
					8.2	SM	Dark gray, silty SAND with gravel (SM), mps = 1.5 in., no odor,	10	10	5	5	40	30				
	0.4	S3 10	9.0 11.0		9.0	SM	moist, organics in tip of spoon, 0.25 in. layer of Coal-Like Material on top of gray layer 15% black staining. Medium dense, dark gray, silty SAND (SM), mps = 1 in., no odor, wet, 50% staining throughout sample. Approximately 10% brick; 5% wood/organics. Similar to the bottom 8 in., of S2.		5	5	5	50	35				
10					11.0		-FILL- BOTTOM OF EXPLORATION AT 11.0 FT.										

NOTE: Borehole backfilled drill cuttings and sand upon completion.

Sample "17CY009-00" collected from 0 - 0.2 feet
Sample "17CY009-10" collected from 8.0 - 10.0 feet.

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/9/2004	NA	NA	9.0	11.0	9.0

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

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

Summary
Overburden (lin. ft.) 11.0
Rock Cored (lin. ft.) -
Samples S3
Boring No. 17CY009

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17CY010

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 1
Start February 2, 2004
Finish February 9, 2004
Driller J. Kamenicek / B. Cruz
H&A Rep.A. Murphy/H. Klein
Elevation 7.47
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Davey Drill DK 527 ATV Mounted
Inside Diameter (in.)	3.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Rope Cathead/Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0			NO WELL INSTALLED		SP	Brown, poorly-graded SAND with gravel (SP), mps = 3 in., no structure, no odor, dry. Approximately 5% roots and brick.	10	15	15	50	5	5				
					5.0												
5	0.2	S1 6	5.0 7.0			SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Medium dense, brown, silty SAND (SM), mps = 0.5 in., no odor, moist; 30% wood, and 5% brick. Some staining on brick pieces.		5	10	10	45	30				
	1.0	S2 8	7.0 9.0			SM	-FILL- Medium dense, brown to dark gray, silty SAND with gravel (SM), slight odor, moist to wet, occasional light brown gravelly sand layer. Bottom of sample 50% stained. Pieces of gravel in spoon tip.	5	10	5	10	40	30				
					9.0												
	8.0	S3 7	9.0 11.0			SP	Medium dense, gray to brown, poorly-graded SAND (SP), mps = 0.5 in., trace wood, slight petroleum-like odor, wet.		15	15	10	55	5				
10							-FILL-										
					11.0		BOTTOM OF EXPLORATION AT 11.0 FT.										

NOTE:Borehole backfilled with drill cuttings and sand upon completion.

Sample "17CY010-00" collected from 0 - 0.2 feet
Sample "17CY010-09" collected from 7.0 - 9.0 feet.
Sample "17CY010-11FP" collected from 9.0 - 11.0 feet.

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/9/2004	NA	NA	9.0	11.0	9.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 11.0
Rock Cored (lin. ft.) -
Samples S3
Boring No. 17CY010

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 17MWD04/ 17GH001

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No 29462-011
Sheet No. 1 of 2
Start February 10, 2004
Finish March 11, 2004
Driller M.Smith/B.Cruz/M.Mede
H&A Rep. H. Klein/B. Tarbell
Elevation 10.08
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Davey Drill DK 527 ATV Mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Rope Cathead/Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.2		-BITUMONIUS CONCRETE-										
	0.1				0.5	SM	-CONCRETE-	10	10	10	40	15	15				
							Brown, silty SAND with gravel (SM), mps= 6 in., no structure, slight MGP-like odor, dry, 10% trace red brick. -FILL-										
5	1.7	S1 10	5.0 7.0		5.0	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Dense, brown, silty SAND (SM), mps= 1 in., no odor, moist, brick and mortar filled bottom of 2 in. of spoon (25% spoon is brick). FILL-	0	5	5	5	60	25				
	6.0	S2 8	7.0 9.0			SM	Medium dense, brown, silty SAND (SM), mps= 1.25 in., no odor, moist, brick in bottom of spoon (15%), no staining.	10	5	10	10	50	25				
	1.4	S3 3	9.0 11.0			SM	Similar to S2, except 1.25 in. rock in tip of spoon, no odor, moist, trace of brick.										
10	0.6	S4 9	11.0 13.0			SM	Medium dense, dark gray-brown, silty SAND (SM), mps= 1.25 in., no odor, wet, concrete in tip of spoon (5%), no observable stain.	0	5	5	10	60	20				
	1.0	S5 9	13.0 15.0			SM	Medium dense, dark gray, silty SAND (SM), mps= 1 in., no odor, wet, fill, pieces concrete (5%)/brick, weathered rock pieces (2 in. thick) at bottom spoon. -FILL-	0	5	10	10	50	25				
15	4.2	S7 14	15.0 17.0			SM	Medium dense, brown, silty SAND (SM), mps= 0.5 in., frequent pockets of Tar-Like Material at 15.1 - 15.3 ft. and 15.9 - 16.2 ft., upper pocket of Tar-Like Material stained, coarse sand to fine gravel, lower pocket of fine grained, slight gas-like odor, wet, 5% Tar-Like Material.	0	10	15	50	15	15				
	1.9	S8 9	17.0 19.0			SP	Similar to S7, except only trace coarse grained Tar-Like Material and less fines.	0	10	15	20	55	5				
	2.2	S9 7	19.0 21.0		19.0		Similar to S8.										
20																	

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

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

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

Summary

Overburden (lin. ft.) 34.0
Rock Cored (lin. ft.) -
Samples S13
Boring No. 17MWD04/ 17GH001

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 17MWD04/ 17GH001
File No. 29462-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	1.8	S10 4	21.0 23.0			SP	Medium dense, brown, poorly graded SAND (SP), mps= 0.25 in., no structure, no odor, wet, coarse sand/fine gravel is black but not stained.	0	5	10	15	65	5				
		S11 8	23.0 25.0				Similar to S10. NOTE: No PID (raining)										
25		S12 12	25.0 27.0			SP	Medium dense, brown, poorly graded SAND (SP), mps= 0.25 in., no structure, no odor. NOTE: Augered to 29 ft. for 28 ft. - 30 ft sample.	0	5	10	15	65	5				
	6.4	S13 9	28.0 30.0				Similar to SI2, except contains frequent brick fragments 5% in lower 6 in. of sample, napthalene-like odor in tip of spoon. -FILL-										
30					34.0		BOTTOM OF EXPLORATION AT 34.0 FT.										

NOTES: Drill cuttings placed in drums.

Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 17MWD04" for complete well details.

Sample "17GH001-00" collected from 0 - 0.2 ft.
Sample "17GH001-07" collected from 5.0 - 7.0 ft.
Sample "17GH001-15" collected from 13.0 - 15.0 ft.
Sample "17GH001 - 19FP" collected from 17.0 - 19.0 ft.
Sample "17GH001-30" collected from 28.0 - 30.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 17MWD04/ 17GH001

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17GH002

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 2
Start February 19, 2004
Finish February 24, 2004
Driller D. Gregorio/ M. Mede
H&A Rep.H. Klein
Elevation 10.62
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Winch/Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0					SM	Brown, silty SAND (SM), mps = 12 in., no odors, moist, approximately 5% brick, trace glass, red ceramic, white ceramic, and Coal-Like Material.	10	10	10	10	45	15				
					5.0												
5	0.4	S1 2	5.0 7.0			SP	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Very loose, brown poorly graded SAND with gravel (SP) approximately 30% brick, 40% cement/mortar. Concrete in tip of spoon.	20	30	10	10	25	5				
	0.5	S2 8	7.0 9.0			SM	Medium dense brown, silty SAND (SM), mps = 1 in., no odor, moist, approximately 20% brick, trace of Coal-Like Material.		5	5	10	65	15				
	0.1	S3 16	9.0 11.0			SM	Medium dense, gray-brown to black mps = 1 in., no odor, moist, approximately 10% brick. Dark staining in bottom of spoon, approximately 45%, of total spoon.		5	5	10	65	15				
10	0.1	S4 12	11.0 13.0	NO WELL INSTALLED		SM	Medium dense, gray silty SAND (SM), mps = 0.5 in., no odor, wet. Approximately 5% Ash-Like Material, trace wood. -FILL-		10	15	15	45	15				
	0.1	S5 1	13.0 15.0			SM	No recovery, (material similar to S4 in tip of spoon.)										
15	0.1	S6 12	15.0 17.0			SM	Medium dense, gray to black, silty SAND with gravel (SM), mps = 1 in., slight petroleum-like odor, wet. Approximately 10% brick, 20% black organic material interbedded with sand, 5% wood pieces.	5	10	5	5	50	25				
	0.3	S7 17	17.0 19.0			SM	Loose, gray to black, silty SAND with gravel (SM), mps = 0.5 in., slight petroleum-like odor, wet, trace Ash-Like Material. Bottom 6 in., of spoon containing 15% black Coal-Like Material; staining throughout bottom of spoon.	5	10	10	10	50	15				
	0.2	S8 20	19.0 21.0			SM	(S8) Similar to S7. -FILL-										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/24/2004	NA	NA	11.0	13.0	11.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 31.0
Rock Cored (lin. ft.) -
Samples S13
Boring No. 17GH002

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 17GH002
File No 29462-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
					20.6		-FILL-										
	0.3	S9 24	21.0 23.0		21.0	OL/ OH	Medium stiff, black organic soil (OL-OH), no odor, wet.					10	90				
						OL/ OH	Similar to bottom of S8, except hard occasional layer of gray silty SAND with gravel, trace wood and peat.					10	90				
	0.2	S10 10	23.0 25.0			OL/ OH	Similar to S9.										
25		S11 16	25.0 27.0			OL/ OH	Similar to S10. -ORGANIC DEPOSIT-						100				
	1.2				26.6												
	0.7	S12 20	27.0 29.0		27.0	SM SP-SM	Medium dense gray, silty SAND (SM), mps = 0.03 in., slight petroleum-like odor, wet, no visible staining, bottom 6 in. of spoon completely stratified from OL/OH layer. -GLACIAL LACUSTRINE-			5	5	80	10				
	0.8	S13 18	29.0 31.0		29.0	SP-SM	Dense, gray, poorly-graded SAND with silt (SP-SM), mps = 0.03 in., slight petroleum-like odor, wet. Similar to S12, except medium dense, slight odor, no observable staining. -GLACIAL LACUSTRINE-				5	85	10				
30					31.0		BOTTOM OF EXPLORATION AT 31.0 FT.										

NOTES: Borehole backfilled with drill cuttings and sand upon completion.

Sample "17GH002-00" collected from 0-0.2 ft.
Sample "17GH002-011" collected from 9.0-11.0 ft.
Sample "17GH002-17" collected from 15.0-17.0 ft.
Sample "17GH002-31" collected from 29.0-31.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. **17GH002**

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17GH003

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 1
Start February 16, 2004
Finish February 27, 2004
Driller M. Smith/M. Mede
H&A Rep.S. Brousseau/P. Falce
Elevation 9.97
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Winch Downhole Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.2		-TOPSOIL-										
					0.7	SM	Dark gray -brown, silty SAND (SM), trace roots, mps = 0.7 in., no odor, dry. Frozen to 0.7 ft.			5	20	35	40				
						SM	Brown, silty SAND (SM), trace of brick fragments, mps = 2.0 in., no odor, dry.	5	5	15	30	25	20				
							-FILL-										
5	0.8	S1 8	5.0 7.0	NO WELL INSTALLED	5.0	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Medium dense, brown, silty SAND with gravel (SM), mps = 1 in., no odor, dry, approximately 50% brick and cobble.	5	10	15	20	25	25				
	1.7	S2 12	7.0 9.0		7.0	SM	Same as S1 except mps = 1.5 in., approximately 30% brick and cobble.										
	4.5	S3 4	9.0 11.0		9.0	SM	Same as S1 except mps = 0.75 in., wet, cobble fragment in spoon tip.										
10	3.3	S4 12	11.0 13.0		11.0	SM	Same as S1 except dense, wet, mps = 1 in., cobble fragment in spoon tip.										
	0.9	S5 8	13.0 15.0		13.0	SM	Very dense, brown to gray, silty SAND, mps = 0.5 in., no odor, wet, weathered cobble fabric in spoon tip.		5	20	30	20	25				
15	3.2	S6 10	15.0 15.5		15.0 15.5	SW	Very dense, brown to gray, well-graded SAND with gravel (SW), no odor, wet. NOTE: HSA refusal at 15.0 ft. Split spoon refusal at 15.5 ft.	15	20	25	20	15	5				
							-FILL-										
							BOTTOM OF EXPLORATION AT 15.5 FT.										

NOTE: Borehole backfilled with drill cuttings and sand upon completion.

Sample "17GH003-00" collected from 0-0.2 in.
Sample "17GH003-09" collected from 7-9 ft.
Sample "17GH003-16" collected from 15-15.5 ft.

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/27/2004	10:00	0	10.0	11.0	10.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 15.5
Rock Cored (lin. ft.) -
Samples S6
Boring No. 17GH003

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 17GH004

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No 29462-011
Sheet No. 1 of 2
Start February 16, 2004
Finish March 1, 2004
Driller M. Smith/M. Mede
H&A Rep S. Brousseau/P. Falce
Elevation 10.31
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Winch Downhole Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0			NO WELL INSTALLED	0.3	SM	NOTE: Hand excavation to 5.0 ft with air knife, mini vac, and post hole digger.			5	20	35	40				
	0.0				1.0	SM	-TOPSOIL- Frozen to 0.8 ft. Dark brown, silty SAND (SM), trace roots, mps = 0.4 in., no odor, dry.	5	5	10	25	25	30				
							Brown, silty SAND (SM), trace brick fragments and wood, mps = 2.0 in., no odor, dry. -FILL-										
5	3.5	S1 4	5.0 7.0		5.0	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Loose, brown silty SAND (SM), mps = 0.1 in., no odor, moist.			20	20	20	40				
	0.3	S2 8	7.0 9.0		7.0	SM	Same as S1 except mps = 1.25 in., cobble in spoon tip.										
	0.8	S3 10	9.0 11.0		9.0	SM	(S3) Same as S1except mps = 1.25 in., wood and cobble in spoon tip.										
10	0.7	S4 8	11.0 13.0		11.0	SM	(S4) Medium dense, brown silty SAND (SM), mps = 0.1 in., no odor, moist to wet. -FILL-										
		S5 0	13.0 15.0				Loose, wet (washed) sands in spoon.										
15	0.4	S6 6	15.0 17.0			SM	Pull auger and realign to attempt sample from 15-17 ft. Medium dense, gray brown, silty SAND (SM), mps = 1.25 in., no odor, wet. Cobble in tip of sample spoon.	5	5	10	30	20	20				
	0.5	S7 12	17.0 19.0		17.0	SM	Very dense, silty SAND with gravel (SM), mps = 1 in., slight odor, wet. Cobble or concrete piece in tip. Hammer binding in HSA from 18.5-19 ft.	10	10	10	20	25	25				
	0.8	S8 12	19.0 20.0		19.0	SM	Very dense, brown, silty SAND (SM), mps = 0.5 in., slight odor. Gravel stained in tip of sample spoon.	5	5	15	25	30	20				
20					20.0												

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/27/2004	12:30	0	-	-	12.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 27.5
Rock Cored (lin. ft.) -
Samples S12
Boring No. 17GH004

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 17GH004
File No 29462-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20							Auger to 21 ft.										
					21.0												
	1.8	S9 12	21.0 23.0			SM	Medium dense, brown, silty SAND (SM), mps = 1.25 in., wet, dark gray (SM), slight petroleum-like odor. Rock chip/cobble in spoon tip.		5	15	25	20	35				
					23.0												
	0.3	S10 14	23.0 25.0			SM	Medium dense brown to gray brown, silty SAND (SM), mps = 1 in., no odor, wet. Rock chip in sample.		5	25	25	25	20				
					25.0												
25		S11 3	25.0 27.0			SM	(S11) Same as S10 above; dense.										
							Auger 26-27 as a result of spoon hammer binding from 24-25 ft.										
	59.5	S12 4	27.0 27.5		27.5	SM	Very dense, gray brown, silty SAND, naphthalene-like and ash-like odor. Brick chips in sample.		5	20	20	30	15				
							-FILL-										
							Spoon sampler refusal at 27.5 ft. Auger refusal at 27.5 ft.										
							BOTTOM OF EXPLORATION AT 27.5 FT.										
							NOTE: Borehole backfilled with cuttings and sand.										
							Sample "17GH004-00" collected from 0-0.2 ft. Sample "17GH004-11" collected from 9.0-11.0 ft. Sample "17GH004-20" collected from 19.0-20.0 ft. Sample "17GH004-28" collected from 27.0-27.5 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 17GH004

HALEY & ALDRICH

TEST BORING REPORT

Boring No.17GH005

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 2
Start February 5, 2004
Finish February 12, 2004
Driller D. Gregorio/M. Mayer
H&A Rep.A. Murphy/W. Graham
Elevation 10.70
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: CME 75 Truck mounted
Inside Diameter (in.)	3.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Winch/Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0					SP-SM	Brown, poorly-graded SAND with silt and gravel (SP-SM), mps = 2 in., no structure, no odor, moist. Occasional brick at 3.5 ft. Refusal on concrete at 3.5 ft. Moved location 4 ft. South.	5	10	10	65	10					
5	0.1	S1 3	5.5 7.0	NO WELL INSTALLED	5.5	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.5 ft. Loose, light brown, silty SAND with gravel (SM), mps = 1.37 in., no structure, no odor, approximately 5% brick. -FILL-	5	15	10	30	25	15				
	0.1	S2 1	7.0 9.0			SM	Red brick.										
	0.6	S3 6	9.0 11.0		9.0	SP	Very loose, light brown, poorly-graded SAND with gravel (SP), mps = 1.37 in., no structure, no odor.	10	10	15	40	20	5				
10	0.3	S4 12	11.0 13.0		12.0	SP											
						SM	Very loose, black, silty SAND (SM), mps = 0.13 in., no structure, slight naphthalene-like odor; 20% Ash-Like Material, 10% wood chips.	5	5	5	50	20	15				
	0.5	S5 6	13.0 15.0			SM	Similar to S4, 12 to 13 ft. except loose.										
15	0.0	S6 8	15.0 17.0		15.0	SM	Similar to S5 except medium dense, trace of very weathered rock, moist.										
	0.0	S7 3	17.0 19.0			SM	Similar to S6 except, strong naphthalene-like odor, 20% fine Cinder-Like Material. -FILL-										
	0.6	S8 11	19.0 21.0		19.0	SP-SM	Medium dense, dark brown, poorly-graded SAND with silt and gravel (SP-SM), mps = 1.37 in., no structure, strong naphthalene-like odor,	10	10	15	30	25	10				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/12/2004	NA	NA	15.0	17.0	15.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 27.9
Rock Cored (lin. ft.) -
Samples S12
Boring No. 17GH005

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 17GH005

File No 29462-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20							20% Cinder-Like Material.										
	0.0	S9 24	21.0 23.0			SP-SM	Similar to S8. -FILL-										
	0.0	S10 9	23.0 25.0			SP-SM	Similar to S8.										
25	0.4	S11 11	25.0 27.0			SP-SM	Similar to S8 except Dense, 15% Ash-Like Material.										
	9.6	S12 8	27.0 27.9		27.9	SP-SM	Similar to S11 except heavy staining from 27.6-27.7 ft. -FILL-										
							BOTTOM OF EXPLORATION AT 27.9 FT										
							NOTE: Borehole backfilled with drill cuttings and sand upon completion.										
							Sample "17GH005-00" collected from 0-0.2 ft. Sample "17GH005-011" collected from 9.0-11.0 ft. Sample "17GH005-21" collected from 19.0-21.0 ft. Sample "17GH005-28" collected from 27.0-27.8 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 17GH005

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TEST BORING REPORT

Boring No.17GH006

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 2
Start February 16, 2004
Finish February 19, 2004
Driller M. Smith/M. Mede
H&A Rep.S. Brousseau/W. Graham
Elevation 10.53
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 truck mounted
Inside Diameter (in.)	3.25/4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing:
				Hoist/Hammer: Winch Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	ND				0.3		-TOPSOIL-										
					0.8	SM	Dark gray to brown, silty SAND (SM), trace roots, mps = 0.6 in., no odor, dry.			5	20	35	40				
						SM	NOTE: Frozen to 0.6 ft.	5	5	15	30	25	20				
							Brown, silty SAND (SM), trace of concrete fragments and pieces, brick fragments, mps = 3.5 in., no odor, dry.										
5	0.1	S1 16	5.0 7.0		5.0	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Medium dense, red-brown, silty SAND with gravel (SM), mps = 1.37 in., no structure no odor, dry.	5	10	15	25	25	20				
							-FILL-										
	0.7	S2 5	7.0 8.5		7.0	GP-GM	Very dense, gray, poorly-graded GRAVEL (GP-GM) with silt and sand, mps = 1.37 in., no structure, no odor, dry.	50	10	5	10	15	10				
	0.2					GP-GM	Similar to S2 except Medium dense with 10% brick.										
		S3 4	9.0 11.0														
10	0.4	S4 4	11.0 13.0	NO WELL INSTALLED		GP-GM	Similar to S2. -FILL-										
	0.3	S5A 3	13.0 14.0		13.0	SM	Dense, gray to brown, silty SAND with gravel (SM), mps = 1.25 in., no structure, no odor, moist.	5	10	30	20	15	20				
		S5B 6	14.0 15.0														
15		S6 0	15.0 17.0				No recovery.										
	0.3	S7 6	17.0 19.0			SM	Similar to S5 except very dense. -FILL-										
	ND				18.5												
	ND	S8 10	19.0 21.0		19.0	SM	Similar to S5 except, red brown.	10	5	5	5	45	30				
20						SP-SM	Very dense, gray, poorly-graded SAND with silt and gravel (SP-SM), mps = 1.25 in. Occasional layer of very loose silt.	15	20	25	15	15	10				

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/19/2004	NA	NA	9.0	11.0	10.5

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 29.8
Rock Cored (lin. ft.) -
Samples S13
Boring No. 17GH006

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 17GH006
File No. 29462-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	ND	S9 3	21.0 23.0			SM	Very dense gray-brown, silty SAND with gravel (SM), mps = 0.75 in., no structure, slight naphthalene-like odor. -FILL-		15	10	10	30	35				
					23.0												
		S10 0	23.0 25.0				No recovery.										
25	0.8	S11 3	25.0 27.0			SM	Very loose, gray-brown silty SAND (SM), mps = 0.03 in., no structure, naphthalene-like odor in spoon tip.				20	35	45				
	7.9	S12 4	27.0 29.0		27.0	SM	Similar to S11 except medium dense; 3 inch black stained layer from 28.7-29.0 ft. naphthalene-like odor present. Red brick in the spoon tip.										
	1.0	S13 6	29.0 29.8		29.8	SP-SM	Very dense, gray-brown, poorly-graded SAND with silt and gravel (SP-SM), mps = 1.37 in., no structure, naphthalene-like odor present. Approximately 10% red brick. -FILL-	5	10	15	40	20	10				
							BOTTOM OF EXPLORATION AT 29.8 FT.										

NOTE: Borehole backfilled with drill cuttings and sand upon completion.

Sample "17GH006-00" collected from 0-0.2 in.
Sample "17GH006-07" collected from 5.0-7.0 ft.
Sample "17GH006-15" collected from 13.0-15.0 ft.
Sample "17GH006-29" collected from 27.0-29.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 17GH006

TEST BORING REPORT

Boring No.17MWS03

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 1
Start January 26, 2004
Finish February 12, 2004
Driller B. Cruz
H&A Rep.A. Murphy/H. Klein
Elevation 10.00
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Davey Drill DK 527 ATV Mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: -
Hammer Weight (lb.)	-	140	-	Drill Mud: -
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Rope Cathead/Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0					SP-SM	Light brown to brown, poorly-graded SAND with silt and gravel (SP-SM), mps = 4 in., no structure, no odor, dry. Approximately 5% brick. -FILL-	10	5	25	50	10					
	0.0				3.5												
					4.0	SP-SM	Dark brown, poorly-graded SAND with silt and gravel (SP-SM), mps = 1 in., no structure, no odor, dry. Approximately 10% brick, 5% glass. Bottom of Hand Excavation/Vac-Truck Exploration at 4.0 ft. -FILL-		15	10	45	20	10				
5		S1 18	8.0 10.0			SM	Top 8 in. of sample, medium dense, brown, silty SAND (SM), mps = 1 in., no odor, moist. Bottom 10 in. of sample, medium dense, dark gray to black, silty SAND (SM), mps = 0.5 in., no odor, moist.		5	5	5	60	25				
					10.0		NOTE: 4 in., of Ash-Like Material at bottom of sample, approximately 25% of spoon; Coal-Like Material in approximately 15% of sample.										
10		S2 14	13.0 15.0			SM	Loose, gray-brown, silty SAND (SM), mps = 1 in., no odor, wet. approximately 10% brick, 20% Ash-Like Material, 10% staining. -FILL-		5	5	5	55	30				
15																	
					19.1		NOTES: Drill cuttings placed in drums. Installed observation wells in borehole upon completion. Refer to "Observation Well Report 17MWS03" for complete well details. BOTTOM OF EXPLORATION AT 19.1 FT										

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/12/2004	NA	NA	13.0	15.0	10.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 19.1
Rock Cored (lin. ft.) -
Samples S2
Boring No. 17MWS03

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.17MWS04

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 17th Street
Client Consolidated Edison Co. of New York Inc.
Contractor Fenley & Nicol Environmental, Inc.

File No29462-011
Sheet No. 1 of 2
Start March 12, 2004
Finish March 12, 2004
Driller M. Mede
H&A Rep. A. Murphy
Elevation 10.03
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 Truck Mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: -
Hammer Weight (lb.)	-	140	-	Drill Mud: -
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: Wire Winch/ Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.2		-ASPHALT-										
						SM	Brown, silty SAND with gravel (SM), mps = 1.0 in., no structure, no odor, dry, 10% trace red brick.	10	10	10	40	15	15				
							-FILL-										
	0.5				3.0	SM	Similar to above, except black, fuel-like odor, 5% cinder, Clinker-like Material and Coal-Like Materials.	10	10	10	40	15	15				
					3.8	SM	-FILL-	10	10	10	40	15	15				
5					5.0		Similar to 0.2-3 sample except slight fuel-like odor. -FILL- See "Test Boring Report 17MWD04/17GH001" for soil descriptions from 5.0 to 20.5 ft.										
10																	
15																	
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
		-NOT ENCOUNTERED-			

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 20.5
Rock Cored (lin. ft.) -
Samples -
Boring No. 17MWS04

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 17MWS04

File No 29462-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20					20.5		BOTTOM OF EXPLORATION AT 20.5 FT.										
							NOTES: Drill cuttings placed in drums.										
							Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 17MWS04" for complete well details.										
							Sample "17MWS04-04 FP" collected from 3.0 - 4.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 17MWS04

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 19MWD05/ 19GH001

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 19th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Fenley & Nicol Environmental, Inc.

File No 29463-011
Sheet No. 1 of 2
Start February 5, 2004
Finish March 5, 2004
Driller M.Smith /M.Meade
H&A Rep. H.Klein / J.O'Brien
Elevation 10.93
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 Truck-mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: - Downhole Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-TOPSOIL- Dark brown/black, (4 in. frost), no odor, moist, mps = 1 in.		5			35	60				
					2.0	SM	Brown, silty SAND (SM), no odor, moist, mps = 4 in.	5	10	5		55	25				
					4.3		Brick, cement/concrete encountered at 3.5 bgs (cement 2.5 in. thick). Two types of concrete, one gray, one blue/green cement layer able to be broken and removed (no soil). Refusal on smooth concrete same as observed in 19MWS05.										
5	1.7	S1 14	5.0 7.0			SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Dense, dark brown, silty SAND with gravel (SM), roots, no structure, dry, no odor (wood fibers in tip).	5	15	10	35	15	20				
	0.0	S2 16	7.0 9.0			SM	-FILL- Loose, dark brown, silty SAND with gravel (SM), brick pieces, common roots, no structure, wet, slight organic odor.	15	10	10	30	10	25				
	1.7	S3 10	9.0 11.0			SM	Dense, dark brown to black, silty SAND with gravel (SM), Asphalt-Like Material, wood, roots, no structure, wet, slight petroleum-like/bituminous-like odor.		10	20	30	15	25				
10	0.0	S4 15	11.0 13.0			SM	Note: Concrete rubble from 10.7 to 11.0 ft. Medium dense, gray, silty SAND (SM), no structure, wet, slightly musty order.		5	10	35	25	25				
	0.0	S5 15	13.0 15.0			SM	-FILL- Loose, gray, silty SAND with gravel (SM), trace roots, no structure, wet, slight musty odor.	10	10	5	30	20	25				
15	0.0	S6 9	15.0 17.0			SM	Loose, gray, silty SAND (SM), no structure, wet, slight organic odor.		5	15	35	20	25				
	0.0	S7 4	17.0 19.0			SM	Medium dense, gray, silty SAND (SM), no structure, wet, slight musty odor.		10	15	35	20	20				
	0.1	S8 8	19.0 21.0			SM	-FILL- Loose, gray, silty SAND (SM), no structure, wet, no odor.		5	10	30	30	25				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/3/2004					6.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 33
Rock Cored (lin. ft.) -
Samples S14
Boring No. 19MWD05/ 19GH001

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 19MWD05/ 19GH001
File No. 29463-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	0.2	S9 4	21.0 23.0			SM	Medium dense, gray, silty SAND (SM), no structure, wet, no odor.		5	5	40	35	15				
	1.0	S10 15	23.0 25.0			ML	Loose, gray, sand SILT (ML), bonded, wet, no odor.					15	85				
25	0.0	S11 10	25.0 27.0			ML	Loose, gray, silty SAND (ML), slightly bonded, wet, no odor.			5	45	35	15				
					26.0		-FILL-										
					26.5	PT	Stiff, brown PEAT, wood fibers.										
	0.0	S12 12	27.0 29.0			OL/ OH	Soft, gray, clayey SILT and peat with sand (OL/OH), trace organics, bonded, wet, slight organic odor.					10	90				
					29.0		-ORGANIC DEPOSITS-										
	0.0	S13 12	29.0 31.0			SP	Loose, gray, poorly-graded SAND (SP), no structure, wet, no odor.			10	70	15	5				
30	0.0					SP	Loose, brown, poorly-graded SAND (SP), no structure, wet, no odor.			10	70	15	5				
	0.0	S14 4	31.0 33.0			SP	Loose, gray, poorly-graded SAND (SP), no structure, wet, no odor.			5	70	20	5				
					33.0		-GLACIAL LACUSTRINE-										
							BOTTOM OF EXPLORATION AT 33 FT.										

Note: Groundwater observation well installed in boring upon completion.

Soil cuttings placed in drums.

Sample 19GH001-00 collected from 0-0.2 ft.
Sample 19GH001-07 collected from 5-7 ft.
Sample 19GH001-15 collected from 13-15 ft.
Sample 19GH001-31 collected from 29-31 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 19MWD05/ 19GH001

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 19GH002

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 19th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Fenley & Nicol Environmental, Inc.

File No 29463-011
Sheet No. 1 of 2
Start February 24, 2004
Finish March 2, 2004
Driller M.Smith/K.Kegal
H&A Rep. P.Falce/J.O'Brien
Elevation 6.33
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.5	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1.7	G1 16	0.0 4.0	NO WELL INSTALLED	0.5		-CONCRETE-										
					1.5	SW-SM	Gray to black, well-graded SAND with silt and gravel (SW-SM), no odor, moist. Pieces of brick, concrete, Clinker-Like Material, mps = 2 in.	10	10	15	25	30	10				
					2.5	SP	No odor, moist, brown, poorly-graded SAND with gravel (SP), brick, concrete & Clinker-Like Material, mps = 4 in.	10	15	20	25	30	0				
	1.8					SW-SM	Dark gray, well-graded SAND with silt and gravel (SW-SM), pieces of brick & concrete, slight organic odor, moist, mps = 1 in.	10	15	15	25	25	10				
		G2 24	4.0 8.0		4.5	SM	Gray, silty SAND (SM), mps = 1 in., wet, slight organic odor, mps =	0	5	15	25	30	25				
5	60					SM	1 in.		5	10	25	30	30				
							Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.										
							Brown, silty SAND (SM) with brick, white ceramic pieces, no structure, moist to wet, no odor.										
	0.0	G3 10	8.0 12.0			SM	Brown, silty SAND with gravel (SM), no structure, wet, no odor.	20	10	10	20	15	25				
							-FILL-										
10																	
	0.0	G4 11	12.0 16.0			SM	Brown, silty SAND with gravel (SM), no structure, wet, slight organic odor.	20	10	10	20	15	25				
15																	
	0.0	G5 19	16.0 20.0			SM	Brown, silty SAND with gravel (SM), no structure, wet, slight organic odor.	15	10	5	20	20	30				
							-FILL-										
20																	

Water Level Data

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

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G8
Boring No. 19GH002

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 19GH002
File No. 29463-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	0.0	G6 30	20.0 24.0			SM	Brown silty SAND (SM), no structure, wet, slight organic odor.		5	5	50	15	25				
							-FILL-										
					23.5												
	0.0				24.0	SM	Gray, silty SAND (SM), slightly bonded, wet, slight organic odor.					65	35				
		G7 0	24.0 28.0				-GLACIAL LACUSTRINE-										
25							No Recovery.										
	0.0	G8 7	28.0 30.0			SM	Gray-brown, silty SAND (SM), stratified, wet, slight musty odor.				5	55	40				
							-GLACIAL LACUSTRINE-										
30					30.0		BOTTOM OF EXPLORATION AT 30 FT.										

Notes: Borehole backfilled with drill cuttings and sand upon completion and concrete patched.

Sample 19GH002-00 collected from 0 - 0.2 ft.
Sample 19GH002-02 collected from 0 - 2 ft.
Sample 19GH002-04 collected from 2 - 4 ft.
Sample 19GH002-07 collected from 5 - 7 ft.
Sample 19GH002-13 collected from 12 - 13 ft.
Sample 19GH002-30 collected from 28 - 30 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

CON ED_TB3_PG1 USCSLIB4.GLB USCSTB+CORE4.GDT G:\DATA\29\29455_29462_29463\GINT LOGS\29463-011.GPJ Apr 12, 05

HALEY & ALDRICH

TEST BORING REPORT

Boring No.19GH003

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 19th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Fenley & Nicol Environmental, Inc.

File No29463-011
Sheet No. 1 of 2
Start March 4, 2004
Finish March 9, 2004
Driller M.Smith/K.Kegal
H&A Rep.P. Falce
Elevation 6.29
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	-	G	-	Rig Make & Model: Simco Earth Probe 200 ATV
Inside Diameter (in.)	-	1.5	-	Bit Type: -
Hammer Weight (lb.)	-	-	-	Drill Mud: -
Hammer Fall (in.)	-	-	-	Casing: -
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1.3			NO WELL INSTALLED	0.5		-CONCRETE-										
					1.5	SW-SM	Gray to black, well-graded SAND with silt and gravel (SW-SM), no odor, moist, pieces of brick, concrete, Clinker-Like Material, mps = 2 in.	10	10	15	25	30	10				
						SP	Concrete piece on south side of hole - full width (10 in.) x 6 in. thick at 2.5 ft. Brown, poorly-graded SAND with gravel (SP), brick, concrete, Clinker-Like Material, moist, no odor, mps = 6 in.	10	20	20	25	25	0				
					3.0	SW-SM	Dark gray, well-graded SAND with silt and gravel (SW-SM), pieces of brick and concrete, moist, no odor, mps = 2 in.	15	15	20	20	20	10				
		G1 27	4.0 8.0		4.0	SM	Gray, silty SAND (SM), wet, slight organic odor, mps = 0 .1 in.	0	5	15	25	30	25				
5	1.8				5.0	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Yellow-brown, silty SAND (SM), moist, mps = 0 .1 in.	0	0	20	25	30	25				
	2.1	G2 24	8.0 12.0				Similar to above.										
10							-FILL-										
		G3 12	12.0 16.0				Similar to above.										
15					15.0												
	0.8	G4 14	16.0 20.0			SM	Dark-gray, silty SAND with gravel (SM), fragments of coal, Tar-Like Material, dry, no odor, mps = 0.25 in.	5	10	20	25	25	15				
	2.1					SM	Yellow-brown, silty SAND (SM), no odor, wet, mps = 0.1 in. -FILL-	0	0	20	25	30	25				
					19.5	SM	Dark gray, silty SAND with gravel (SM), no odor, dry, mps = 0.75 in.	5	15	15	15	30	20				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/9/2004					10

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 30
Rock Cored (lin. ft.) -
Samples G7
Boring No. 19GH003

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 19GH003
File No. 29463-011
Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20	3.1	G5 4	20.0 24.0			ML	-FILL- Dark-gray SILT with sand (ML), moist, slight organic odor, mps = 0.1 in.	0	0	0	20	40	60				
					24.0												
	2.1	G6 12	24.0 28.0			SM	Yellow-brown, silty SAND (SM), no odor, wet, mps = 0.1 in.	0	0	20	25	30	35				
25					25.0												
	3.1					ML	Dark-gray SILT with sand (ML),dry, slight organic odor, mps = 0.1 in.	0	0	0	20	40	60				
	1.9				26.5	SM	Red-brown, silty SAND (SM), moist to wet, slight organic odor, mps = 0.1 in. -FILL-	0	0	15	25	30	30				
	1.9	G7 18	28.0 30.0		28.0	SM	Gray silty SAND (SM), moist to wet, slight organic odor, mps = 0.1 in. -GLACIAL LACUSTRINE-	0	0	20	20	20	40				
30					30.0		BOTTOM OF GEOPROBE EXPLORATION AT 30 FT.										

Notes: Borehole backfilled with drill cuttings and sand upon completion and concrete patched.

Sample 19GH003-00 collected from 0 - 0.2 ft.
Sample 19GH003-07 collected from 5 - 7 ft.
Sample 19GH003-16 collected from 14 - 16 ft.
Sample 19GH003-30 collected from 28 - 30 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 19GH003

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HALEY & ALDRICH

TEST BORING REPORT

Boring No. 19MWS05

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town 19th Street Station
Client Consolidated Edison Co. of New York Inc.
Contractor Fenley & Nicol Environmental, Inc.

File No 29463-011
Sheet No. 1 of 1
Start February 5, 2004
Finish March 17, 2004
Driller M. Meade /M.Smith
H&A Rep. A.Murphy/J.O'Brien
Elevation 10.69
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-47 Truck Mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type:
Hammer Weight (lb.)	-	140	-	Drill Mud:
Hammer Fall (in.)	-	30	-	Casing: -
				Hoist/Hammer: - Downhole Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0						SP	Dark brown, poorly-graded SAND with gravel (SP), no structure, organic odor, moist, frequent root material, (ivy ground cover) mps = 1 in.	5	5	10	50	30					
					3.5		Concrete slab encountered at 3.5 ft. (jack hammer & hand excavated). Brick immediately below concrete.										
					4.7		Bottom of Hand Excavation/Vac-Truck Exploration at 4.7 ft. See Test Boring Report 19MWD05/19GH001 for soil descriptions from 4.7 to 17.5 ft.										
5																	
10																	
15																	
					17.5		-FILL-										
							BOTTOM OF EXPLORATION AT 17.5 FT.										

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

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

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

Summary	
Overburden (lin. ft.)	17.5
Rock Cored (lin. ft.)	-
Samples	
Boring No.	19MWS05

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.00BG001

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29455, 29462, 29463-011
Sheet No. 1 of 3
Start February 9, 2004
Finish February 24, 2004
Driller D.Gregorio/C. Guzzardo
H&A Rep.P. Falce/W.Graham
Elevation 20.93
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Kantera CT450 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: --
				Hoist/Hammer: Winch/ Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0			NO WELL INSTALLED	0.7	ML	Frozen, dark brown, sandy SILT (ML), mps = 0.5 in., no structure, no odor.			5	15	30	50				
						SM	-FILL-	5	10	10	15	40	20				
					3.0		Brown, silty SAND with gravel (SM), mps = 6 in., no structure, no odor, moist. -FILL-										
	0.0					SM	Similar to above, except 20-25% brick and concrete pieces. -FILL-	5	10	10	15	40	20				
5	0.0	S1 10	5.0 7.0		5.0	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Very dense, dark brown, silty SAND with gravel (SM), mps= 1.5 in., no structure, no odor, 40% red brick. -FILL-	5	10	10	30	30	15				
	0.3	S2 17	7.0 9.0			SM	Similar to S1, except 25% red brick, 10% Ash-Like Material, slight naphthalene-like odor. -FILL-										
	0.2	S3 4	9.0 11.0			SM	Similar to S1, except dense, coarse gravel lodged in nose of spoon. -FILL-										
10	2.4	S4 18	11.0 13.0			SM	Similar to S1, except dense, 20% red brick, 5% Coal-Like Material, 5% wood chips (12.0 ft), 5% Clinker-Like Material. -FILL-										
	0.2	S5 10	13.0 15.0			SM	Similar to S1, except 20% red brick, coarse gravel lodge in nose of spoon. -FILL-										
15	0.1	S6 20	15.0 17.0		15.0	SM	Medium dense, dark brown, silty SAND (SM), mps = 0.25 in., no structure, no odor, moist. -FILL-		10	10	25	35	20				
	0.0	S7 22	17.0 19.0			SM	Similar to S6. -FILL-										
	0.0	S8 21	19.0 21.0		18.5 19.0	SM	Medium dense, olive brown, silty SAND (SM), mps = 0.25 in., occasionally stratified, no odor, wet.		5	10	10	30	45				
20						SM	Similar to S7 (18.5 to 19.0 ft.), except loose.		5	15	20	30	30				

Water Level Data

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

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 50.0
Rock Cored (lin. ft.) -
Samples S23
Boring No. 00BG001

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG001

File No 29455, 29462, 29463-01

Sheet No. 2 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20					21.0	SM	-GLACIAL LACUSTRINE-										
	0.1	S9 14	21.0 23.0			SP-SM	Medium dense, brown, poorly graded SAND with silt and gravel (SP-SM), mps= 1 in., no structure, no odor. -GLACIAL LACUSTRINE-	5	10	15	30	30	10				
	0.2	S10 16	23.0 25.0		23.0	SM	Dense, red-brown, silty SAND (SM), mps = 0.02 in., no structure, no odor. -GLACIAL LACUSTRINE-				30	35	35	S	L	N	N
25	0.3	S11 14	25.0 27.0			SM	Similar to S10, except loose. -GLACIAL LACUSTRINE-										
	0.1	S12 14	27.0 29.0			SM	Similar to S10, except medium dense, rust staining 28.2 to 28.5 ft. -GLACIAL LACUSTRINE-										
	0.0	S13 2	29.0 31.0			SM	Similar to S10. -GLACIAL LACUSTRINE-										
30	0.0	S14 3	31.0 33.0			SM	Similar to S10, except medium dense. -GLACIAL LACUSTRINE-										
	0.6	S15 16	33.0 35.0			SM	Similar to S10, except medium dense. -GLACIAL LACUSTRINE-										
35	0.0	S16 10	35.0 37.0			SM	Similar to S10, except loose, occasional gray fat CLAY seam 1/8 in. thick. -GLACIAL LACUSTRINE-										
	0.0	S17 8	37.0 39.0			SM	Similar to S10, except medium dense, stratified appearance. -GLACIAL LACUSTRINE-										
	0.0	S18 11	39.0 41.0			SM	Similar to S16, except medium dense. -GLACIAL LACUSTRINE-										
40	0.0	S19 13	41.0 43.0			SM	Similar to S10, except medium dense. -GLACIAL LACUSTRINE-										
	0.0	S20 13	43.0 45.0			SM	Similar to S10, except medium dense. -GLACIAL LACUSTRINE-										
45	0.0	S21 15	45.0 47.0			SM	Similar to S10, except medium dense. -GLACIAL LACUSTRINE-										
	0.0	S22 18	47.0 49.0			SM	Similar to S17, except gray lean CLAY layer from 48.8 to 49.0 ft. -GLACIAL LACUSTRINE-										
	0.0	S23	49.0		49.0	SC	Medium dense, gray-brown, clayey SAND (SC), mps = 0.25 in.,		5	10	20	40	25				

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00BG001

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG001

File No 29455, 29462, 29463-01

Sheet No. 3 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50		10	50.0		50.0		frequent coarse sand and fine gravel layers 1/2 in. thick, no odor. -GLACIAL LACUSTRINE- BOTTOM OF EXPLORATION AT 50.0 FT. NOTES: Borehole backfilled with drill cuttings and sand upon completion. Sample "00BG001-00" collected from 0 - 0.2 ft. Sample "00BG001-02" collected from 0 - 2.0 ft. Sample "00BG001-04" collected from 2.0 - 4.0 ft. Sample "00BG001-07" collected from 5.0 - 7.0 ft. Sample "00BG001-15" collected from 13.0 - 15.0 ft. Sample "00BG001-35" collected from 33.0 - 35.0 ft. Sample "00BG001-50" collected from 48.0 - 50.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00BG001

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.00BG002

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc.

File No29455,29462,29463-011
Sheet No. 1 of 3
Start February 9, 2004
Finish March 5, 2004
Driller M.Smith/R.Buley
H&A Rep.S.Brousseau/B.Tarbell
Elevation 20.78
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-59 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: --
				Hoist/Hammer: Winch/ Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED		SM	Dark gray-brown, silty SAND (SM), mps = 0.6 in., trace roots, no odor, moist. Frost to 1.0 ft.				20	40	40				
					1.3		-FILL-										
						SM	Brown, silty SAND (SM), mps = 4 in., no odor, dry, 25% bricks at 4.5 to 5.0 ft.	5	5	10	30	25	25				
							-FILL-										
					5.0												
5	0.3	S1 3	5.0 6.5			SP-SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Very dense, brown to dark brown, poorly graded SAND with silt (SP-SM), mps= 1.5 in., brown with dark brown mottling, no structure, no odor, dry, 5% gray micaceous particles and frequent black asphalt 0.1 in. particles.		5	10	40	35	10				
		S2 0	7.0 9.0				-FILL- No recovery.										
	0.0	S3 2	9.0 11.0		9.0	SP	Loose, red-brown, poorly graded SAND with gravel (SP), mps = 0.5 in., no structure, no odor, dry, 15% brick fragments.			10	50	20	5				
10							-FILL-										
	0.0	S4 3	11.0 13.0			SP	Similar to S3, except medium dense, mps = 0.75 in., 50% brick fragments.			5	30	10	5				
							-FILL-										
	0.0	S5 6	13.0 15.0			SP	Medium dense, gray, poorly graded SAND with gravel (SP), mps = 0.5 in., no structure, no odor, dry, 40-50% probable crushed concrete fill.			5	35	10	5				
					15.0		-FILL-										
15	0.0	S6 12	15.0 17.0			SP	Medium dense, red, poorly graded SAND (SP), mps = 0.5 in., no structure, no odor, dry, 10% brick particles with occasional 0.5 inch brick fragments, 5% concrete fragments.				45	10	5				
							-FILL-										
	0.1	S7 11	17.0 19.0			SP	Similar to S6, except loose, moist at 17.5 ft, occasional 1 in. pocket of Ash-Like Material.										
							-FILL-										
	0.0	S8 6	19.0 21.0		19.0	SM	Medium dense, brown-red, silty SAND (SM), mps = 0.2 in., no structure, no odor, wet.			10	15	50	25				
20																	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/4/04	NA	0	17.0	19.0	17.0

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

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

Summary	
Overburden (lin. ft.)	50.0
Rock Cored (lin. ft.)	-
Samples	S22
Boring No.	00BG002

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG002

File No 29455,29462,29463-011

Sheet No. 2 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20							-GLACIAL LACUSTRINE-										
	0.0	S9 10	21.0 23.0			SM	Similar to S8. -GLACIAL LACUSTRINE-										
	0.2	S10 6	23.0 25.0			SM	Similar to S8. -GLACIAL LACUSTRINE-										
25	0.1	S11 9	25.0 27.0		25.0	SM	Similar to S8, except soil has finer grain. -GLACIAL LACUSTRINE-				10	50	40				
	0.0	S12 18	27.0 29.0			SM	Similar to S11. -GLACIAL LACUSTRINE-										
	0.0	S13 15	29.0 31.0			SM	Similar to S11. -GLACIAL LACUSTRINE-										
30	0.0	S14 18	31.0 33.0		31.0	SM	Similar to S11, except grain size. -GLACIAL LACUSTRINE-				35	40	25				
	0.0	S15	33.0 35.0			SM	Similar to S14. -GLACIAL LACUSTRINE-										
35	0.0	S16 18	35.0 37.0			SM	Similar to S14. -GLACIAL LACUSTRINE-										
	0.0	S17 20	37.0 39.0		37.0	SM	Similar to S14, except grain size. -GLACIAL LACUSTRINE-				5	55	40				
		S18 16	39.0 41.0			SM	Similar to S17. -GLACIAL LACUSTRINE-										
40	0.0	S19 20	41.0 43.0			SM	Similar to S17, except loose. -GLACIAL LACUSTRINE-										
	0.0	S20 22	43.0 45.0			SM	Similar to S19. -GLACIAL LACUSTRINE-										
45	0.0	S21 17	45.0 47.0			SM	Similar to S19, except medium dense. -GLACIAL LACUSTRINE-										
	0.0	S22 12	48.0 50.0			SM	Similar to S21. -GLACIAL LACUSTRINE-										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00BG002

CON ED_TB3_PG1 USCSLIB4.GLB USCSTB+CORE4.GDT G:\DATA\29\29455_29462_29463\GINT LOGS\BACKGROUND AQUIFER.GPJ Apr 12, 05

HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG002

File No 29455, 29462, 29463-011

Sheet No. 3 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
					50.0												
50							BOTTOM OF EXPLORATION AT 50.0 FT.										
							NOTES: Borehole backfilled with drill cuttings and sand upon completion.										
							Sample "00BG002-00" collected from 0 - 0.2 ft.										
							Sample "00BG002-02" collected from 0 - 2.0 ft.										
							Sample "00BG002-04" collected from 2.0 - 4.0 ft.										
							Sample "00BG002-17" collected from 15.0 - 17.0 ft.										
							Sample "00BG002-19" collected from 17.0 - 19.0 ft.										
							Sample "00BG002-33" collected from 31.0 - 33.0 ft.										
							Sample "00BG002-50" collected from 48.0 - 50.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00BG002

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.00BG003

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29455, 29462, 29463-011
Sheet No. 1 of 3
Start February 2, 2004
Finish February 27, 2004
Driller M.Smith/C Guzzardo
H&A Rep.H.Klein/W.Graham
Elevation 13.34
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Kantera CT450 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: --
				Hoist/Hammer: Winch/ Downhole Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0						SM	Dark brown, silty SAND (SM), mps = 2 in., no odor, moist/frozen. -TOPSOIL-										
					1.0	SM	Brown, silty SAND with gravel (SM), mps = 6 in., no odor, moist. -FILL-	10	10	5	5	55	15				
					3.5	SM	Similar to above except, brick at 3.5 ft. Less than 5% wood pieces (6 in.). Less than 2% trace of Ash-Like Material at 4 ft. Light gray piece of iron pipe at 4 feet.										
5	0.1	S1 8	5.0 7.0	NO WELL INSTALLED	5.0	SM	-FILL- Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Medium dense, dark brown, silty SAND (SM), mps = 0.25 in., no structure, no odor, moist. Approximately 15% red brick. -FILL-		5	10	30	20	35				
	0.0	S2 5	7.0 9.0			SM	Similar to S1, except 5% red brick, 5% Clinker-Like Material. -FILL-										
	0.2	S3 14	9.0 11.0			SM	Similar to S1, except dense, 10% red brick, 25% Clinker-Like Material, 10% Ash-Like Material. -FILL-										
10	0.0	S4 21	11.0 13.0			SM	Similar to S3, except medium dense, wet.										
	0.1	S5 12	13.0 15.0			SM	Similar to S3, except loose, 14.2-14.4 ft black stained soil; 14.4-14.6 ft fractured red brick, 14.6-15.0 ft black stained soil. -FILL-										
15	0.0	S6 10	15.0 17.0		15.0	SP-SM	Medium dense, dark brown to dark gray poorly-graded SAND with silt (SP-SM). Occasional sandy, organic layer 2-3 in. thick, organic odor, approximately 5% roots. -ESTUARY DEPOSIT-		5	15	45	25	10				
	0.0	S7 18	17.0 19.0			SP-SM	Medium dense, dark brown, poorly-graded SAND with silt (SP-SM), mps = 0.13 in., approximately 10% plant fibers, occasional gray, silt layer, organic odor. -ESTUARY DEPOSIT-		5	25	45	15	10				
	0.0	S8 10	19.0 21.0			SP-SM	Similar to S7, except loose, frequent shell fragments, approximately 0.25 in. thick.										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/26/04	NA	NA	11.0	13.0	11.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 51.0
Rock Cored (lin. ft.) -
Samples S23
Boring No. 00BG003

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG003

File No 29455, 29462, 29463-01

Sheet No. 2 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20					21.0	SP-SM	-ESTUARY DEPOSIT-										
	0.0	S9 20	21.0 23.0			OL/OH	Loose, dark brown, ORGANIC SOIL with sand (OL-OH), mps = 0.02 in., no structure, organic odor present, approximately 30% plant material. -ORGANIC DEPOSIT-				5	10	85				
	0.0	S10 20	23.0 25.0			OL/OH	Similar to S9, except medium dense clay interbedded in 1/8 in. thick seams. Fibrous peat in 1/4 in. thick seams, coarse sand 1/4 in. thick seams, organic odor present. -ORGANIC DEPOSIT-										
25	0.0	S11 18	25.0 27.0			OL/OH	Similar to S10. -ORGANIC DEPOSIT-										
	0.0	S12 8	27.0 29.0		27.5	SP-SM	Dense, gray, poorly-graded SAND with silt and gravel (SP-SM), mps = 0.75 in., no structure, no odor, approximately 5% plant matter. -ESTUARY DEPOSIT-	5	10	20	40	15	10				
		S13 12	29.0 31.0			SP-SM	Similar to S12 (27.5-29.0 ft). -ESTUARY DEPOSIT-										
30	0.0	S14 10	31.0 33.0		31.0	SP-SM	Very dense, gray-brown, poorly-graded SAND with silt and gravel (SP-SM), mps = 1.37 in., no structure, no odor. -GLACIAL LACUSTRINE-	10	10	30	30	10	10				
	0.0	S15 6	33.0 35.0			SP-SM	Similar to S14. -GLACIAL LACUSTRINE-										
35	0.0	S16 8	35.0 37.0		35.0	SM	Very dense, red-gray, silty SAND (SM), mps = 0.13 in., occasional 1 to 2 in. thick, sandy SILT layers, no odor. -GLACIAL LACUSTRINE-		5	15	35	15	30				
	0.0	S17 10	37.0 39.0			SM	Similar to S16, except frequent gray-brown silt seams, 1/8 to 1/4 in. of thick. -GLACIAL LACUSTRINE-										
	0.0	S18 6	39.0 41.0		39.0	SM	Very dense, red gray, silty SAND with gravel (SM), mps = 1.37 in., no structure, no odor.	5	10	10	15	30	30				
40	0.0	S19 8	41.0 43.0				-GLACIAL LACUSTRINE-										
	0.1	S20 8	43.0 45.0		42.5	SP SP	Very dense, tan, poorly-graded SAND (SP), mps = 0.03 in., no structure, no odor. Similar to S19, except occasional silt seam approximately 1/8 in. thick. -GLACIAL LACUSTRINE-				70	25	5				
45	0.0	S21 10	45.0 47.0		45.0	CL	Very dense, olive-brown, sandy lean CLAY with gravel (CL), mps = 0.75 in., interbedded with brown silt and black biotite, 1/8 in. thick, no odor. -GLACIAL LACUSTRINE-	5	10		10	15	60				
	0.0	S22 12	47.0 49.0			CL	Similar to S21, except dense. -GLACIAL LACUSTRINE-										
	0.0	S23	49.0			CL	Similar to S21.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00BG003

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG003

File No 29455, 29462, 29463-01

Sheet No. 3 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50		8	51.0		50.0		-GLACIAL LACUSTRINE-										
						SP	Dense, poorly-graded SAND (SP), mps = 0.03 in., occasional 2 in. thick layers of black sand (biotite in nature), no odor.				60	35	5				
					51.0		-GLACIAL LACUSTRINE-										
							BOTTOM OF EXPLORATION AT 51.0 FT.										

NOTES: Borehole backfilled with drill cuttings and sand upon completion.
Sample "00BG003-00" collected from 0 - 0.2 ft.
Sample "00BG003-07" collected from 5.0 - 7.0 ft.
Sample "00BG003-15" collected from 13.0 - 15.0 ft.
Sample "00BG003-30" collected from 28.0 - 30.0 ft.
Sample "00BG003-50" collected from 48.0 - 50.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00BG003

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.00BG004

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29455, 29462, 29463-011
Sheet No. 1 of 3
Start March 10, 2004
Finish March 11, 2004
Driller M.Mede/R.Buley
H&A Rep.A.Murphy/B.Tarbell
Elevation 9.86
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B-59 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: --
				Hoist/Hammer: Winch/ Safety Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED		SP-SM	Dark brown, poorly graded SAND with silt and gravel (SP-SM), mps = 1.5 in., no structure, organic odor, moist, some root material.	10	5	5	45	25	10				
					1.0		-FILL-										
						SP	Brown, poorly graded SAND with gravel (SP), mps = 2.5 in., no structure, no odor, moist, approximately 30-50% brick from 3-5 ft. -FILL-	15	10	10	40	25					
5		S1 3	5.0 7.0		5.0	SP	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Loose, brown, poorly graded SAND (SP), mps = 0.5 in., no structure, no odor, dry.		5	5	60	25	5				
		S2 11	7.0 9.0			SP	Loose, brown, poorly graded SAND (SP), mps = 0.25 in., black staining with No. 6 fuel-like odor, frequent brick fragments and a lens of red silty sand stained soil, from 7.4 ft. to 8.0 ft., slight oily sheen with faint kerosene-like/No. 6 fuel-like odor from 8.0 ft. to 9.0 ft.		5	10	55	25	5				
10		S3 5	9.0 11.0			SP	Medium dense, gray, poorly graded SAND (SP), mps = 1.0 in., no structure, faint No.6 fuel-like odor, wet in lower portion, fragment of white cobble with mica partings, slight oily sheen. 10% black organics, mottled in lower 1 ft of sample.		10	5	50	30	5				
		S4 9	11.0 13.0			SP	Similar to S3, except loose, wet, 5% brick fragments, black weathered organics mottled through lower 1 ft of spoon, slight organic odor. -FILL-			15	50	30	5				
					12.8												
		S5 17	13.0 15.0		13.0	SM	Loose, dark brown, silty SAND (SM).		5	20	15	50	35				
						SM	Very loose, dark brown silty SAND (SM), black organics mottled through entire sample. -ESTUARY DEPOSIT-				20	40	15				
15		S6 9	15.0 17.0			SM	Similar to S5. -ESTUARY DEPOSIT-										
					16.8												
		S7 20	17.0 19.0			CL	Very soft, gray, lean CLAY (CL), mps = 0.1 in., no structure, no odor, wet. -ESTUARY DEPOSIT-					5	95	N	M	M
	0.1	S8 23	19.0 21.0			CL	Similar to S7, except mps = 0.25 in., frequent white shells 1%. -ESTUARY DEPOSIT-										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
3/11/04	NA	0	48.0	50.0	10.2

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 50.0
Rock Cored (lin. ft.) -
Samples S22
Boring No. 00BG004

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG004

File No 29455, 29462, 29463-01

Sheet No. 2 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20					21.0	CL											
	0.0	S9 24	21.0 23.0			CL	Similar to S8, except without shells. -GLACIAL LACUSTRINE-										
		S10	23.0 25.0			CL	Similar to S9. -GLACIAL LACUSTRINE-										
25	0.1	S11 24	25.0 27.0			CL	Similar to S9, except soft, occasional layer of silty clay. -GLACIAL LACUSTRINE-										
	0.0	S12 23	27.0 29.0		27.2	SP	Medium dense, brown-gray, poorly-graded SAND (SP), mps = 0.1 in., no structure, no odor, wet. -GLACIAL LACUSTRINE-			10	35	50	5				
	0.0	S13 10	29.0 31.0		29.0 30.0	SM	Medium dense, gray, poorly-graded SAND (SM), mps = 0.1 in., no structure, no odor, wet. -GLACIAL LACUSTRINE-			10	10	40	40				
30						SP				25	60	10	5				
	0.0	S14 8	31.0 33.0			SP	Medium dense, red, poorly graded SAND (SP), mps = 0.1 in., occasional 2 inch layer of gray silty sand at top of sample, no odor, wet. -GLACIAL LACUSTRINE-			20	65	10	5				
	0.0	S15 7	33.0 35.0			SP	Similar to S14, except frequent pockets of fine grained brown sand with gold pyrite, mps = 1.0 in. -GLACIAL LACUSTRINE-										
35	0.0	S16 11	35.0 37.0			SP	Medium dense, red-brown, poorly graded SAND (SP), mps = 0.75 in., contains a 3 inch layer of fine sand with occasional 0.25 inch pocket of yellow sand. -GLACIAL LACUSTRINE-		5	30	55	5	5				
	0.0	S17 5	37.0 39.0			SP	Similar to S16, except homogeneous structure. -GLACIAL LACUSTRINE-										
40	0.0	S18 8	39.0 41.0			SP	Similar to S15. -GLACIAL LACUSTRINE-										
	0.0	S19 7	41.0 43.0			SP	Similar to S15. -GLACIAL LACUSTRINE-										
	0.0	S20 22	43.0 45.0			SP	Similar to S15. -GLACIAL LACUSTRINE-										
45	0.0	S21 23	45.0 47.0			SP	Similar to S15. -GLACIAL LACUSTRINE-										
					48.0												
		S22	48.0 50.0			SM	Medium dense, red-brown, silty SAND (SM), mps = 0.1 in., occasional laminae of gray lean clay, no odor, wet. -GLACIAL LACUSTRINE-				10	55	35				

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG004

File No 29455, 29462, 29463-01

Sheet No. 3 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
					50.0												
50							BOTTOM OF EXPLORATION AT 50.0 FT.										
							NOTES: Borehole backfilled with drill cuttings and sand upon completion.										
							Sample "00BG004-00" collected from 0 - 0.2 ft.										
							Sample "00BG004-02" collected from 0 - 2.0 ft.										
							Sample "00BG004-04" collected from 2.0 - 4.0 ft.										
							Sample "00BG004-09FP" collected from 7.0 - 9.0 ft.										
							Sample "00BG004-15" collected from 13.0 - 15.0 ft.										
							Sample "00BG004-31" collected from 29.0 - 31.0 ft.										
							Sample "00BG004-50" collected from 48.0 - 50.0 ft.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size

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

Boring No. 00BG004

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.00BG005

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc.

File No29455,29462,29463-011
Sheet No. 1 of 3
Start February 5, 2004
Finish February 16, 2004
Driller M.Smith/D.Mayer
H&A Rep.H.Klein/P.Falce
Elevation 10.40
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: CME 75 truck mounted
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: --
				Hoist/Hammer: Cat-Head/ Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.5		-TOPSOIL-										
						SP-SM	Brown, poorly graded SAND with silt (SP-SM), mps = 6 in., no odor, moist (frost to 1.5 bgs), approximately 5% red brick and less than 5% black Clinker-Like Material at 2.5 ft., black sand layer (approximately 2 in. thick) with very slight petroleum-like odor, stained at 3.0 ft. -FILL-	5	5	5	5	70	10				
					4.0												
					5.0	SP	Dark gray, poorly graded SAND (SP), mps = 1 in., no odor, moist, layer of approximately 10% Ash-Like Material, approximately 3 in. thick.	0	5	5	15	70	5				
5	0.0	S1 6	5.0 7.0			SM	-FILL-	0	5	10	25	20	40				
							Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Medium dense, brown, silty SAND (SM), mps = 0.1 in., brick fragment lodged in nose of spoon.										
	4.1	S2 12	7.0 9.0			SM	-FILL- Very loose, brown, silty SAND with gravel (SM), mps = 0.25 in., no odor, moist. -FILL-	10	10	15	20	15	30				
	4.3	S3 10	9.0 11.0	NO WELL INSTALLED	9.0	SP	Loose, brown, poorly graded SAND with gravel (SP), mps = 0.25 in., no odor, moist. -FILL-	10	15	20	30	20	5				
10					11.0												
	4.4	S4 7	11.0 13.0			SM	Very loose, gray, silty SAND (SM), mps = 0.1 in., no odor, moist. -FILL-	0	5	15	25	20	35				
	4.1	S5 6	13.0 15.0		13.0	SM	Loose, gray, silty SAND (SM), mps = 0.1 in., slight organic odor, wet. -ESTUARY DEPOSIT-	0	0	20	35	20	25				
15	4.4	S6 24	15.0 17.0			SM	Very loose, gray to black, silty SAND (SM), slight petroleum-like odor, wet. -ESTUARY DEPOSIT-	0	0	20	30	20	30				
	4.2	S7 9	17.0 19.0			SM	Loose, gray to black, silty SAND (SM), slight petroleum-like/organic odor, wet. -ESTUARY DEPOSIT-	0	0	15	30	20	35				
		S8 24	19.0 21.0		19.5	SM	Very loose, black, silty SAND (SM), mps= 0.05 in., slight organic odor, wet.	0	0	20	25	25	30				
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/16/04	10:00	0	-	-	14.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 51.0
Rock Cored (lin. ft.) -
Samples S23
Boring No. 00BG005

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG005

File No 29455,29462,29463-011

Sheet No. 2 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20						OL/ OH	Very soft, black SILT (OL/OH), organic odor, wet. -ORGANIC DEPOSIT-										
	3.5	S9 24	21.0 23.0			OL/ OH	Medium, stiff, black SILT (OL/OH), slight organic odor, wet. -ORGANIC DEPOSIT-										
	0.0	S10 18	23.0 25.0		23.5	OL/ OH	Similar to S9. -ORGANIC DEPOSIT-	0	0	15	20	30	35				
						SM	Very loose, gray, silty SAND (SM), no odor, wet. -GLACIAL LACUSTRINE-										
25	2.9	S11 18	25.0 27.0		25.0	SP-SM	Medium dense, gray, poorly graded SAND with silt (SP-SM), mps = 0.5 in., slight organic odor, wet. -GLACIAL LACUSTRINE-	0	0	25	30	35	10				
	2.8	S12 16	27.0 29.0			SP-SM	Similar to S11. -GLACIAL LACUSTRINE-										
	3.1	S13 22	29.0 31.0			SP-SM	Similar to S11. -GLACIAL LACUSTRINE-										
30	2.7	S14 24	31.0 33.0		31.0	SP	Loose, gray, poorly graded SAND (SP), mps = 0.25 in., slight organic odor, wet. -GLACIAL LACUSTRINE-	5	5	20	30	35	5				
	3.1	S15 17	33.0 35.0		33.0	ML	Soft, red-brown SILT (ML), no odor, wet. -GLACIAL LACUSTRINE-	0	0	0	0	5	95				
35	3.2	S16 16	35.0 37.0			ML	Medium stiff, red-brown, SILT (ML), no odor, wet. -GLACIAL LACUSTRINE-	0	0	0	0	5	95				
	2.6	S17 18	37.0 39.0			ML	Similar to SI6. -GLACIAL LACUSTRINE-										
	2.5	S18 14	39.0 41.0		38.8	SP-SM	Loose, red-brown, poorly graded SAND with silt (SP-SM). -GLACIAL LACUSTRINE-	0	5	10	25	50	10				
40	2.5				40.8												
	2.5	S19 16	41.0 43.0		41.0	CL	Medium stiff, gray-brown lean CLAY (CL), no odor, moist.	0	0	20	25	30	25				
						SM	Medium dense, red-brown, silty SAND (SM), mps = .025 in., no odor, wet. -GLACIAL LACUSTRINE-										
	2.4	S20 14	43.0 45.0			SM	Similar to S19, except loose. -GLACIAL LACUSTRINE-										
45	2.4	S21 16	45.0 47.0		45.0	SP-SM	Medium dense, brown-gray, poorly-graded SAND with silt (SP-SM), mps = .012 in., no odor, moist, layered structure. -GLACIAL LACUSTRINE-	0	0	0	0	90	10				
	3.4	S22 24	47.0 49.0			SP-SM	Similar to S21, except interbedded gray clay layers. -GLACIAL LACUSTRINE-										
	3.6	S23	49.0				Similar to S21.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00BG005

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG005

File No 29455,29462,29463-011

Sheet No. 3 of 3

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
50		23	51.0			SP-SM	-GLACIAL LACUSTRINE-										
					51.0		BOTTOM OF EXPLORATION AT 51.0 FT.										

NOTES: Borehole backfilled with drill cuttings and sand upon completion.

Sample "00BG005-00" collected from 0 - 0.2 ft.
Sample "00BG005-07" collected from 5.0 - 7.0 ft.
Sample "00BG005-15" collected from 13.0 - 15.0 ft.
Sample "00BG005-29" collected from 27.0 - 29.0 ft.
Sample "00BG005-51" collected from 49.0 - 51.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00BG005

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.00BG006

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc.

File No29455,29462,29463-011
Sheet No. 1 of 2
Start February 3, 2004
Finish February 17, 2004
Driller D.Gregorio/D.Mayer
H&A Rep.H.Klein/W.Graham
Elevation 11.75
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: CME 75 truck mounted
Inside Diameter (in.)	3.25	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: --
				Hoist/Hammer: Cat-Head/ Automatic Hammer

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					0.3		-TOPSOIL-										
						SP-SM	Brown, poorly-graded SAND with silt and gravel (SP-SM), mps = 5 in., no odor, moist.	5	10	5	10	60	10				
					1.5		-FILL-										
						SP-SM	Similar to above, except with 20% brick fragments and 5% cobbles, (frost to 2.0 ft. bgs). -FILL-										
5	0.0	S1 2	5.0 7.0		5.0	SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft. Medium dense, dark brown, silty SAND with gravel (SM), mps = 1.37 in., no structure, no odor, 10% red brick. -FILL-	5	10	10	45	15	15				
	0.4	S2 8	7.0 9.0			SM	Similar to S1, except loose. -FILL-										
	0.6	S3 10	9.0 11.0			SM	Similar to S1, except 70% red brick. -FILL-										
10	0.0	S4 3	11.0 13.0	NO WELL INSTALLED		SM	Similar to S2, except wet. -FILL-										
	0.2	S5 8	13.0 15.0			SM	Similar to S1, except loose, 10% Ash-Like Material, some black staining at 14.2 feet. -FILL-										
15	0.0	S6 10	15.0 17.0		15.0	OL/OH	Very soft, gray-brown ORGANIC SOIL (OL/OH), mps = 0.03 in. Occasional tan to white layer of medium sand, organic odor present, moist. -ORGANIC DEPOSIT-					5	95				
	0.0	S7 20	17.0 19.0		17.0	ML	Very soft, gray-brown SILT (ML), mps = 0.03 in., frequent shells and shell fragments. -ESTUARY DEPOSIT-										
	0.0	S8 20	19.0 21.0			ML	Similar to S7, except soft. -ESTUARY DEPOSIT-										
20																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
2/16/04	NA	NA	11.0	13.0	11.0

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 41.0
Rock Cored (lin. ft.) -
Samples S18
Boring No. 00BG006

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00BG006

File No 29455,29462,29463-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
	0.4	S9 21	21.0 23.0			ML	Similar to S7. -ESTUARY DEPOSIT-										
	0.0	S10 12	23.0 25.0		24.0	ML	Similar to S7, except soft. -ESTUARY DEPOSIT-										
	0.0					PT	Soft, brown, fibrous PEAT (PT), 30% plant fibers, organic odor, moist. -PEAT DEPOSIT-					5	95				
25		S11 12	25.0 27.0		26.5												
	0.0				27.0	ML	Soft, gray, silt with SAND (ML), mps = 0.02 in., stratified, organic odor. -ESTUARY DEPOSIT-				5	10	85				
	0.0	S12 20	27.0 29.0			SM	Medium dense, gray, silty SAND (SM), mps = 0.03 in., no structure, no odor. -GLACIAL LACUSTRINE-		10	10	10	30	40				
	0.0	S13 20	29.0 31.0			SM	Similar to S12. -GLACIAL LACUSTRINE-										
30					30.5												
	0.0				31.0	ML	Stiff, red-brown, silt with SAND (ML), mps = 0.02 in., interbedded with occasional gray silt seams 1/8 in. thick.				5	10	85	R	N	N	N
	0.0	S14 14	31.0 33.0			SM	Medium dense, red-brown, silty SAND with gravel (SM), mps = 0.13 in., no structure, no odor. -GLACIAL LACUSTRINE-		15	15	10	20	40				
	0.0	S15 20	33.0 35.0			SM	Similar to S14, except loose. -GLACIAL LACUSTRINE-										
35	0.2	S16 21	35.0 37.0			SM	Similar to S14, except interbedded with fine sand and silt layer. -GLACIAL LACUSTRINE-	5	15	20	25	15	20				
	0.0	S17 5	37.0 39.0			SM	Similar to S14. -GLACIAL LACUSTRINE-										
	0.0	S18 3	39.0 41.0			SM	Similar to S14, except loose. -GLACIAL LACUSTRINE-										
40					41.0		BOTTOM OF EXPLORATION AT 41.0 FT.										

NOTES: First attempt was continuous sampling to 37 ft. At 37 ft running sands blew into the HSA at approximately 8.0 ft. The augers were retracted from the hole 10 ft and the drillers attempted to keep ahead of H20 on the sand to prevent blow-in. This second attempt achieved a total depth of 41.0 ft where the sand blew in approximately 2 ft over the 41-43 ft. Boring was terminated at 41 ft due to the drillers inability to counter act the head differential in accordance with Haley & Aldrich's Scope of Work.

Borehole backfilled with drill cuttings and sand upon completion.

Sample "00BG006-00" collected from 0 - 0.2 ft.
Sample "00BG006-09" collected from 7.0 - 9.0 ft.
Sample "00BG006-15" collected from 13.0 - 15.0 ft.
Sample "00BG006-30" collected from 28.0 - 30.0 ft.

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. **00BG006**

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.00MWS06

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29455, 29462, 29463-011
Sheet No. 1 of 1
Start March 10, 2004
Finish March 12, 2004
Driller M.Mede/R.Buley
H&A Rep.A.Murphy/B.Tarbell
Elevation 9.89
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	-	-	Rig Make & Model: Mobile B-59 truck mounted
Inside Diameter (in.)	4.25	-	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: --
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					1.0	SP-SM	Dark brown, poorly graded SAND with silt and gravel (SP-SM), mps= 1.5 in., no structure, organic odor, roots.	10	5	5	45	25	10				
							-FILL-										
						SP	Brown to light brown, poorly graded SAND with gravel (SP), mps = 3 in., no structure, organic odor, occasional roots, 20% - 30% brick debris at 3.0 - 5.0 ft. (1 x 1 piece of mortared brick at 3.5 ft.)	15	10	10	40	25					
5					5.0		-FILL-										
							Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.		5	5	60	25	5				
							Note: See "Test Boring Report 00BG004" for soil descriptions.										
10																	
15																	
							NOTES: Drill cuttings placed in drums.										
							Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 00MWS06" for complete well details.										
					19.2		BOTTOM OF EXPLORATION AT 19.2 FT.										

Water Level Data						Sample Identification	Well Diagram	Summary
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water	O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon G Geoprobe	Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal	Overburden (lin. ft.) 19.2 Rock Cored (lin. ft.) - Samples - Boring No. 00MWS06

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.00MWD06

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc./Fenley & Nicol Environmental, Inc.

File No29455, 29462, 29463-011
Sheet No. 1 of 2
Start March 10, 2004
Finish March 15, 2004
Driller M.Mede/L.Adams
H&A Rep.A.Murphy/B.Tarbell
Elevation 10.08
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	-	-	Rig Make & Model: Mobile B-59 truck mounted
Inside Diameter (in.)	4.25	-	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: --
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					1.0	SP-SM	Dark brown, poorly graded SAND with gravel and silt (SP-SM), mps = 1.0 in., no structure, organic odor, roots. -FILL-	10	5	5	45	25	10				
						SP	Brown to light brown, poorly graded SAND with gravel (SP), mps = 5 in., no structure, organic odor, some roots, 15% bricks (probable interlocking) at 3.0 to 5.0 ft. -FILL-	15	10	10	40	25					
5					5.0		Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.		5	5	60	25	5				
							Note: See "Test Boring Report 00BG004" for soil descriptions.										
10																	
15																	
20																	

Water Level Data

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

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 34.0
Rock Cored (lin. ft.) -
Samples -
Boring No. 00MWD06

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

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HALEY & ALDRICH

TEST BORING REPORT

Boring No 00MWD06

File No 29455, 29462, 29463-01

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20																	
25																	
30																	
					34.0		BOTTOM OF EXPLORATION AT 34.0 FT.										
							NOTES: Drill cuttings placed in drums.										
							Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 00MWD06" for complete well details.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00MWD06

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HALEY & ALDRICH

TEST BORING REPORT

Boring No.00MWS07

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc.

File No29455,29462,29463-011
Sheet No. 1 of 2
Start February 9, 2004
Finish March 2, 2004
Driller D.Gregorio/R.Buley
H&A Rep.P.Falce/B.Tarbell
Elevation 20.83
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	-	-	Rig Make & Model: Mobile B-59 truck mounted
Inside Diameter (in.)	4.25	-	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: --
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0				1.0	ML	Frozen, dark brown, sandy SILT (ML), mps = 0.5 in., no structure, no odor. -TOPSOIL-		5	5	20	20	50				
	0.0				4.0	SW	Dense, brown, well graded SAND with gravel (SW), mps = 4 in., no structure, no odor, moist.	5	10	10	15	40	20				
5	0.0				5.0		Similar to above, except 20 - 50% brick and concrete pieces. -FILL-	5	10	10	15	40	20				
						SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.	5	10	10	30	30	15				
10							Note: See "Test Boring Report 00BG001" for soil descriptions.										
15																	
20																	

Water Level Data

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

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 27.0
Rock Cored (lin. ft.) -
Samples -
Boring No. 00MWS07

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

CON ED_TB3_PG1 USCSLIB4.GLB USCSTB+CORE4.GDT G:\DATA\29\29455_29462_29463\GINT LOGS\BACKGROUND AQUIFER.GPJ Apr 12, 05

HALEY & ALDRICH

TEST BORING REPORT

Boring No 00MWS07

File No 29455, 29462, 29463-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20						SM											
25					27.0		BOTTOM OF EXPLORATION AT 27.0 FT. NOTES: Drill cuttings placed in drums. Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 00MWS07" for complete well details.										

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00MWS07

CON ED_TB3_PG1 USCSLIB4.GLB USCSTB+CORE4.GDT G:\DATA\29\29455_29462_29463\GINT LOGS\BACKGROUND AQUIFER.GPJ Apr 12, 05

TEST BORING REPORT

Boring No.00MWD07

Project Former Con Edison Manufactured Gas Plants within Stuyvesant Town Background
Client Consolidated Edison Co. of New York Inc.
Contractor Aquifer Drilling & Testing, Inc.

File No29455,29462,29463-011
Sheet No. 1 of 2
Start February 9, 2004
Finish March 3, 2004
Driller D.Gregorio/R.Buley
H&A Rep.P.Falce/B.Tarbell
Elevation 20.89
Datum Manhattan Borough
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	-	-	Rig Make & Model: Mobile B-59 truck mounted
Inside Diameter (in.)	4.25	-	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	-	-	Drill Mud: None
Hammer Fall (in.)	-	-	-	Casing: --
				Hoist/Hammer: - -

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	0.0				1.0	ML	Frozen, dark brown, sandy SILT (ML), mps = 0.5 in., no structure, no odor. -TOPSOIL-		5	5	20	20	50				
	0.0				3.0	SM	Brown, silty SAND with gravel (SM), mps= 4 in., no structure, no odor, moist. -FILL-	5	10	10	15	40	20				
					5.0	SM	Similar to above, except 20 - 25% brick and concrete pieces. -FILL-	5	10	10	15	40	20				
5	0.0					SM	Bottom of Hand Excavation/Vac-Truck Exploration at 5.0 ft.	5	10	10	30	30	15				
							Note: See "Test Boring Report 00BG001" for soil descriptions.										
10																	
15																	
20																	

Water Level Data

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

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 43.0
Rock Cored (lin. ft.) -
Samples -
Boring No. 00MWD07

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

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

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

CON ED_TB3_PG1 USCSLIB4.GLB USCSTB+CORE4.GDT G:\DATA\29\29455_29462_29463\GINT LOGS\BACKGROUND AQUIFER.GPJ Apr 12, 05

HALEY & ALDRICH

TEST BORING REPORT

Boring No. 00MWD07

File No. 29455,29462,29463-011

Sheet No. 2 of 2

Depth (ft.)	PID (ppm)	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
20						SM											
25																	
30																	
35																	
40																	
					43.0		BOTTOM OF EXPLORATION AT 43.0 FT.										

NOTES: Drill cuttings placed in drums.

Installed observation well in borehole upon completion. Refer to "Observation Well Installation Report 00MWD07" for complete well details.

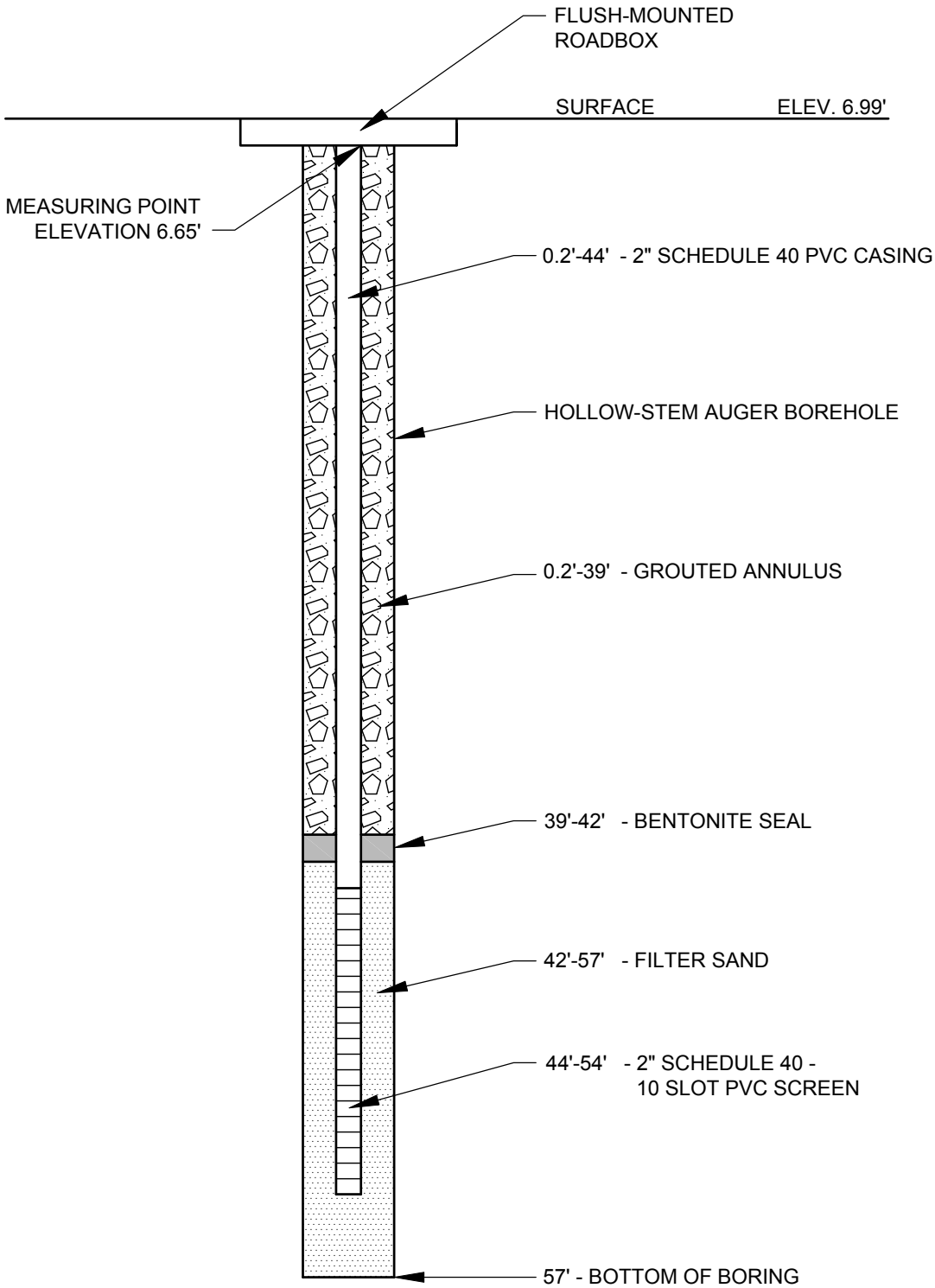
[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size.

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

Boring No. 00MWD07

CON ED_TB3_PG1 USCSLIB4.GLB USCSTB+CORE4.GDT G:\DATA\29\29455_29462_29463\GINT LOGS\BACKGROUND AQUIFER.GPJ Apr 12, 05

GEI Well Construction Logs



NOTES:

1. DRAWING NOT TO SCALE.
2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST14SB04 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT TOWN FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 14MWDD01** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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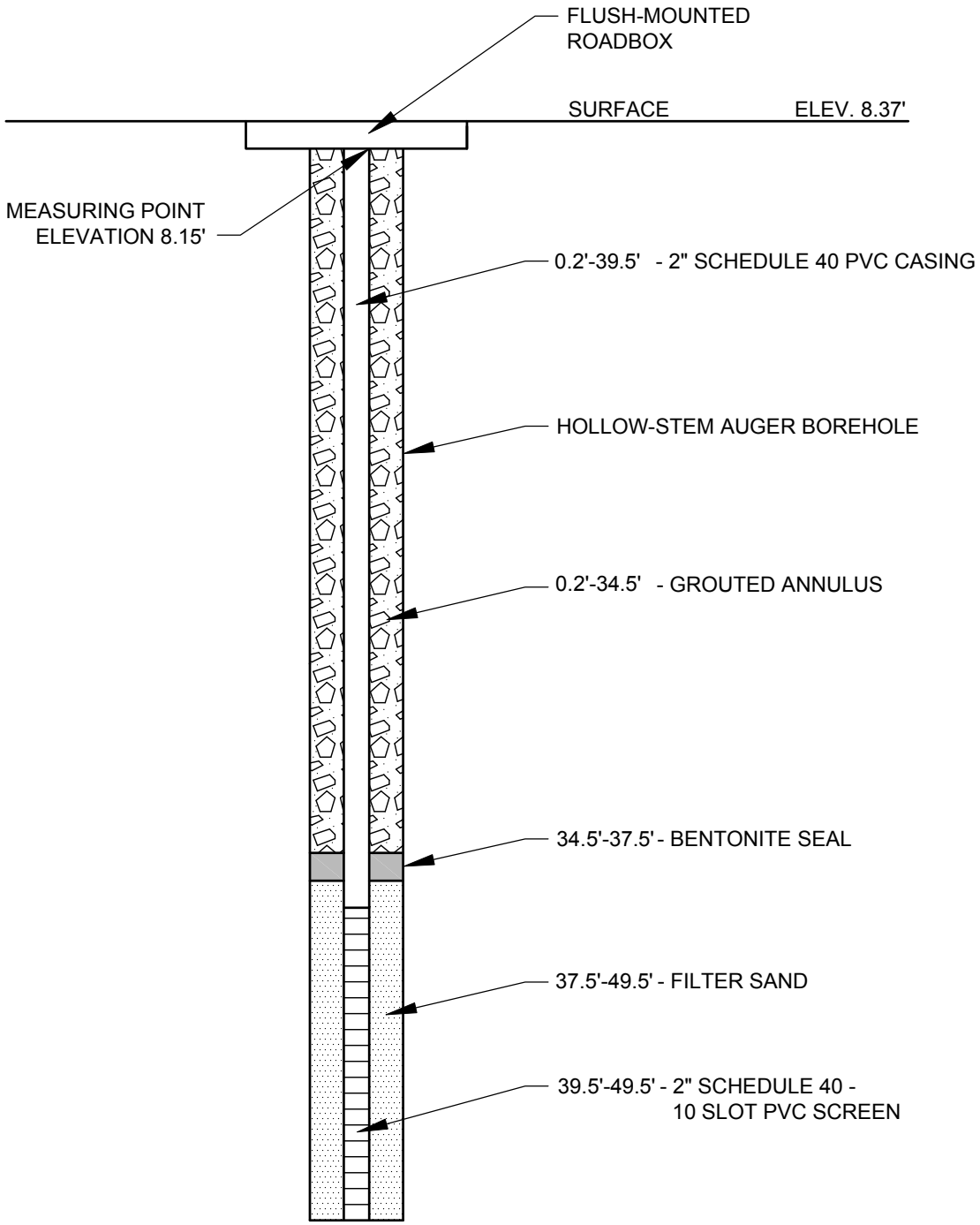

NOTES:

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3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST14SB05 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 14MWDD02** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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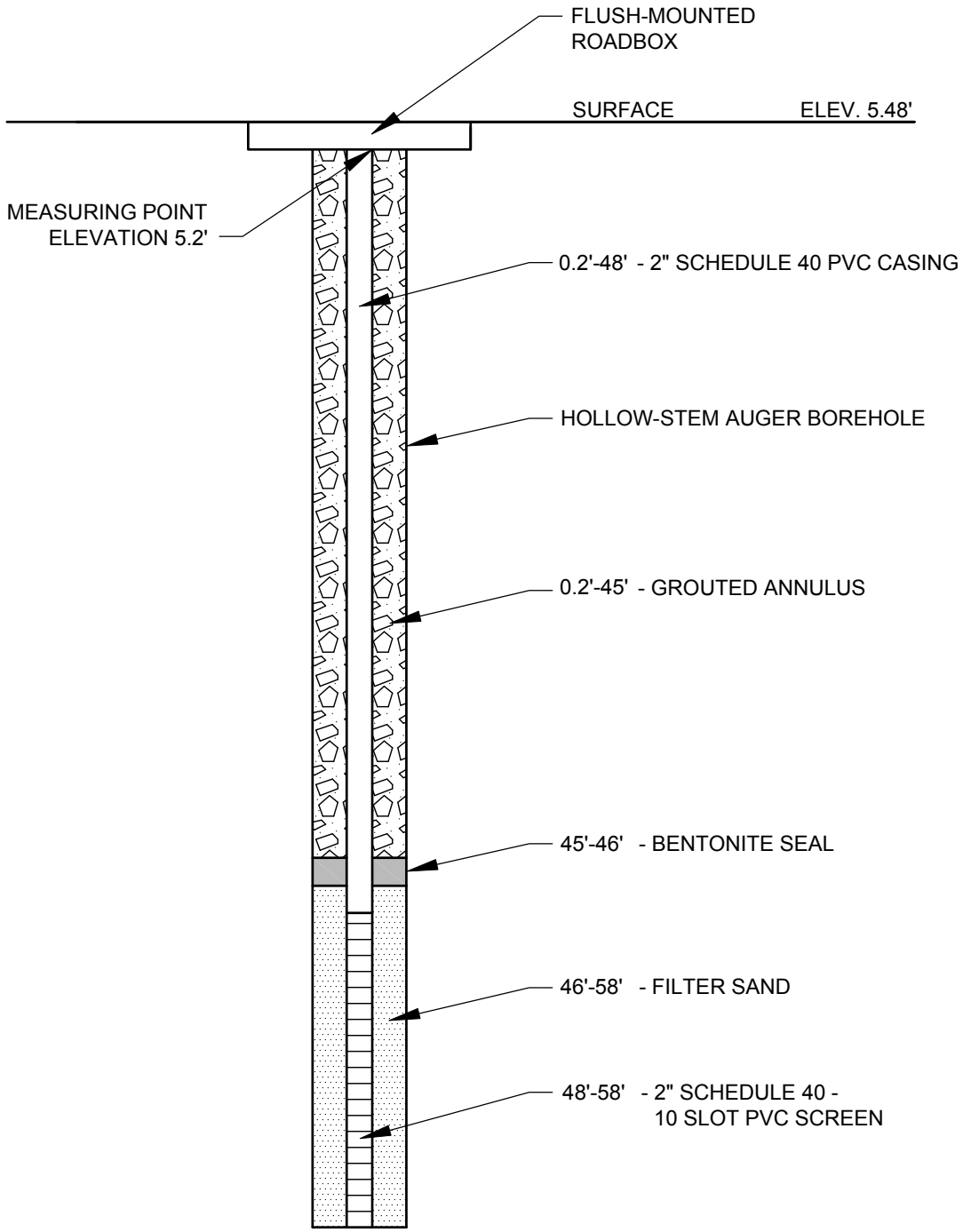

NOTES:

1. DRAWING NOT TO SCALE.
2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST14SB06 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 14MWDD03** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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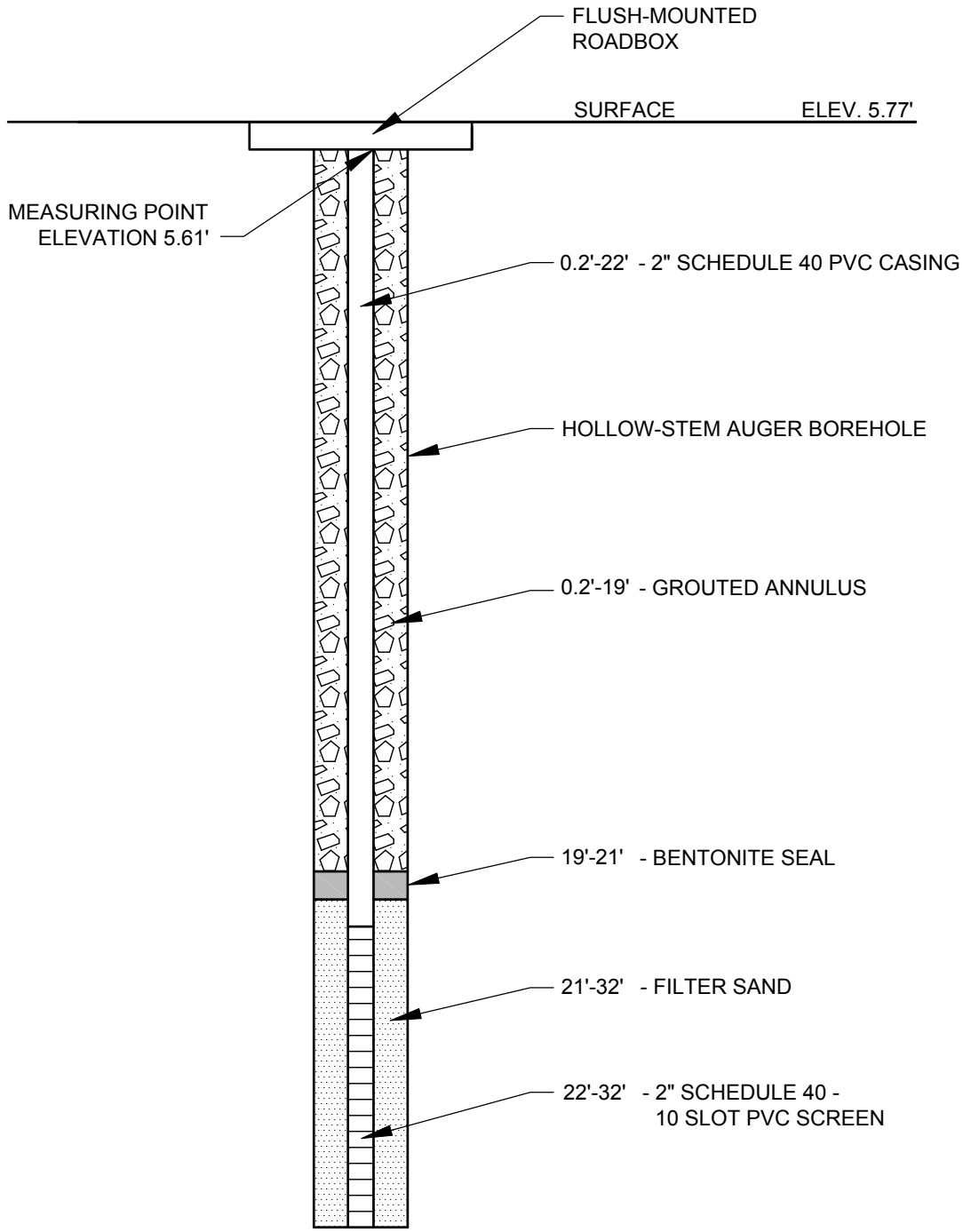

NOTES:

1. DRAWING NOT TO SCALE.
2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST14SB08 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 14MWD05** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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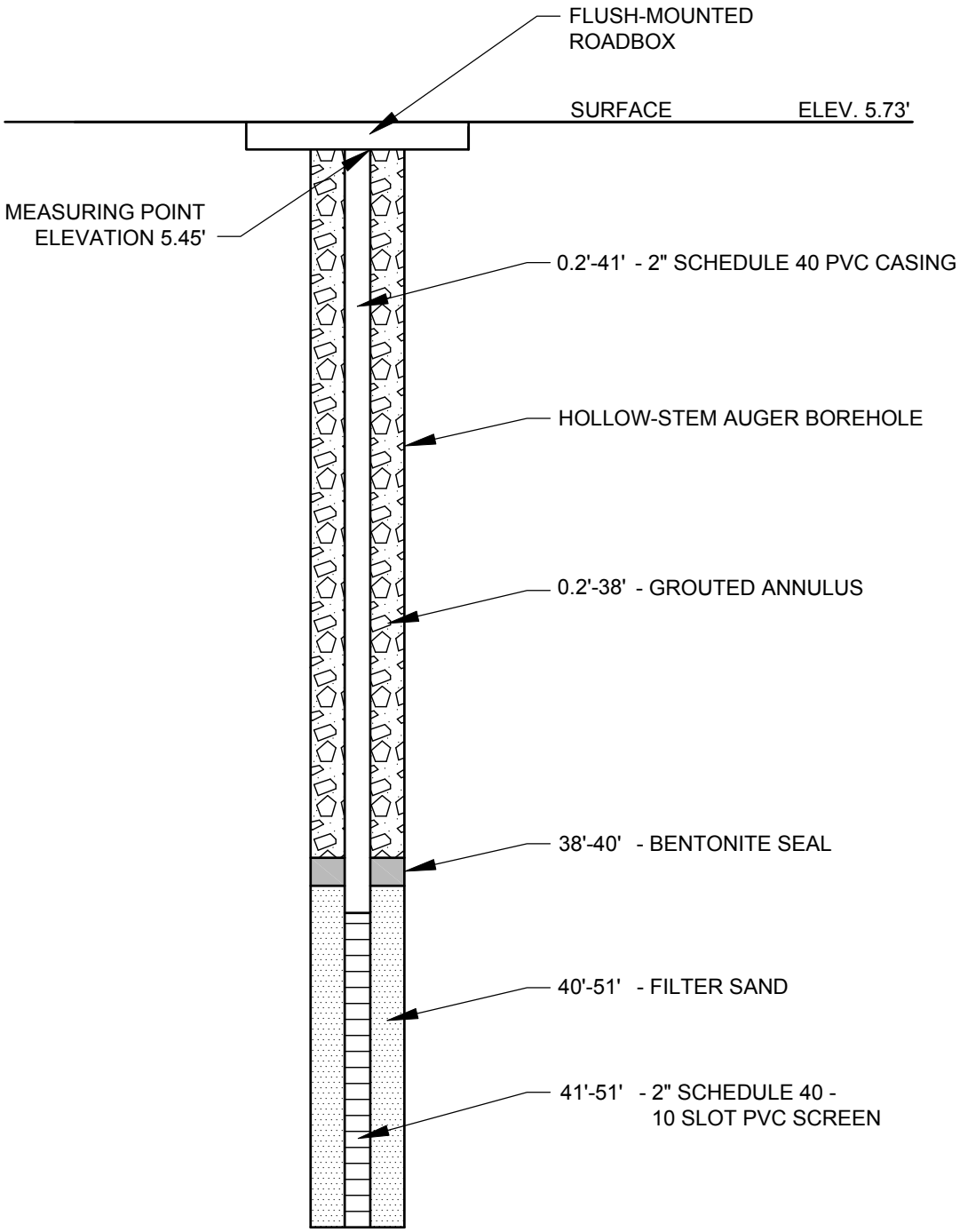

NOTES:

1. DRAWING NOT TO SCALE.
2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST14SB08 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 14MWDD05** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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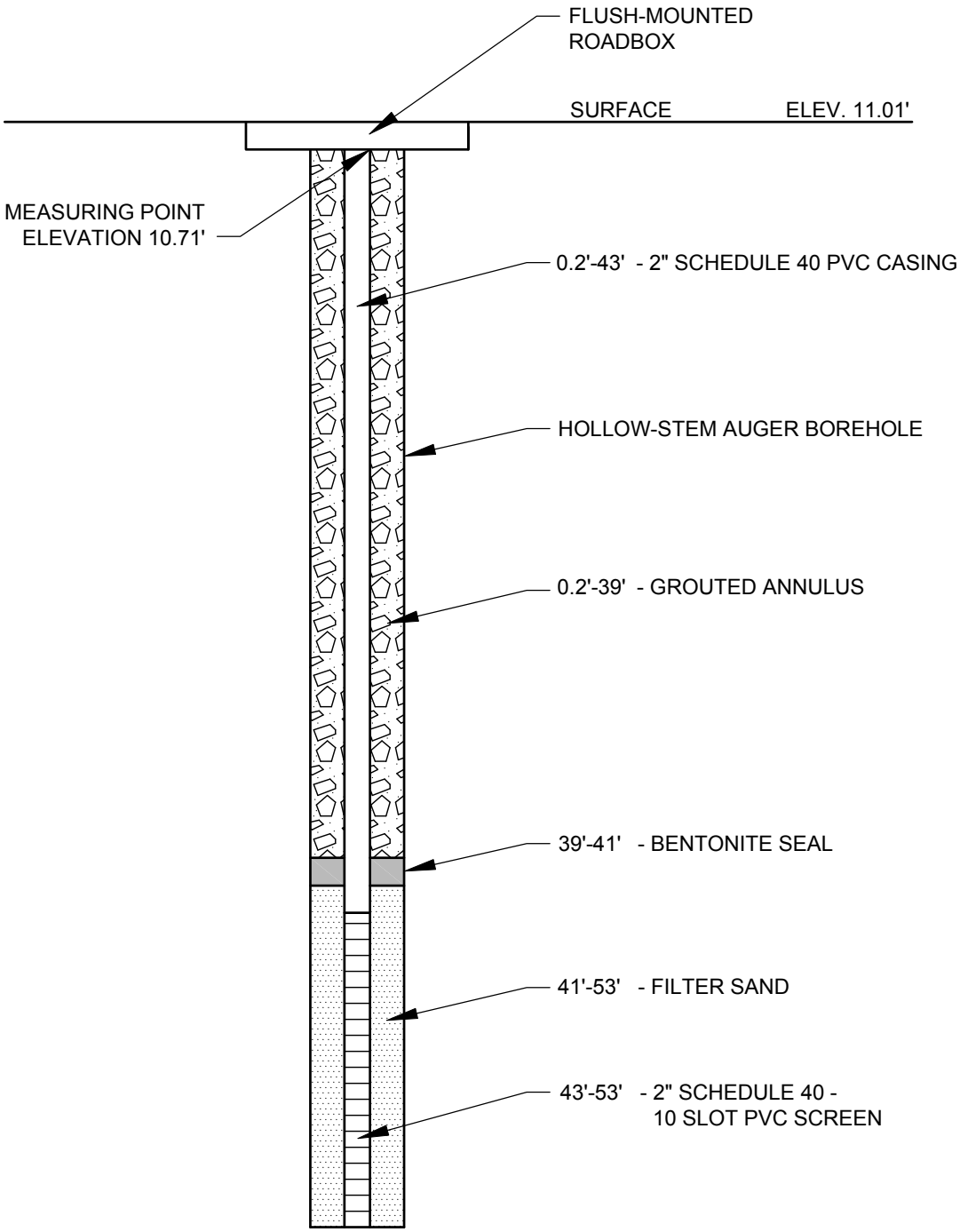

NOTES:

1. DRAWING NOT TO SCALE.
2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST17SB03 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 17MWDD03** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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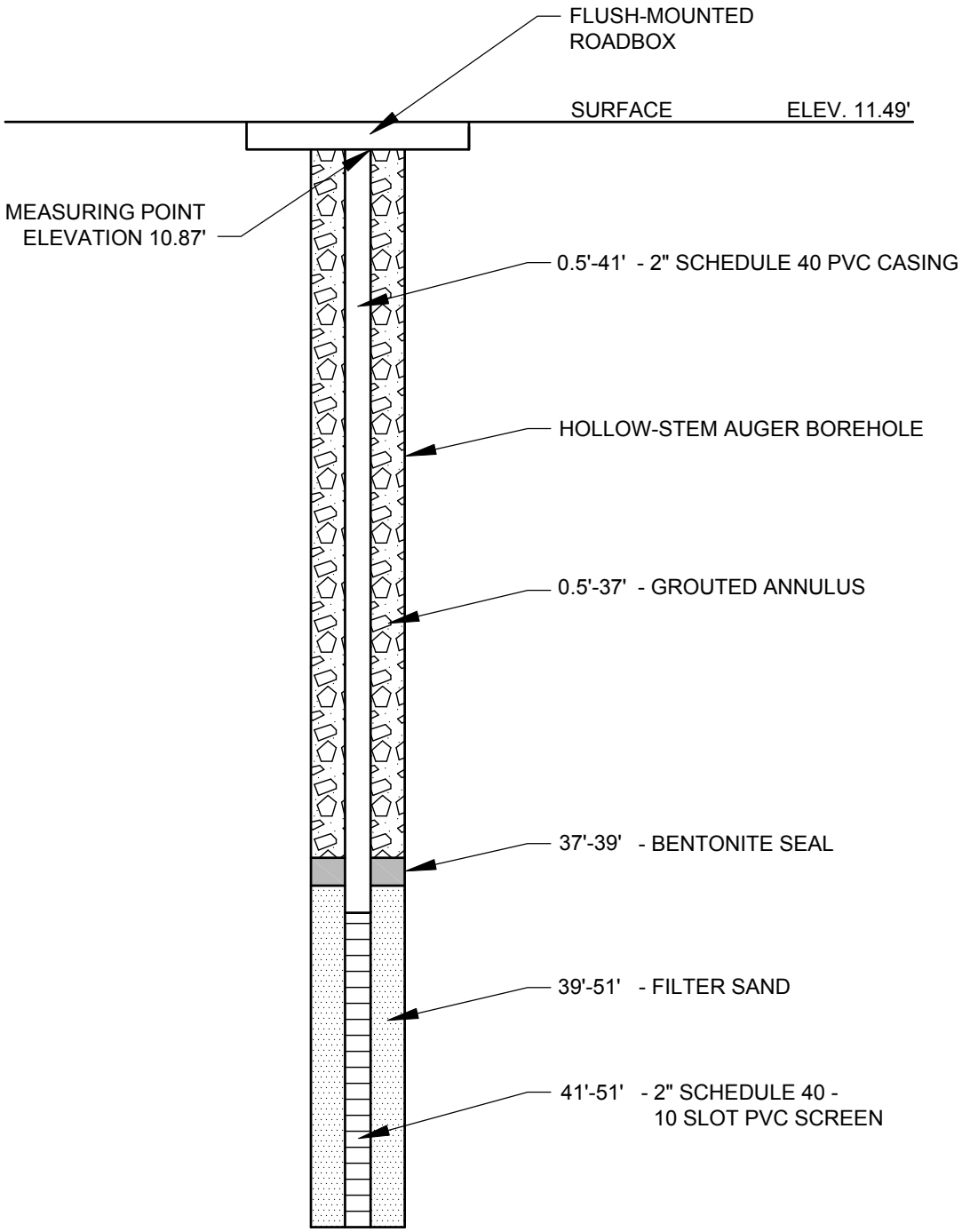

NOTES:

1. DRAWING NOT TO SCALE.
2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST17SB04 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 17MWDD04** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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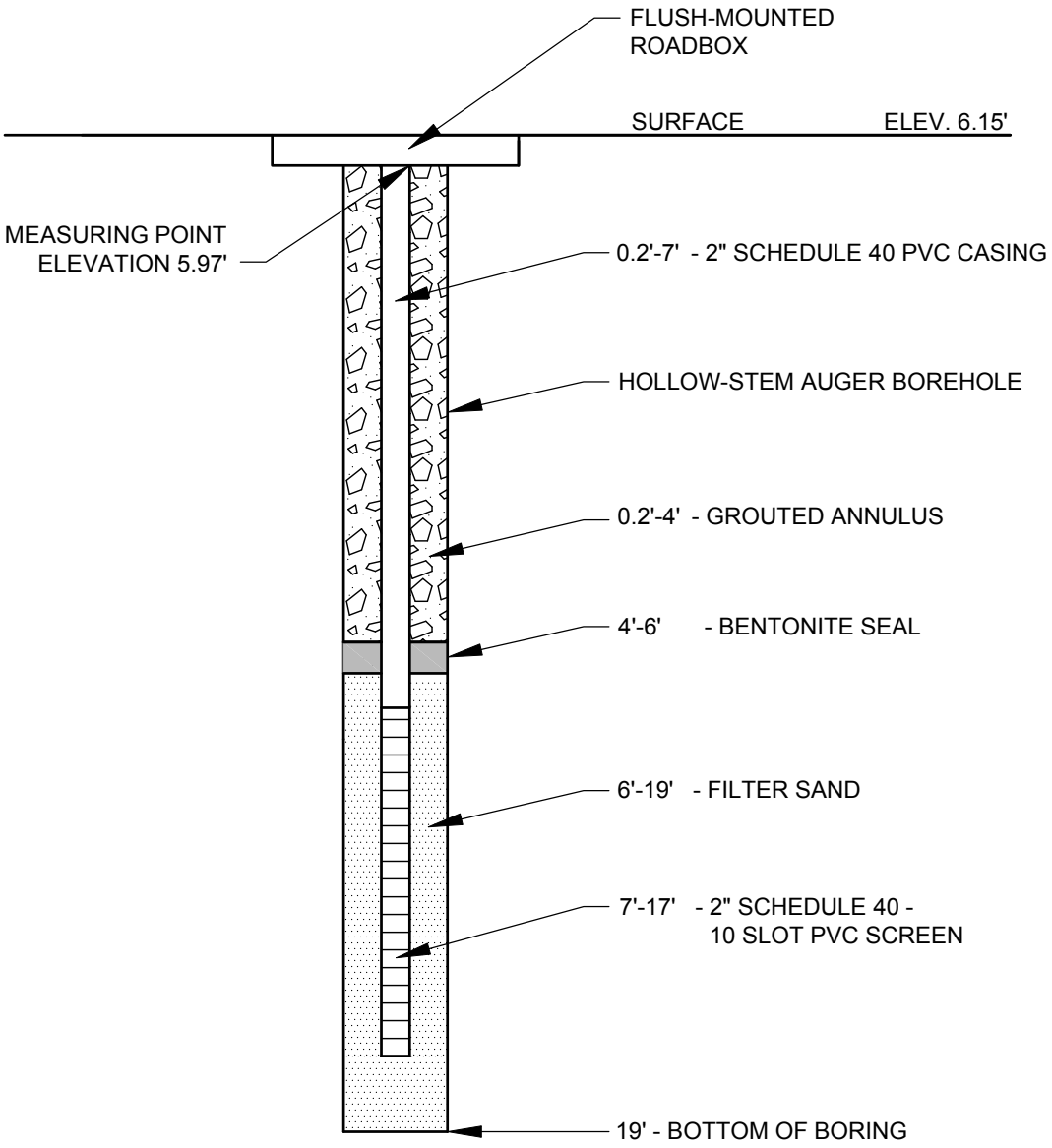

NOTES:

1. DRAWING NOT TO SCALE.
2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST17SB05 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 17MWS05** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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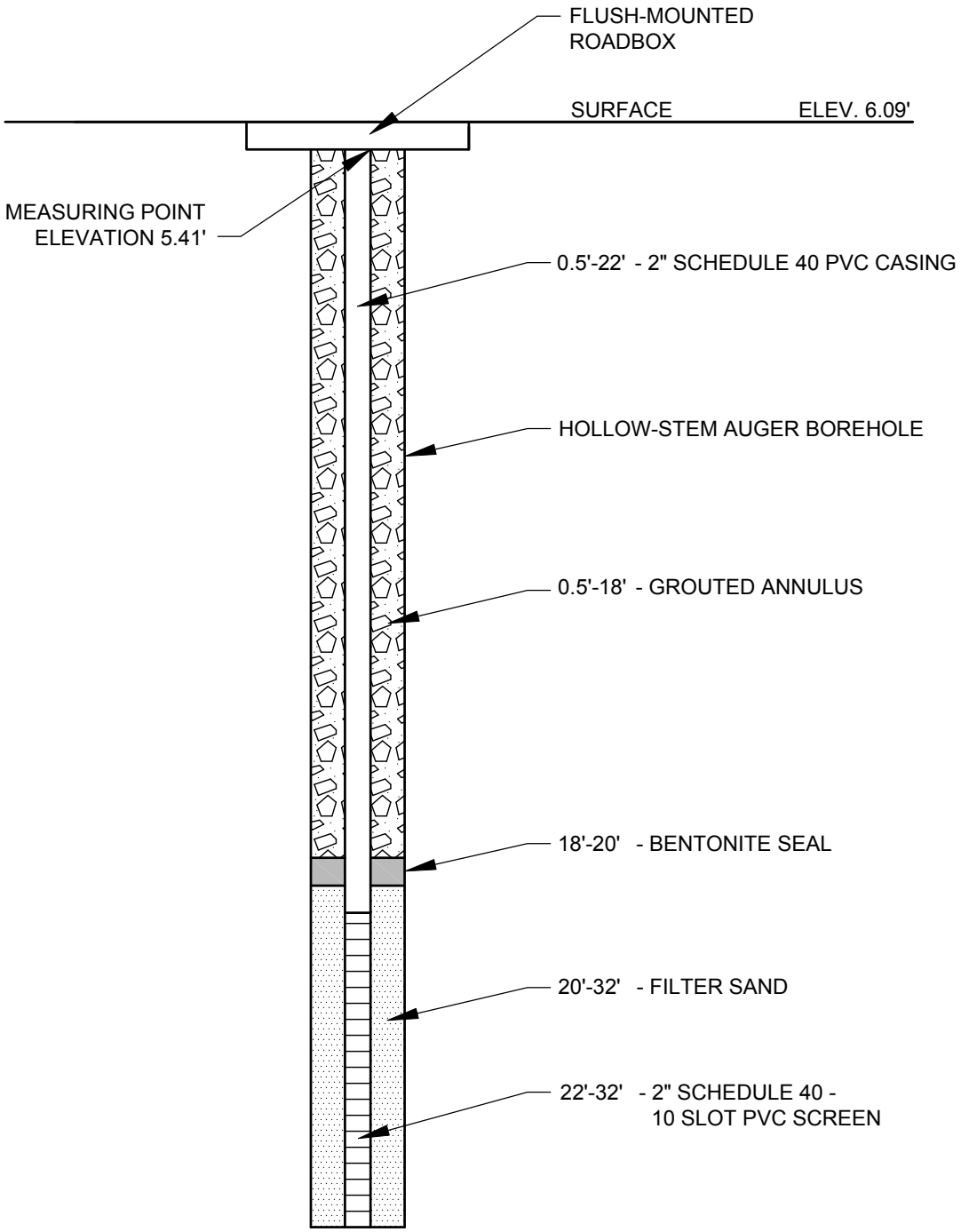

NOTES:

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3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST17SB05 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 17MWD05** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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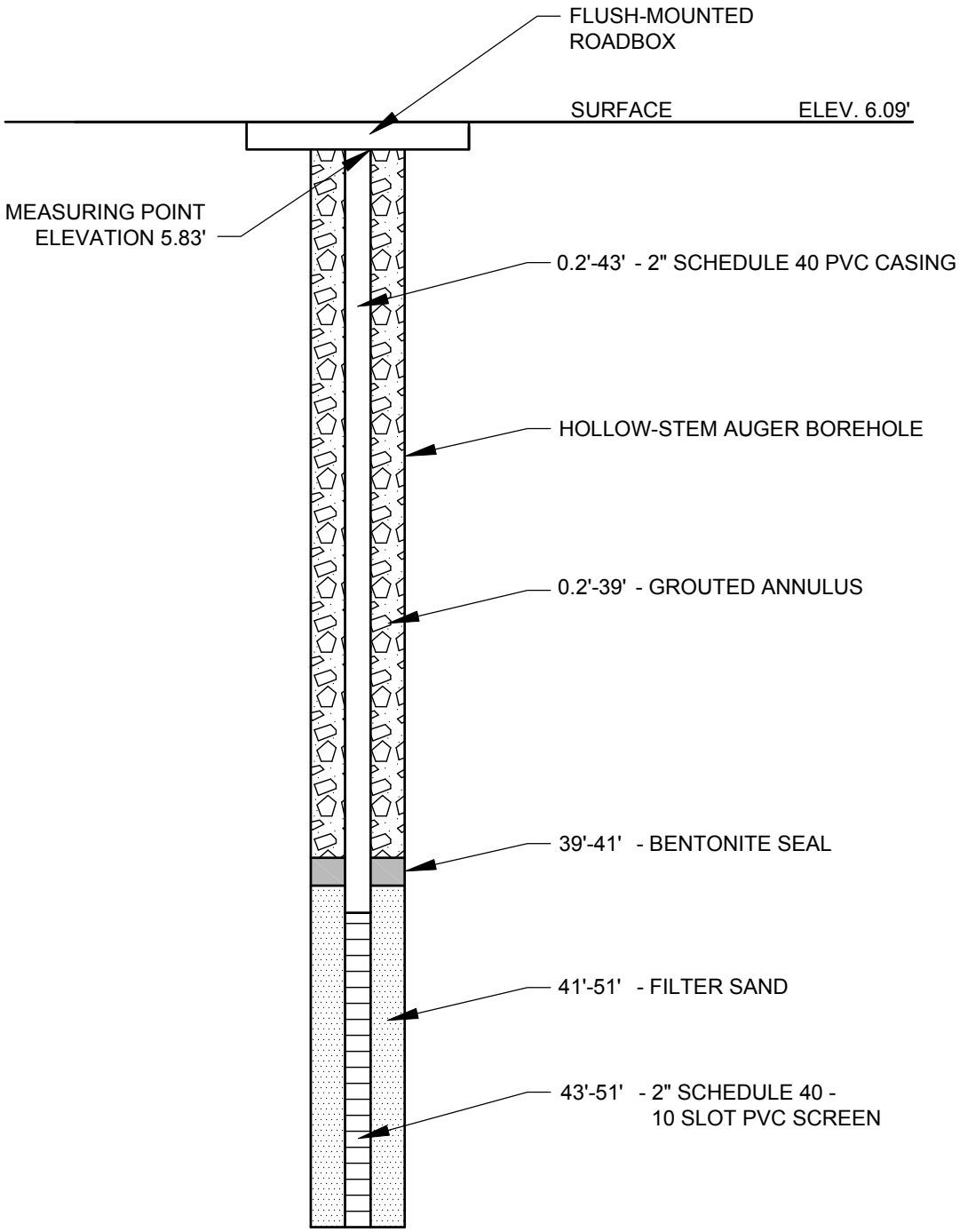

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INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 17MWDD05** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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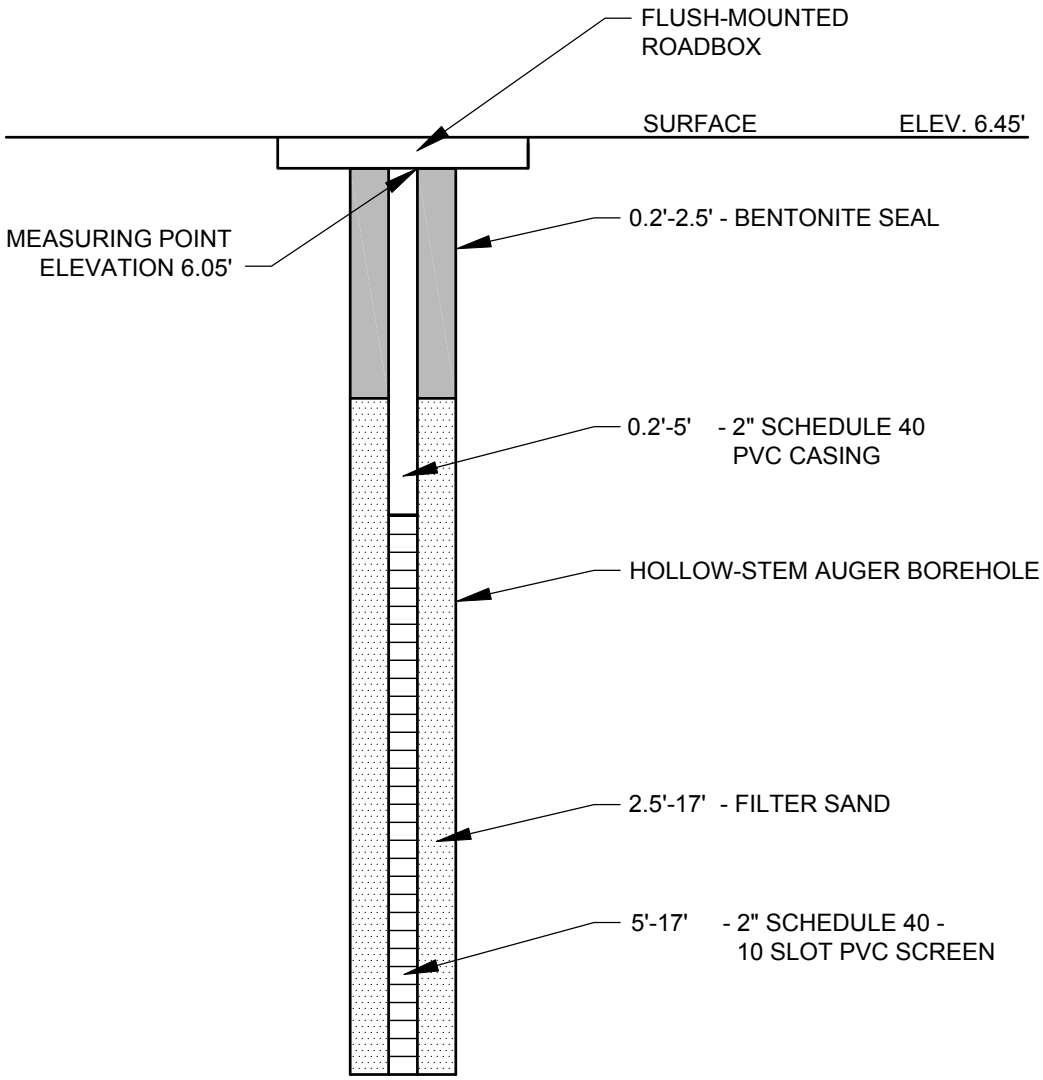

NOTES:

1. DRAWING NOT TO SCALE.
2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST17SB06 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 17MWS06** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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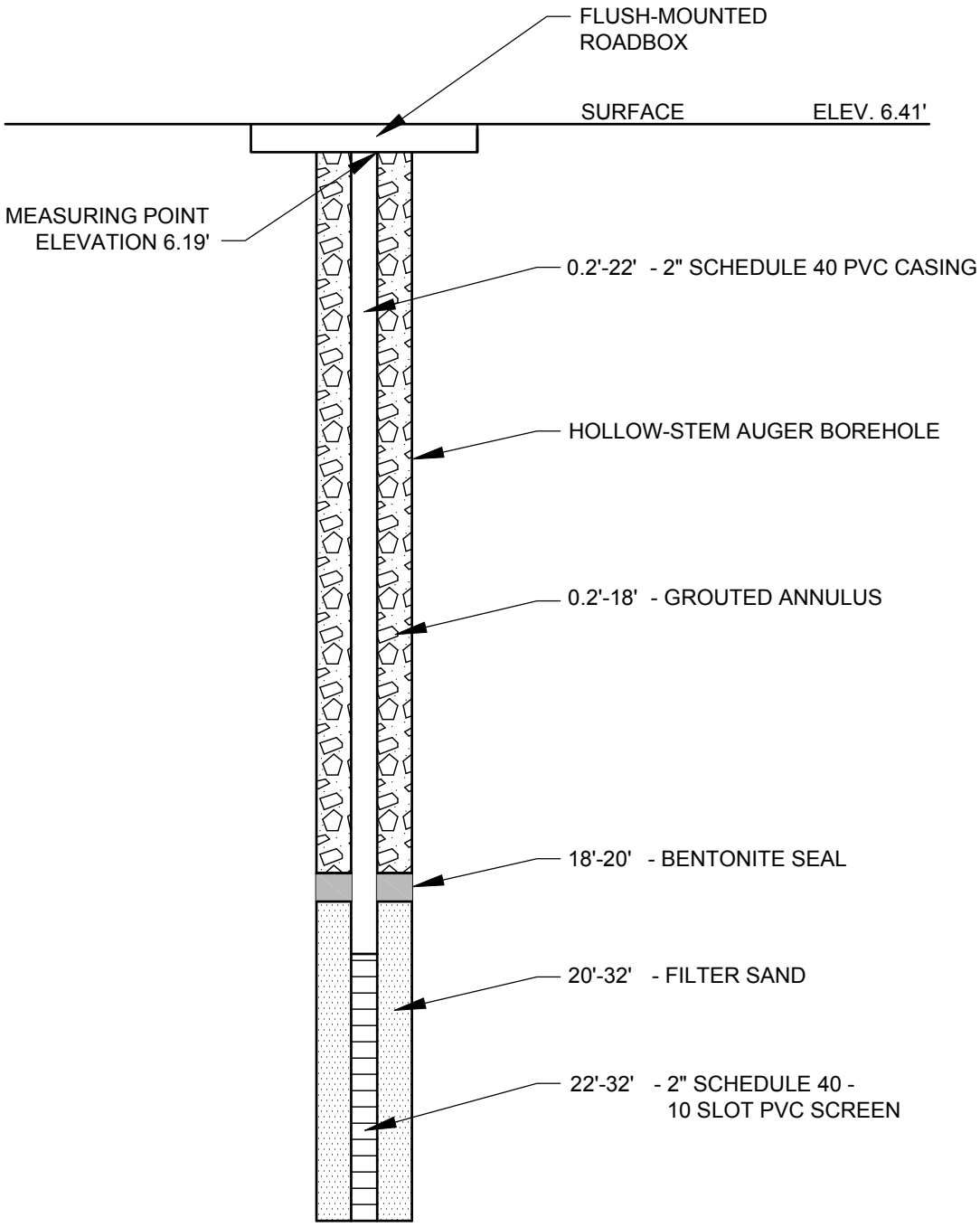

NOTES:

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2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST17SB06 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 17MWD06** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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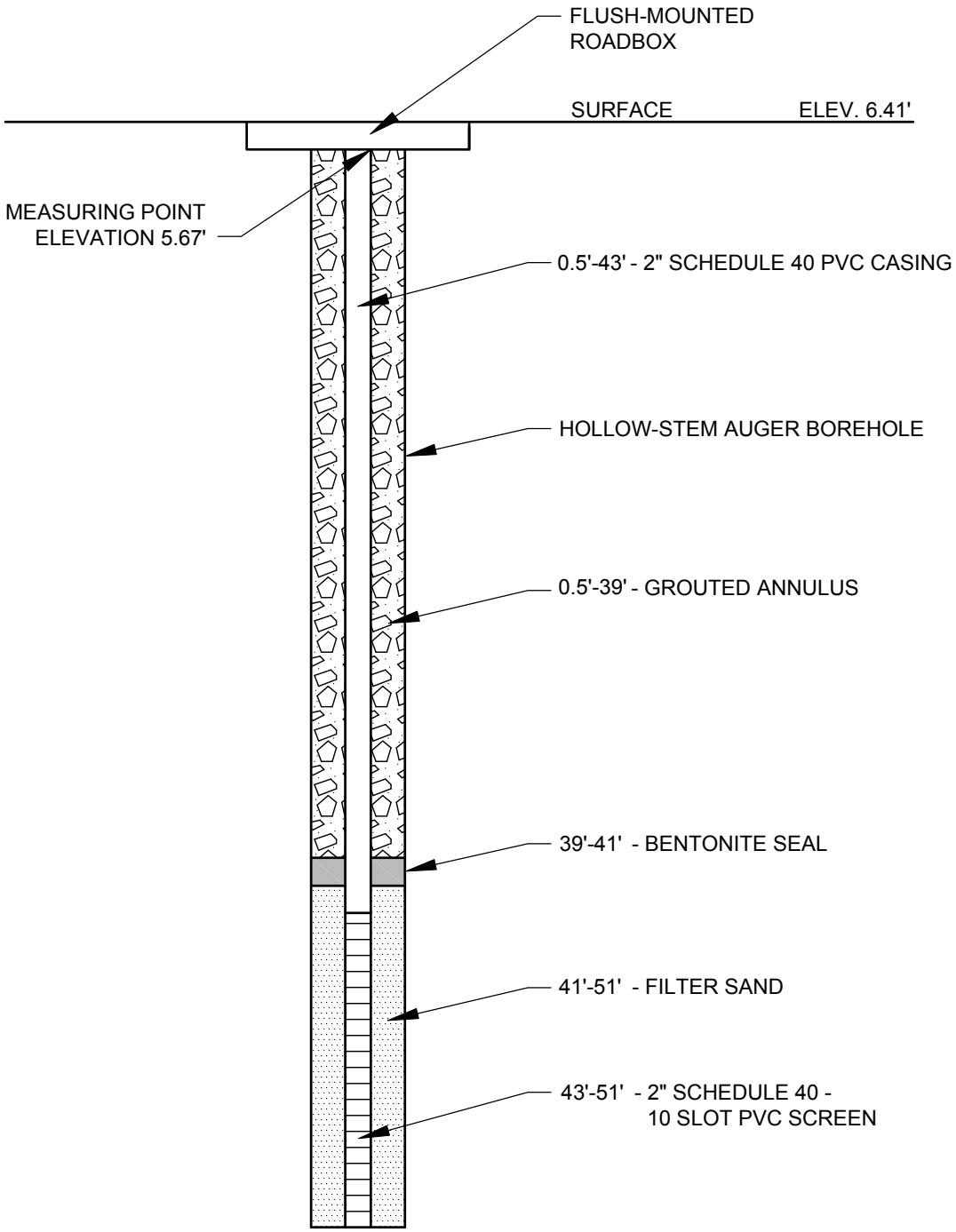

NOTES:

1. DRAWING NOT TO SCALE.
2. MEASUREMENTS ARE IN FEET BELOW GROUND SURFACE.
3. ELEVATIONS ARE IN NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
4. SEE LOG ST17SB06 FOR BORING INFORMATION.

INTERIM REMEDIAL INVESTIGATION REPORT STUYVESANT FORMER MGP SITES NEW YORK, NEW YORK	GEI Consultants	**WELL 17MWDD06** **CONSTRUCTION DETAILS**
CONSOLIDATED EDISON CO. OF NEW YORK, INC.	Project 060660	September 2007

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Haley & Aldrich Well Construction Logs

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 14MWS01
Boring No. 14MWS01

PROJECT	Stuyvesant Town - 14th Street Station	**H&A FILE NO.**	29455-011
LOCATION	New York, New York	**PROJECT MGR.**	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	**FIELD REP.**	B. Tarbell
CONTRACTOR	Aquifer Drilling and Testing, Inc.	**DATE INSTALLED**	3/16/2004
DRILLER	L. Adams	**WATER LEVEL**	5.89

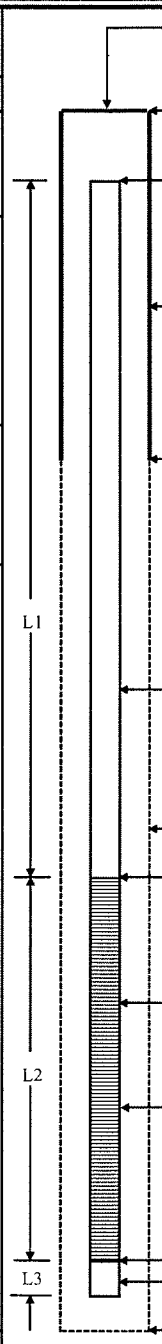
Ground El. 5.64 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	1.5
	GROUT
	3.7
	BENTONITE
	5.0
	FILTER SAND
N/A	19.0

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



(Not to Scale)

Type of protective cover/lock: Locking expandable plug

Height/Depth of top of guard pipe/roadway box above/below ground surface: 0.0 ft

Height/Depth of top of riser pipe above/below ground surface: 0.42 ft

Type of protective casing: Steel
- **Length:** 1.0 ft
- **Inside Diameter:** 8.0 in

Depth of bottom of guard pipe/roadway box: 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.5
Grout	1.5	2.2
Bentonite Seal	3.7	1.3

Type of riser pipe: Schedule 40 PVC
- **Inside diameter of riser pipe:** 2.0 in
- **Type of backfill around riser:** Sand/Bentonite/Grout

Diameter of borehole: 8.0 in

Depth to top of well screen: 7.0 ft

Type of screen: Schedule 40 PVC
- **Screen gauge or size of openings:** 0.010 in
- **Diameter of screen:** 2.0 in

Type of backfill around screen: #1 Filter Sand

Depth of bottom of well screen: 17.0 ft

Bottom of Silt trap: 19.0 ft

Depth of bottom of borehole: 19.0 ft

7.0 ft	+	10.0 ft	+	2.0 ft	=	19.0 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: See "Test Boring Report 14MWD01/14PH001" for soil descriptions.

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 14MWD01
Boring No. 14PH001

PROJECT	Stuyvesant Town - 14th Street Station	**H&A FILE NO.**	29455-011
LOCATION	New York, New York	**PROJECT MGR.**	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	**FIELD REP.**	B. Tarbell
CONTRACTOR	Aquifer Drilling and Testing, Inc.	**DATE INSTALLED**	3/16/2004
DRILLER	L. Adams	**WATER LEVEL**	6.03

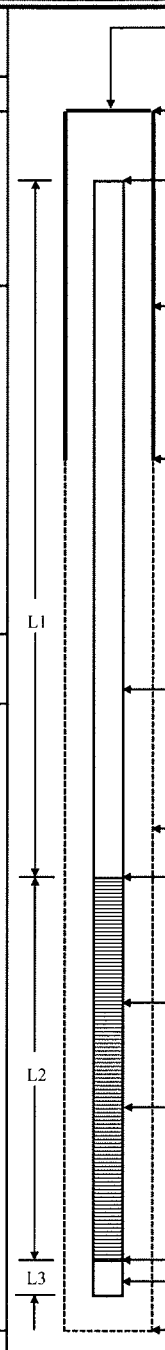
Ground El. 5.53 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	1.5
	GROUT
FILL	
	19.0
	BENTONITE
	20.0
	FILTER SAND
34.5	34.5

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



(Not to Scale)

Type of protective cover/lock	Locking expandable plug
Height/Depth of top of guard pipe/roadway box above/below ground surface	0.0 ft
Height/Depth of top of riser pipe above/below ground surface	0.31 ft
Type of protective casing:	Steel
Length	1.0 ft
Inside Diameter	8.0 in
Depth of bottom of guard pipe/roadway box	1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.5
Grout	1.5	17.5
Bentonite Seal	19.0	1.0

Type of riser pipe:	Schedule 40 PVC
Inside diameter of riser pipe	2.0 in
Type of backfill around riser	Sand/Bentonite/Grout
Diameter of borehole	8.0 in
Depth to top of well screen	22.0 ft
Type of screen	Schedule 40 PVC
Screen gauge or size of openings	0.010 in
Diameter of screen	2.0 in
Type of backfill around screen	#1 Filter Sand
Depth of bottom of well screen	32.0 ft
Bottom of Silt trap	34.0 ft
Depth of bottom of borehole	34.5 ft

22.0 ft	+	10.0 ft	+	2.0 ft	=	34.0 ft	
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length	

COMMENTS: See "Test Boring Report 14MWD01/14PH001" for soil descriptions.

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 14MWS02
Boring No. 14GH013

PROJECT	Stuyvesant Town - 14th Street Station	**H&A FILE NO.**	29455-011
LOCATION	New York, New York	**PROJECT MGR.**	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	**FIELD REP.**	B. Tarbell
CONTRACTOR	Aquifer Drilling and Testing, Inc.	**DATE INSTALLED**	3/18/2004
DRILLER	L. Adams	**WATER LEVEL**	5.23

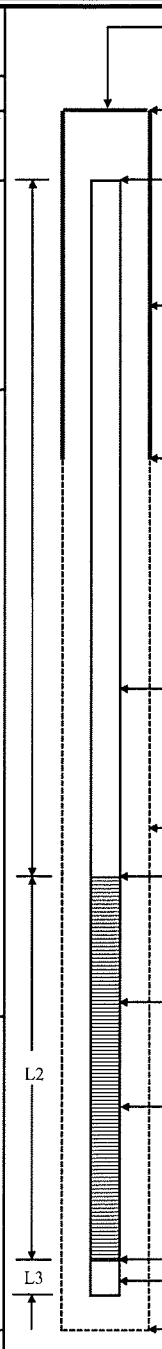
Ground El. 7.19 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	1.5
	BENTONITE
	5.0
FILL	FILTER SAND
	20.0
	GROUT
25.0	
GLACIAL LACUSTRINE	
27.0	27.0

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



(Not to Scale)

Type of protective cover/lock Locking expandable plug

Height/Depth of top of guard pipe/roadway box above/below ground surface 0.0 ft

Height/Depth of top of riser pipe above/below ground surface 0.50 ft

Type of protective casing: Steel
Length 1.0 ft
Inside Diameter 8.0 in

Depth of bottom of guard pipe/roadway box 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.5
Bentonite Seal	1.5	3.5
Grout	20.0	27.0

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe 2.0 in
Type of backfill around riser Sand/Bentonite/Grout

Diameter of borehole 8.0 in

Depth to top of well screen 7.0 ft

Type of screen Schedule 40 PVC
Screen gauge or size of openings 0.010 in
Diameter of screen 2.0 in
Type of backfill around screen #1 Filter Sand

Depth of bottom of well screen 17.0 ft

Bottom of Silt trap 19.0 ft

Depth of bottom of borehole 27.0 ft

7.0 ft	+	10.0 ft	+	2.0 ft	=	19.0 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: See " Test Boring Report 14MWS02/14GH013" for soil descriptions.

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 14MWD02
Boring No. 14MWD02

PROJECT	Stuyvesant Town - 14th Street Station	**H&A FILE NO.**	29455-011
LOCATION	New York, New York	**PROJECT MGR.**	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	**FIELD REP.**	P. Falce
CONTRACTOR	Aquifer Drilling and Testing, Inc.	**DATE INSTALLED**	3/25/2004
DRILLER	V. Champagne	**WATER LEVEL**	5.90

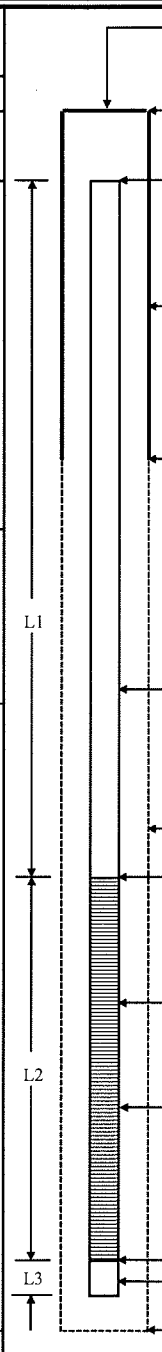
Ground El. 6.39 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	1.5
	GROUT
	16.0
	BENTONITE
	19.0
	FILTER SAND
N/A	34.5

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



(Not to Scale)

Type of protective cover/lock: Locking expandable plug

Height/Depth of top of guard pipe/roadway box above/below ground surface: 0.0 ft

Height/Depth of top of riser pipe above/below ground surface: 0.56 ft

Type of protective casing: Steel
Length: 1.0 ft
Inside Diameter: 8.0 in

Depth of bottom of guard pipe/roadway box: 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.5
Grout	1.5	14.5
Bentonite Seal	16.0	3.0

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe: 2.0 in
Type of backfill around riser: Sand/Bentonite/Grout

Diameter of borehole: 8.0 in

Depth to top of well screen: 22.0 ft

Type of screen: Schedule 40 PVC
Screen gauge or size of openings: 0.010 in
Diameter of screen: 2.0 in
Type of backfill around screen: #1 Filter Sand

Depth of bottom of well screen: 32.0 ft

Bottom of Silt trap: 34.0 ft

Depth of bottom of borehole: 34.5 ft

Riser Pay Length (L1)	+	Length of screen (L2)	+	Length of silt trap (L3)	=	Pay length
22.0 ft	+	10.0 ft	+	2.0 ft	=	34.0 ft

COMMENTS: See " Test Boring Reports 14GH011 and 14GH012" for soil descriptions.

Form # 3010

OBSERVATION WELL INSTALLATION REPORT

HALEY & ALDRICH

Well No.	Boring No.
17MWS03	17MWS03

PROJECT	Stuyvesant Town - 17 th Street Station	**H&A FILE NO.**	29462-011
LOCATION	New York, New York	**PROJECT MGR.**	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	**FIELD REP.**	H. Klein
CONTRACTOR	Aquifer Drilling and Testing, Inc.	**DATE INSTALLED**	2/12/2004
DRILLER	B. Cruz	**WATER LEVEL**	9.94

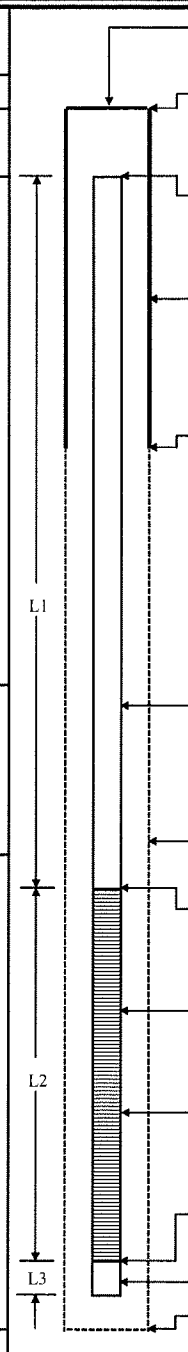
Ground El. 10.00 ft
El. Datum Manhattan Borough

Location see plan

☐ **Guard Pipe**
☑ **Roadway Box**

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	0.5
FILL	GROUT
	3.1
	BENTONITE
	5.3
	FILTER SAND
	15.0
NO SAMPLE SPOONS COLLECTED	
19.1 (Bottom of Exlporation)	19.1

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock Locking expandable plug

Height/Depth of top of guard pipe/roadway box above/below ground surface 0.0 ft

Height/Depth of top of riser pipe above/below ground surface 0.52 ft

Type of protective casing: Steel
Length 1.0 ft
Inside Diameter 9.0 in

Depth of bottom of guard pipe/roadway box 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	0.5
Grout	0.5	2.6
Bentonite Seal	3.1	2.2

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe 2.0 in
Type of backfill around riser Sand/Bentonite/Grout

Diameter of borehole 8.0 in

Depth to top of well sereen 7.1 ft

Type of screen Schedule 40 PVC
Screen gauge or size of openings 0.010 in
Diameter of sereen 2.0 in
Type of backfill around screen #1 Filter Sand

Depth of bottom of well screen 17.1 ft

Bottom of Silt trap 19.1 ft

Depth of bottom of borehole 19.1 ft

7.1 ft	+	10.0 ft	+	2.0 ft	=	19.1 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: See "Test Boring Report 17MWD03/17CY007" for soil descriptions.

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 17MWD03
Boring No. 17CY007

PROJECT	Stuyvesant Town - 17th Street Station	**H&A FILE NO.**	29462-011
LOCATION	New York, New York	**PROJECT MGR.**	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	**FIELD REP.**	H. Klein
CONTRACTOR	Aquifer Drilling and Testing, Inc.	**DATE INSTALLED**	2/17/2004
DRILLER	B. Cruz	**WATER LEVEL**	9.97

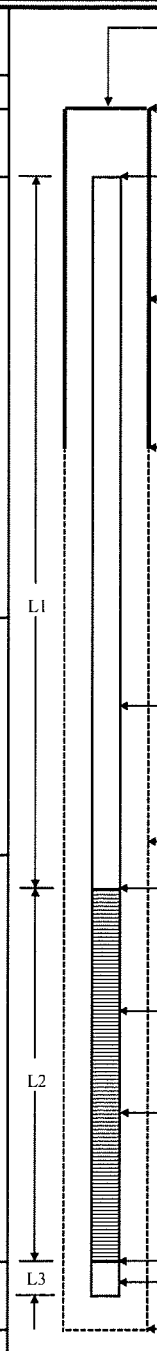
Ground El. 10.09 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	0.5
	GROUT
FILL	
	18.3
	BENTONITE
	19.9
	FILTER SAND
	34.0
	CAVE IN
35.0	35.0

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



(Not to Scale)

Type of protective cover/lock Locking expandable plug

Height/Depth of top of guard pipe/roadway box above/below ground surface 0.0 ft

Height/Depth of top of riser pipe above/below ground surface 0.25 ft

Type of protective casing: Steel
Length 1.0 ft
Inside Diameter 8.0 in

Depth of bottom of guard pipe/roadway box 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	0.5
Grout	0.5	17.8
Bentonite Seal	18.3	1.6

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe 2.0 in
Type of backfill around riser Sand/Bentonite/Grout

Diameter of borehole 8.0 in

Depth to top of well screen 21.6 ft

Type of screen Schedule 40 PVC
Screen gauge or size of openings 0.010 in
Diameter of screen 2.0 in
Type of backfill around screen #1 Filter Sand

Depth of bottom of well screen 31.6 ft

Bottom of Silt trap 33.6 ft

Depth of bottom of borehole 35.0 ft

21.6 ft (Riser Pay Length (L1)) + 10.0 ft (Length of screen (L2)) + 2.0 ft (Length of silt trap (L3)) = 33.6 ft (Pay length)

COMMENTS: See " Test Boring Report 17MWD03/17CY007" for soil descriptions.

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 17MWS04
Boring No. 17MWS04

PROJECT	Stuyvesant Town - 17 Street Station	H&A FILE NO.	29462-001
LOCATION	New York, New York	PROJECT MGR.	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	FIELD REP.	A. Murphy
CONTRACTOR	Fenley & Nicol Environmental, Inc.	DATE INSTALLED	3/12/2004
DRILLER	M. Mede	WATER LEVEL	9.41

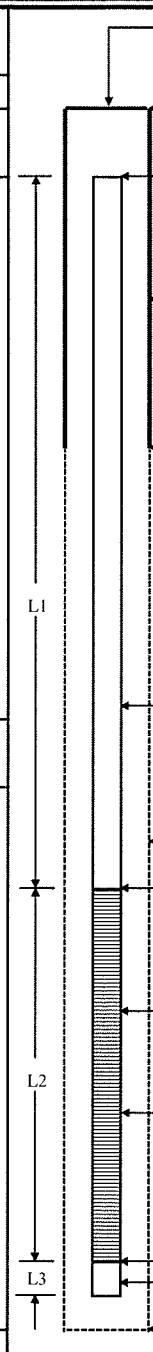
Ground El. 10.03 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	1.0
	GROUT
	4.0
	BENTONITE
	5.0
	FILTER SAND
NA	20.5
	(Bottom of Exlporation)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

- Type of protective cover/lock: Locking expandable plug
- Height/Depth of top of guard pipe/roadway box above/below ground surface: 0.0 ft
- Height/Depth of top of riser pipe above/below ground surface: 0.36 ft
- Type of protective casing: Steel
  - Length: 1.0 ft
  - Inside Diameter: 8.0 in
- Depth of bottom of guard pipe/roadway box: 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Grout	1.0	3.0
Bentonite Seal	4.0	1.0

- Type of riser pipe: Schedule 40 PVC
  - Inside diameter of riser pipe: 2.0 in
  - Type of backfill around riser: Sand/Bentonite/Grout
- Diameter of borehole: 8.0 in
- Depth to top of well screen: 7.0 ft
- Type of screen: Schedule 40 PVC
  - Screen gauge or size of openings: 0.010 in
  - Diameter of screen: 2.0 in
- Type of backfill around screen: #1 Filter Sand
- Depth of bottom of well screen: 17.0 ft
- Bottom of Silt trap: 19.0 ft
- Depth of bottom of borehole: 20.5 ft

7.0 ft	+	10.0 ft	+	2.0 ft	=	19.0 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: See "Test Boring Report 17MWD04/17GH001" for soil descriptions.

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

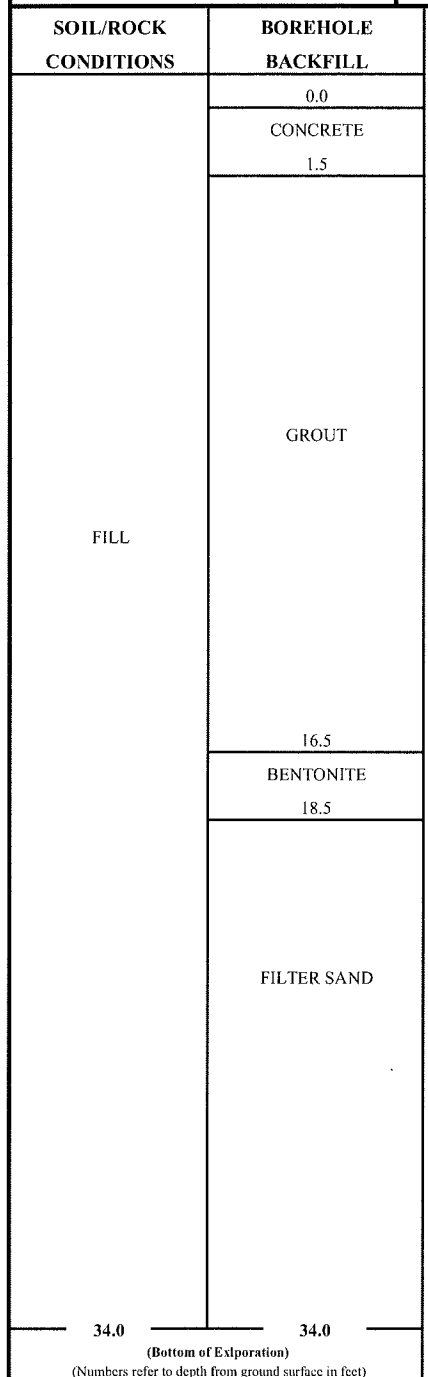
Well No. 17MWD04
Boring No. 17GH001

PROJECT	Stuyvesant Town - 17th Street Station	H&A FILE NO.	29462-011
LOCATION	New York, New York	PROJECT MGR.	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	FIELD REP.	A. Murphy
CONTRACTOR	Fenley & Nicol Environmental, Inc.	DATE INSTALLED	3/11/2004
DRILLER	M. Mede	WATER LEVEL	9.91

Ground El. 10.08 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box



Type of protective cover/lock: Locking expandable plug

Height/Depth of top of guard pipe/roadway box above/below ground surface: 0.0 ft

Height/Depth of top of riser pipe above/below ground surface: 0.22 ft

Type of protective casing: Steel
- Length: 1.0 ft
- Inside Diameter: 8.0 in

Depth of bottom of guard pipe/roadway box: 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.5
Grout	1.5	15.0
Bentonite Seal	16.5	2.0

Type of riser pipe: Schedule 40 PVC
- Inside diameter of riser pipe: 2.0 in
- Type of backfill around riser: Sand/Bentonite/Grout

Diameter of borehole: 8.0 in

Depth to top of well screen: 22.0 ft

Type of screen: Schedule 40 PVC
- Screen gauge or size of openings: 0.010 in
- Diameter of screen: 2.0 in

Type of backfill around screen: #1 Filter Sand

Depth of bottom of well screen: 32.0 ft

Bottom of Silt trap: 34.0 ft

Depth of bottom of borehole: 34.0 ft

(Not to Scale)

22.0 ft (Riser Pay Length (L1)) + 10.0 ft (Length of screen (L2)) + 2.0 ft (Length of silt trap (L3)) = 34.0 ft (Pay length)

COMMENTS: See "Test Boring Report 17MWD04/17GH001" for soil descriptions.

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 19MWS05
Boring No. 19MWS05

PROJECT	Stuyvesant Town - 19th Street Station	H&A FILE NO.	29463-011
LOCATION	New York, New York	PROJECT MGR.	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	FIELD REP.	B. Tarbell
CONTRACTOR	Aquifer Drilling and Testing, Inc.	DATE INSTALLED	3/17/2004
DRILLER	L. Adams	WATER LEVEL	7.00

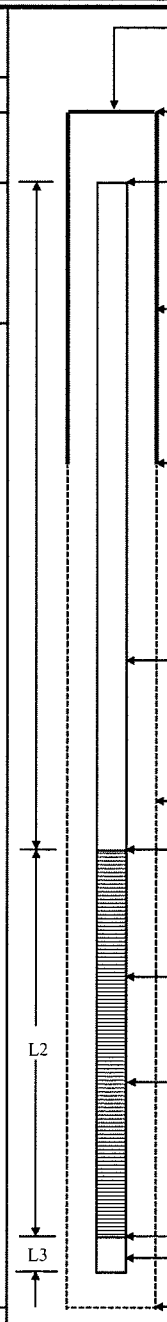
Ground El. 10.69 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	GROUT
	1.0
	BENTONITE
	3.5
	FILTER SAND
N/A	17.5

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



(Not to Scale)

Type of protective cover/lock	Locking expandable plug	
Height/Depth of top of guard pipe/roadway box above/below ground surface	0.0	ft
Height/Depth of top of riser pipe above/below ground surface	0.53	ft
Type of protective casing:	Steel	
Length	1.0	ft
Inside Diameter	8.0	in
Depth of bottom of guard pipe/roadway box	1.0	ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Grout	0.0	1.0
Bentonite Seal	1.0	2.5

Type of riser pipe:	Schedule 40 PVC	
Inside diameter of riser pipe	2.0	in
Type of backfill around riser	Sand/Bentonite/Grout	
Diameter of borehole	8.0	in
Depth to top of well screen	5.5	ft
Type of screen	Schedule 40 PVC	
Screen gauge or size of openings	0.010	in
Diameter of screen	2.0	in
Type of backfill around screen	#1 Filter Sand	
Depth of bottom of well screen	15.5	ft
Bottom of Silt trap	17.5	ft
Depth of bottom of borehole	17.5	ft

5.5	ft	+ 10.0	ft	+ 2.0	ft	= 17.5	ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length	

COMMENTS: See "Test Boring Report 19MWD05/19GH001" for soil descriptions.

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 19MWD05
Boring No. 19GH001

PROJECT	Stuyvesant Town 19th Street Station	**H&A FILE NO.**	29463-011
LOCATION	New York, New York	**PROJECT MGR.**	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	**FIELD REP.**	J. O'Brien
CONTRACTOR	Fenley & Nicol Environmental, Inc.	**DATE INSTALLED**	3/5/2004
DRILLER	M. Meade	**WATER LEVEL**	9.12

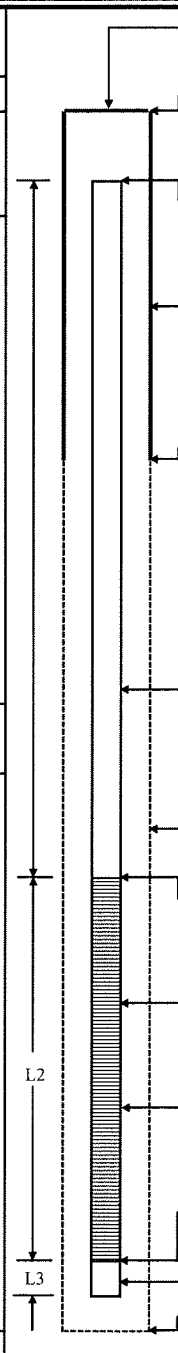
Ground El. 10.93 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	1.5
	GROUT
FILL	
	18.0
	BENTONITE
	19.0
	FILTER SAND
26.0	
ORGANIC DEPOSITS	
29.0	
GLACIAL LACUSTRINE	
33.0	33.0

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



(Not to Scale)

Type of protective cover/lock: Locking expandable plug

Height/Depth of top of guard pipe/roadway box above/below ground surface: 0.0 ft

Height/Depth of top of riser pipe above/below ground surface: 0.41 ft

Type of protective casing: Steel
Length: 1.0 ft
Inside Diameter: 8.0 in

Depth of bottom of guard pipe/roadway box: 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.5
Grout	1.5	16.5
Bentonite Seal	18.0	1.0

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe: 2.0 in
Type of backfill around riser: Sand/Bentonite/Grout

Diameter of borehole: 8.0 in

Depth to top of well screen: 20.5 ft

Type of screen: Schedule 40 PVC
Screen gauge or size of openings: 0.010 in
Diameter of screen: 2.0 in
Type of backfill around screen: #1 Filter Sand

Depth of bottom of well screen: 30.5 ft

Bottom of Silt trap: 32.5 ft

Depth of bottom of borehole: 33.0 ft

Riser Pay Length (L1)	+	Length of screen (L2)	+	Length of silt trap (L3)	=	Pay length
20.5 ft	+	10.0 ft	+	2.0 ft	=	32.5 ft

COMMENTS: See "Test Boring Report 19MWD05/19GH001" for soil descriptions.

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 00MWS06
Boring No. 00MWS06

PROJECT	Stuyvesant Town - Background	**H&A FILE NO.**	29455,29462,29463-011
LOCATION	New York, New York	**PROJECT MGR.**	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	**FIELD REP.**	B. Tarbell
CONTRACTOR	Aquifer Drilling and Testing, Inc.	**DATE INSTALLED**	3/12/2004
DRILLER	R. Buley	**WATER LEVEL**	6.59

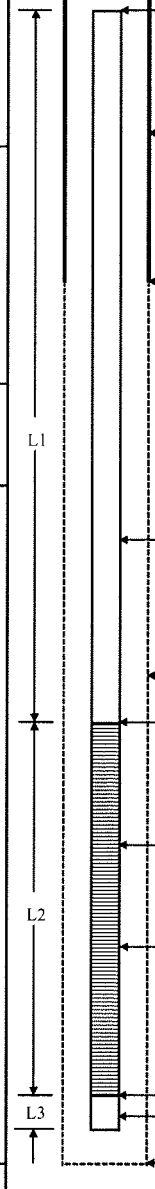
Ground El. 9.89 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	2.0
	GROUT
	4.2
	BENTONITE
	5.2
	FILTER SAND
NA	19.2
(Bottom of Exlporation)	

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock Locking expandable plug

Height/Depth of top of guard pipe/roadway box above/below ground surface 0.0 ft

Height/Depth of top of riser pipe above/below ground surface 0.23 ft

Type of protective casing: Steel
Length 0.8 ft
Inside Diameter 8.0 in

Depth of bottom of guard pipe/roadway box 0.8 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	2.0
Grout	2.0	2.2
Bentonite Seal	4.2	1.0

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe 2.0 in
Type of backfill around riser Sand/Bentonite/Grout

Diameter of borehole 8.0 in

Depth to top of well screen 7.2 ft

Type of screen Schedule 40 PVC
Screen gauge or size of openings 0.010 in
Diameter of screen 2.0 in
Type of backfill around screen #1 Filter Sand

Depth of bottom of well screen 17.2 ft

Bottom of Silt trap 19.2 ft

Depth of bottom of borehole 19.2 ft

7.2 ft	+	10.0 ft	+	2.0 ft	=	19.2 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: See "Test Boring Report 00BG004" for soil descriptions.

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 00MWD06

Boring No. 00MWD06

PROJECT	Stuyvesant Town Housing Development - Background	H&A FILE NO.	29455,29462,29463-011
LOCATION	New York, New York	PROJECT MGR.	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	FIELD REP.	B. Tarbell
CONTRACTOR	Aquifer Drilling and Testing, Inc.	DATE INSTALLED	3/15/2004
DRILLER	L. Adams	WATER LEVEL	8.38

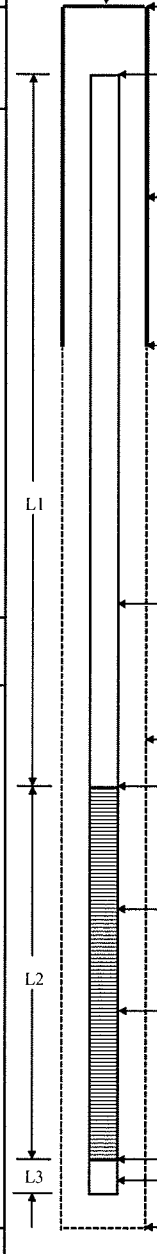
Ground El. 10.08 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	1.0
	GROUT
	18.0
	BENTONITE
	19.0
	FILTER SAND
NA	34.0
	(Bottom of Exlporation)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

- Type of protective cover/lock: Locking expandable plug
- Height/Depth of top of guard pipe/roadway box above/below ground surface: 0.0 ft
- Height/Depth of top of riser pipe above/below ground surface: 0.27 ft
- Type of protective casing: Steel
  - Length: 0.8 ft
  - Inside Diameter: 8.0 in
- Depth of bottom of guard pipe/roadway box: 0.8 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Grout	1.0	17.0
Bentonite Seal	18.0	1.0

- Type of riser pipe: Schedule 40 PVC
  - Inside diameter of riser pipe: 2.0 in
  - Type of backfill around riser: Sand/Bentonite/Grout
- Diameter of borehole: 8.0 in
- Depth to top of well screen: 22.0 ft
- Type of screen: Schedule 40 PVC
  - Screen gauge or size of openings: 0.010 in
  - Diameter of screen: 2.0 in
- Type of backfill around screen: #1 Filter Sand
- Depth of bottom of well screen: 32.0 ft
- Bottom of Silt trap: 34.0 ft
- Depth of bottom of borehole: 34.0 ft

22.0 ft	+	10.0 ft	+	2.0 ft	=	34.0 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: See " Test Boring Report 00BG004" for soil descriptions.

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 00MWS07
Boring No. 00MWS07

PROJECT	Stuyvesant Town Housing Development - Background	H&A FILE NO.	29455,29462,29463-011
LOCATION	New York, New York	PROJECT MGR.	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	FIELD REP.	B. Tarbell
CONTRACTOR	Aquifer Drilling and Testing, Inc.	DATE INSTALLED	3/2/2004
DRILLER	R. Buley	WATER LEVEL	17.91

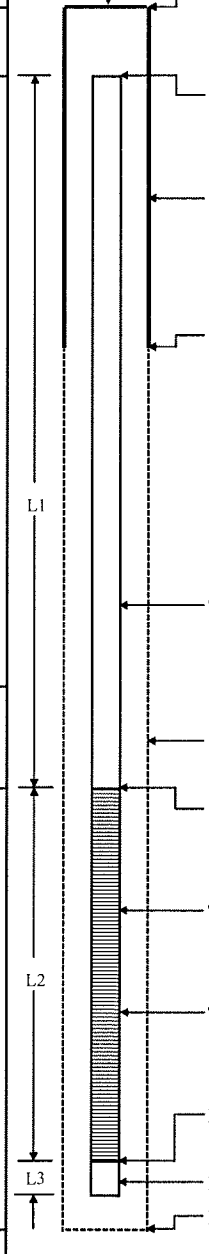
Ground El. 20.83 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	1.5
	GROUT
	13.0
	BENTONITE
	14.0
	FILTER SAND
NA	27.0

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



(Not to Scale)

Type of protective cover/lock	Locking expandable plug
Height/Depth of top of guard pipe/roadway box above/below ground surface	0.0 ft
Height/Depth of top of riser pipe above/below ground surface	0.30 ft
Type of protective casing:	Steel
Length	0.8 ft
Inside Diameter	8.0 in
Depth of bottom of guard pipe/roadway box	0.8 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.5
Grout	1.5	11.5
Bentonite Seal	13.0	1.0

Type of riser pipe:	Schedule 40 PVC
Inside diameter of riser pipe	2.0 in
Type of backfill around riser	Sand/Bentonite/Grout
Diameter of borehole	8.0 in
Depth to top of well screen	15.0 ft
Type of screen	Schedule 40 PVC
Screen gauge or size of openings	0.010 in
Diameter of screen	2.0 in
Type of backfill around screen	#1 Filter Sand
Depth of bottom of well screen	25.0 ft
Bottom of Silt trap	27.0 ft
Depth of bottom of borehole	27.0 ft

15.0 ft (Riser Pay Length (L1)) + 10.0 ft (Length of screen (L2)) + 2.0 ft (Length of silt trap (L3)) = 27.0 ft (Pay length)

COMMENTS: See " Test Boring Report 00BG001" for soil descriptions.

Form # 3010

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. 00MWD07
Boring No. 00MWD07

PROJECT	Stuyvesant Town Housing Development - Background	H&A FILE NO.	29455,29462,29463-011
LOCATION	New York, New York	PROJECT MGR.	N. Van Dyke
CLIENT	Consolidated Edison Company of New York, Inc.	FIELD REP.	B. Tarbell
CONTRACTOR	Aquifer Drilling and Testing, Inc.	DATE INSTALLED	3/3/2004
DRILLER	R. Buley	WATER LEVEL	16.75

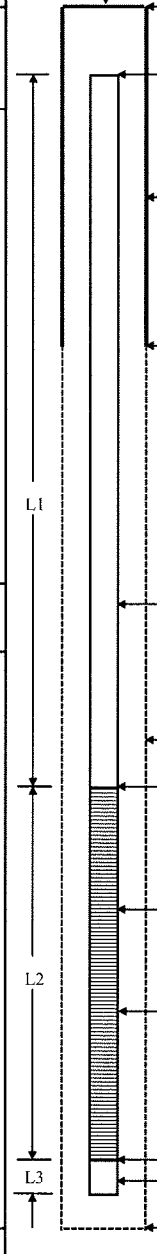
Ground El. 20.89 ft
El. Datum Manhattan Borough

Location see plan

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	0.0
	CONCRETE
	4.0
	GROUT
	28.4
	BENTONITE
	29.6
	FILTER SAND
NA	43.0
	(Bottom of Exlporation)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

- Type of protective cover/lock: Locking expandable plug
- Height/Depth of top of guard pipe/roadway box above/below ground surface: 0.0 ft
- Height/Depth of top of riser pipe above/below ground surface: 0.25 ft
- Type of protective casing: Steel
  - Length: 0.8 ft
  - Inside Diameter: 8.0 in
- Depth of bottom of guard pipe/roadway box: 0.8 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	4.0
Grout	4.0	24.4
Bentonite Seal	28.4	1.2

- Type of riser pipe: Schedule 40 PVC
  - Inside diameter of riser pipe: 2.0 in
  - Type of backfill around riser: Sand/Bentonite/Grout
- Diameter of borehole: 8.0 in
- Depth to top of well screen: 30.6 ft
- Type of screen: Schedule 40 PVC
  - Screen gauge or size of openings: 0.010 in
  - Diameter of screen: 2.0 in
- Type of backfill around screen: #1 Filter Sand
- Depth of bottom of well screen: 40.6 ft
- Bottom of Silt trap: 42.6 ft
- Depth of bottom of borehole: 43.0 ft

30.6 ft	+	10.0 ft	+	2.0 ft	=	42.6 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: See "Test Boring Report 00BG001" for soil descriptions.

Form # 3010

Appendix C

GEI Valve Replacement Project Summary Report

Addendum to Interim Remedial Investigation Report

Stuyvesant Town
Former Manufactured Gas Plant Sites

East 14th Street Station (NYSDEC Site #V00535)
East 17th Street Station (NYSDEC Site #V00541)
East 19th Street Station (NYSDEC Site #V00542)
New York, New York

VCA Index D2 -0003-02-08

Valve Replacement Project
Observation Summary Report

Submitted to:
Consolidated Edison Company of New York, Inc.

Submitted by:
GEI Consultants, Inc.
455 Winding Brook Drive
Glastonbury, CT 06033
860-368-5300

September 2007
Project #060660-1-1001

Table of Contents

Figures

Abbreviations and Acronyms

AKRF	AKRF Environmental Consultants
Con Edison	Consolidated Edison Company of New York, Inc.
Emilcott	Emilcott Associates, Inc.
GEI	GEI Consultants, Inc.
Langan	Langan Engineering and Environmental Services, P.C.
MGP	Manufactured Gas Plant
NYSDEC	New York State Department of Environmental Conservation
OM&M	Operational, Maintenance and Monitoring (Plan)
PPE	Personal Protection Equipment
Phase 1	Phase 1 Group, Inc.
RETEC	The RETEC Group, Inc.
RI	Remedial Investigation
Rose	Rose Associates, Inc.
SC	Site Characterization
VCA	Voluntary Cleanup Agreement

MEASUREMENTS

bg	Below Grade

Executive Summary

In 2006 and 2007, an underground valve replacement program was conducted at the Stuyvesant Town property located in Manhattan, New York. The capital-improvement work entailed the excavation, removal and replacement of 58 water and hydrant valves beneath the approximately 61-acre residential campus. A number of the valves were located in or adjacent to the Stuyvesant Town former manufactured gas plant (MGP) sites, for which a Voluntary Cleanup Agreement (VCA) between the Consolidated Edison Company of New York, Inc., (Con Edison) and the New York State Department of Environmental Conservation (NYSDEC) exists. As a result, Con Edison contracted GEI to serve in an observational role during the subsurface project activities and document field observations regarding general subsurface conditions and potential environmental impacts in order to augment the findings of previous investigation work at the property. This report provides a summary of the project scope and findings, as pertains to environmental conditions associated with the former MGP sites, and as such, has been included as Appendix A of the Interim Remedial Investigation Report submitted to the NYSDEC in September 2007.

The valve excavations were grouped into five "areas": Area 2, the East 20th Street Loop, where the former East 19th Street Station was located; Area 4, the First Avenue Loop; Area 5, the Center Oval; Area 6, the Avenue C Loop, where the former East 17th Street Station was located; and Area 8, the East 14th Street Loop, west of the former East 14th Street Station.

MGP-type impacts were observed in soil and/or groundwater outside of the former MGP sites and respective investigation areas. These impacts were observed in excavations along the Avenue C Loop and the East 20th Street Loop roads, beyond the former station and investigation areas for the East 17th Street and East 19th Street Stations respectively. The fill within these areas is highly variable in content and contains significant historic building and roadway debris that may have originated on and/or off site. Although the impacts observed within and/or beneath the fill may or may not be associated with former operations at the property and are variable and localized in degree and extent, the presence of these impacts may require additional investigation.

MGP-type impacts were also observed in soils at one location along the First Avenue Loop. Given the background borings in the vicinity, the observations made during the other excavations along the First Avenue Loop, and the limited impacts detected at this one location, additional investigation of the area is not deemed necessary at this time.

Observations support previous findings that indicate MGP-related residuals, where present, are generally confined to site soils deeper than 5 feet below grade (bg) and would be exposed

only during significant construction events that would be managed under appropriate soil and groundwater management plans and a site-specific worker and community health and safety plans, such as the protocol followed during this project and summarized in this report.

Finally, observations made during the East 14th Street Loop excavations support previous findings that indicate subsurface impacts related to the former East 14th Street Station do not appear to extend to the west of the former station footprint.

1. Introduction

This report was prepared for Consolidated Edison Company of New York, Inc. (Con Edison) by GEI Consultants, Inc. (GEI). This summary report presents observations made during capital-improvement work conducted in 2006 and 2007, at and adjacent to the Stuyvesant Town former manufactured gas plant sites located in Manhattan, New York. Commissioned by the former property owner, MetLife®, the work involved the replacement of underground water valves located throughout the Stuyvesant Town residential campus. Due to the fact that a number of valves were located within and/or adjacent to the former East 14th Street, East 17th Street and East 19th Street Station sites, Con Edison requested that GEI serve in an observational role during the valve excavation work. As such, GEI recorded and photo documented field observations made during the course of the project and was kept apprised of the characterization results and disposal amounts for soil and water shipped and disposed off-site.

This summary report was prepared for submission to the New York State Department of Environmental Conservation (NYSDEC) as an addendum (Appendix A) to the Interim Remedial Investigation (RI) Report submitted to the NYSDEC on September 11, 2007. The findings described herein supplement those presented in the Interim RI Report and provide additional information on the property subsurface soil and groundwater.

2. Site Setting and Background

The Stuyvesant Town residential campus occupies Block 972, Lot 1 in the Borough of Manhattan within the City, County, and State of New York. Located in the Lower East Side section of Manhattan, the property comprises nearly 61 acres and is bounded by and extends from East 14th Street north to East 20th Street and from First Avenue east to Avenue C (see Figure 1.) When constructed in the 1940s, Stuyvesant Town replaced the former buildings, industries and streets within its 18-block footprint, including three former manufactured gas plant (MGP) holder stations that were once owned and operated by predecessor companies of Con Edison. As illustrated in Figure 2, the three former MGP holder stations were located on non-contiguous parcels that together occupied approximately 4 acres in total: the East 14th Street Station, which was located at the northwestern corner of East 14th Street and Avenue C; the East 17th Street Station, which was located across the northern portion of the present-day Avenue C Loop Road; and the East 19th Street Station, located between East 20th Street and the present-day East 20th Street Loop Road. The three stations had been built on land created on fill brought into the area in the mid 1800s to extend the shoreline of the Lower East Side and operated from the mid 1800s until the early part of the 20th century. For the East 17th Street and East 19th Street Stations, the sites were converted to other industrial uses (i.e., garages and vehicle maintenance shops) by others before the development of Stuyvesant Town in the mid 1940s.

In 2002, Con Edison entered into a Voluntary Cleanup Agreement (VCA) with the NYSDEC to address potential environmental conditions of concern associated with the former MGP sites. Pursuant to VCA Index #D2-0003-02-08, dated August 25, 2002, site characterization and remedial investigation activities were conducted for the former East 14th Street Station (NYSDEC Site #V00535), East 17th Street Station (NYSDEC Site #V00541) and the East 19th Street Station (NYSDEC Site #V00542). The site characterization (SC) work was performed by Haley & Aldrich, Inc., and documented in a SC Report (October 2004/revised April 2005), which was submitted and approved by the NYSDEC. GEI conducted remedial investigation activities in 2006, pursuant to the NYSDEC-approved RI Work Plan (GEI, February 2006) and March 6, 2006 soil vapor and air sampling addendum. The RI scope was developed to provide supplemental information to the SC Report and a 2003 indoor air and soil gas sampling report by The RETEC Group, Inc. (RETEC), in order to assess whether remedial actions are necessary and, if so, to support analysis of remedial alternatives and selection of a remedy.

In September 2007, Con Edison submitted an Interim RI Report to the NYSDEC. The Interim RI Report presents a comprehensive discussion of documented site conditions

through the combined presentation of the previous SC findings and recent RI data and includes this summary report as an appendix.

3. Project Scope and Methods

On June 19, 2006, the construction phase of the underground valve-replacement project for Stuyvesant Town commenced. GEI observed project-related excavation activities conducted at the Stuyvesant Town property from mid-June 2006 through early November 2006. The water-valve replacement project continued on the Peter Cooper Village property in November 2006 and was completed in June 2007, during which time several remaining perimeter valves at Stuyvesant were also completed. A separate report on the observations at the Peter Cooper Village property has been submitted to the NYSDEC and New York State Department of Health.

3.1 Project Description

The valve-replacement project entailed the excavation and replacement of subsurface hydrant and water valves located throughout the complex, mainly within and along property access roads. Metropolitan Insurance and Annuity Company, an affiliate of MetLife®, owned the property at the time of the project bid and award and during the majority of the project implementation at Stuyvesant Town. Rose Associates, Inc. (Rose) managed the capital-improvement project on behalf of MetLife®. The Phase 1 Group, Inc. (Phase 1) of Staten Island, New York, was the underground utilities contractor for the valve-replacement work. Due to potential environmental concerns related to area-wide historic fill and the former MGP sites within both the Stuyvesant Town and Peter Cooper Village campuses, MetLife® contracted Langan Engineering & Environmental Services (Langan) of New York, New York, to provide environmental oversight of the subsurface activities. AKRF Environmental Consultants (AKRF) of New York, New York, provided environmental oversight of the work at Stuyvesant Town following transfer of property ownership to PCV ST Owner LP and ST Owner LP in late 2006. Emilcott Associates, Inc. (Emilcott) of Chatham, New Jersey, provided environmental health and safety monitoring during subsurface project activities, including community air monitoring.

For the Stuyvesant Town campus, the project targeted 39 water valves and 19 hydrant valves located beneath the property. The hydrant and water valves were grouped into five main "areas" based on their location and the engineering specifications provided by Dagher Engineering, PLLC, of New York, New York (see Figure 2). The five "Areas" and the order in which they were addressed are as follows:

- Area 6 - Avenue C Loop
- Area 4 - First Avenue Loop
- Area 2 - East 20th Street Loop
- Area 5 - Center Oval (addressed concurrent with Area 2)
- Area 8 - East 14th Street Loop

In addition, excavation for the replacement of two steam lines traversing the East 20th Street Loop and repair of a corner of the 21 Stuy Oval foundation wall were also performed during the valve-related activities. These excavations were located within Area 2 and were conducted as part of the Area 2 valve-related activities.

The valve-replacement activities included excavation, removal and replacement of the valves, installation of concrete vaults around water valves and restoration of affected roadways, pedestrian paths, and landscaping. An Operational, Maintenance & Monitoring (OM&M) Plan was implemented by Langan, and later by AKRF, during the project. The environmental management of the project is described further in the sections below.

3.2 Soil and Groundwater Management

Soil and groundwater handling during subsurface activities was directed by Langan, and later by AKRF, and included characterization and segregation management of excavated materials for re-use or off-site disposal and characterization of groundwater for disposal. A protocol for the management of soil and groundwater at the excavations was established before work began and was implemented during the project activities. This protocol consisted of the following:

- All excavated soil exhibiting visual and olfactory evidence of impacts (MGP and/or petroleum) would not be reused as on-site fill but would be characterized and properly disposed off site.
- All other excavated soil was reused as on-site fill where possible. Any excess soil was characterized and properly disposed off site.
- Soils exhibiting potential contaminant impacts were stockpiled on plastic or direct-loaded into lined roll-off containers for waste characterization and proper disposal. Soil piles and roll-offs containing potential soil impacts were covered with plastic or tarps while staged at the site and prior to off-site transport on trailers or dump trucks.
- All groundwater in the areas of the former gas holder site, in an excavation with observed evidence of soil impacts, or exhibiting a sheen was assumed to be impacted and, where required for the work, was pumped into on-site Baker™ tanks for characterization and disposal.

On behalf of the property owner, Langan directed soil and groundwater management, conducted waste characterization sampling and prepared waste disposal paperwork during the majority of the Stuyvesant Town valve project. AKRF took over environmental management responsibilities with the sale of the property in late 2006.

3.3 Environmental Health and Safety Management

Emilcott instituted community and worker air monitoring when visual and or olfactory evidence of contaminant impacts were encountered during subsurface activities conducted by Phase 1 or its subcontractors. Based on observed environmental conditions, Emilcott also informed Phase 1 and its subcontractors of the need to upgrade personal protective equipment (PPE) (e.g., don Tyvek suits and rubber boots) and implement decontamination zones and procedures (e.g., cordon off a corridor to a decontamination area and provide boot wash and PPE changes).

3.4 Field Observation

As previously indicated, GEI was asked by Con Edison to serve in an observational role during the subsurface project activities since a portion of the project work was slated for areas within or adjacent to the former MGP holder station sites. Con Edison requested that GEI document any field observations regarding general subsurface conditions and potential environmental impacts at all the excavation locations on the property. The information obtained would augment the findings reported in the comprehensive Draft RI Report and provide additional knowledge into the feasibility of potential remediation of subsurface MGP-related residuals. GEI maintained a field log throughout the project, attended weekly contractor and project meetings and provided site-specific information, as necessary, to aid in the field assessment of environmental conditions and soil and groundwater management. As such, GEI served as Con Edison's on-site representative during the project work.

RETEC observed the 2007 activities at Stuyvesant Town on behalf of Con Edison, since they were observing the work at the Peter Cooper Village during that time. RETEC's observations have been included in this report.

4. Observation Summaries

The following is a summary of field observations made by GEI or RETEC during subsurface valve activities. The summary focuses on general subsurface conditions and visual and olfactory evidence of impacts observed during the field activities. In addition, information on waste characterization and disposal is also provided, as it relates to potential contaminant impacts. Specific soil and groundwater characterization data were maintained by Langan, and later AKRF, during the project and are presently retained by PCV ST Owner LP and ST Owner LP, the current property owner. The summary is presented by "area," and Figures 3 through 6 show the respective valve excavation locations with general environmental observations also illustrated.

4.1 Area 6 – Avenue C Loop

The valves grouped within Area 6 were located within or in close proximity to the Avenue C Loop (see Figure 3). They include Valves 7 through 12, Valves 14 through 20, Valve D and Hydrant Valves H5, H6, H7, and H21 for a total of 18 valves. The footprint of the former East 17th Street Station traverses a portion of the northern section of the Avenue C Loop; a number of the valve excavation locations were within or adjacent to the former station footprint, as shown on Figure 3.

In general, fill materials consisting of sands, gravels, concrete and brick fragments were encountered in the hydrant and water valve excavations along the Avenue C Loop. Historic intact and partial building foundations and related debris, and a complex network of active and abandoned utilities, were encountered within the water valve excavations, which extended approximately 12 to 14 feet below grade (bg) and required shoring and significant hand clearance work to access and replace the associated underground valves. The hydrant valve excavations near and along the Avenue C Loop were smaller in area and shallower in depth than the water valve excavations and extended approximately 5.5 to 7 feet bg; no contaminant-related impacts or groundwater infiltration were observed in the hydrant valve excavations along the Avenue C Loop.

As illustrated on Figure 3, stained soils and MGP-type odors were observed in the interconnected excavations for Valves 9-12 and the excavation for Valve 14. Stained soils and petroleum-type odors were observed in the excavation for Valve 20. Depths of excavation are shown on Figure 3 and averaged approximately 13 feet bg at these locations. The MGP-type impacts were generally observed within the bottom 2 to 3 feet of the excavations for Valves 9-12 and Valve D, while the observed impacts appeared variable from approximately 3.5 feet bg to depths of excavation for Valves 14 and 20. Groundwater

infiltration within the excavations occurred between 9 and 11 feet bg. Within excavations where soil staining and associated odors were observed, the groundwater exhibited sheens consistent with the observed impacts.

In total, approximately 330 tons of non-hazardous characterized soils were removed from the valve excavations within Area 6 and transported off site to Clean Earth of Philadelphia, Inc., for disposal. Of that total, approximately 275 tons were transported as soils with potential MGP-related impacts and 55 tons were transported as soils with potential petroleum-related impacts. Other materials excavated during the valve replacement work were characterized as historic fill and were either re-used on site as backfill material or transported to Clean Earth of Carteret, Inc., for disposal. Approximately 150,000 gallons of groundwater were transported to AB Oil Service, Ltd., of Bohemia, New York, or Clean Water of New York, Inc., of Staten Island, New York, for disposal.

4.2 Area 4 – First Avenue Loop

The valves grouped within Area 4 were located within or in close proximity to the First Avenue Loop (see Figure 4). They include Valves 30, 31, 31A and 32, and Hydrant Valves H12, H13, H15 and H16 for a total of 8 valves excavated. There are no known former MGP sites located on or adjacent to the First Avenue Loop. Conditions encountered during the valve and hydrant excavations were anticipated to be typical of urban background and characteristic of site-wide fill materials.

With the exception of the Valve 31 excavation, no evidence of MGP- or petroleum-type impacts were observed in the soils or groundwater encountered during the First Avenue Loop valve activities. Disturbed fill materials were similar to those observed within the Avenue C Loop excavations. Stained soils and a moderate MGP-type odor were detected along the northeastern sidewall of the Valve 31 excavation at 10.5 feet bg. Since the observed impacts were encountered near the vertical and horizontal extent of the valve excavation, no impacted soils were removed from the excavation. No other impacts to soil or groundwater were observed within any of the other valve excavation locations along the First Avenue Loop. Excess soils from the First Avenue Loop excavations were characterized as non-hazardous historic fill and transported to Clean Earth of Carteret, Inc., for disposal.

4.3 Areas 2 and 5 – East 20th Street Loop and Center Oval

The valves grouped within Area 2 were located within or in close proximity to the East 20th Street Loop (see Figure 5). They included Valves 21 through 29, Valve A and Hydrant Valves H17 through H20 for a total of 14 valves excavated. Five excavations were located near the former station footprint. In addition, two excavations (Excavations 20SM and 21SM) were conducted across the Loop road as part of underground steam line rehabilitation

activities, and an additional excavation (Excavation 21FW) near the northern corner of the 21 Stuy Oval building was conducted to repair a section of foundation wall.

As stated earlier, the four hydrant valves around the center Oval (Area 5) were replaced concurrent with the Area 2 valve work. Hydrant Valves H8 and H9 are shown on Figure 3, and H10 and H11 are shown on Figure 4.

In general, fill materials encountered within the Area 2 excavations were similar to those encountered within the excavations along the Avenue C and First Avenue Loop roads. Evidence of a historic roadway and partial building foundations and related piping were encountered in a number of the valve excavations. As with the other areas, the hydrant valve excavations in Area 2 and around the center Oval (Area 5, shown on Figures 3 and 4) extended 5.5 to 7 feet in depth. Two excavations were conducted across the Loop road at its southeastern and southwestern corners for the rehabilitation of underground steam lines. These excavations extended to depths of 8 to 10 feet bg. Groundwater was encountered in the southeastern steam line excavation (Excavation 20SM) at approximately 9 feet bg. No contaminant-related impacts were encountered in the hydrant valves in Area 2 and Area 5 or in the steam line excavations within Area 2.

As illustrated in Figure 5, stained soils and MGP-type odors were observed in the excavations for Valves 21, 22 and 23 and in the interconnected excavations for Valves 24-27. This group of excavations extended to an average depth of 13 feet bg. Creosote-preserved wood piles, stained soils and both MGP- and petroleum-type odors were observed in the excavations for Valves 21-23 between 12 and 13 feet bg, and a visible sheen with brown, product-like globules were observed on the groundwater that accumulated near the bottom of these excavations. The interconnected excavations for Valves 24-27 exhibited stained soils at approximately 8 to 10 feet bg, and groundwater infiltration was observed at approximately 7 feet bg and exhibited both a sheen and brown, product-like globules. Stained soils and odors were observed at approximately 5 feet bg in the excavation for Valve A. Groundwater was observed at approximately 4.5 feet bg, but was attributed to perched water within the fill that may have been the result of a leaking water pipe.

During pump-out of groundwater from the Valves 24-27 excavations to a mobile Baker tank, a spill event occurred on August 17, 2006, and was reported to the NYSDEC. Spill Number 060572 was opened for the building address at 524 East 20th Street. Approximately 10 gallons were estimated to have spilled onto the adjacent ground due to a loose hose connection. The affected soils were excavated and placed in a roll-off container for subsequent disposal. Approximately 1.5 cubic yards of soil were removed as a result. Langan reported the spill and provided confirmation to the NYSDEC on the remedial action taken. Mr. Sangesland, the NYSDEC Case Manager, informed Langan that the spill file would be closed as a result.

Petroleum-type staining and odors were noted in the excavation conducted for the 21 Stuy Oval foundation repair (Excavation 21FW). The excavation was conducted to a depth of approximately 11 feet bg, and groundwater infiltration was observed from 8.5 feet bg to the excavation depth.

In total, approximately 468 tons of non-hazardous characterized soils were removed from the valve excavations within Area 2 and transported off-site to Clean Earth of Philadelphia, Inc., for disposal. Of that total, approximately 415 tons were transported as soils with potential MGP-related impacts and 53 tons were transported as soils with potential petroleum-related impacts. Other materials excavated during the valve replacement and ancillary work were characterized as historic fill and were either re-used on-site as backfill material or transported to Clean Earth of Carteret, Inc., for disposal. Approximately 56,000 gallons of groundwater were transported to Clean Water of New York, Inc., of Staten Island, New York, for disposal.

4.4 Area 8 – East 14th Street Loop

The valves grouped within Area 8 were located within or in close proximity to the East 14th Street Loop (see Figure 6). They included Valves 1 through 6, Valve 2A, Valves 33 through 35, Valve B, and Hydrant Valves H1, H3 and H4 for a total of 14 valves excavated. A number of valve excavations were located along the eastern extent of the East 14th Street Loop and were within 500 feet of the western limit of the former East 14th Street Station footprint. Based on investigation locations and results for the former station site, no MGP-related impacts were expected to be encountered within the Area 8 valve excavations.

Fill materials encountered within the Area 8 excavations were similar in type to those found during the excavations along the Avenue C and First Avenue Loop roads. No evidence of MGP-related impacts to soil or groundwater was observed during the valve excavations conducted within Area 8. As shown on Figure 6, petroleum-related staining and moderate odors were encountered at approximately 10.5 feet bg in the excavations for Valves 3-6, which were within close proximity to one another. Minor amounts of groundwater accumulated within these excavations and were observed to infiltrate at variable depths between 10.5 and 12 feet bg, the bottom of the excavations. Soils with observed petroleum-type impacts were transported as non-hazardous materials to Clean Earth of Philadelphia, Inc. Other soils from the East 14th Street Loop excavations were characterized as non-hazardous historic fill and excess historic fill were transported to Clean Earth of Carteret, Inc., for disposal.

5. Conclusions

Field observations and analytical results from the valve replacement project provided the following supplemental information to the findings of the previous SC and RI activities performed at the Stuyvesant Town residential campus:

- MGP-type impacts were observed in soil and/or groundwater outside of the former MGP sites and respective SC and RI areas. These impacts were observed in excavations along the Avenue C Loop and the East 20th Street Loop roads, beyond the former station and investigation areas for the East 17th Street and East 19th Street Stations respectively. The presence of these impacts may require additional investigation.

- MGP-type impacts were observed in soils at one location along the First Avenue Loop, near the bottom of the 12-foot excavation. Given the background borings in the vicinity and the observations made during the other excavations along the First Avenue Loop, additional investigation of the area is not deemed necessary at this time.

- Observations support previous findings that indicate MGP-related residuals, where present, are generally confined to site soils deeper than 5 feet bg and would be exposed only during significant construction events that would be managed under appropriate soil and groundwater management plans and a site-specific worker and community health and safety plans.

- Observations indicate that the fill beneath the site is highly variable in content and contains significant historic building and roadway debris that may have originated on and/or off site. Impacts observed within and/or beneath the fill may or may not be associated with former operations at the property and are variable and localized in degree and extent. This is especially true of the impacts observed along the East 20th Street Loop and First Avenue Loop.

- Observations made during the East 14th Street Loop excavations support previous findings that indicate subsurface impacts related to the former East 14th Street Station do not appear to extend to the west of the former station footprint.

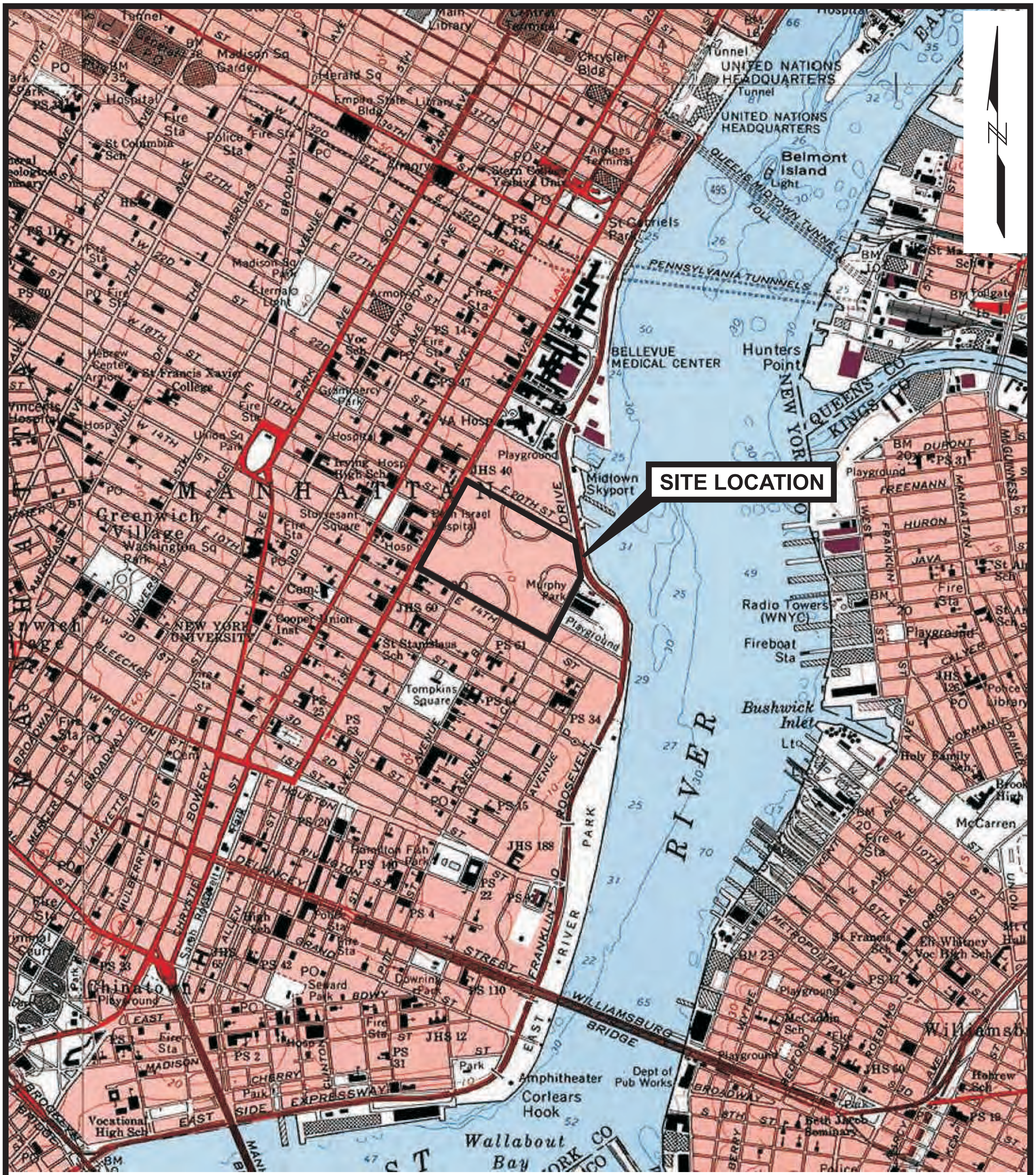
References

GEI Consultants, Inc. (2007). "Interim Remedial Investigation Report, Stuyvesant Town Former Manufactured Gas Plant Sites," prepared for Consolidated Edison Company of New York, Inc., September.

Haley & Aldrich, Inc. (2005). "Site Characterization Report, Former Consolidated Edison Manufactured Gas Plants, Stuyvesant Town Housing Development," prepared for Consolidated Edison Company of New York, Inc., October 2004, revised April 2005.

The RETEC Group, Inc. (2003). "E.14th Works and E.17th and E.19th Street Stations, Report of Evaluation of Indoor Air and Soil Gas Sampling," prepared for Consolidated Edison Company of New York, Inc., October 7.

Figures



SOURCE: Map created with TOPO! ® ©2001 National Geographic (www.nationalgeographic.com/topo)

0 2000 4000

SCALE, FEET

VALVE PROJECT - OBSERVATION REPORT
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GEI Consultants

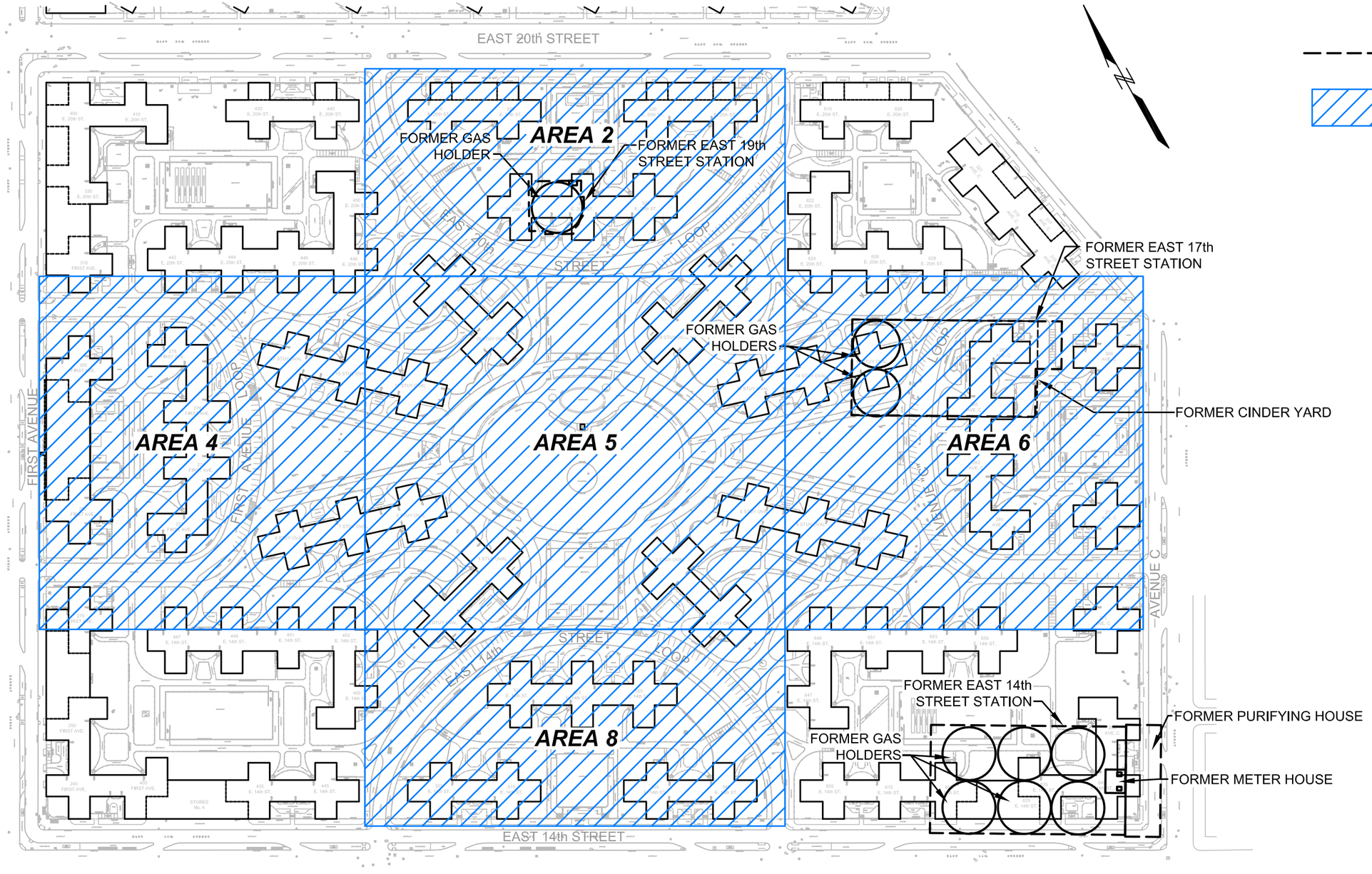
Project 060660-1-1001

SITE LOCATION MAP

September 2007

Figure 1

I:\GEI\CON_ED\STUYVESANT\060660\INTERIM RI\APPENDIX A-VALVE RPT\FIGURES\STUYVESANT-LOC.CDR



SOURCES:

1. *FIGURE 2: SITE PLAN AND MGP FACILITIES*, PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC., FORMER CONSOLIDATED EDISON MANUFACTURED GAS PLANTS WITHIN STUYVESANT TOWN, NEW YORK, NEW YORK, PREPARED BY HALEY & ALDRICH, SCALE: 1" = 60', DATED OCTOBER, 2004.

2. DRAWING Nos. P-101 THROUGH P-105, PREPARED FOR STUYVESANT TOWN UNDERGROUND VALVE REPLACEMENT STUYVESANT TOWN PETER COOPER VILLAGE, PREPARED BY DAGHER ENGINEERING, PLLC (DE PROJ. No. 1174), N.T.S., DATED MARCH 29, 2006.

0 200 400

SCALE, FEET

VALVE PROJECT - OBSERVATION REPORT
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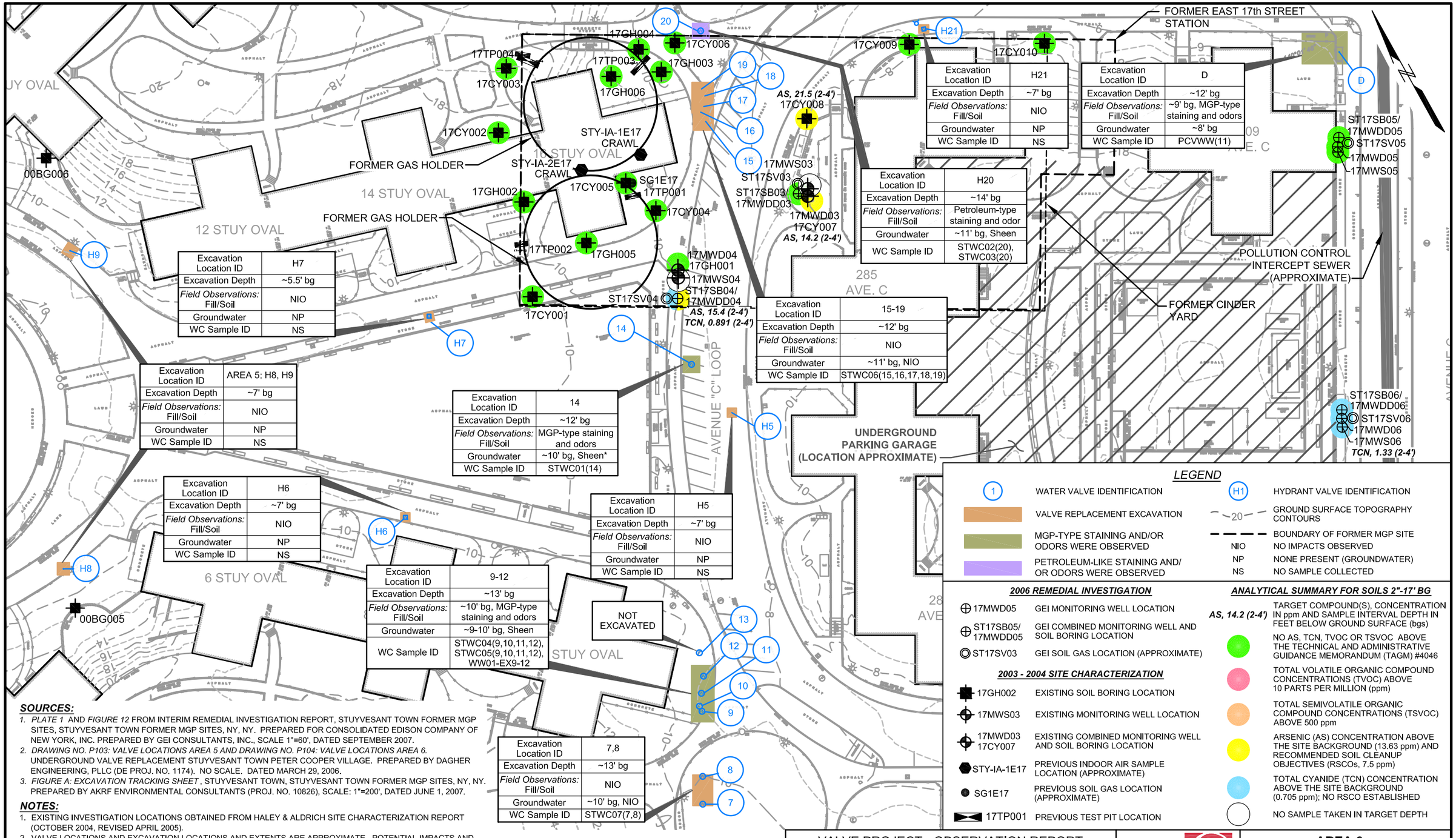
STUYVESANT TOWN FORMER MGP SITES AND VALVE PROJECT "AREAS"

September 2007 Figure 2

I:\GEI\CON_ED\STUYVESANT\060660\Interim RI\Appendix A-Valve Rpt\Figures\ Stuyvesant-Historic.dwg \Sep 11, 2007



LEGEND

- 1 — WATER VALVE IDENTIFICATION
- VALVE REPLACEMENT EXCAVATION
- MGP-TYPE STAINING AND/OR ODORS WERE OBSERVED
- PETROLEUM-LIKE STAINING AND/ OR ODORS WERE OBSERVED
- H1 — HYDRANT VALVE IDENTIFICATION
- ~20~ — GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE
- NIO — NO IMPACTS OBSERVED
- NP — NONE PRESENT (GROUNDWATER)
- NS — NO SAMPLE COLLECTED

2006 REMEDIAL INVESTIGATION

- 17MWD05 — GEI MONITORING WELL LOCATION
- ST17SB05/ 17MWDD05 — GEI COMBINED MONITORING WELL AND SOIL BORING LOCATION
- ST17SV03 — GEI SOIL GAS LOCATION (APPROXIMATE)

2003 - 2004 SITE CHARACTERIZATION

- 17GH002 — EXISTING SOIL BORING LOCATION
- 17MWS03 — EXISTING MONITORING WELL LOCATION
- 17MWD03 17CY007 — EXISTING COMBINED MONITORING WELL AND SOIL BORING LOCATION
- STY-IA-1E17 — PREVIOUS INDOOR AIR SAMPLE LOCATION (APPROXIMATE)
- SG1E17 — PREVIOUS SOIL GAS LOCATION (APPROXIMATE)
- 17TP001 — PREVIOUS TEST PIT LOCATION

ANALYTICAL SUMMARY FOR SOILS 2"-17' BG

- AS, 14.2 (2-4') — TARGET COMPOUND(S), CONCENTRATION IN ppm AND SAMPLE INTERVAL DEPTH IN FEET BELOW GROUND SURFACE (bgs)
- NO AS, TCN, TVOC OR TSVOC ABOVE THE TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046
- TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS (TVOC) ABOVE 10 PARTS PER MILLION (ppm)
- TOTAL SEMIVOLATILE ORGANIC COMPOUND CONCENTRATIONS (TSVOC) ABOVE 500 ppm
- ARSENIC (AS) CONCENTRATION ABOVE THE SITE BACKGROUND (13.63 ppm) AND RECOMMENDED SOIL CLEANUP OBJECTIVES (RSCOs, 7.5 ppm)
- TOTAL CYANIDE (TCN) CONCENTRATION ABOVE THE SITE BACKGROUND (0.705 ppm); NO RSCO ESTABLISHED
- NO SAMPLE TAKEN IN TARGET DEPTH

SOURCES:

1. *PLATE 1* AND *FIGURE 12* FROM INTERIM REMEDIAL INVESTIGATION REPORT, STUYVESANT TOWN FORMER MGP SITES, STUYVESANT TOWN FORMER MGP SITES, NY, NY. PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. PREPARED BY GEI CONSULTANTS, INC., SCALE 1"=60', DATED SEPTEMBER 2007.
2. *DRAWING NO. P103: VALVE LOCATIONS AREA 5 AND DRAWING NO. P104: VALVE LOCATIONS AREA 6.* UNDERGROUND VALVE REPLACEMENT STUYVESANT TOWN PETER COOPER VILLAGE. PREPARED BY DAGHER ENGINEERING, PLLC (DE PROJ. NO. 1174). NO SCALE. DATED MARCH 29, 2006.
3. *FIGURE A: EXCAVATION TRACKING SHEET* , STUYVESANT TOWN, STUYVESANT TOWN FORMER MGP SITES, NY, NY. PREPARED BY AKRF ENVIRONMENTAL CONSULTANTS (PROJ. NO. 10826), SCALE: 1"=200', DATED JUNE 1, 2007.

NOTES:

1. EXISTING INVESTIGATION LOCATIONS OBTAINED FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
2. VALVE LOCATIONS AND EXCAVATION LOCATIONS AND EXTENTS ARE APPROXIMATE. POTENTIAL IMPACTS AND RELATED DEPTHS, AS WELL AS GROUNDWATER INFILTRATION DEPTHS, ARE BASED ON VISUAL AND OLFACTORY OBSERVATIONS AND NOT FIELD AND/OR LABORATORY TEST RESULTS. OBSERVATIONS BASED ON GEI FIELD NOTES AND WEEKLY PROJECT MEETING MINUTES, EXCEPT FOR VALVE D (RETEC/AKRF DATA).
3. *SOURCE OF SHEEN FROM RESIDUAL WATERS IN ABANDONED SEWER PIPE LOCATED IN EXCAVATION.
4. "WC SAMPLE ID" REFERS TO WASTE CHARACTERIZATION SAMPLES FOR OFFSITE DISPOSAL. SOIL (XXWC#) SAMPLES WERE COMPOSITES FROM EXCAVATIONS AND STOCKPILES AND GROUNDWATER (XXWW#) SAMPLES WERE FROM EXCAVATIONS AND BAKER TANKS.

VALVE PROJECT - OBSERVATION REPORT
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Project 060660-1-1001

AREA 6 - AVENUE C LOOP: VALVE EXCAVATION OBSERVATIONS

September 2007 Figure 3

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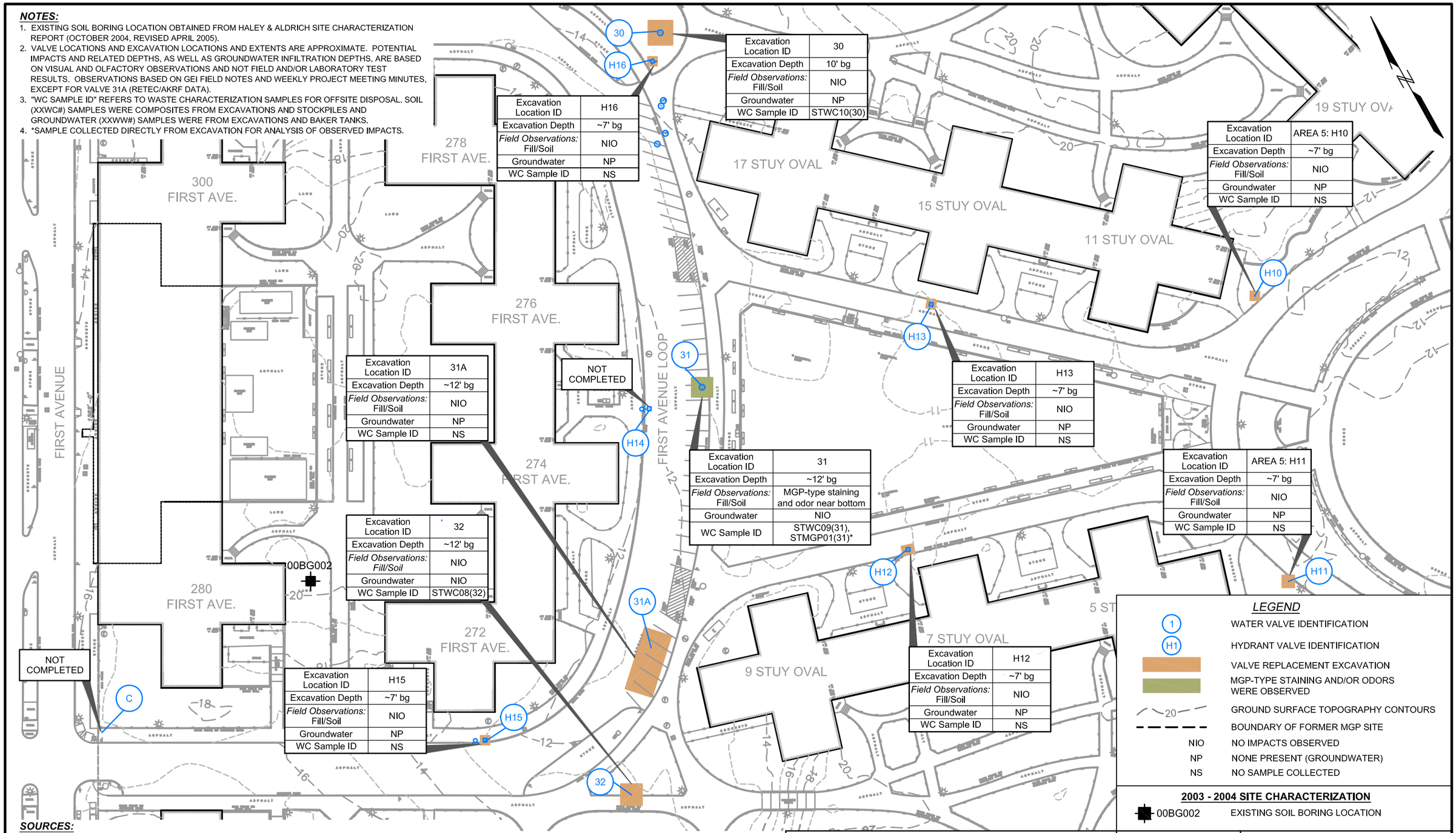
NOTES:

1. EXISTING SOIL BORING LOCATION OBTAINED FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
2. VALVE LOCATIONS AND EXCAVATION LOCATIONS AND EXTENTS ARE APPROXIMATE. POTENTIAL IMPACTS AND RELATED DEPTHS, AS WELL AS GROUNDWATER INFILTRATION DEPTHS, ARE BASED ON VISUAL AND OLFACTORY OBSERVATIONS AND NOT FIELD AND/OR LABORATORY TEST RESULTS. OBSERVATIONS BASED ON GEI FIELD NOTES AND WEEKLY PROJECT MEETING MINUTES, EXCEPT FOR VALVE 31A (RETEC/AKRF DATA).
3. "WC SAMPLE ID" REFERS TO WASTE CHARACTERIZATION SAMPLES FOR OFFSITE DISPOSAL. SOIL (XXWC#) SAMPLES WERE COMPOSITES FROM EXCAVATIONS AND STOCKPILES AND GROUNDWATER (XXWW#) SAMPLES WERE FROM EXCAVATIONS AND BAKER TANKS.
4. *SAMPLE COLLECTED DIRECTLY FROM EXCAVATION FOR ANALYSIS OF OBSERVED IMPACTS.



Excavation Location ID	30
Excavation Depth	10' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	STWC10(30)

Excavation Location ID	H16
Excavation Depth	~7' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	AREA 5: H10
Excavation Depth	~7' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	31A
Excavation Depth	~12' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	H13
Excavation Depth	~7' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	31
Excavation Depth	~12' bg
Field Observations: Fill/Soil	MGP-type staining and odor near bottom
Groundwater	NIO
WC Sample ID	STWC09(31), STMGP01(31)*

Excavation Location ID	AREA 5: H11
Excavation Depth	~7' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	32
Excavation Depth	~12' bg
Field Observations: Fill/Soil	NIO
Groundwater	NIO
WC Sample ID	STWC08(32)

Excavation Location ID	H15
Excavation Depth	~7' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	H12
Excavation Depth	~7' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

LEGEND

- 1 — WATER VALVE IDENTIFICATION
- H1 — HYDRANT VALVE IDENTIFICATION
- VALVE REPLACEMENT EXCAVATION
- MGP-TYPE STAINING AND/OR ODORS WERE OBSERVED
- 20 — GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE
- NIO — NO IMPACTS OBSERVED
- NP — NONE PRESENT (GROUNDWATER)
- NS — NO SAMPLE COLLECTED

2003 - 2004 SITE CHARACTERIZATION

- 00BG002 — EXISTING SOIL BORING LOCATION

SOURCES:

1. *PLATE 1: SITE PLAN WITH INVESTIGATION LOCATIONS.* INTERIM REMEDIAL INVESTIGATION REPORT, STUYVESANT TOWN FORMER MGP SITES, STUYVESANT TOWN FORMER MGP SITES, NY, NY. PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. PREPARED BY GEI CONSULTANTS, INC., SCALE 1"=60', DATED SEPTEMBER 2007.
2. *DRAWING NO. P102: VALVE LOCATIONS AREA 4 AND DRAWING NO. P103: VALVE LOCATIONS AREA 5* . UNDERGROUND VALVE REPLACEMENT STUYVESANT TOWN PETER COOPER VILLAGE. PREPARED BY DAGHER ENGINEERING, PLLC (DE PROJ. NO. 1174). NO SCALE. DATED MARCH 29, 2006.
3. *FIGURE A: EXCAVATION TRACKING SHEET,* STUYVESANT TOWN, STUYVESANT TOWN FORMER MGP SITES, NY, NY. PREPARED BY AKRF ENVIRONMENTAL CONSULTANTS (PROJ. NO. 10826), SCALE: 1"=200', DATED JUNE 1, 2007.

0 60 120

SCALE, FEET

VALVE PROJECT - OBSERVATION REPORT
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STUYVESANT TOWN FORMER MGP SITES, NY, NY

CONSOLIDATED EDISON CO. OF NEW YORK, INC.

GEI Consultants

Project 060660-1-1001

AREA 4 - FIRST AVENUE LOOP: VALVE EXCAVATION OBSERVATIONS

September 2007 Figure 4

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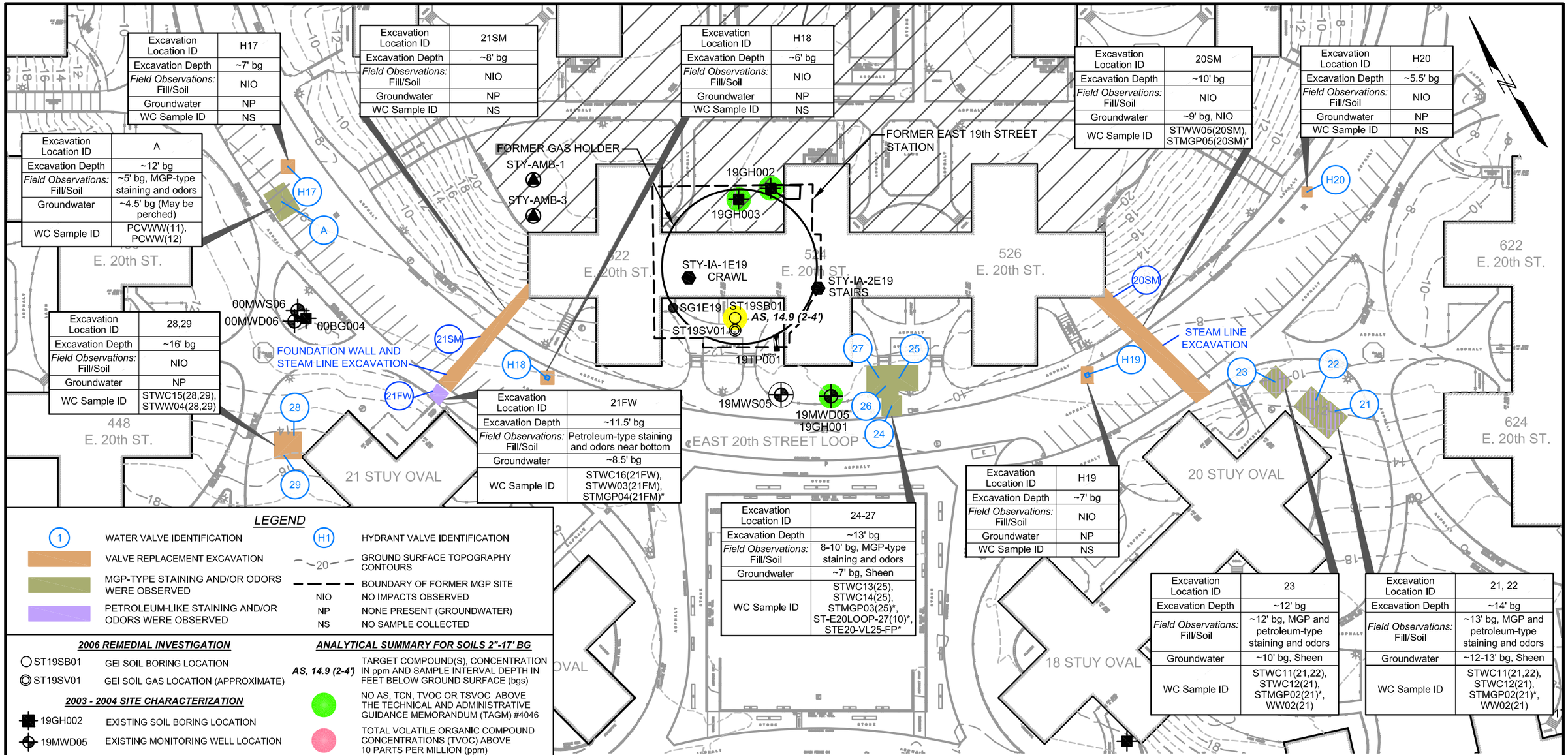

Excavation Location ID	H17
Excavation Depth	~7' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	A
Excavation Depth	~12' bg
Field Observations: Fill/Soil	~5' bg, MGP-type staining and odors
Groundwater	~4.5' bg (May be perched)
WC Sample ID	PCVWW(11). PCWW(12)

Excavation Location ID	28,29
Excavation Depth	~16' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	STWC15(28,29), STWW04(28,29)

Excavation Location ID	21SM
Excavation Depth	~8' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	21FW
Excavation Depth	~11.5' bg
Field Observations: Fill/Soil	Petroleum-type staining and odors near bottom
Groundwater	~8.5' bg
WC Sample ID	STWC16(21FW), STWW03(21FM), STMGP04(21FM)*

Excavation Location ID	H18
Excavation Depth	~6' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	24-27
Excavation Depth	~13' bg
Field Observations: Fill/Soil	8-10' bg, MGP-type staining and odors
Groundwater	~7' bg, Sheen
WC Sample ID	STWC13(25), STWC14(25), STMGP03(25)*, ST-E20LOOP-27(10)*, STE20-VL25-FP*

Excavation Location ID	20SM
Excavation Depth	~10' bg
Field Observations: Fill/Soil	NIO
Groundwater	~9' bg, NIO
WC Sample ID	STWW05(20SM), STMGP05(20SM)*

Excavation Location ID	H19
Excavation Depth	~7' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	H20
Excavation Depth	~5.5' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	23
Excavation Depth	~12' bg
Field Observations: Fill/Soil	~12' bg, MGP and petroleum-type staining and odors
Groundwater	~10' bg, Sheen
WC Sample ID	STWC11(21,22), STWC12(21), STMGP02(21)*, WW02(21)

Excavation Location ID	21, 22
Excavation Depth	~14' bg
Field Observations: Fill/Soil	~13' bg, MGP and petroleum-type staining and odors
Groundwater	~12-13' bg, Sheen
WC Sample ID	STWC11(21,22), STWC12(21), STMGP02(21)*, WW02(21)

LEGEND

- 1 — WATER VALVE IDENTIFICATION
- VALVE REPLACEMENT EXCAVATION
- MGP-TYPE STAINING AND/OR ODORS WERE OBSERVED
- PETROLEUM-LIKE STAINING AND/OR ODORS WERE OBSERVED
- H1 — HYDRANT VALVE IDENTIFICATION
- 20 — GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE
- NIO — NO IMPACTS OBSERVED
- NP — NONE PRESENT (GROUNDWATER)
- NS — NO SAMPLE COLLECTED

2006 REMEDIAL INVESTIGATION

- ST19SB01 — GEI SOIL BORING LOCATION
- ST19SV01 — GEI SOIL GAS LOCATION (APPROXIMATE)

2003 - 2004 SITE CHARACTERIZATION

- 19GH002 — EXISTING SOIL BORING LOCATION
- 19MWD05 — EXISTING MONITORING WELL LOCATION
- 19MWD05 19GH001 — EXISTING COMBINED MONITORING WELL AND SOIL BORING LOCATION
- STY-IA-1E19 — PREVIOUS INDOOR AIR SAMPLE LOCATION (APPROXIMATE)
- SG1E19 — PREVIOUS SOIL GAS LOCATION (APPROXIMATE)
- STY-AMB-1 — PREVIOUS OUTDOOR AIR SAMPLE LOCATION (APPROXIMATE)
- 19TP001 — PREVIOUS TEST PIT LOCATION

ANALYTICAL SUMMARY FOR SOILS 2"-17' BG

- *AS, 14.9 (2-4')* — TARGET COMPOUND(S), CONCENTRATION IN ppm AND SAMPLE INTERVAL DEPTH IN FEET BELOW GROUND SURFACE (bgs)
- NO AS, TCN, TVOC OR TSVOC ABOVE THE TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) #4046
- TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS (TVOC) ABOVE 10 PARTS PER MILLION (ppm)
- TOTAL SEMIVOLATILE ORGANIC COMPOUND CONCENTRATIONS (TSVOC) ABOVE 500 ppm
- ARSENIC (AS) CONCENTRATION ABOVE THE SITE BACKGROUND (13.63 ppm) AND RECOMMENDED SOIL CLEANUP OBJECTIVES (RSCOs, 7.5 ppm)
- TOTAL CYANIDE (TCN) CONCENTRATION ABOVE THE SITE BACKGROUND (0.705 ppm); NO RSCO ESTABLISHED
- NO SAMPLE TAKEN IN TARGET DEPTH

0 60 120

SCALE, FEET

NOTES:

1. EXISTING INVESTIGATION LOCATIONS OBTAINED FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
2. VALVE LOCATIONS AND EXCAVATION LOCATIONS AND EXTENTS ARE APPROXIMATE. POTENTIAL IMPACTS AND RELATED DEPTHS, AS WELL AS GROUNDWATER INFILTRATION DEPTHS, ARE BASED ON VISUAL AND OLFACTORY OBSERVATIONS AND NOT FIELD AND/OR LABORATORY TEST RESULTS. OBSERVATIONS BASED ON GEI FIELD NOTES AND WEEKLY PROJECT MEETING MINUTES EXCEPT FOR VALVE A (RETEC/AKRF DATA).
3. "WC SAMPLE ID" REFERS TO WASTE CHARACTERIZATION SAMPLES FOR OFFSITE DISPOSAL. SOIL (XXWC#) SAMPLES WERE COMPOSITES FROM EXCAVATIONS AND STOCKPILES AND GROUNDWATER (XXWW#) SAMPLES WERE FROM EXCAVATIONS AND BAKER TANKS.
4. *SAMPLES COLLECTED DIRECTLY FROM EXCAVATION FOR ANALYSIS OF OBSERVED IMPACTS. SAMPLE STMGP05(20SM) COLLECTED FOR CYANIDE AND COPPER ANALYSES ONLY.

SOURCES:

1. *PLATE 1* AND *FIGURE 17* FROM INTERIM REMEDIAL INVESTIGATION REPORT, STUYVESANT TOWN FORMER MGP SITES, STUYVESANT TOWN FORMER MGP SITES, NY, NY. PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. PREPARED BY GEI CONSULTANTS, INC., SCALE 1"=60', DATED SEPTEMBER 2007.
2. *DRAWING NO. P101: VALVE LOCATIONS AREA 2.* UNDERGROUND VALVE REPLACEMENT STUYVESANT TOWN PETER COOPER VILLAGE. PREPARED BY DAGHER ENGINEERING, PLLC (DE PROJ. NO. 1174). NO SCALE. DATED MARCH 29, 2006.
3. *FIGURE A: EXCAVATION TRACKING SHEET,* STUYVESANT TOWN, STUYVESANT TOWN FORMER MGP SITES, NY, NY. PREPARED BY AKRF ENVIRONMENTAL CONSULTANTS (PROJ. NO. 10826), SCALE: 1"=200', DATED JUNE 1, 2007.

VALVE PROJECT - OBSERVATION REPORT
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STUYVESANT TOWN FORMER MGP SITES, NY, NY

CONSOLIDATED EDISON CO. OF NEW YORK, INC.

GEI Consultants

Project 060660-1-1001

AREA 2 - EAST 20th STREET LOOP: VALVE EXCAVATION OBSERVATIONS

September 2007 Figure 5

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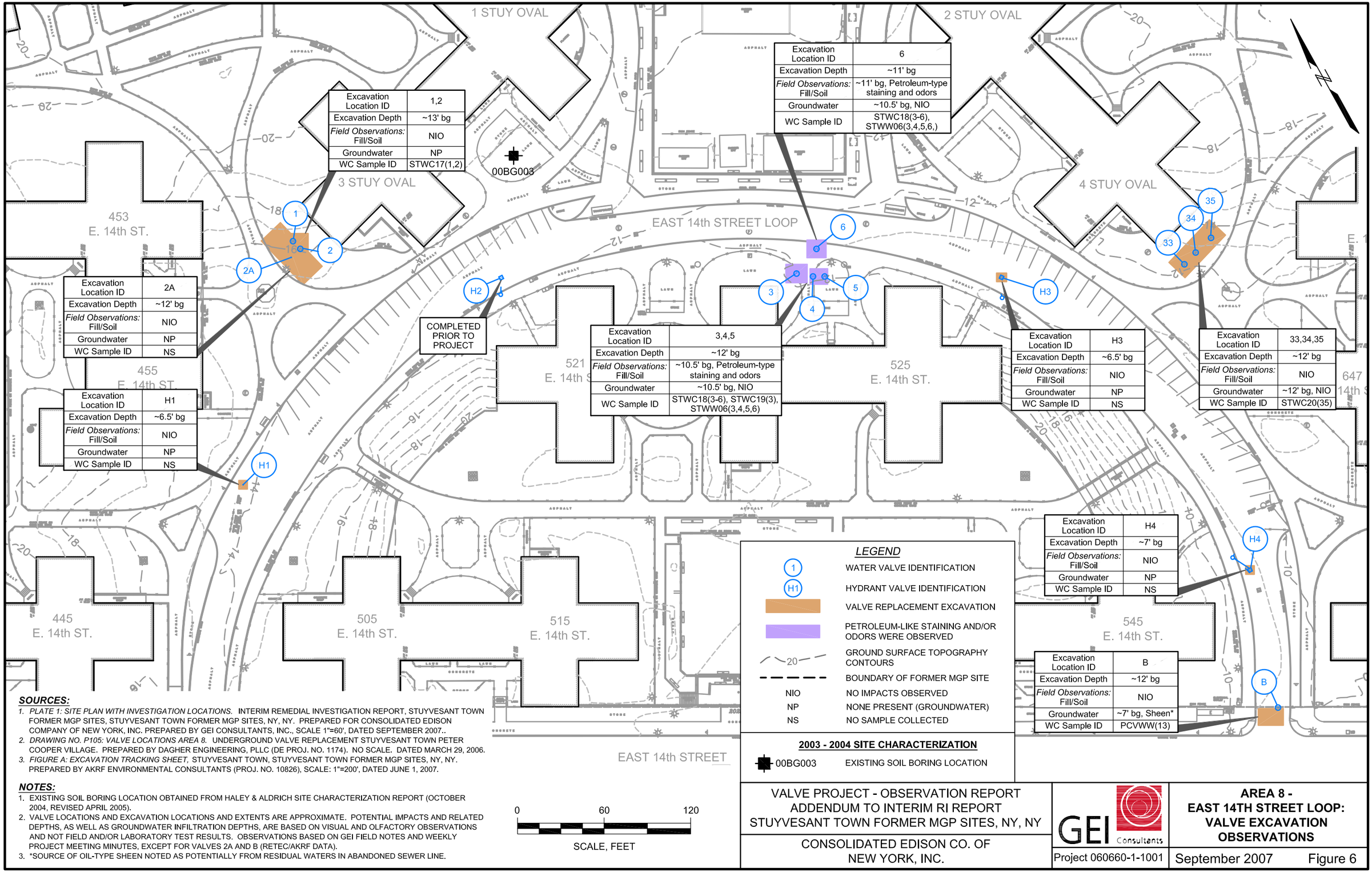


Excavation Location ID	1,2
Excavation Depth	~13' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	STWC17(1,2)

Excavation Location ID	6
Excavation Depth	~11' bg
Field Observations: Fill/Soil	~11' bg, Petroleum-type staining and odors
Groundwater	~10.5' bg, NIO
WC Sample ID	STWC18(3-6), STWW06(3,4,5,6,)

Excavation Location ID	2A
Excavation Depth	~12' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	H1
Excavation Depth	~6.5' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	3,4,5
Excavation Depth	~12' bg
Field Observations: Fill/Soil	~10.5' bg, Petroleum-type staining and odors
Groundwater	~10.5' bg, NIO
WC Sample ID	STWC18(3-6), STWC19(3), STWW06(3,4,5,6)

Excavation Location ID	H3
Excavation Depth	~6.5' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	33,34,35
Excavation Depth	~12' bg
Field Observations: Fill/Soil	NIO
Groundwater	~12' bg, NIO
WC Sample ID	STWC20(35)

Excavation Location ID	H4
Excavation Depth	~7' bg
Field Observations: Fill/Soil	NIO
Groundwater	NP
WC Sample ID	NS

Excavation Location ID	B
Excavation Depth	~12' bg
Field Observations: Fill/Soil	NIO
Groundwater	~7' bg, Sheen*
WC Sample ID	PCVWW(13)

LEGEND

- 1 — WATER VALVE IDENTIFICATION
- H1 — HYDRANT VALVE IDENTIFICATION
- VALVE REPLACEMENT EXCAVATION
- PETROLEUM-LIKE STAINING AND/OR ODORS WERE OBSERVED
- 20 — GROUND SURFACE TOPOGRAPHY CONTOURS
- BOUNDARY OF FORMER MGP SITE
- NIO — NO IMPACTS OBSERVED
- NP — NONE PRESENT (GROUNDWATER)
- NS — NO SAMPLE COLLECTED

2003 - 2004 SITE CHARACTERIZATION

- 00BG003 — EXISTING SOIL BORING LOCATION

SOURCES:

1. *PLATE 1: SITE PLAN WITH INVESTIGATION LOCATIONS.* INTERIM REMEDIAL INVESTIGATION REPORT, STUYVESANT TOWN FORMER MGP SITES, STUYVESANT TOWN FORMER MGP SITES, NY, NY. PREPARED FOR CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. PREPARED BY GEI CONSULTANTS, INC., SCALE 1"=60', DATED SEPTEMBER 2007..
2. *DRAWING NO. P105: VALVE LOCATIONS AREA 8.* UNDERGROUND VALVE REPLACEMENT STUYVESANT TOWN PETER COOPER VILLAGE. PREPARED BY DAGHER ENGINEERING, PLLC (DE PROJ. NO. 1174). NO SCALE. DATED MARCH 29, 2006.
3. *FIGURE A: EXCAVATION TRACKING SHEET,* STUYVESANT TOWN, STUYVESANT TOWN FORMER MGP SITES, NY, NY. PREPARED BY AKRF ENVIRONMENTAL CONSULTANTS (PROJ. NO. 10826), SCALE: 1"=200', DATED JUNE 1, 2007.

NOTES:

1. EXISTING SOIL BORING LOCATION OBTAINED FROM HALEY & ALDRICH SITE CHARACTERIZATION REPORT (OCTOBER 2004, REVISED APRIL 2005).
2. VALVE LOCATIONS AND EXCAVATION LOCATIONS AND EXTENTS ARE APPROXIMATE. POTENTIAL IMPACTS AND RELATED DEPTHS, AS WELL AS GROUNDWATER INFILTRATION DEPTHS, ARE BASED ON VISUAL AND OLFACTORY OBSERVATIONS AND NOT FIELD AND/OR LABORATORY TEST RESULTS. OBSERVATIONS BASED ON GEI FIELD NOTES AND WEEKLY PROJECT MEETING MINUTES, EXCEPT FOR VALVES 2A AND B (RETEC/AKRF DATA).
3. *SOURCE OF OIL-TYPE SHEEN NOTED AS POTENTIALLY FROM RESIDUAL WATERS IN ABANDONED SEWER LINE.

VALVE PROJECT - OBSERVATION REPORT
ADDENDUM TO INTERIM RI REPORT
STUYVESANT TOWN FORMER MGP SITES, NY, NY

CONSOLIDATED EDISON CO. OF NEW YORK, INC.

GEI Consultants

Project 060660-1-1001

AREA 8 - EAST 14TH STREET LOOP: VALVE EXCAVATION OBSERVATIONS

September 2007 Figure 6

I:\GEI\CON_ED\STUYVESANT\060660\Interim RI\Appendix A-Valve Rpt\Figures\ Stuyvesant-Valve-Obs.dwg \Sep 11, 2007

Appendix D

Groundwater Sampling Forms

ENSR/AECOM Groundwater Sampling Forms

ENSR

Well ID: **14MW-S01**

Low Flow Ground Water Sample Collection Record

Client: CoEdison | Date: 8/21/08 | Time: Start 1240 am/pm | Finish 1355 am/pm

Project No: 01869-164-240

Site Location: Stuytown NY, NY

Weather Conds: Sunny ~80° | Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 18.78 c. Length of Water Column 11.48 (a-b)

b. Water Table Depth 7.30 d. Calculated System Volume (see back) 1.87

Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	00725
	Lamont	2020	06074
	Geopump 2		G0200647

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1240	—	21.18	8.71	1.44	0.69	-103	4.02		7.84	clear/none
1245	0.25	21.15	8.81	1.38	0.56	-116	2.08		7.86	"
1250	0.5	20.97	8.95	1.36	0.50	-132	2.41		7.87	"
1255	1.0	20.98	9.03	1.36	0.44	-141	4.25		7.87	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-S01	40 mL VOA	2	HCL	8260 VOC+10	1300
14MW-S01	1L Glass	1	None	8270 SVOC+20	
14MW-S01	1L Glass	1	None	8270 PAH SIM	
14MW-S01	500 mL Plastic	1	HNO3	Total Metals	
~~14MW-S01~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
14MW-S01	50 mL Plastic	1	NaOH	9012 CN	
14MW-S01	50 mL Plastic	1	NaOH	9012 Amenable CN	

Comments No well cap on well

Signature Josh Gowan Date 8/21/08

ENSR

Well ID: **14MW-D01**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~80

Date: 08/21/08
Time: Start 1210 am/(pm)
Finish 1225 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 33.98
b. Water Table Depth 6.40
c. Length of Water Column 27.58 (a-b)
d. Calculated System Volume (see back) 4.50

Casing Diameter/Material 2"/PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	11850
Lamont	2020	1889-0300
Geopump 2		B06000610

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1210	0.05G	21.04	7.72	1.10	1.95	-150	9.8		6.38	Cl/none
1215	0.25G	21.09	7.78	1.10	0.79	-164	11.0		6.37	Cl/none
1220	0.5G	21.01	7.42	1.11	0.69	-169	6.87		6.36	Cl/none
1225	1G	21.01	7.39	1.39	0.54	-172	4.51		6.36	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-D01	40 mL VOA	2	HCL	8260 VOC+10	1230
14MW-D01	1L Glass	1	None	8270 SVOC+20	|
14MW-D01	1L Glass	1	None	8270 PAHs SIM	|
14MW-D01	500 mL Plastic	1	HNO3	Total Metals	|
~~14MW-D01~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
14MW-D01	500 mL Plastic	1	NaOH	9012 CN	1230
14MW-D01	500 mL Plastic	1	NaOH	9012 Amenable CN	|

Comments

Signature G Tallentire Date 08/21/08

ENSR

Well ID: 14MW-DD01

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~80
Date: 08/21/08
Time: Start ________ am/pm
Finish ________ am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 52.22 c. Length of Water Column 45.83 (a-b) Casing Diameter/Material 2"/PVC

b. Water Table Depth 6.39 d. Calculated System Volume (see back) 7.48

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	11880
Lamont	2020	1889-0300
Geopump 2		BO600610

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-DD01	40 mL VOA	2	HCL	8260 VOC+10	
14MW-DD01	1L Glass	1	None	8270 SVOC+20	
14MW-DD01	1L Glass	1	None	8270 PAHs SIM	
14MW-DD01	500 mL Plastic	1	HNO3	Total Metals	
14MW-DD01	500 mL Plastic	1	HNO3	Dissolved Metals	
14MW-DD01	500 mL Plastic	1	NaOH	9012 CN	
14MW-DD01	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments MGP/petrolium odor and black substance at bottom of well ~~was~~ on end of depth metre when sampled bottom of well

Signature [signature] Date 08/21/08

ENSR

Well ID: 14MWDD01

Low Flow Ground Water Sample Collection Record

Client: ROW ED Date: 9/29/08 Time: Start _____ am/pm
Project No: _____ Finish _____ am/pm
Site Location: ST
Weather Conds: BREEZY, 70° Collector(s): VIPUL M

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 52.83 c. Length of Water Column 47.19 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 5.64 d. Calculated System Volume (see back) 7.7 Gall.

2. WELL PURGE DATA

a. Purge Method: LOW FLOW

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	HORIBA	U22D	
	LAMOTTE	2020	

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
12:10								350	5.64	STATIC
12:15		22.19	6.61	0.999	1.92	106	4.45	"	5.66	PUMP ON
12:20		21.92	6.40	0.964	1.55	114	2.7	"	"	CLEAR

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☒	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☐	☒	☐

If no or N/A - Explain below.

_____

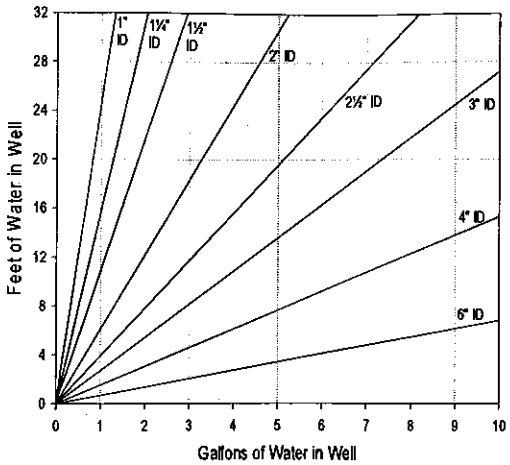
3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MWDD01-092908	VOA	2	HCL	VOC	13:15
"	1LA	1	—	SVOC	"
"	1LA	1	—	SVOC PAH	"
"	500 Poly	1	NaOH	CN	"
"	"	1	HNO_3	Metals	

Comments _____

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
12:25		21.90	6.36	0.929	1.37	115	3.61	"	"	CLEAR
12:30		21.80	6.39	0.914	1.25	113	4.16	"	"	"
12:35		21.79	6.48	0.906	1.17	106	2.17	"	"	"
12:40		21.76	6.51	0.905	0.93	0883	7.28	"	"	"
12:50		21.68	6.95	0.995	0.00	32	6.10	"	"	"
1255		21.71	7.12	1.01	0.00	-62	4.11	"	"	"
1300		21.67	7.36	1.32	0.00	-125	7.79	"	"	"
1305		REDUCED FLOW & SAMPLED AFTER 15 MINS.								

ENSR

Well ID: ~~14MW-DD02~~ 14MW502

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~80°
Date: 8/22/08
Time: Start 1135 am/pm
Finish 1155 am/pm
Collector(s): J. Gowan/G. Tallentire

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 18.77 c. Length of Water Column 13.38 (a-b)
   b. Water Table Depth 5.39 d. Calculated System Volume (see back) 2.18
   Casing Diameter/Material 2" PVC

2. **WELL PURGE DATA**
   a. Purge Method: Peristaltic Pump

   b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

   c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	00725
	Lamont	2020	
	Geopump 2		

Time (24hr)	Volume Removed (~~Liters~~ Gal)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1135	—	24.79	9.57	1.38	1.24	-168	11.0		5.58	clear/none
1140	0.25	24.59	9.56	1.26	0.48	-192	4.91		5.58	"
1145	0.5	23.82	9.70	1.13	0.95	-210	2.29		5.58	"
1150	1.0	23.21	9.74	1.06	0.83	-214	1.82		5.59	"
1155	1.5	23.18	9.77	1.03	0.77	-218	1.47		5.60	"

   d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

   If no or N/A - Explain below.

(continued on back)

3. **SAMPLE COLLECTION:** Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-DD02	40 mL VOA	2	HCL	8260 VOC+10	1200
14MW-DD02	1L Glass	1	None	8270 SVOC+20	
14MW-DD02	1L Glass	1	None	8270 PAHs SIM	
14MW-DD02	500 mL Plastic	1	HNO3	Total Metals	
~~14MW-DD02~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
14MW-DD02	500 mL Plastic	1	NaOH	9012 CN	
14MW-DD02	500 mL Plastic	1	NaOH	9012 Amenable CN	

14MW502

14MW502(dup)

14MW-DD02(dup	40 mL VOA	2	HCL	8260 VOC+10	1200
14MW-DD02(dup	1L Glass	1	None	8270 SVOC+20	
14MW-DD02(dup	1L Glass	1	None	8270 PAHs SIM	
14MW-DD02(dup	500 mL Plastic	1	HNO3	Total Metals	
~~14MW-DD02(dup~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
14MW-DD02(dup	500 mL Plastic	1	NaOH	9012 CN	
14MW-DD02(dup	500 mL Plastic	1	NaOH	9012 Amenable CN	

5

Comments Sampled for dup at 14MW502.

Broken cap at 14MW502

Signature _____ Date _____

14MWD02

ENSR

Well ID: [redacted]

Low Flow Ground Water Sample Collection Record

Client: CoEdison Date: 8/21/08 Time: Start _____ am/pm
Project No: 01869-164-240 Finish _____ am/pm
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~80° Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length [redacted] c. Length of Water Column _____ (a-b) Casing Diameter/Material _____

b. Water Table Depth [redacted] d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	11850
Lamont	2020	[redacted]
Geopump 2		[redacted]

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-S02	40 mL VOA	2	HCL	8260 VOC+10	
14MW-S02	1L Glass	1	None	8270 SVOC+20	
14MW-S02	1L Glass	1	None	8270 PAHs SIM	
14MW-S02	500 mL Plastic	1	HNO3	Total Metals	
14MW-S02	500 mL Plastic	1	HNO3	Dissolved Metals	
14MW-S02	500 mL Plastic	1	NaOH	9012 CN	
14MW-S02	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments Did not sample due to MGP product in well

Signature [signature] Date 08/21/08

14MW-D002

ENSR

Well ID: ~~14MW-D02~~

Low Flow Ground Water Sample Collection Record

Client: CoEdison Date: _____ Time: Start _____ am/pm
Project No: 01869-164-240 Finish _____ am/pm
Site Location: Stuytown NY, NY
Weather Conds: _____ Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b) Casing Diameter/Material _____

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	
Lamont	2020	
Geopump 2		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

_____

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-D02	40 mL VOA	2	HCL	8260 VOC+10	
14MW-D02	1L Glass	1	None	8270 SVOC+20	
14MW-D02	1L Glass	1	None	8270 PAHs SIM	
14MW-D02	500 mL Plastic	1	HNO3	Total Metals	
14MW-D02	500 mL Plastic	1	HNO3	Dissolved Metals	
14MW-D02	500 mL Plastic	1	NaOH	9012 CN	
14MW-D02	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments Could not open well, bolts are rounded off.

Signature _____ Date 08/22/08

ENSR

Well ID: 14MWDD02

Low Flow Ground Water Sample Collection Record

Client: COW ED Date: 9/29/08 Time: Start _____ am/pm
Project No: _____ Finish _____ am/pm
Site Location: PCW
Weather Conds: SUNNY, 70s Collector(s): VIPOL M

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 49.52 c. Length of Water Column 42.75 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth ~~42.77~~ 6.77 d. Calculated System Volume (see back) 6.97 Gall

2. WELL PURGE DATA

a. Purge Method: LOW FLOW

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

DUP @ 11:15
ID = 14MWDD02-092908-DUP

c. Field Testing Equipment used:

	Make	Model	Serial Number
	LAMOTTE	2020	02013
	HORIBA	U-22D	08743

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
									6.77	
10:20									~~6.77~~	STATIC
10:25		23.35	7.46	1.55	5.80	-140	97.3	350	~~7.79~~ 7.79	PUMP ON
10:30		23.69	7.46	1.55	6.00	-139	121	"	8.16	CLOUDY

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

_____

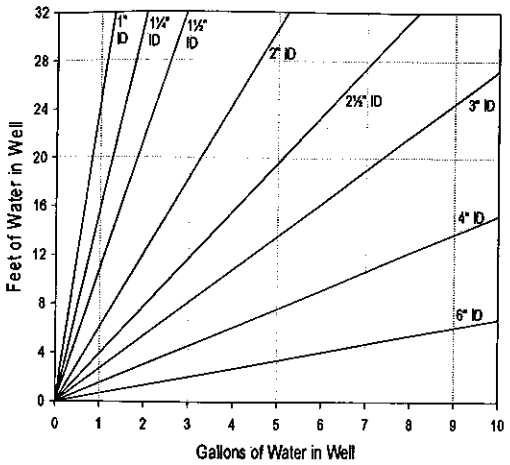
3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MWDD02-092908	VOA	2	HCL	VOC	11:05
"	1LA	1	-	SVOC	"
"	1LA	1	-	PAH/SIM	"
"	500 POLY	1	HNO3	METALS	"
"	500 POLY	1	NaOH	CN	"

Comments _____

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
10:35		23.64	7.49	1.56	5.22	-145	78.9	"		"
10:40		24.14	7.48	1.55	5.07	-145	55.7	"	8.84	"
10:45		24.10	7.48	1.55	4.13	-148	30.6	"	9.20	"
10:50		23.95	7.47	1.54	2.56	-149	25.8	"	9.41	"
10:55		23.70	7.49	1.54	2.58	-151	22.7	"	9.55	"
11:00		23.94	7.49	1.54	2.58	-150	18.2	"	9.61	"

ENSR

Well ID: **MW-36**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~80

Date: 08/20/08
Time: Start _____ am/pm
Finish _____ am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 13.80
b. Water Table Depth 5.49
c. Length of Water Column 8.31 (a-b)
d. Calculated System Volume (see back) 1.36

Casing Diameter/Material 2"/PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	~~#350~~ 00725
Lamont	2020	4621-4003
Geopump 2		G02000471

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-36	40 mL VOA	2	HCL	8260 VOC+10	
MW-36	1L Glass	1	None	8270 SVOC+20	
MW-36	1L Glass	1	None	8270 PAHs SIM	
MW-36	500 mL Plastic	1	HNO3	Total Metals	
MW-36	500 mL Plastic	1	HNO3	Dissolved Metals	
MW-36	500 mL Plastic	1	NaOH	9012 CN	
MW-36	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments: Well not sampled due to ~~[redacted]~~ petroleum odor and black ~~[redacted]~~ substance on probe when sampled bottom depth of well. No bolts on lid.

Signature: Tallentire Date: 08/20/08

ENSR

Well ID: MW-36

Low Flow Ground Water Sample Collection Record

Client: Con Edison Date: 9-26-2008 Time: Start 1100 am/pm
Project No: 01869-164-240 Finish ______ am/pm
Site Location: Stuyvesant Town
Weather Conds: ~~clear~~ overcast, rain, wind ~10-15 mph Collector(s): JKoch

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 13.99 c. Length of Water Column 10.76 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 3.23 d. Calculated System Volume (see back) 1.5 (single volume).

2. WELL PURGE DATA

a. Purge Method: low-flow

b. Acceptance Criteria defined (see workplan)

- Temperature 3% -D.O. 10%
- pH ± 1.0 unit - ORP ± 10mV
- Sp. Cond. 3% - Drawdown <0.3'

c. Field Testing Equipment used: ~~Make~~ ~~Model~~ ~~Serial Number~~
geopump-geotech, horiba U-22, lamotte 2020e, Solinist water meter.

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1108	1L	23.33	6.42	1.83	2.80	-32	58.7	~250ml	4.61	slight black @first now clear.
1113	~3L	23.49	6.71	1.84	0.77	-74	73.8	~250ml	4.70	clear
1118	~.5gal	23.40	6.84	1.84	0.54	-94	72.6	~250ml	4.74	clear
1123	~1gal.	23.32	6.93	1.85	0.49	-102	57.1	~250ml	4.75	clear
1128	~1.25gal	23.37	7.00	1.84	0.47	-110	49.2	~250ml	4.80	clear.
1133	~1.75gal	23.41	7.04	1.84	0.49	-115	39.0	~250ml.	4.83	clear
1138	~1.9gal	23.46	7.09	1.84	0.48	-120	23.3	~250ml	4.85	clear

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

- Has required volume been removed ☐ ☐ ☐
- Has required turbidity been reached ☐ ☐ ☐
- Have parameters stabilized ☐ ☐ ☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: [illegible]

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-36	(up) amber-1L	PAH-SIM			
	(up) amber-1L	SVOC			
	(HCl) 40ml voa vails	VOC			
	NaOH NO.				

Comments (up) = unpreserved.

Signature ____________ Date ____________

ENSR

Well ID: **14MW-DD03**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~80°
Date: 8/20/08
Time: Start 1700 am/pm
Finish 1715 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 55.81 c. Length of Water Column 50.19 (a-b)

b. Water Table Depth 5.62 d. Calculated System Volume (see back) 8.19

Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	11850 ~~Q8735~~
	Lamont	2020	1589-0300
	Geopump 2		B06000619

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1700	—	22.93	7.27	5.70	3.63	-129	3.48		0.30	cloudy/slight MFP
1705	0.25	24.11	7.50	14.3	1.22	-238	15.8		0.31	"
1710	0.50	23.89	7.52	16.3	0.78	-251	16.9		0.33	"
1715	1.0	23.66	7.47	16.8	0.75	-246	29.9		0.37	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-DD03	40 mL VOA	2	HCL	8260 VOC+10	1720
14MW-DD03	1L Glass	1	None	8270 SVOC+20	
14MW-DD03	1L Glass	1	None	8270 PAHs SIM	
14MW-DD03	500 mL Plastic	1	HNO3	Total Metals	
~~14MW-DD03~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
14MW-DD03	500 mL Plastic	1	NaOH	9012 CN	
14MW-DD03	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments

Signature J. Gowan Date 8/20/08

ENSR

Well ID: **MW-10**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: sunny ~80°
Date: 8/21/08
Time: Start 1045 (am)/pm
Finish 1105 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 14.15 c. Length of Water Column 8.01 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 6.14 d. Calculated System Volume (see back) 1.31

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	QR725
	Lamont	2020	P6074
	Geopump 2		G0200471

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1045	—	24.51	8.30	3.92	1.06	-107	21.7		7.28	Clear/slight MGP
1050	0.25	24.49	8.44	3.75	0.82	-147	19.4		7.34	"
1055	0.9	24.36	8.64	3.76	0.82	-189	8.17		7.33	"
1100	0.75	24.27	8.80	3.79	0.72	-214	9.37		7.35	"
1105	1.0	24.15	8.98	3.82	0.78	-221	8.53		7.35	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-10	40 mL VOA	2	HCL	8260 VOC+10	1110
MW-10	1L Glass	1	None	8270 SVOC+20	
MW-10	1L Glass	1	None	8270 PAHs SIM	
MW-10	500 mL Plastic	1	HNO3	Total Metals	
~~MW-10~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
MW-10	500 mL Plastic	1	NaOH	9012 CN	
MW-10	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments

Signature [signature] Date 8/21/08

ENSR

Well ID: **14MW-D05**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Clear ~80

Date: 08/21/08
Time: Start 09.00 am/pm
Finish 0915 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 31.55 c. Length of Water Column 26.07 (a-b)

b. Water Table Depth 5.48 d. Calculated System Volume (see back) 4.25

Casing Diameter/Material 2"/PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	±10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	11850
	Lamont	2020	1589-0300
	Geopump 2		B0600061O

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0900	0.05	24.13	7.46	3.56	3.16	-159	21.4		6.27	Cl/none
0905	0.25	24.63	7.43	3.59	0.92	-166	20.3		6.21	Cl/none
0910	0.5	24.42	7.43	3.55	0.73	-168	21.4		6.30	Cl/none
0915	1	24.38	7.42	3.50	0.63	-169	25.8		6.35	Cl/none

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-D05	40 mL VOA	2	HCL	8260 VOC+10	0920
14MW-D05	1L Glass	1	None	8270 SVOC+20	
14MW-D05	1L Glass	1	None	8270 PAHs SIM	
14MW-D05	500 mL Plastic	1	HNO3	Total Metals	
~~14MW-D05~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
14MW-D05	500 mL Plastic	1	NaOH	9012 CN	0920
14MW-D05	500 mL Plastic	1	NaOH	9012 Amenable CN	0920

Comments

Signature [signature] Date 08/21/08

ENSR

Well ID: **14MW-DD05**

Low Flow Ground Water Sample Collection Record

Client: CoEdison Date: 8/21/08 Time: Start 850 am/pm
Project No: 01869-164-240 Finish 910 am/pm
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~75° Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 47.75 c. Length of Water Column 41.87 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 5.88 d. Calculated System Volume (see back) 6.83

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	00725
Lamont	2020	06074
Geopump 2		G02000471

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
850	~	23.50	8.99	5.34	1.32	-156	6.52		5.28	clear/organic
855	0.25	23.94	9.29	6.17	0.77	-175	14.4		5.27	
900	0.5	23.85	9.51	6.72	0.60	-190	14.3		5.28	
905	0.75	23.72	9.60	6.96	0.56	-197	13.6		5.28	
910	1.0	23.65	9.69	7.05	0.48	-203	8.54		5.28	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-DD05	40 mL VOA	2	HCL	8260 VOC+10	915
14MW-DD05	1L Glass	1	None	8270 SVOC+20	
14MW-DD05	1L Glass	1	None	8270 PAHs SIM	
14MW-DD05	500 mL Plastic	1	HNO3	Total Metals	
~~14MW-DD05~~	~~500 mL Plastic~~	1	~~HNO3~~	~~Dissolved Metals~~	
14MW-DD05	500 mL Plastic	1	NaOH	9012 CN	
14MW-DD05	500 mL Plastic	1	NaOH	9012 Amenable CN	

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MW-DD05MS	40 mL VOA	2	HCL	8260 VOC+10	915
14MW-DD05MS	1L Glass	1	None	8270 SVOC+20	
14MW-DD05MS	1L Glass	1	None	8270 PAHs SIM	
14MW-DD05MS	500 mL Plastic	1	HNO3	Total Metals	
~~14MW-DD05MS~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
14MW-DD05MS	500 mL Plastic	1	NaOH	9012 CN	
14MW-DD05MS	500 mL Plastic	1	NaOH	9012 Amenable CN	
14MW-DD05MSI	40 mL VOA	2	HCL	8260 VOC+10	
14MW-DD05MSI	1L Glass	1	None	8270 SVOC+20	
14MW-DD05MSI	1L Glass	1	None	8270 PAHs SIM	
14MW-DD05MSI	500 mL Plastic	1	HNO3	Total Metals	
~~14MW-DD05MSI~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
14MW-DD05MSI	500 mL Plastic	1	NaOH	9012 CN	
14MW-DD05MSI	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments _____

Signature _____ Date 8/21/08

ENSR

Well ID: **17MW-S03**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: sunny @ 80

Date: 08/20/08
Time: Start 1525 am/pm
Finish 1540 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19.05 c. Length of Water Column 9.70 (a-b)

Casing Diameter/Material

b. Water Table Depth 9.35 d. Calculated System Volume (see back)

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	00725
	Lamont	2020	4621-4003
	Geopump 2		00200471

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1525	0.05G	20.29	9.10	1.83	1.72	-124	3.28		9.60	CL/none
1530	0.50G	20.00	8.61	1.82	1.29	-129	3.29		9.81	CL/none
1535	1G	19.93	8.54	1.82	1.24	-133	3.18		9.92	CL/none
1540	1.5G	20.01	8.52	1.81	1.38	-135	3.38		10.02	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-S03	40 mL VOA	2	HCL	8260 VOC+10	1545
17MW-S03	1L Glass	1	None	8270 SVOC+20	"
17MW-S03	1L Glass	1	None	8270 PAHs SIM	"
17MW-S03	500 mL Plastic	1	HNO3	Total Metals	"
~~17MW-S03~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	~~"~~
17MW-S03	500 mL Plastic	1	NaOH	9012 CN	1545
17MW-S03	500 mL Plastic	1	NaOH	9012 Amenable CN	"

Comments

Signature Date

ENSR

Well ID: **17MW-D03**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~75°
Date: 8/20/08
Time: Start 1525 am/pm
Finish 1540 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 38.39 c. Length of Water Column 23.4 (a-b)

b. Water Table Depth 9.99 d. Calculated System Volume (see back) 3.82

Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	11850
	Lamont	2020	1589-0300
	Geopump 2		BG000610

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1525	—	19.48	6.64	3.11	2.0	-139	9.39		11.17	clear/organic
1530	0.25	19.55	6.61	3.01	3.17	-143	4.50		11.27	"
1535	0.5	19.91	6.62	3.04	6.58	-147	3.96		11.31	"
1540	1.0	19.47	6.62	3.09	6.30	-151	3.47		11.36	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-D03	40 mL VOA	2	HCL	8260 VOC+10	1545
17MW-D03	1L Glass	1	None	8270 SVOC+20	
17MW-D03	1L Glass	1	None	8270 PAHs SIM	
17MW-D03	500 mL Plastic	1	HNO3	Total Metals	
~~17MW-D03~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
17MW-D03	500 mL Plastic	1	NaOH	9012 CN	
17MW-D03	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments

Signature [signature] Date 8/20/08

ENSR

Well ID: **17MW-DD03**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~ 75°
Date: 08/20/08
Time: Start 1315 am/pm
Finish 1340 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 51.2
c. Length of Water Column 42.33 (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 8.87
d. Calculated System Volume (see back) 6.91

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	11850
	Lamont	2020	1589-0300
	Geopump 2		B060006619

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1315	—	19.46	7.31	1.47	3.08	-36	32.5		10.13	clear/none
1320	0.25	19.44	7.25	1.45	1.13	-81	32		10.21	"
1325	0.5	19.41	7.22	1.46	0.99	-108	29.9		10.75	"
1330	0.75	19.46	7.23	1.49	0.91	-124	37.3		10.92	"
1335	1.0	19.42	7.24	1.50	0.83	-132	36.7		10.99	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-DD03	40 mL VOA	2	HCL	8260 VOC+10	1340
17MW-DD03	1L Glass	1	None	8270 SVOC+20	
17MW-DD03	1L Glass	1	None	8270 PAHs SIM	
17MW-DD03	500 mL Plastic	1	HNO3	Total Metals	
17MW-DD03	500 mL Plastic	1	HNO3	Dissolved Metals	
17MW-DD03	500 mL Plastic	1	NaOH	9012 CN	
17MW-DD03	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments

Signature Josh Gowan Date 8/20/08

ENSR

Well ID: **17MW-S04**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: sunny N 70°
Date: 8/20/08
Time: Start 920 am/pm
Finish 940 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 18.86 c. Length of Water Column 9.06 (a-b)

b. Water Table Depth 9.8 d. Calculated System Volume (see back) 1.48

Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	00725
	Lamont	2020	1589-0800
	Geopump 2		G02000741

Time (24hr)	Volume Removed (L)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
920	—	19.09	7.90	4.89	1.86	69	12.6		11.44	clear/none
925	0.25	19.04	8.21	4.90	1.20	18	6.04		11.81	"
930	0.5	19.15	8.21	4.87	1.78	26	4.78		11.88	"
935	0.75	18.92	8.38	4.85	1.34	7	4.62		11.98	"
940	1.0	19.71	8.38	4.85	1.38	9	5.86		12.05	"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-S04	40 mL VOA	2	HCL	8260 VOC+10	945
17MW-S04	1L Glass	1	None	8270 SVOC+20	↓
17MW-S04	1L Glass	1	None	8270 PAHs SIM	
17MW-S04	500 mL Plastic	1	HNO3	Total Metals	
~~17MW-S04~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
17MW-S04	500 mL Plastic	1	NaOH	9012 CN	945
17MW-S04	500 mL Plastic	1	NaOH	9012 Amenable CN	945

Comments well recharges very slowely

Signature [signature] Date 8/20/08

ENSR

Well ID: **17MW-D04**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~80
Date: 08/20/08
Time: Start 1040 am/pm
Finish 1055 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 34.29 c. Length of Water Column 24.49 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 9.80 d. Calculated System Volume (see back) 3.99

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	11850
Lamont	2020	4621-4003
Geopump 2		B0600610

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1040		18.03	7.69	1.56	7.98	-119	6.3		10.55	Cl/MGP odor
1045		18.26	7.59	1.56	1.22	-145	2.34		10.48	Cl/MGP odor
1050		18.12	7.64	1.54	0.93	-160	1.94		10.48	Cl/MGP odor
1055		17.97	7.73	1.50	0.91	-171	1.31		10.51	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-D04	40 mL VOA	2	HCL	8260 VOC+10	1100
17MW-D04	1L Glass	1	None	8270 SVOC+20	↓
17MW-D04	1L Glass	1	None	8270 PAHs SIM	
17MW-D04	500 mL Plastic	1	HNO3	Total Metals	
~~17MW-D04~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
17MW-D04	500 mL Plastic	1	NaOH	9012 CN	1100
17MW-D04	500 mL Plastic	1	NaOH	9012 Amenable CN	↓

ENSR

Well ID: **17MW-D04**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~80

Date: 08/20/08
Time: Start 1040 am/pm
Finish 1055 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 34.29 c. Length of Water Column 24.49 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 9.80 d. Calculated System Volume (see back) 3.99

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	11850
	Lamont	2020	4621-4003
	Geopump 2		30600610

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1040		18.03	7.69	1.56	7.98	-119	6.3		10.55	Cl/mgp odor
1045		18.26	7.59	1.56	1.22	-145	2.34		10.48	Cl/mgp odor
1050		18.12	7.64	1.54	0.93	-160	1.94		10.48	Cl/mgp odor
1055		17.97	7.73	1.50	0.91	-171	1.31		10.51	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-D04	40 mL VOA	2	HCL	8260 VOC+10	1100
17MW-D04	1L Glass	1	None	8270 SVOC+20	↓
17MW-D04	1L Glass	1	None	8270 PAHs SIM	
17MW-D04	500 mL Plastic	1	HNO3	Total Metals	
~~17MW-D04~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
17MW-D04	500 mL Plastic	1	NaOH	9012 CN	1100
17MW-D04	500 mL Plastic	1	NaOH	9012 Amenable CN	↓

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-D04(dup)	40 mL VOA	2	HCL	8260 VOC+10	1105
17MW-D04(dup)	1L Glass	1	None	8270 SVOC+20	↓
17MW-D04(dup)	1L Glass	1	None	8270 PAHs SIM	↓
17MW-D04(dup)	500 mL Plastic	1	HNO3	Total Metals	↓
~~17MW-D04(dup)~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
17MW-D04(dup)	500 mL Plastic	1	NaOH	9012 CN	1100
17MW-D04(dup)	500 mL Plastic	1	NaOH	9012 Amenable CN	↓

Comments Cap broken in well

Signature [signature] Date 08/20/08

ENSR

Well ID: **17MW-DD04**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: _____
Date: 8/20/08
Time: Start 1200 am/pm
Finish 1220 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 49.95 c. Length of Water Column 41.74 (a-b)

b. Water Table Depth 8.21 d. Calculated System Volume (see back) 6.81

Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	11850
Lamont	2020	1589-8209
Geopump 2		B0600610

Time (24hr)	Volume Removed (liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1200	—	20.92	7.67	0.814	6.16	43	16.70		8.59	clear/none
1205	0.25	18.61	7.31	1.36	2.41	48	11.80		8.40	"
1210	0.5	18.60	7.26	1.34	1.64	35	12.20		8.41	"
1215	0.75	18.45	7.24	1.35	1.39	9	8.48		8.40	"
1220	1.0	18.50	7.23	1.36	1.43	1	18.1		8.40	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

_____

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-DD04	40 mL VOA	2	HCL	8260 VOC+10	1225
17MW-DD04	1L Glass	1	None	8270 SVOC+20	
17MW-DD04	1L Glass	1	None	8270 PAHs SIM	
17MW-DD04	500 mL Plastic	1	HNO3	Total Metals	
~~17MW-DD04~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
17MW-DD04	500 mL Plastic	1	NaOH	9012 CN	
17MW-DD04	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments _____

Signature _____ Date 8/20/08

ENSR

Well ID: 14MWS05

Low Flow Ground Water Sample Collection Record

Client: CON EDISON Date: 9/29/08 Time: Start _____ am/pm
Project No: _____ Finish _____ am/pm
Site Location: ST
Weather Conds: CLOUDY, 70F Collector(s): VIPUL M

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 16.02 c. Length of Water Column 9.97 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 6.05 d. Calculated System Volume (see back) 1.62Gal

2. WELL PURGE DATA

a. Purge Method: LOW FLOW

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	HORIBA	UX 22D	
	LAMOTTE	2020	

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
13:42									6.05	STATIC
1347	✓	28.0	6.48	0.955	0.00	-87	43.9	300	6.34	PUMP ON
1355		28.82	6.47	0.857	0.00	-100	44.0	"	"	CLEAR

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

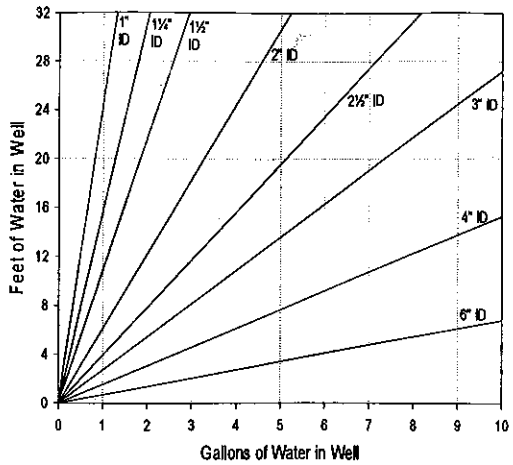
3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
14MWS05-092908	VOA	2	HCl	VOC	14:20
"	1LA	1	—	SVOC	"
"	1LA	1	—	PAH	"
"	500Poly	1	NaOH	CN	"
"	"	1	HNO_3	Metals	"

Comments _____

Signature VIPUL Date 9/29/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1400		28.87	6.46	0.904	0.00	-104	41.6	"	"	"
1405		28.85	6.46	0.937	0.00	-108	30.2	"	"	"
1410		28.81	6.46	0.938	"	-111	25.71	"	"	"
1415		28.76	6.47	0.938	"	-114	10.12	"	"	"

ENSR

Well ID: **17MW-S05**

Low Flow Ground Water Sample Collection Record

Client: CoEdison Date: _____ Time: Start _____ am/pm
Project No: 01869-164-240 Finish _____ am/pm
Site Location: Stuytown NY, NY
Weather Conds: _____ Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length _____ c. Length of Water Column _____ (a-b) Casing Diameter/Material _____

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	
Lamont	2020	
Geopump 2		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

_____

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-S05	40 mL VOA	2	HCL	8260 VOC+10	
17MW-S05	1L Glass	1	None	8270 SVOC+20	
17MW-S05	1L Glass	1	None	8270 PAHs SIM	
17MW-S05	500 mL Plastic	1	HNO3	Total Metals	
17MW-S05	500 mL Plastic	1	HNO3	Dissolved Metals	
17MW-S05	500 mL Plastic	1	NaOH	9012 CN	
17MW-S05	500 mL Plastic	1	NaOH	9012 Amenable CN	

Comments Could not open well, lbs rounded off

Signature _____ Date 08/22/08

ENSR

Well ID: **17MW-D05**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~85°
Date: 8/19/08
Time: Start 1545 am/pm
Finish 1605 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 30.08 c. Length of Water Column 25.47 (a-b)

b. Water Table Depth 4.61 d. Calculated System Volume (see back) 4.16

Casing Diameter/Material 2" PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	Horiba	U22	00725
	Lamont	2020	06074
	Geopump 2		B0600610

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1545	—	26.61	8.02	2.67	0.58	-114	75.2		5.96	dark/organic
1550	0.5 G	27.21	8.10	2.97	0.51	-127	83.6		6.01	dark/organic
1555	0.75 G	26.79	8.28	2.45	0.43	-142	60.1		6.20	lighter/organic
1600	1.0 G	27.18	8.31	2.44	0.41	-145	56.9		6.13	"
1605	1.25 G	27.17	8.34	2.45	0.42	-147	44.9		6.16	"

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☒	☐	☐
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-D05	40 mL VOA	2	HCL	8260 VOC+10	1610
17MW-D05	1L Glass	1	None	8270 SVOC+20	↓
17MW-D05	1L Glass	1	None	8270 PAHs SIM	↓
17MW-D05	500 mL Plastic	1	HNO3	Total Metals	↓
~~17MW-D05~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	~~—~~
17MW-D05	500 mL Plastic	1	NaOH	9012 CN	1610
17MW-D05	500 mL Plastic	1	NaOH	9012 Amenable CN	1610

Comments

Signature [signature] Date 8/19/08

ENSR

Well ID: **17MW-DD05**

Low Flow Ground Water Sample Collection Record

Client: CoEdison
Project No: 01869-164-240
Site Location: Stuytown NY, NY
Weather Conds: Sunny ~85

Date: 08/19/08
Time: Start 1545 am/pm
Finish 1605 am/pm
Collector(s): J. Gowan/G. Tallentire

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 50.00 c. Length of Water Column 45.76 (a-b)

b. Water Table Depth 5.14 d. Calculated System Volume (see back) 7.47

Casing Diameter/Material 2" / PVC

2. WELL PURGE DATA

a. Purge Method: Peristaltic Pump

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	±10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
Horiba	U22	11850
Lamont	2020	1589-0300
Geopump 2		G02000472

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1545	0.5G	27.65	7.12	4.80	3.4	-128	23.6		5.24	C/none
1550	0.75G	26.16	7.60	7.85	0.40	-201	18.0		5.1	C/none
1555	1.5G	25.84	7.62	7.95	0.38	-204	17.3			C/none
1600	1.75G	26.67	7.62	7.95	0.42	-197	11.2			C/none
1605	2.0G	27.8	7.62	8.01	0.41	-197	12.4			C/none

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic Pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
17MW-DD05	40 mL VOA	2	HCL	8260 VOC+10	1610
17MW-DD05	1L Glass	1	None	8270 SVOC+20	↓
17MW-DD05	1L Glass	1	None	8270 PAHs SIM	
17MW-DD05	500 mL Plastic	1	HNO3	Total Metals	
~~17MW-DD05~~	~~500 mL Plastic~~	~~1~~	~~HNO3~~	~~Dissolved Metals~~	
17MW-DD05	500 mL Plastic	1	NaOH	9012 CN	1610
17MW-DD05	500 mL Plastic	1	NaOH	9012 Amenable CN	1610

Comments: water metre kept sounding alarm even when outside of the well.

Signature: [signature] Date: 08/19/08