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**To:** Amanda Sutphin, Landmarks Preservation Commission

**From:** Gerald Nicholls, PE and Michael Audin, RPA

**Date:** October 30, 2015

**Re:** Archaeological Monitoring of Boring Results  
111 Leroy Street, New York, NY  
Langan Project No.: 170370001

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This memorandum summarizes the findings from archaeological monitoring of the borings inside and adjacent to 111 Leroy Street, New York, New York. Preliminary subsurface testing for archaeological sensitivity is required by the New York City Landmarks Preservation Commission (LPC) as part of the Restrictive Declaration from the 2008-06-02 (07DCP095M) Determination of Significance for the Hudson Square North Rezoning by the Department of City Planning (DCP) for the project. Subsurface testing conformed to the testing plan dated 25 September 2015 and approved by LPC in an email dated 1 October 2015 (Appendix D).

On October 12 to 13, 2015, a Langan archaeologist supervised ten borings in the Project Area. The sample locations are shown on the Figure 1 site plan. This testing was conducted to supplement prior geological borings overseen by Mueser Rutledge Consulting Engineers. The previous boring series identified 12 to 16 feet of historic fill directly overlying glacial till soils. The supplemental testing by Langan more closely characterized the stratigraphy above the glacial till allowing for the identification of archaeologically sensitive layers.

#### Description of Project Site

The project site currently consists of two buildings, a paved parking lot with hydraulic lift structures, and alleyway connecting the parking lot with Morton Street. One building is 111 Leroy Street, a two-story structure that includes a garage structure with an in floor hydraulic lift and an underground storage tank (Photo 1). The building is currently unoccupied and is generally empty beyond some accumulated old furniture and trash.

621 Greenwich Street is a one-story building (Photo 2). Access to this structure is limited, as the building is full of material. Therefore, all samples planned for the interior of the structure were moved to the exterior, adjacent to the building.

# MEMO



*Photo 1: View of 111 Leroy Street and the adjacent parking lot, facing northeast.*



*Photo 2: View of 621 Greenwich Street and adjacent parking lot, facing southeast.*

An asphalt parking lot is situated between the buildings at 111 Leroy Street and 621 Greenwich Street (Photos 1 and 2). The parking lot remained open during our testing and cars were moved to accommodate the machinery. Lines of hydraulic car lifts are at the site, but are not currently functional. This restricted the access of the machines to certain locations, such as the proposed location of SB02, which had to be moved to the alleyway.

The paved alleyway connects Morton Street to the parking lot (Photo 3). Currently, ZipCar rentals are parked on each side of the alleyway. Otherwise, it is an empty driveway.



*Photo 3: View of the alley connecting Morton Street with the parking lot adjacent to 111 Leroy Street, facing south.*

## Methodology

Langan proposed ten borings across the Project site, including three inside the existing structures. Appendix A includes the boring locations. Figure 1 shows the location of each sample boring. Three tests moved from the proposed locations:

- SB02 moved to the south of the alleyway connecting Morton Street and the parking lot. The non-working hydraulic lift structures in the parking lot restricted machine access to the proposed location.
- SB03 was originally planned to be drilled inside 621 Greenwich Street. However, the machine could not access the interior due to all the material inside the structure. The

sample location was moved to just outside the east exterior wall of the building in the parking lot.

- SB10 moved south approximately 6 feet to the 111 Leroy Street garage doorway.

A team of drillers from AARCO Environmental Services conducted the borings using a direct push Geoprobe 7822DT advancing a 4-inch macrocore sampler (Photo 4). Each advance and depths were recorded using standard auger forms (Appendix B). Soil consistency and color, anthropogenic alterations, and any artifacts encountered for each soil layer were recorded.

## Results

Our results are generally consistent with MRCE's prior findings of a thick deposit of historic fill and demolition debris overlying sands and glacial till. While MRCE identified 12 to 16 feet of fill, our borings show between 5 feet (150 cm) and 14 feet (416 cm) of fill overlying loose sands (most commonly coarse sand with 2-5% rose quartzite pebbles) and glacial till (reddish brown fine sand with mica). A few of the borings represented unique sequences:

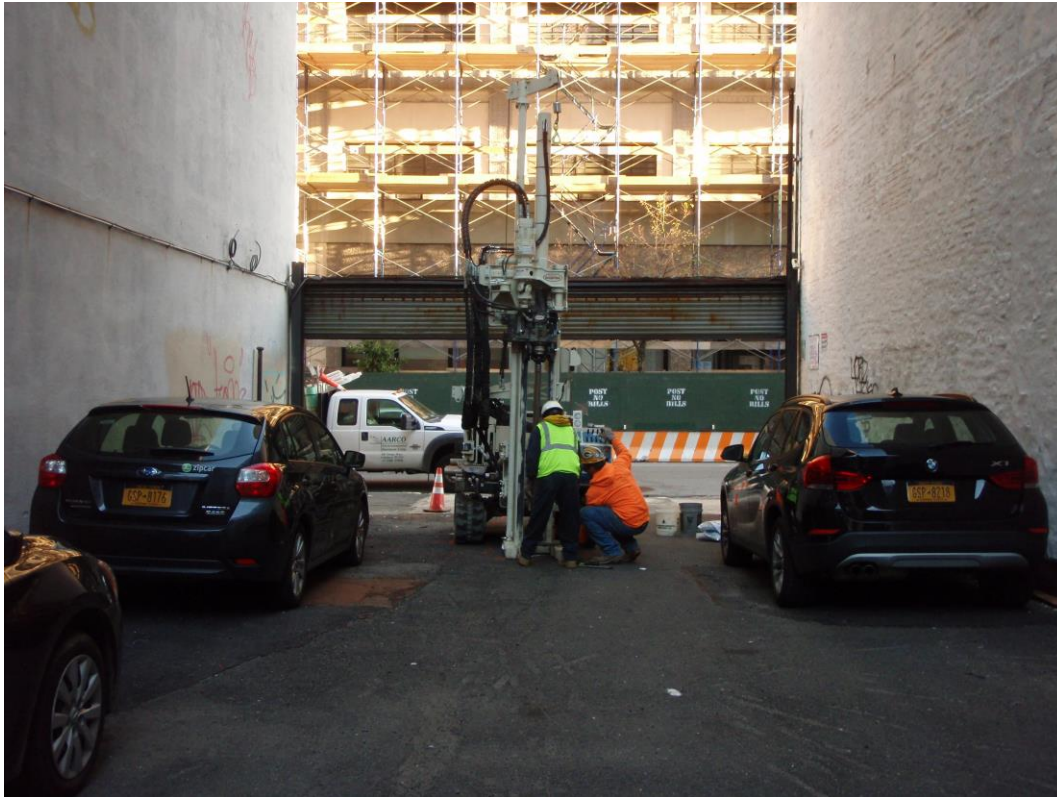
- SB01 contained the thickest historic fill deposit, with historic fill layers extending as deep as 14 feet (416 cm), just above a layer of loose, coarse sand with quartzite pebbles.
- The historic fill deposit was the least thick in SB04, only extending to approximately 5 feet (150 cm) below the top of the parking lot asphalt. Underlying the historic fill was layers of sands, ranging from fine to coarse grained.
- SB05 contained fill material all the way down to the glacial till soils.

In nine borings (all except for SB05), loose coarse sands were identified underlying historic fill and overlying glacial till soils. These sands are unstable and would never have provided a stable ground surface prior to filling. The instability of these sands means that, even if these loose, coarse sands represent the ground surface in the pre-Contact period, there is a low probability that archaeological material of prehistoric date would be in situ.

No artifacts beyond brick were recovered from any of the borings. Red brick was a common find in all of the borings, as well as coal, coal ash, and coal cinder. Coal waste is a common constituent of historic fill in New York City throughout the nineteenth century. The lack of any other artifacts throughout the layers of historic fill is surprising, as historic fill commonly contained animal bone, ceramics, glass, and other types of architectural debris. The various levels of cinder, brick, and coal ash separated by fill sands also suggests that there was not a



single, intact level of historic demolition debris, but instead that either the fill has been churned by later development, or that these layers were discrete fill layers brought from offsite.



*Photo 4: View of boring by AARCO utilizing the Geoprobe 7822DT, facing north. Morton Street is just beyond the drillers.*

## Conclusion

The archaeological monitoring for the ten borings resulted in no artifacts being recovered beyond red brick fragments in any boring. The brick fragments are consistent with historic fill or demolition debris from prior historic occupation at the site. No foundations or slabs were encountered during the borings. In boring SB05, the historic fill was deposited directly overlying glacial till soils. In the remaining borings, loose coarse sands were identified underlying historic fill and overlying glacial till soils. These sands are unstable and would never have provided a stable ground surface prior to the historic filling of the Project Site.

Based on these results the Project Site has a low sensitivity for prehistoric materials. The Project Site does have a moderate sensitivity for historic resources, yet the lack of any finds even within the historic fill suggests that there is little information to gain from further testing. The various levels of cinder, brick, and coal ash separated by fill sands also suggests that there was not a single, intact level of historic demolition debris, but instead that either the fill has

# MEMO

been churned by later development, or that these layers were discrete fill layers brought from offsite.

Based on the results of the archaeological monitoring of the ten borings, Langan does not recommend further archaeological testing for prehistoric materials at the Project Site.

## Attached Appendices

- Appendix A Boring Locations & Archaeology Logs
- Appendix B Soil Profile Log
- Appendix C Environmental Boring Logs
- Appendix D Relevant Communication with LPC

## APPENDIX A

State Site # \_\_\_\_\_ Project Name 111 Leroy Street Phase Geotech Borings

Recorders KM French Date 10/12/15 Screened Yes  No  Mesh Size \_\_\_\_\_

Comments - Adjacent Landmarks, Tests, Features Etc Alley northwest of 111 Leroy Street Building

Procedures: Excavate by natural strata. Record soil texture, Munsell color, and depth below ground surface for each stratum. Provide brief description of cultural material in each stratum (artifact class and count).

Test #	SB01	SB01 - Cont.	SB01 cont.	SB01 cont.
10 cm	Crushed asphalt	Crushed Coal and melbauche	10yr 4.5/4	Organic, water logged
20	Gritty medium sand	10yr 2/1 Sandy matrix	Yellowish-Dark yellowish brown medium sand	Saturated soils
30	10yr 4/4		10yr 3/1 v. dark grey clay w/ mica	276
40	Medium Brown		Coal cinder, crushed brick in sandy matrix	396
50		Medium Sand	Stone crushed	
60 1st	As pocket of crushed brick + green shale	10yr 7/2 Light Grey	Coal ash + crushed red brick in sandy matrix	416
60 2nd	Crushed brick + shale	10yr 2/2 v. dark brown sandy matrix	10yr 2/1 Black	Medium sand 10yr 3/2 dark brown
75 cm 1st	10yr 4.5/4	Crushed brick	Ash + coal cinder	Fine sand + mica
75 cm 2nd	Yellowish to dark yellowish brown medium sand.	10yr 2/2 v. dark brown Gritty medium sand	10yr 2/1 black w/ purplish cinder	438
75 cm 3rd	Medium sand.			456
85 cm	Gritty sand w/ crushed brick + ash 10yr 4/3 Brown			
	See next			

Glacial till  
↓



State Site # \_\_\_\_\_ Project Name 111 Leray Street Phase Geotech Borings

Recorders KM French Date 10/12/15 Screened  Yes  No Mesh Size \_\_\_\_\_

Comments - Adjacent Landmarks, Tests, Features Etc SE quadrant parking lot

Procedures: Excavate by natural strata. Record soil texture, Munsell color, and depth below ground surface for each stratum. Provide brief description of cultural material in each stratum (artifact class and count).

Test # SB04 Test # SB04 - cont. Test # \_\_\_\_\_ Test # \_\_\_\_\_

5  
Asphalt  
med. silty sand  
some red bricke  
color range grey to black  
25  
Crushed bricke  
30/1st  
Advance  
104R 5/3 brown  
Sand w/ crushed  
red bricke + mica  
flakes  
↓  
same  
78 3rd  
Advance  
Same  
red bricke w/ sand  
88  
91  
Loose med to coarse  
sand 7.5 yr 4/4  
Brown  
136  
pocket of degraded material schist

145  
150  
160  
170  
178  
104R 5/3 brown sand  
Red bricke  
degraded sandstone  
Fine sand 7.5 yr 4/4  
Brown  
Loose med to coarse  
sand 7.5 yr 4/4  
Brown  
5 YR 4/3 Reddish  
Brown fine sand  
↑ mica  
← fill  
236

Blank box for Test # \_\_\_\_\_

Blank box for Test # \_\_\_\_\_

176  
58  
236

State Site # \_\_\_\_\_

Project Name 111 Leroy Street Phase Geotech. Bonngs

Recorders KM French

Date 10/12/15

Screened Yes

No

Mesh Size \_\_\_\_\_

Comments - Adjacent Landmarks, Tests, Features Etc Alley northwest of extant 111 Leroy building South of

SB01

Procedures: Excavate by natural strata. Record soil texture, Munsell color, and depth below ground surface for each stratum. Provide brief description of cultural material in each stratum (artifact class and count).

Test # SB05

Test # SB05 - cont.

Test # SB05 - cont.

Test # SB05 - cont.

Asphalt  
10yr 3/2 v. dark  
greyish brown  
Fine/medium  
Sand  
Crushed red brick  
crushed red brick  
in medium/fine sand  
matrix 10yr 6/3 pale  
brown  
↓  
Fine sand 10yr 4/4  
D. yell. brn  
Coarse sand 10yr 5/3  
brown

26  
44  
49 1st  
Advance  
64 Advance  
2nd  
88  
94  
100  
Fine Sand 10yr 4/4 D.  
Yell. Brn. pockets  
Red sandstone + gravel  
1-5cm, 2-5%  
Same as above  
↑ Crushed stone  
medium to coarse sand  
10yr 4/3 Brown  
5yr 4/3 Reddish  
Brown Fine sand ↑  
mica  
Crushed red brick,  
cinder in silty matrix  
10yr 3/3 dark brown

100  
115 3rd  
Advance  
172  
180  
Kill  
red brick  
red brick  
200 4th  
advance  
Loose, medium to coarse  
Sand 10yr 4/3 Brown  
Crushed red brick  
cinder in silty matrix  
10yr 3/3 dark brown  
Loose medium sand  
10yr 4/3 brown  
5yr 4/3 reddish brown  
fine sand ↑  
Crushed red brick  
cinder in silty matrix  
10yr 3/3 dark brown  
5yr 4/3 reddish  
brown fine sand ↑  
mica

262  
312 5th  
Advance  
352  
360  
364  
392  
Till  
409  
209

# STP/Auger Test Form

State Site # \_\_\_\_\_ Project Name 111 Leroy Street Phase Geotech Borings  
 Recorders K M French Date 10/13/15 Screened Yes Mesh Size No

Comments - Adjacent Landmarks, Tests, Features Etc South of Greenwich Street facing building (SB03) Interior of 111 Leroy Street garage, northern sample boring (SB06)

Procedures: Excavate by natural strata. Record soil texture, Munsell color, and depth below ground surface for each stratum. Provide brief description of cultural material in each stratum (artifact class and count).

Test # SB03-cont.

Loose med sand	177
7.5/1R 5/2 Brown	181
Red Sandstone, degraded	191
Loose med sands	211
crushed brick + coal in med. sand matrix 10YR 3/3 Dk Brown	228
Loose med. sand w/ crushed quartzite 10YR 4/3 Brown	240
Degrading Schist	255
Coarse Sands 10YR 4/7 Brown	

Test # SB03-cont.

Loose, coarse sand 10YR 4/3 Brown, 105 above	301
5YR 4/3 Reddish Brown fine sand ↑ mica	Till
	Inundated
	375

Test # SB06

Concrete Floor	7
Crushed coal/asphalt?	11
Medium sand 10YR 3/6 Dark Yellowish Brown	22
Silty sand 10YR 3/1 V. Dark Grey	32
Fine Sand 10YR 4/6 Dark yellowish Brown w/ gravel	38
Degrading mortar	41
Fine Sand 10YR 7/3 V. pale brown w/ red brick frags	51
10YR 5/6 Yellowish brown fine sand w/ gravel	56
crushed stone	65
Red brick	85

Test # SB06-cont.

Degrading schist	85
Med Sand 10YR 3/2 V. dark greyish brown	89
Red brick	93
Med Sand 10YR 3/2 V. dark greyish brown w/ gravel	99
Red brick	128
10YR 6/1 fine sand grey	131
Crushed red brick	137
10YR 3/3 Brown med. Sand w/ sandstone	140
Red brick	145
Mix red sandstone, grey sandstone in med sand	165
↓	178 7.5 YR 4/3 brown
Red brick	189
	204





# STP/Auger Test Form

Engineering and Environmental Services, Inc.

State Site # \_\_\_\_\_ Project Name 111 Larry Street Phase Geotech Borings

Recorders LM French Date 10/13/15 Screened Yes (No) Mesh Size \_\_\_\_\_

Comments - Adjacent Landmarks, Tests, Features Etc East of Greenwich Street facing building, Approx 5 ft from exterior wall. SB03 South of Greenwich facing building

Procedures: Excavate by natural strata. Record soil texture, Munsell color, and depth below ground surface for each stratum. Provide brief description of cultural material in each stratum (artifact class and count).

Test # SB07

Asphalt	5
Crushed brick + sandstone	
Medium coarse sand w/ gravel 1-2%	18 1st Advance
10 YR 3/4 Dk. Yell. Brown	No Record
Few Ben stones in base	2nd Advance
Crushed up quartzite	56
Medium coarse sand w/ gravel 1-2%	69
10 YR 3/4 Pk Yell. Brown	
Few pieces coal	
Crushed red sandstone in same matrix as above	80
Crushed stone	95
	100
	106

Test # SB03

Asphalt	5
Stratified coal, coal ash, and cinders	
fine to medium sand w/ rose sandstone 7.5 YR 4/4 Brown	36
Coal cinder in sandy matrix	46
Crushed brick	48
	54
Loose sand	63
7.5 YR 4/3	
Coal cinder in sandy matrix	71
Loose sand fine to med	79
7.5 YR 4/4 Brown	90

Test # SB03 - cont.

Loose med. sand w/ concrete + red brick frags	90
Large chunk of coal	103
Red brick - large chunks	108
Crushed brick + coal	128
Crushed rose quartzite	138
Degraded schist, loose w/ gneiss stone	144
Loose med. sand 7.5 YR 4/4 Brown	153
Crushed quartzite	161
Degraded schist	167
	177

State Site # \_\_\_\_\_ Project Name 111 Leroy Street Phase Geotech Borings

Recorders KM French Date 10/12/15 Screened Yes  No Mesh Size \_\_\_\_\_

Comments - Adjacent Landmarks, Tests, Features Etc Center of main parking area

Procedures: Excavate by natural strata. Record soil texture, Munsell color, and depth below ground surface for each stratum. Provide brief description of cultural material in each stratum (artifact class and count).

Test #	SB08	Test #	SB08 - Cont.	Test #	SB08 - Cont.	Test #	SB08 - Cont.
6	Asphalt 104R 4/3 Brown w/ pockets of 2.54R 7/4 Pale Brown	87	104R 6/1 grey fine sand	151	Red brick fin in med. sand 104R 5/3 Brown	358	Mixed fill - brick frags, coal, coal cinder, ash, sandstone
28	104R 2/1 Black coal ash in silty matrix	95	104R 6/2 fine sand w/ stone Red brick @ above interface	163	Loose coal and ash, coal gravel		Loose med to coarse Sand w/ quartz pebbles 7.5 yr 4/4 brown
48	104R 4/1 Dark grey gravelly fine sand	115	Red brick	193	Same as above w/ 2 brick frags		
60	Crushed stone (quartzite?)	131	104R 2/2 V. dk greyish brown silty sand	233	Loose medium to Advanc-coarse sand 104R 4/6 Dark yellowish brown. No Cultural material. Degraded quartzite @ interface 104R 5th advanc		
70	104R 2/1 Black Coal ash ↑ mica	141	Red brick				
77	104R 2/2 V. Dark brown fine sand w/ ash and gravel	151	Refused. Moved 2ft. North to continue				
87							



State Site # \_\_\_\_\_ Project Name 111 Leroy Street Phase Geotech Borings

Recorders KM French Date 10/12/15 Screened  Yes  No Mesh Size \_\_\_\_\_

Comments - Adjacent Landmarks, Tests, Features Etc Main parking lot - South central boring

Procedures: Excavate by natural strata. Record soil texture, Munsell color, and depth below ground surface for each stratum. Provide brief description of cultural material in each stratum (artifact class and count).

Test #	SB09 - cont.	Test #	SB09 - cont.	Test #	SB09 - cont.
5cm	Asphalt	80 1st advance	2.5" 4/3 Reddish brown degrading sandstone 2-5% flat pebbles	196	Loose medium to coarse sand 7.5 YR 4/3 Brown
10	10YR 2/2 v. dark brown med silty sand	88	Red brick	203	Silt 10YR 2/2 v. Dark brown
22	Crushed sandstone	90	Loose medium to coarse sand 10YR 3/3 Brown	216	Red brick/degraded quartzite
34	10YR 4/3 Brown w/ pockets 2.5 YR 7/4 Pale brown	118	Red brick embedded in 10YR 4/3 Brown medium sand matrix	229	Loose medium to coarse sand 7.5 YR 4/3 Brown
42	Coal ash 10YR 2/1	126	Coarse sand, w/ large gravel 10YR 6/2 light brownish gray	235 3rd advance	Fine to medium sand 7.5 YR 4/3 Brown
53	10YR 2/2 v. dark brown med. sand gravelly	138	Silty sand coal ash crushed red brick in 10YR 2/2 Dark brown	257	
64	Crushed sandstone	148	Crushed quartzite	277	
66	Coal ash	166 2nd advance			
75	10YR 3/3 Brown med. sand few crushed brick frags	176			

277  
44  
322

387  
25  
12

State Site # \_\_\_\_\_ Project Name Ill Leroy Phase Geotech Borings

Recorders K M French Date 10/13/15 Screened  Yes  No Mesh Size \_\_\_\_\_

Comments - Adjacent Landmarks, Tests, Features Etc Inside Ill Leroy Street building. North (SBC6) & South sample point (SB10). SB10 just inside garage entrance to building

Procedures: Excavate by natural strata. Record soil texture, Munsell color, and depth below ground surface for each stratum. Provide brief description of cultural material in each stratum (artifact class and count).

Test # SBC6 cont

Sandstone	204
Fine/Medium Sand 7.5 yr 4/6 Strong Brown	214
Crushed stone	234
10yr 3/2 med sand w/ gravel	239
↓	251
10yr 3/3 med sand w/ gravel	269
Red brick	284
Loose coarse sand 7.5 yr 4/4 Brown	293
	325

Test # SBC6 cont.

5/2R 4/3 reddish Brown Fine Sand ↑ mica	325
	350

Test # SB10

Crushed asphalt + concrete	14
Fine Sand 10yr 4/3 Brown w/ sandstone pebbles.	30
Red brick	33
concrete in fine sand 10yr 4/3 matrix	43
Red brick	50
Crushed sandstone	54
Red brick	72
Mixed crushed brick + sandstone	95
Red brick	107
Mortar sandy matrix 10yr 6/3	112

Test # SB10 cont

Mix red brick + mortar	112
Degrading mortar in sandy matrix 10yr 6/3	132
Degrading schist	138
10yr 2/1 smells strongly of petroleum	151
Crumbled red brick	158
Coarse pinkish sand w/ green	165
10yr 2/1 smells strongly of petroleum	171
Loose Coarse Sand 10yr 3/2 V. Dark grayish brown	210
Fine sand 10yr 4/3 Brown	218
Red brick	221
10yr 2/1 Petroleum smells	225
crushed sandstone	234

10yr 6/2  
pale red  
w/ 10y  
5/2  
grayish  
olive  
fine sand



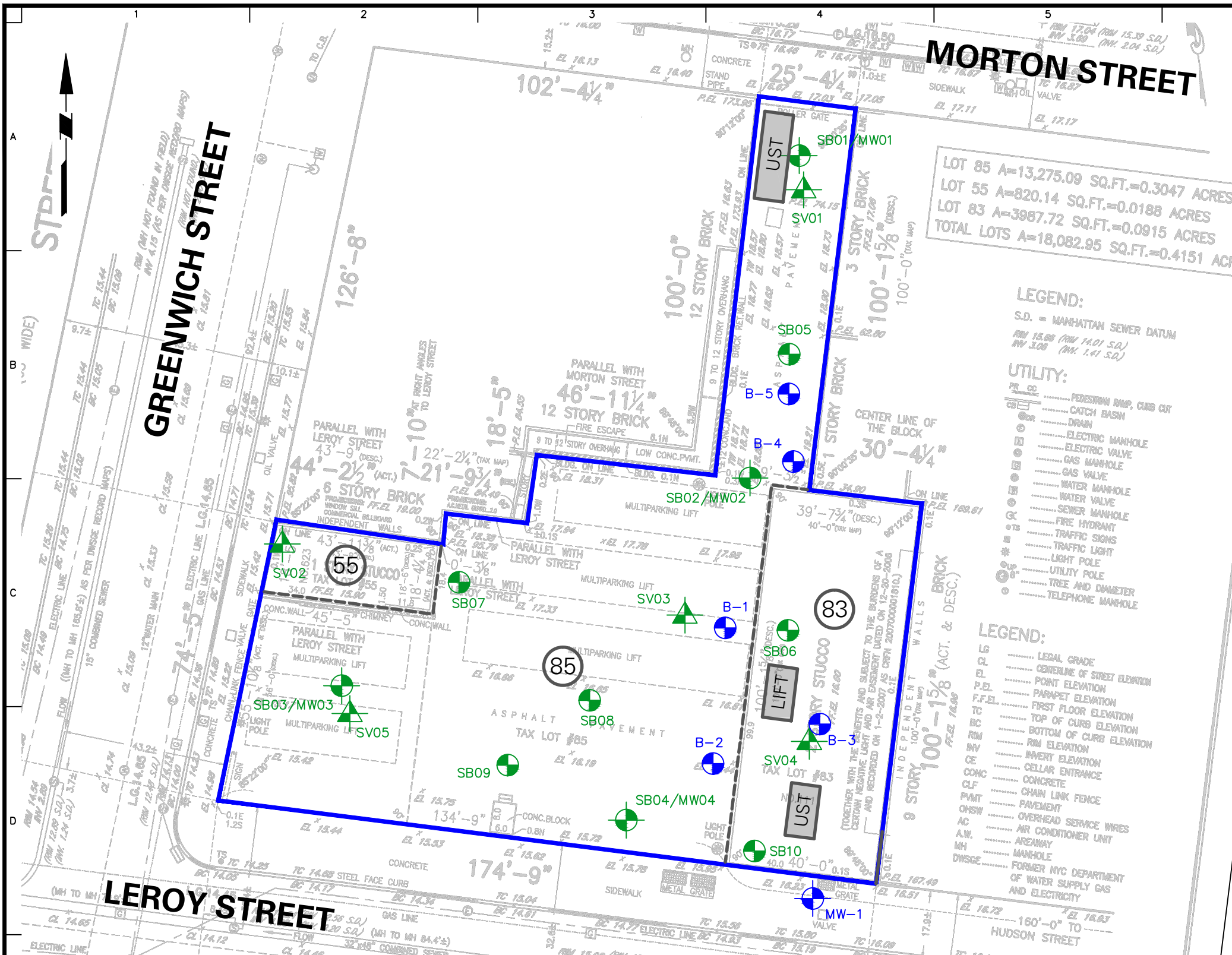
State Site # \_\_\_\_\_ Project Name 111 Leroy St. Phase Geotech borings

Recorders Kim French Date 10/13/15 Screened Yes  No  Mesh Size \_\_\_\_\_

Comments - Adjacent Landmarks, Tests, Features Etc \_\_\_\_\_

Procedures: Excavate by natural strata. Record soil texture, Munsell color, and depth below ground surface for each stratum. Provide brief description of cultural material in each stratum (artifact class and count).

Test #	SB10 - cont	SB10 - moved	SB02 - Cont	SB02 - cont	Test #
234	Petrolium impounded?	Asphalt	136	Coarse sand	236
242	Crushed brick + mortar	10yr 2 1/2 Coal + ash	142	7.5yr 4/3 brown	259
245	Mixed med sands	Fine sand 7.5yr 4/3 brown	178	Fine sand 7.5yr 3/4 dark brown 1 1/2 gravel	265
255	5G4 4/1 Dark greenish grey fine sand	Crushed quartzite	192	Coarse sand 7.5yr 4/3 Brown w/stones	271
259	Mixed crushed brick, sandstone	Brick	194	Crushed sandstone	62
292	Coarse sand w/ Quarts gravel	Fine sand 10yr 4/2 light brownish grey w/pockets of 10yr 3/3 brown	206	7.5yr 2.5/2 v. dusky red fine sand w/ mica	303
14	7.5yr 4/3 Brown	Fine sand 7.5yr 3/4 dark brown 1 1/2 gravel	214	degrating schist + sandstone	347
306	Coarse sand	Crash brown 1 1/2 gravel	228	Coarse sand 7.5yr 3/3 dark brown w/ quartz	389
15	7.5yr 3/2 dark brown		236		
321					



**LEGEND:**

- SITE BOUNDARY
- TAX LOT BOUNDARY
- TAX LOT NUMBER
- PREVIOUS SOIL BORING LOCATION AND ID (ATC)
- PREVIOUS GROUNDWATER SAMPLE LOCATION AND ID (ATC)
- SOIL BORING AND MONITORING WELL LOCATION AND ID
- SOIL BORING LOCATION AND ID
- SOIL VAPOR SAMPLING POINT LOCATION AND ID
- APPROXIMATE LOCATION OF SUSPECTED UNDERGROUND STORAGE TANK (UST)
- APPROXIMATE LOCATION OF SUSPECTED FORMER HYDRAULIC LIFT

**NOTES:**

1. BASE MAP SOURCE: SURVEY BY JOSEPH NICOLETTI ASSOCIATES PROFESSIONAL LAND SURVEYORS, P.C. (JULY 29, 2014).
2. PREVIOUS ATC ASSOCIATES, INC. (ATC) SAMPLING LOCATIONS WERE COMPLETED IN JULY 2005.
3. DATUM REFERS TO THE NATIONAL VERTICAL DATUM OF 1988 (NAVD88), WHICH IS APPROXIMATELY 1.1 FEET ABOVE MEAN SEA LEVEL DATUM AT SANDY HOOK, NEW JERSEY AS DEFINED BY THE UNITED STATES GEOLOGICAL SURVEY (USGS NGVD 1929).

SCALE IN FEET

**LANGAN**

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Langan Engineering, Environmental, Surveying and  
Landscape Architecture, D.P.C.  
Langan Engineering and Environmental Services, Inc.  
Langan International LLC  
Collectively known as Langan

Project

**111 LEROY STREET**

**BLOCK No. 602, LOT Nos. 55, 83, and 85**

**NEW YORK NEW YORK**

Figure Title

**SAMPLE LOCATION PLAN**

Project No. 170370001	Figure No.
Date 10/15/2015	<b>3</b>
Scale 1" = 30'	
Drawn By PTF	
Submission Date	Sheet 3 of 6

## APPENDIX B



## Soil Profile Log

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB01	0 to 10	I		Crushed Asphalt		Parking lot surface
SB01	10 to 60	II	10 YR 4/4	Gritty medium sand	Crushed brick	Fill
SB01	60 to 65	III		Crushed brick and shale	Crushed brick	Fill
SB01	65 to 75	IV	10 YR 4.5/4	Medium sand	NCM	Fill
SB01	75 to 83	V	10 YR 4/3	Gritty coarse sand with ash	Crushed brick	Fill
SB01	83 to 123	VI	10 YR 2/1	Sandy matrix with coal	Crushed brick	Fill
SB01	123 to 131	VII	10 YR 7/2	Medium Sand	NCM	Fill
SB01	131 to 138	VIII	10 YR 2/2	Sandy matrix	NCM	Fill
SB01	138 to 143	IX		Crushed brick	Crushed brick	Fill
SB01	143 to 175	X	10 YR 2/2	Gritty medium sand	NCM	Fill

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB01	175 to 180	XI	10 YR 4.5/5	Medium sand	NCM	Fill
SB01	180 to 190	XII		Coal cinder	NCM	Fill
SB01	190 to 196	XIII		Crushed stone		
SB01	196 to 236	XIV	10 YR 2/1	Sandy matrix with coal ash	Crushed brick	Fill
SB01	236 to 266	XV	10 YR 2/1	Ash and coal cinder	NCM	Fill
SB01	266 to 276	XVI		10 YR 2/1	NCM	Organic, water logged/saturated soil
SB01	276 to 396	XVII	10 YR 3/1	Clay with mica	NCM	Fill
SB01	396 to 416	XVIII		Sandy matrix with coal cinder	Crushed brick	Fill
SB01	416 to 438	XIX	10 YR 3/3	Medium sand	NCM	
SB01	438 to 456	XX		Fine sand with mica	NCM	
SB01	456	XXI	5 YR 4/3	Fine sand with mica	NCM	Glacial till

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB02	0 to 5	I		Crushed Asphalt		Parking lot surface
SB02	5 to 12	II	10 YR 2/1	Coal and ash	NCM	Fill
SB02	12 to 22	III	7.5 YR 4/3		NCM	Fill
SB02	22 to 25	IV		Crushed quartzite		
SB02	25 to 50	V		Brick	Brick	
SB02	50 to 74	VI	10 YR 6/2 with pockets of 10 YR3/3	Fine sand	NCM	Fill
SB02	74 to 84	VII	10 YR 3/2	Medium sand	Brick	Fill
SB02	74 to 138	VIII	7.5 YR 3/4	Fine sand	NCM	1% gravel
SB02	138 to 146	IX	7.5 YR 4/3	Coarse sand	NCM	
SB02	146 to 178	X	7.5 YR 3/4	Fine sand	NCM	1% gravel
SB02	178 to 192	XI	7.5 YR 3/4	Coarse sand	NCM	Stoney

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB02	192 o 206	XII		Crushed sandstone		
SB02	206 to 214	XIII	2.5 YR 2.5/2	Fine sand with mica	NCM	
SB02	214 to 228	XIV		Degrading schist and sandstone		
SB02	228 to 236	XV	7.5 YR 3/3	Coarse sand		1% Gravel
SB02	236 to 259	XVI	10 YR 3/2	Silty sand	Crushed brick	Fill
SB02	259 to 265	XVII	10 YR 3/3	Medium sand	NCM	
SB02	265 to 271	XVIII		Stone		
SB02	271 to 347	XIX	7.5 YR 4/3	Coarse sand with degrading schist	NCM	
SB02	347 to 389	XX	5 YR 4/3	Fine sand with mica	NCM	Glacial till
SB03	0 to 5	I		Crushed Asphalt		Parking lot surface

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB03	5 to 36	II		Stratified coal, coal ash, and cinders	NCM	Fill
SB03	36 to 46	III	7.5 YR 4/4	Fine to medium sand	NCM	Fill
SB03	46 to 48	IV		Coal	NCM	Fill
SB03	48 to 54	V		Coal cinder in sandy matrix	NCM	Fill
SB03	54 to 63	VI		Crushed brick	Crushed brick	Fill
SB03	63 to 71	VII	7.5 YR 4/3	Fine to medium loose sand	NCM	
SB03	71 to 79	VIII		Coal cinder in sandy matrix	NCM	Fill
SB03	79 to 90	IX	7.5 YR 4/4	Fine to medium loose sand	NCM	Fill
SB03	90 to 103	X		Loose medium sand	Concrete and red brick fragments	Fill
SB03	103 to 108	XI		Coal		Fill



SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB03	108 to 128	XII		Brick	Brick	Fill
SB03	128 to 138	XIII		Crushed brick and coal	Crushed brick	Fill
SB03	138 to 144	XIV		Crushed rose quartzite		
SB03	144 to 153	XV		Degraded schist		
SB03	153 to 161	XVI	7.5 YR 4/4	Loose medium sand	NCM	Fill
SB03	161 to 167	XVII		Crushed quartzite		
SB03	167 to 177	XVIII		Degraded schist		
SB03	177 to 181	XIX	7.5 YR 5/2	Loose medium sand	NCM	Fill
SB03	181 to 191	XX		Red sandstone		
SB03	191 to 211	XXI	7.5 YR 5/2	Loose medium sand	NCM	Fill
SB03	211 to 228	XXII	10 YR 3/3	Medium sand with coal	Crushed brick	Fill

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB03	228 to 240	XXIII	10 YR 3/4	Loose medium sand with crushed quartzite	NCM	
SB03	240 to 255	XXIV		Degrading schist		
SB03	255 to 301	XXV	10 YR 4/3	Loose coarse sands	NCM	
SB03	301 to 375	XXVI	5 YR 4/3	Fine sand with mica	NCM	Glacial till
SB04	0 to 5	I		Crushed Asphalt		Parking lot surface
SB04	5 to 25	II	10 YR 3/2 10 10 YR 2.5/1	Medium silty sand	Few fragments red brick	Fill
SB04	25 to 30	III		Crushed brick	Crushed brick	Fill
SB04	30 to 88	IV	10 YR 5/3	Sand with mica	Crushed brick	Fill
SB04	88 to 91	V		Red brick with degrading mortar	Red brick with degrading mortar	Fill
SB04	91 to 136	VI	7.5 YR 4/4	Loose medium to coarse sand with degrading schist	NCM	
SB04	136 to 145	VII	10 YR 5/3	Sand	NCM	

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB04	145 to 150	VIII		Brick	Brick	Fill
SB04	150 to 160	IX		Degrading Sandstone		
SB04	160 to 170	X	7.5 YR 4/4	Fine sand	NCM	
SB04	170 to 178	XI	7.5 YR 4/4	Loose medium to coarse sand	NCM	
SB04	178 to 236	XII	5 YR 4/3	Fine sand with mica	NCM	Glacial till
SB05	0 to 26	I		Crushed Asphalt		Parking lot surface
SB05	26 to 44	II	10 YR 3/2	Fine/Medium sand	NCM	Fill
SB05	44 to 88	III	10 YR 6/3	Fine/Medium sand matrix	Brick	Fill
SB05	88 to 94	IV	10 YR 4/4	Fine sand	NCM	Fill
SB05	94 to 100	V	10 YR 5/3	Coarse sand	NCM	Fill
SB05	100 to 172	VI	10 YR 4/4	Fine sand	NCM	Red sandstone, 2-5% gravel (1-5 cm)
SB05	172 to 180	VII	10 YR 4/3	Medium to coarse sand	NCM	
SB05	180 to 200	VIII	5 YR 4/3	Fine sand with mica	NCM	Redeposited till over fill?

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB05	200 to 262	IX	10 YR 3/3	Silty matrix with crushed brick and cinder	Crushed brick	Fill
SB05	262 to 312	X	10 YR 4/3	Loose, medium to coarse sand	NCM	
SB05	312 to 352	XI	10 YR 3/3	Silty matrix with crushed brick and cinder	Crushed brick	Fill
SB05	352 to 360	XII	10 YR 4/3	Loose, medium to coarse sand	NCM	
SB05	360 to 364	XIII	5 YR 4/3	Fine sand with mica	NCM	Redeposited till over fill?
SB05	364 to 392	XIV	10 YR 3/3	Silty matrix with crushed brick and cinder	Crushed brick	Fill
SB05	392 to 409	XV	5 YR 4/3	Fine sand with mica	NCM	Glacial till
SB06	0 to 7	I		Concrete		Floor of 111 Leroy Street building
SB06	7 to 11	II		Crushed coal/asphalt	NCM	
SB06	11 to 22	III	10 YR 3/6	Medium sand	NCM	Fill

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB06	22 to 32	IV	10 YR 3/1	Silty sand	NCM	Fill
SB06	32 to 38	V	10 YR 4/6	Fine sand with gravel	NCM	Fill
SB06	38 to 41	VI		Degrading mortar		Fill
SB06	41 to 51	VII	10 YR 7/3	Fine sand	Red brick fragments	Fill
SB06	51 to 56	VIII	10 YR 5/6	Fine sand with gravel	NCM	
SB06	56 to 65	IX		Crushed stone		
SB06	65 to 85	X		Red brick	Brick	Fill
SB06	85 to 88	XI		Degrading schist		
SB06	88 to 93	XII	10 YR 3/2	Medium sand	NCM	
SB06	93 to 99	XIII		Red brick	Brick	



SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB06	99 to 128	XIV	10 YR 3/2	Medium sand with gravel	NCM	
SB06	128 to 131	XV		Red brick	Brick	
SB06	131 to 137	XVI	10 YR 6/1	Fine sand		
SB06	137 to 140	XVII		Crushed red brick	Brick	
SB06	140 to 145	XVIII	10 YR 3/3	Medium sand with sandstone	NCM	Fill
SB06	145 to 165	XIX		Brick	Brick	Fill
SB06	165 to 189	XX	7.5 YR 4/3	Medium sand matrix	NCM	Mix red sandstone, grey sandstone
SB06	189 to 204	XXI		Brick	Brick	
SB06	204 to 214	XXII		Sandstone		
SB06	214 to 234	XXIII	7.5 YR 4/6	Fine/medium sand	NCM	

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB06	234 to 239	XXIV		Crushed stone		
SB06	239 to 269	XXV	10 YR 3/2	Medium sand with gravel	NCM	Fill
SB06	269 to 184	XXVI	10 YR 3/3	Medium sand with gravel	NCM	Fill
SB06	184 to 293	XXVII		Brick	Brick	Fill
SB06	293 to 325	XXVIII	10 YR 4/4	Loose coarse sands	NCM	
SB06	325 to 350	XXIX	5 YR 4/3	Fine sand with mica	NCM	Glacial till
SB07	0 to 5	I		Crushed Asphalt		Parking lot surface
SB07	5 to 18	II		Crushed brick and sandstone	Brick	
SB07	18 to 69	III	10 YR 3/4	Medium to coarse sand	NCM	1-2% gravel
SB07	69 to 80	IV		Crushed quartzite		

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB07	80 to 95	V	10 YR 3/4	Medium to coarse sand	NCM	1-2% gravel; few pieces of coal
SB07	95 to 100	VI	10 YR 3/4	Medium to coarse sand with crushed sandstone	NCM	1-2% gravel; few pieces of coal
SB07	100 to 106	VII		Crushed stone		
SB07	106 to 148	VIII	7.5 3/4	Medium sand grading to coarse sand near base		Hit water, end of boring
SB08	0 to 6	I		Crushed Asphalt		Parking surface
SB08	6 to 28	II	10 YR 4/3 with pockets of 2.5 YR 7/4	Medium sand	NCM	Fill
SB08	28 to 48	III	10 YR 2/1	Silty matrix with coal ash	NCM	Fill
SB08	48 to 60	IV	10 YR 4/1	Gravelly fine sand	NCM	Fill
SB08	60 to 70	V		Crushed quartzite		
SB08	70 to 77	VI	10 YR 2/1	Coal ash with mica	NCM	Fill

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB08	77 to 87	VII	10 YR 2/2	Fine sand with ash and gravel	NCM	Fill
SB08	87 to 95	VIII	10 YR 6/1	Fine sand	NCM	Fill
SB08	95 to 115	IX	10 YR 6/2	Fine stoney sand	Brick	Fill
SB08	115 to 131	X		Brick	Brick	Fill
SB08	131 to 141	XI	10 YR 3/2	Silty sand	NCM	Fill
SB08	141 to 151	XII		Brick	Brick	Refused at base. Moved 2 feet north and continued boring from this point deeper
SB08	151 to 163	XIII	10 YR 5/3	Medium sand	Brick fragments	Fill
SB08	163 to 193	XIV	10 YR 2/1	Loose coal cinder, ash, coal, gravel	NCM	Fill
SB08	193 to 233	XV	10 YR 2/1	Loose coal cinder, ash, coal, gravel	Brick fragments	Fill
SB08	233 to 293	XVI	10 YR 4/6	Loose medium to coarse sand	NCM	Degrading schist

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB08	293 to 358	XVII		Mixed fill - brick, coal, coal cinder, ash, sandstone	Brick	Fill
SB08	358 to 401	XVIII	7.5 YR 4/4	Loose medium to coarse sand	NCM	Quartz pebbles
SB09	0 to 10	I		Crushed Asphalt		
SB09	10 to 22	II	10 YR 2/2	Silty sand	NCM	Fill
SB09	22 to 34	III	10 YR 4/3 with pockets of 2.5 YR 7/4	Medium sand	NCM	Fill
SB09	34 to 42	IV	10 YR 2/1	Coal Ash	NCM	Fill
SB09	42 to 53	V	10 YR 2/2	Medium gravelly sand	NCM	Fill
SB09	53 to 64	VI		Crushed sandstone		
SB09	64 to 66	VII	10 YR 2/1	Coal Ash	NCM	Fill
SB09	66 to 75	VIII	10 YR 3/3	Medium sand	Few fragments red brick	Fill

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB09	75 to 80	IX		Crushed sandstone		
SB09	80 to 88	X	10 YR 2/2	Medium silty sand	NCM	Fill
SB09	88 to 90	XI		Crushed sandstone		
SB09	90 to 118	XII	10 YR 3/3	Medium sand	Few fragments red brick	Fill
SB09	118 to 126	XIII		Crushed quartzite		
SB09	126 to 138	XIV		Crushed brick	Brick	Fill
SB09	138 to 148	XV		Coal, ash, cinder	NCM	Fill
SB09	148 to 168	XVI		Brick	Brick	Fill
SB09	168 to 176	XVII	10 YR 2/2	Silty sand with cinder	NCM	Fill
SB09	176 to 196	XVIII	2.5 YR 4/3	Degrading Sandstone	NCM	2-5% flat pebbles

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB09	196 to 203	XIX		Brick	Brick	Fill
SB09	203 to 216	XX	10 YR 3/3	Loose, medium to coarse sand	NCM	
SB09	216 to 229	XXI	10 YR 4/3	Medium sand matrix	Crumbled red brick	Fill
SB09	229 to 235	XXII	10 YR 6/2	Coarse sand with large gravel	NCM	Fill
SB09	235 to 257	XXIII	10 YR 2/2	Silty sand, coal, ash	Crushed brick	Fill
SB09	257 to 277	XXIV		Crushed quartzite		
SB09	277 to 322	XXV	7.5 YR 4/3	Loose medium to coarse sand	NCM	Fill
SB09	322 to 332	XXVI	10 YR 2/2	Silt	NCM	Fill
SB09	332 to 347	XXVII		Degraded quartzite, brick	Brick	Fill
SB09	347 to 387	XXVIII	7.5 YR 4/3	Loose medium to coarse sand	NCM	



SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB09	387 to 412	XXIX	7.5 YR 4/3	Fine to medium sand	NCM	
SB10	0 to 14	I		Crushed asphalt and concrete		111 Leroy Street building floor surface
SB10	14 to 30	II	10 YR 4/3	Fine sand with sandstone pebbles	NCM	Fill
SB10	30 to 33	III		Brick	Brick	Fill
SB10	33 to 43	IV	10 YR 4/3	Medium sand	Concrete fragments	Fill
SB10	43 to 50	V		Brick	Brick	Fill
SB10	50 to 54	VI		Crushed sandstone		
SB10	54 to 72	VII		Brick	Brick	Fill
SB10	72 to 95	VIII		Crushed brick and sandstone	Brick	Fill
SB10	95 to 107	IX		Brick	Brick	Fill

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB10	107 to 112	X	10 YR 6/3	Sandy matrix with degrading mortar	Mortar	
SB10	112 to 132	XI		Mix red brick and mortar	Brick and mortar	
SB10	132 to 138	XII	10 YR 6/3	Sandy matrix with degrading mortar	Mortar	
SB10	138 to 142	XIII		Degrading schist		
SB10	142 to 151	XIV	10 YR 2/1	Petroleum impacted soil, not further characterized		Smells strongly of petroleum
SB10	151 to 158	XV		Brick	Brick	
SB10	158 to 165	XVI	10 YR 6/2 with 10 Y 5/2	Coarse sand with fine sand	NCM	
SB10	165 to 171	XVII	10 YR 2/1	Petroleum impacted soil, not further characterized		Smells strongly of petroleum
SB10	171 to 210	XVIII	10 YR 3/2	Loose coarse sands	NCM	
SB10	210 to 218	XIX	10 YR 4/3	Fine sand	NCM	

SB #	DEPTH (cm)	STRATUM	MUNSELL	SOIL TYPE	ARTIFACTS	COMMENTS
SB10	218 to 221	XX		Brick	Brick	Fill
SB10	221 to 225	XXI	10 YR 2/1	Petroleum impacted soil, not further characterized		Smells strongly of petroleum
SB10	225 to 234	XXII		Crushed sandstone		
SB10	234 to 242	XXIII	10 YR 2/1	Petroleum impacted soil, not further characterized		Smells strongly of petroleum
SB10	242 to 245	XXIV		Crushed brick and mortar	Brick	
SB10	245 to 255	XXV		Mixed medium sands	NCM	Fill
SB10	255 to 259	XXVI	5GY 4/1	Fine sand		
SB10	259 to 292	XXVII		Mixed crushed brick, sandstone	Brick	Fill
SB10	292 to 306	XXVIII	7.5 YR 4/3	Coarse sand with quartz gravel	NCM	
SB10	306 to 321	XXIX	7.5 YR	Coarse sand	NCM	

## APPENDIX C

PROJECT <u>111 Leroy</u>			PROJECT NO. <u>170370001</u>		
LOCATION <u>NY, NY</u>			ELEVATION AND DATUM <u>N/A</u>		
DRILLING AGENCY <u>AARCO</u>			DATE STARTED <u>10/12/15</u>	DATE FINISHED <u>10/12/15</u>	
DRILLING EQUIPMENT <u>Geoprobe 7822DT</u>			COMPLETION DEPTH <u>24</u>	ROCK DEPTH <u>—</u>	
SIZE AND TYPE OF BIT <u>Direct Push</u>			NO. SAMPLES	DIST. <u>2</u>	UNDIST. <u>—</u> CORE <u>—</u>
CASING <u>—</u>			WATER LEVEL	FIRST <u>19</u>	COMPL. <u>—</u> 24 HR. <u>—</u>
CASING HAMMER	WEIGHT <u>—</u>	DROP <u>—</u>	FOREMAN <u>Tom Seickel</u>		
SAMPLER <u>4' Macrocore</u>			INSPECTOR <u>R. Tisherman</u>		
SAMPLER HAMMER	WEIGHT <u>—</u>	DROP <u>—</u>			

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PERCENT. RESIST. BLOWING	
0-2 asphalt	0				0.0	
2-15 Brown m. SAND, trace brick, trace gravel (dry) [FILL]	1	R1	Macro	15/48	0.0	
	2				0.1	
0-8 Light brown medium SAND (moist) [FILL]	3				0.0	8:10 Start drilling 8:15 SB01 - 0-2 collected 8:45 SB01 - 13-20 collected 9:00 EOB 24', install well to 26'
8-10 rock	4				0.0	
	5				0.0	
	6	R2	Macro	10/48		
	7					
	8					
0-2 gray medium SAND, tr. gravel (moist) [FILL]	9				0.0	
	10				0.0	
2-5 Black medium SAND, tr. gravel (moist) [FILL]	11	R3	Macro	5/48		
	12					
	13					
0-20 Black medium SAND, some brick, some gravel (moist) [FILL]	14	R4	Macro	40/48	0.0	
	15				0.0	
	16				0.0	
	17				0.0	
	18				0.0	
	19				0.0	
	20				0.0	
Fill	21				0.0	
NATIVE	22				0.0	
20-23 Gray medium SAND, tr. gravel (moist) [FILL]	23				0.0	
	24				0.0	

# LANGAN

JOB NO. 170370001 LOG OF BORING NO. S301

DATE 10/12/15 SHEET 2 OF 2

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)	
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/6 IN.		
23-40 Brown medium SAND, tr. gravel, tr. mica (moist) [NATIVE]	15				0.0		
	15				2.0		
	16				6.0		
	17				0.0		
	17				6.0		
	18				6.0		
0-56 Brown medium SAND, tr. gravel, tr. mica (moist)	18	R5	Macro	98/98	0.0	GW @ 19'	
	18				0.0		
	19				0.0		
	19				0.0		
	20				5.6		
	20				8.5		
36-48 Brown fine SAND, tr. clay, tr. silt (wet) petroleum-like odor	21	R6	Macro	98/98	0.0		E.O.B. 24' - Install MW01 to 26'
	21				0.0		
	22				0.0		
	22				6.0		
	23				6.1		
	23				0.2		
0-15 Brown medium SAND, tr. gravel (wet)	24				0.0		
	24						
	24						
	24						
	24						
	24						
15-48 Brown medium SAND, tr. silt, tr. mica, tr. clay (wet)	24						
	24						
	24						
	24						
	24						
	24						

PROJECT 111 Leroy St.			PROJECT NO. 170370001		
LOCATION NY, NY			ELEVATION AND DATUM —		
DRILLING AGENCY AARCO			DATE STARTED 10/13/15	DATE FINISHED 10/13/15	
DRILLING EQUIPMENT Geoprobe 7822DT			COMPLETION DEPTH 24	ROCK DEPTH —	
SIZE AND TYPE OF BIT Direct Push			NO. SAMPLES	DIST. 3	UNDIST. — CORE —
CASING —			WATER LEVEL	FIRST 20	COMPL. — 24 HR. —
CASING HAMMER	WEIGHT —	DROP —	FOREMAN Tom Seickel		
SAMPLER 4" Macro core			INSPECTOR R. Tisherman		
SAMPLER HAMMER	WEIGHT —	DROP —			

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES			REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT. PENETR. RESIST. BLOWING	
0-2	concrete			0.0	<p>12:35 Start drilling 12:45 S802 - 0-2 12:55 S802 - 18-20 DUP01 - 10/13/15</p>
2-6	Black fine GRAVEL (dry) [FILL]			0.0	
6-7	Brown fine SAND (moist) [FILL]			0.0	
7-8	Coarse GRAVEL	R1	Macro	14/48	
8-14	Brown medium SAND, some black (moist) [FILL]			0.0	
0-10	Brown medium SAND, some black, trace light brown sand, trace gravel (moist) [FILL]			0.0	
10-12		R2	Macro	10/48	
12-13				0.0	
13-14				0.0	
0-28	Fine brown SAND, tr. mica (moist) [FILL]			0.0	
28-30		R3	Macro	28/48	
30-32				0.0	
32-34				0.0	
0-20	Brown medium SAND, tr. gravel, tr. mica (moist) [FILL]			0.0	
20-22	Coarse gray GRAVEL (dry) [FILL]	R4	Macro	36/48	

# LANGAN

JOB NO. 170370001 LOG OF BORING NO. SBO2  
 DATE 10/13/15 SHEET 2 OF 2

	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/6 IN.	
	22-23 Pinkish gray medln SAND (dry)						
	23-26 Reddish brown medln SAND, fr. coarse gravel (moist) [FILL]	15					
	36.	16					
	0-13 Brown medln SAND, fr. brick, fr. gravel (moist) [FILL]	17			0.0		
FILL					0.0		
NATIVE	13-18 Reddish brown medln SAND (moist) [NATIVE]	18	R5	Moist	43/48	0.0	
		19					
		20				0.0	
	0-20 Reddish brown m SAND (wet)	21				2.0	
	20-48 Reddish brown fine silty SAND (wet)	22				0.0	
		23	R6	Moist	43/48		
		24					
							EOR 24' - Install MWD to 27'



PROJECT <u>111 Leray St.</u>			PROJECT NO. <u>170370001</u>		
LOCATION <u>NY, NY</u>			ELEVATION AND DATUM <u>—</u>		
DRILLING AGENCY <u>AARCO</u>			DATE STARTED <u>10/13/15</u>	DATE FINISHED <u>10/13/15</u>	
DRILLING EQUIPMENT <u>Geoprobe 7822BT</u>			COMPLETION DEPTH <u>20</u>	ROCK DEPTH <u>—</u>	
SIZE AND TYPE OF BIT <u>Direct Push</u>			NO. SAMPLES	DIST. <u>2</u>	UNDIST. <u>—</u> CORE <u>—</u>
CASING <u>—</u>			WATER LEVEL	FIRST <u>17</u>	COMPL. <u>—</u> 24 HR. <u>—</u>
CASING HAMMER	WEIGHT <u>—</u>	DROP <u>—</u>	FOREMAN <u>Tom Seickel</u>		
SAMPLER <u>4' Macrocore</u>			INSPECTOR <u>R. Tisherman</u>		
SAMPLER HAMMER	WEIGHT <u>—</u>	DROP <u>—</u>			

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. (psi)	
0-2	concrete				PID	<p>8:05 start drilling 8:15 SB03 - 0-2 8:30 SB03 - 16-17</p>
2-11	Black medim SAND, trace gravel (moist) [FILL]				0.0 0.0	
11-15	CONCRETE					
13-22	Brown. n. silty SAND, trace gravel, trace brick [FILL] (moist)	R1	27/43 Macro			
22-25	BRICK				0.0	
25-27	Brown medim SAND, trace gravel, tr. brick				0.0	
0-11	Brow n. SAND, trace brick, tr. gravel (moist) [FILL]				0.0	
11-24	BRICK, trace brown medim SAND (dry) [FILL]	R2	24/43 Macro		0.0	
0-5	Brown medim SAND, trace brick trace gravel (moist) [FILL]				0.0	
5-7	Quartzite (moist) [FILL]				0.0	
7-9	Light brown medim SAND (moist) [FILL]	R3	31/43 Macro		0.0	
9-11	Reddish brown medim SAND (moist) [FILL]				0.0	
11-12	CONCRETE				0.0	
12-20	Gray n. SAND (moist) [FILL]				0.0	
20-31	Reddish brown c. GRAVEL (moist) [FILL]	R4	30/43 Macro		0.0	

# LANGAN

JOB NO. 17050001  
 DATE 10/13/15

LOG OF BORING NO. SB03

SHEET 2 OF 2

	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES			REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOC.	TYPE	RECOV. FT. PENETR. RESIST. BL/6 IN.	
	0-13 Brown medium SAND, some gravel, trace brick (mortar) (fill)	15			0.0	
	13-15 silt				0.0	
	15-17 quartzite	16				
FILL	17-30 Reddish brown medium SAND (mortar) (NATIVE)	17			6.0	FW @ 17'
NATIVE	0-12 Brown medium SAND, trace gravel, trace wood (mortar) (fill)	18	RS	Macro	46/48	
	12-40 Reddish brown fine silty SAND (wet) (NATIVE)	19			0.0	
		20				END 20'

# LANGAN

LOG OF BORING SB4 SHEET 1 OF 2

PROJECT <u>111 Leroy St.</u>			PROJECT NO. <u>170370001</u>		
LOCATION <u>NY, NY</u>			ELEVATION AND DATUM <u>      </u>		
DRILLING AGENCY <u>AARCO</u>			DATE STARTED <u>10/12/15</u>		DATE FINISHED <u>10/12/15</u>
DRILLING EQUIPMENT <u>Geoprobe 7822DT</u>			COMPLETION DEPTH <u>24</u>		ROCK DEPTH <u>      </u>
SIZE AND TYPE OF BIT <u>Direct Push</u>			NO. SAMPLES	DIST. <u>2</u>	UNDIST. <u>-</u>
CASING <u>      </u>			WATER LEVEL	FIRST <u>18</u>	COMPL. <u>-</u>
CASING HAMMER	WEIGHT <u>-</u>	DROP <u>-</u>	FOREMAN <u>Tom Seickel</u>		
SAMPLER <u>4' Macrocore</u>			LOGGED BY <u>R. Tisherman</u>		
SAMPLER HAMMER	WEIGHT <u>-</u>	DROP <u>-</u>			

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BLANK	
0-2	Concrete					<p>13:10 Start drilling 13:15 SB04-0-2 13:30 SB04-16-18</p>
2-10	Brown m SAND, trace gravel and to. BRICK (moist) [FILL]				0.0	
10-12	BRICK				0.0	
		R1	Macro	12/48	0.0	
0-4	Light brown medium SAND, trace BRICK (moist) [FILL]				0.0	
4-10	BRICK				0.0	
		R2	Macro	10/48	0.0	
0-13	Light brown medium SAND, trace brick (moist) [FILL]				0.0	
		R3	Macro	13/48	0.0	
0-4	Light brown SAND, some coarse gravel [FILL] (moist)				0.0	
4-5	BRICK				0.0	
		R4	Macro	30/48	0.0	

JOB NO. 170370001 LOG OF BORING NO. SB4

DATE 10/12/15 SHEET 2 OF 2

	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/6 IN.	
	5-30 Reddish Brown SAND, some coarse SAND (moist) [FILL]	15				0.0 0.0	
	0-24 Brown med. SAND, trace gravel, tr. brick (moist) [FILL]	16 17				0.0 0.0	
FILL	24-48 Reddish Brown fine silty SAND, tr. mica (wet) [NATIVE]	18 19	RS	Macro	48/48		
NATIVE	0-48 Reddish Brown fine silty SAND (wet)	20 21 22 23 24	R6	Macro	48/48	0.0 0.0 0.0	
							EOB 24'

PROJECT 111 Leroy St.			PROJECT NO. 170370001		
LOCATION NY, NY			ELEVATION AND DATUM		
DRILLING AGENCY AARCO			DATE STARTED 10/12/15		DATE FINISHED 10/12/15
DRILLING EQUIPMENT Geoprobe 7822DT			COMPLETION DEPTH 24		ROCK DEPTH —
SIZE AND TYPE OF BIT Direct Push			NO. SAMPLES	DIST. 2	UNDIST. —
CASING			WATER LEVEL	FIRST 23	COMPL. —
CASING HAMMER	WEIGHT	DROP	FOREMAN Tom Seickel		
SAMPLER 4' Macrocore			LOGGED BY Rebecca Tisherman		
SAMPLER HAMMER	WEIGHT	DROP			

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENET. RESIST. BORING	
0-2	Asphalt					<p>10:25 Start Drilling 10:30 SB05-0-2 11:00 SB05-21-23</p>
2-10	Black medium SAND, some gravel (dry) [FILL]		Macro	24/48	0.0	
10-24	Brown medium SAND, trace gravel, trace Brick (dry) [FILL]	R1	Macro	24/48	0.0	
0-10	light Brown medium SAND, some Brick (dry) [FILL]		Macro	10/48	0.0	
0-8	light Brown medium SAND, some brick (dry) [FILL]	R2	Macro	10/48	0.0	
8-25	Brown fine SAND, trace gravel (dry) [FILL]	R3	Macro	25/48	0.0	
0-10	Brown medium SAND, trace gravel, trace brick (moist) [FILL]	R4	Macro	33/48	0.0	

JOB NO. 170370001  
 DATE 10/12/15

LOG OF BORING NO. ~~170370001~~ <sup>5805</sup>

SHEET 2 OF 2

	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/6 IN.	
NATIVE	10-23 Pinkish Brown med. SAND, some coarse gravel (dry) [FILL]	15				0.0	
	23-33 Reddish Brown fine silty SAND, trace mica (moist) [FILL]	16				0.0	
	0-36 Reddish brown medium SAND, trace gravel, trace brick (moist) [FILL]	17				0.0	
		18				0.0	
	36-48 Reddish brown medium SAND (moist) [NATIVE]	19				0.0	
		20				0.0	
	0-36 Reddish brown medium SAND, trace brick, trace gypsum, trace gravel, (moist) [FILL]	21				0.0	
		22				0.0	
	36-48 Reddish brown fine SAND, trace silt (wet) [NATIVE]	23				0.0	GW @ 23'
		24				0.0	EOB 24'

# LANGAN

LOG OF BORING

SB06

SHEET 1 OF 2

PROJECT 111 Leroy St.			PROJECT NO. 170370001		
LOCATION New York, NY			ELEVATION AND DATUM		
DRILLING AGENCY AARCO			DATE STARTED 10/13/15		DATE FINISHED 10/13/15
DRILLING EQUIPMENT Geoprobe			COMPLETION DEPTH 20		ROCK DEPTH -
SIZE AND TYPE OF BIT Direct Push			NO. SAMPLES	DIST. 2	UNDIST. -
CASING -			WATER LEVEL	FIRST 19	COMPL. -
CASING HAMMER	WEIGHT -	DROP -	FOREMAN Tom Seickel		
SAMPLER 4' Macrocore			LOGGED BY B. Tisherman		
SAMPLER HAMMER	WEIGHT -	DROP -			

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BLUG IN.	
0-2	Concrete				0.0	<p>10:42 Start Drilling 10:55 SB06-0-2 11:10 SB06-17-19</p>
2-6	Brown medium SAND, trace gravel, trace brick (moist) [FILL]				0.0	
6-10	Black gravel [FILL]				0.0	
10-19	Brown medium SAND, some brick, trace gravel (moist) [FILL]	R1	Macro	19/48		
0-4	Concrete				0.0	
4-24	Brown medium SAND, some brick, trace gravel (moist) [FILL]				0.0	
4-24	Brown medium SAND, some brick, trace gravel (moist) [FILL]	R2	Macro	24/48	0.0	
0-2	Concrete				0.0	
2-7	Brown medium SAND, trace brick, trace gravel (moist) [FILL]				0.0	
7-14	BRICK	R3	Macro	16/48		
14-16	Brown medium SAND, some gravel, trace brick (moist) [FILL]				0.0	
0-4	Brown medium SAND, some brick, trace gravel (moist) [FILL]				0.0	
0-4	Brown medium SAND, some brick, trace gravel (moist) [FILL]	R4	Macro	28/48		

JOB NO. 170370001 LOG OF BORING NO. SBO6

DATE 10/13/15 SHEET 2 OF 2

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES			REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOVER. FT. PENETR. RESIST BL/6 IN.	
4-10 BRICK, trace gravel (moist) [FILL]	15				
10-12 CONCRETE	16				
12-24 Reddish Brown medium SAND (moist)	17			0.0	
24-26 CONCRETE	18			6.0	
26-28 Brown medium SAND, trace gravel (moist) [FILL]	19	25	Macro	48/48	
0-12 Brown medium SAND, trace BRICK, trace gravel (moist) [FILL]	20			0.0	EOB 20'
12-36 Reddish brown medium SAND (moist) (NATIVE)					
36-48 Reddish Brown fine silty SAND (wet) (NATIVE)					



PROJECT 111 Leroy St			PROJECT NO. 170370001		
LOCATION NY, NY			ELEVATION AND DATUM		
DRILLING AGENCY AARCO		DATE STARTED 10/13/15		DATE FINISHED 10/13/15	
DRILLING EQUIPMENT Geoprobe 7822DT		COMPLETION DEPTH 20		ROCK DEPTH	
SIZE AND TYPE OF BIT Direct Push		NO. SAMPLES	DIST. 2	UNDIST. -	CORE -
CASING		WATER LEVEL	FIRST 19	COMPL. -	24 HR. -
CASING HAMMER	WEIGHT	DROP		FOREMAN Tom Seckel	
SAMPLER 4" Macrocore			INSPECTOR R. Tisherman		
SAMPLER HAMMER	WEIGHT	DROP			

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST BUE in.	
0-6	Brown medium SAND, some brick (dry) [Fill]				0.0	<p>7:28 Start drilling 7:40 No recovery 4-8' 7:45 SB07-0-2 8:06 SB07-17-19</p>
1					0.0	
2		R1	Macro	6/48		
3						
4	NO RECOVERY					
5						
6		R2	Macro	0/48		
7						
8						
8-15	Brown med. SAND, trace gravel, trace silt, (moist) [Fill]				0.0	
9					0.0	
10		R3	Macro	15/48		
11						
12						
12-13	0-6 Brown m. SAND trace brick, trace gravel (moist) [Fill]				0.0	
13		R4	Macro	14/48	0.0	
14						

JOB NO. 170370001  
 DATE 10/13/18

LOG OF BORING NO. S37

SHEET 2 OF 2

	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/6 IN.	
	6-14 CONCRETE	15					
Fill NATIVE	0-4 Brown medium SAND, tr. gravel, tr. brick (nat)	16				0.0	
	[FILL]	17				0.0	
	4-6 COARSE GRAVEL (nat) [FILL]	18	RS	Moss	57/18	0.0	
	6-57 Reddish brown medium SAND (nat) [NATIVE] (wet @ 19')	19					FW @ 19'
		20					EOB 20'

PROJECT <u>111 Leary St.</u>			PROJECT NO. <u>170370001</u>		
LOCATION <u>NY, NY</u>			ELEVATION AND DATUM <u>-</u>		
DRILLING AGENCY <u>AARCO</u>			DATE STARTED <u>10/12/15</u>	DATE FINISHED <u>10/12/15</u>	
DRILLING EQUIPMENT <u>Geoprobe 7822DT</u>			COMPLETION DEPTH <u>20</u>	ROCK DEPTH <u>-</u>	
SIZE AND TYPE OF BIT <u>Direct Push</u>			NO. SAMPLES	DIST. <u>2</u>	UNDIST. <u>-</u> CORE <u>-</u>
CASING <u>-</u>			WATER LEVEL	FIRST <u>18</u>	COMPL. <u>-</u> 24 HR. <u>-</u>
CASING HAMMER	WEIGHT <u>-</u>	DROP <u>-</u>	FOREMAN <u>Tom Seckel</u>		
SAMPLER <u>4' Macrocore</u>			INSPECTOR <u>R. Tisherman</u>		
SAMPLER HAMMER	WEIGHT <u>-</u>	DROP <u>-</u>			

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	REC. FT.	REMARKS	
0-3	CONCRETE			0.0		<p>12:20 start drilling 12:30 S308 - 0-2 collected 12:40 Refusal @ 15', move boring 5' North and start R3 12:47 R3 done 13:05 S308 - 16-18 collected</p>
3-26	Black medium SAND, some gravel (dry) [fill]			0.0		
26-30	Gray medium GRAVEL (dry) [fill]	R1	Macro	36/48	0.0	
30-33	CONCRETE			0.0		
33-36	Black medium SAND, some gravel (dry) [fill]			0.0		
0-8	Brown medium silty SAND trace gravel; trace brick (dry) [fill]			0.0		
8-15	Light brown medium SAND, trace gravel (med) [fill]	R2	Macro	30/48	0.0	
15-20	BRICK			0.0		
0-18	Brown medium SAND, some black medium gravel, trace brick (med) [fill]			0.0		
				0.0		
				0.0		
				0.0		
				0.0		
				0.0		
0-8	Brown medium SAND, trace gravel, trace brick (med) [fill]	R3	Macro	32/48	0.0	
8-10	Gray medium GRAVEL [fill]			0.0		

JOB NO. 17050001 LOG OF BORING NO. S1308

DATE 10/12/15 SHEET 2 OF 2

	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/6 IN.	
	10-57 Reddish brown mediu SAND (moist) [ <del>NATIVE</del> ] (LT) [FILL]	15					
	0-24 Brown mediu silty SAND, trace gravel, trace brick (moist) [FILL]	17				0.0	
FILL NATIVE	24-48 Reddish brown mediu SAND (moist) [NATIVE]	18	R5	Macro	48/48	0.0	
		19				5.0	
		20				0.0	

PROJECT 111 Leroy St.			PROJECT NO. 170370001			
LOCATION NY, NY			ELEVATION AND DATUM			
DRILLING AGENCY AARCO			DATE STARTED 10/12/15		DATE FINISHED 10/12/15	
DRILLING EQUIPMENT Geoprobe 7822DT			COMPLETION DEPTH 20		ROCK DEPTH	
SIZE AND TYPE OF BIT Direct Push			NO. SAMPLES		DIST. 2 UNDIST. - CORE -	
CASING			WATER LEVEL		FIRST 19 COMPL. - 24 HR. -	
CASING HAMMER		WEIGHT	DROP		FOREMAN Tom Seckel	
SAMPLER 4" Macrocore				INSPECTOR R. Tisherman		
SAMPLER HAMMER		WEIGHT	DROP			

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BLOW/FT.	
0-5 CONCRETE						
5-16 Brown med. SAND, trace brick, trace gravel (dry) [fill]	1				0.0	
16-18 CONCRETE	2				0.0	
18-20 Gray med. SAND, some gravel (dry) [fill]	3	R1	Macro	36/48	0.0	
20-22 CONCRETE	4				0.0	
22-26 Brown m. SAND, some gravel, tr. brick, tr. concrete (dry) [fill]	5				0.0	
0-15 Brown m. SAND, some silt, tr. gravel (moist) [fill]	6				0.0	
15-17 BRICK	7	R2	Macro	38/48	0.0	
17-21 ASPHALT	8				0.0	
21-23 BRICK	9				0.0	
0-8 Dark brown med. SAND, some silt, tr. brick, tr. gravel (moist) [fill]	10	R3	Macro	36/48	0.0	
8-12 Purple brown fine SAND, some brick, trace gravel (moist) [fill]	11				0.0	
12-30 Brown med. SAND, some brick, trace gravel (moist) [fill]	12				0.0	
0-10 Brown m. SAND, some brick, tr. gravel (moist) [fill]	13	R4	Macro	40/48	0.0	
10-15 Crushed QUARTZITE	14				0.0	

JOB NO. 170570001

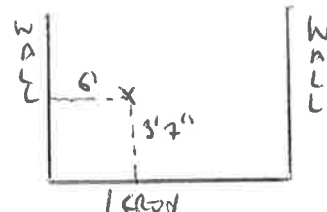
LOG OF BORING NO. S1809

DATE \_\_\_\_\_

SHEET 2 OF 2

	SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
			NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/6 IN.	
	13-40 Reddin bow medin SAND, some coarse SAND (nat)	15				0.0	
		16				0.0	
	0-12 Brown medin SAND, tr. brckly tr. gravel (nat) [FILL]	17				0.0	
	12-42 Reddin bow m SAND, Trce coarse sand (nat) [NATIVE] wt @ 19	18				0.0	
		19	RS	Macro	42/42	0.0	GW @ 19'
		20					End 20'

PROJECT <u>111 Leroy St.</u>			PROJECT NO. <u>17037001</u>			
LOCATION <u>NY, NY</u>			ELEVATION AND DATUM <u>        </u>			
DRILLING AGENCY <u>AARCO</u>			DATE STARTED <u>10/12/15</u>		DATE FINISHED <u>10/12/15</u>	
DRILLING EQUIPMENT <u>Geoprobe 7822DT</u>			COMPLETION DEPTH <u>20</u>		ROCK DEPTH <u>        </u>	
SIZE AND TYPE OF BIT <u>Dicat Push</u>			NO. SAMPLES	DIST. <u>3</u>	UNDIST. <u>-</u>	CORE <u>-</u>
CASING <u>        </u>			WATER LEVEL FIRST <u>20</u>		COMPL. <u>-</u> 24 HR. <u>        </u>	
CASING HAMMER	WEIGHT <u>        </u>		DROP <u>        </u>		FOREMAN <u>Tom Seickel</u>	
SAMPLER <u>4" Macro core</u>			INSPECTOR <u>R. Tisherna</u>			
SAMPLER HAMMER	WEIGHT <u>        </u>		DROP <u>        </u>			

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	REC. FT.	PENETR. RESIST. BEH'V.	
0-11	Brown medln SAND, some concrete, trace gravel (dry) [Fill]				0.0	 <p>11:20 start drilling 11:30 SB10-0-2 11:45 SB10-12-14 11:55 SB10-17-19</p>
11-15	BRICK	R1	Macro	13/48		
0-3	brn medln SAND, trace c. gravel (moist) [Fill]				0.0	
3-5	BRICK					
5-6	Grayish brn m. SAND (moist) [Fill]	R2	Macro	16/48		
6-16	BRICK					
0-11	Grayish brn m. SAND, trace gravel, some brick (moist) [Fill]				0.0	
11-13	BRICK	R3	Macro	15/48		
13-15	Gray m. SAND, tr. gypsum (moist) [Fill]					
0-8	BRICK, some medln brn SAND	R4	Macro	36/48	0.0	
8-10	Light brwn. SAND (moist) [Fill]				10.1	
					333	
					10.3	

# LANGAN

JOB NO. 17070001  
 DATE 10/12/15

LOG OF BORING NO. S310

SHEET 2 OF 2

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/6 IN.	
15	10-20 Black m. SAND, tr. brick, tr. gravel (mort) [FILL] staining HK odor				0.0	EOL 20'
16	20-28 Reddish brown m SAND (mort) [FILL]				0.0	
17	0-5 Brown m SAND trace brick, trace gravel (mort) [FILL]				12.2	
18	5-6 Brown f. SAND (mort) HK odor staining				0.0	
19	6-7 CONCRETE				0.0	
20	7-8 Brown f. SAND (mort) [FILL]				0.0	
	8-36 Brown m. SAND, some brick, trace gravel (mort) [FILL]					
	36-48 Reddish brown m SAND (wet) [NATIVE]					

FILL MARK

PS  
 Mason  
 10/18



## APPENDIX D

## Michael Audin

---

**From:** Amanda Sutphin (LPC) <ASutphin@lpc.nyc.gov>  
**Sent:** Thursday, October 01, 2015 10:49 AM  
**To:** Michael Audin  
**Subject:** RE: Archaeological Monitoring of Environmental Borings 111 Leroy St.  
**Attachments:** Picture (Device Independent Bitmap) 1.jpg; Picture (Device Independent Bitmap) 2.jpg; Picture (Device Independent Bitmap) 3.jpg; Picture (Device Independent Bitmap) 4.jpg

Good Morning:

Thank you for this submission. We concur with your recommendations. I do not believe that you need a Department of Buildings permit for this work but if you do, please let me know and I will issue a Notice to Proceed to DOB as specified in the Restrictive Declaration. In any event, please keep us apprised of your findings.

Best,  
Amanda



Amanda Sutphin  
Director of Archaeology  
1 Centre St., 9<sup>th</sup> Fl. | New York, NY 10007  
p: 212.669.7823 | f: 212.669.7818 | [asutphin@lpc.nyc.gov](mailto:asutphin@lpc.nyc.gov)



### Quick Links!

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[Designation Reports](#) | [Historic District Maps](#) | [Request LPC Records](#)  
**NEW!** [Permit Application Guide](#)  
**NEW!** [FasTrack Submission Guidelines](#)

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**From:** Michael Audin [<mailto:maudin@Langan.com>]  
**Sent:** Monday, September 28, 2015 8:30 PM  
**To:** Amanda Sutphin (LPC)  
**Subject:** Archaeological Monitoring of Environmental Borings 111 Leroy St.

Amanda,

As per our conversation today here is the proposed boring locations for 111 Leroy St. Please let me know if you need anything else. Thank you.

<< File: Letter to LPC 111 Leroy Street.pdf >> << File: Figure 3 - Proposed Sampling Plan.pdf >>

Michael Audin, RPA

**Principal Archaeologist**

Direct: 201.398.4899 x4218

Cell: 973.919.1965

**LANGAN**

Phone: 201.794.6900 Fax: 201.794.0366

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