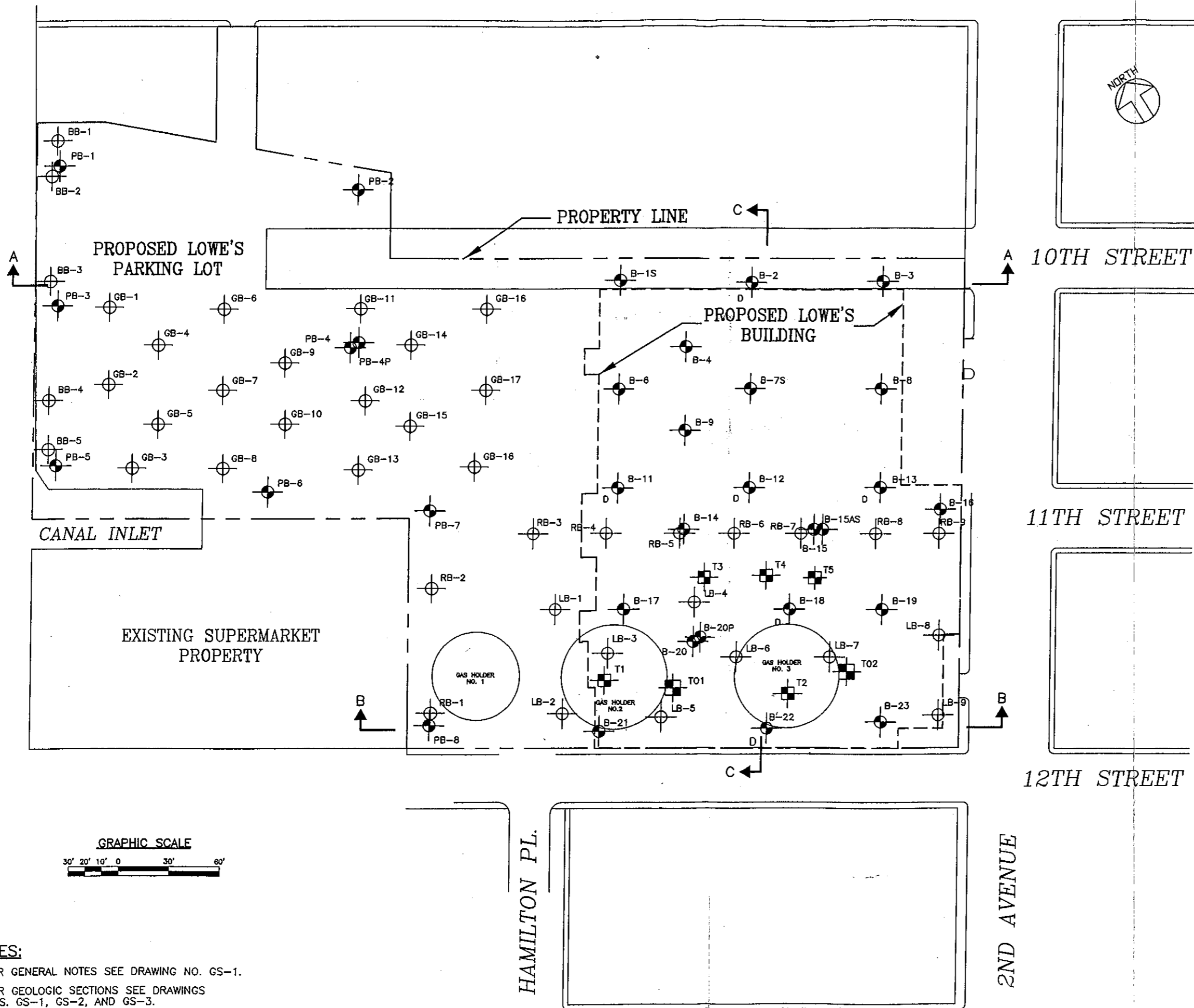


GOWANUS CANAL



# LEGEND:

## PROJECT MRCE BORINGS:

- B-1 - BUILDING BORING, 82 FEET DEEP
- B-2 - BUILDING BORING, 102 FEET DEEP
- PB-1 - PARKING LOT BORING, 82 FEET DEEP
- B-1S - UNDISTURBED SAMPLE TAKEN IN BORING
- B-20P - 30 FOOT DEEP OBSERVATION WELL INSTALLED IN BORING

## 2002 SUPPLEMENTAL BORINGS:

- T1 - BORING TO INVESTIGATE REMNANTS OF FORMER GAS HOLDERS AND OIL TANKS

## PREVIOUS BORINGS:

- LB-1 - 1998 BORING
- RB-1 - 1998 BORING
- BB-1 - 1998 BORING
- GB-1 - 1998 BORING

## NOTES:

- FOR GENERAL NOTES SEE DRAWING NO. GS-1.
- FOR GEOLOGIC SECTIONS SEE DRAWINGS NOS. GS-1, GS-2, AND GS-3.

1	12-12-02	J.C.	ADDED SUPPLEMENTAL BORINGS AND UNDERGROUND TANK LOCATIONS MODIFIED LOCATIONS OF PREVIOUS BORINGS	
REV.	DATE	BY	DESCRIPTION	
LOWE'S HOME CENTER				
BROOKLYN			NEW YORK	
AKRF ENGINEERING, P.C.				
NEW YORK			NEW YORK	
MUESER RUTLEDGE CONSULTING ENGINEERS				
225 WEST 34th STREET, NEW YORK, NY 10122				
SCALE	MADE BY J.C.	DATE	1-14-01	FILE NO.
GRAPHIC	CH'KD BY	DATE		9446
BORING LOCATION PLAN				DRAWING NO.  B-1

PROJECT <b>Gowanus Development</b>		PROJECT NO. <b>1503701</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>Approx. el. 7.4 [BBHDD]</b>	
DRILLING EQUIPMENT <b>Mobile B61 Truck Mounted Rig</b>		DATE STARTED <b>10/20/98</b>	DATE FINISHED <b>10/20/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" (0'-3") and 3 7/8" Tri-Cone Roller Bits</b>		NUMBER OF SAMPLES <b>16</b>	DIST. <b>16</b>
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH(ft) <b>18</b>	WATER LEVEL (ft.) <b>▽ 8</b>	UNDIST. <b>-----</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>		COMPLETION DEPTH <b>80 ft.</b>	
SAMPLER HAMMER <b>140</b>		CORE <b>-----</b>	
WEIGHT(lbs) <b>140</b>		24 HR. <b>-----</b>	
DROP(in) <b>30</b>		DRILLING FOREMAN <b>Ernest Thomas/Desmond Williams</b>	
		INSPECTING ENGINEER <b>Gary L. Gleason</b>	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE	BLOWS PER FT	
approx. el. 7.4	Surficial ASPHALT									* New York City BC Classification numbers in parenthesis Added water D = 0'
	Brown f.-c. SAND, trace silt and red brick (11-65)*		5	S1	SS	14	4 3 3		6	PID = 0 ppm
	Brown f.-c. SAND, trace f.-m. gravel/coal, silt, and red brick (11-65)		10	S2	SS	4	1 6 2		8	PID = 196 ppm, visible "Copper" brown petroleum like material Trace wood in wash
	Brown f.-c. SAND, trace silt, f.-m gravel, and wood (11-65)		15	S3	SS	13	8 5 3		8	PID = 290 ppm, visible petroleum like material Added mud D = 15'
	Inferred WOOD FIBERS and brown clayey SILT, trace f. sand (11-65)		20	S4	SS	0	6 2 2		4	PID = 25 ppm Sample S4 spoon tip material
	WOOD FIBERS, trace brown silt and f. sand (11-65)		25	S5	SS	9	21 29 38 41		67	PID = 52 ppm Very slow/hard drilling and wood fibers in wash D = 23' - 28'
	Green brown SILT, trace clay, wood fibers, and f.-m. sand (11-65)		30	S6	SS	16	8 10 11 12		21	PID = 9.6 ppm
	Brown/gray f.-m SAND, some silt and clay (7-65)		35	S7	SS	19	4 7 15 13		22	PID = 168 ppm, slightly visible petroleum like material
	Brown silty f. SAND (8-65)		40	S8	SS	14.5	10 13 10 10		23	PID = 20 ppm


PROJECT		PROJECT NO.							
Gowanus Development		1503701							
LOCATION		ELEVATION AND DATUM							
Brooklyn, NY		Approx. el. 7.4 [BBHDD]							
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	
	Gray/brown f.-m SAND (7-65)		45	S9	SS	13	9 12 15 21	27	PID = 410 ppm, petroleum like material very visible
	Gray/brown f.-m. SAND, trace silt (8-65)		50	S10	SS	15	12 15 18 20	33	PID = 188 ppm, visible petroleum like material
	Brown f.-m. SAND (7-65)		55	S11	SS	12	8 9 11 11	20	PID = 7.1 ppm, visible petroleum like material
	Brown f.-m. SAND, trace silt (7-65)		60	S12	SS	16	11 14 16 18	30	PID = 330 ppm, very visible petroleum like material
	Red/gray f.-c. GRAVEL and f.-c. SAND, trace silt (6-65)		65	S13	SS	4	77 62 22 18	84	Rig chatter D = 62' Slow/hard drilling D = 62' - 63' PID = 25 ppm Minor rig chatter D = 63' to 68'
	Inferred Gray f.-c. GRAVEL, some red/brown silty clay and f.-c. sand (6-65)		70	S14	SS	0	21 28 22 26	50	Petroleum like material floating on the surface of wash tub PID = 19.8 ppm Sample S14 spoon tip material
	Red brown f.-c. SAND, trace silt, f.-m. gravel, and clay (6-65)		75	S15	SS	12	33 27 19 19	46	PID = 3 ppm  Rig chatter D = 77'
	Red brown f.-c. SAND, some clay, trace silt and f.-m. gravel (6-65)		80	S16	SS	9.5	14 12 14 12	26	PID = 5.1 ppm
	Boring terminated D = 80'								Borehole grouted upon completion
			85						
			90						

PROJECT <b>Gowanus Development</b>		PROJECT NO. <b>1503701</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>Approx. el. 9.0 [BBHDD]</b>	
DRILLING EQUIPMENT <b>CME 75 Truck Mounted Rig</b>		DATE STARTED <b>10/19/98</b>	DATE FINISHED <b>10/20/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" (0'-3") and 3 7/8" Tri-Cone Roller Bits</b>		NUMBER OF SAMPLES <b>16</b>	DIST. <b>16</b>
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH(ft) <b>14</b>	WATER LEVEL (ft.) <b>10</b>	COMPLETION DEPTH <b>85 ft.</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>		DRILLING FOREMAN <b>Tommy Gregory/Chris Mitchell</b>	
SAMPLER HAMMER <b>140</b>	WEIGHT(lbs) <b>140</b>	DROP(in) <b>30</b>	INSPECTING ENGINEER <b>Gary L. Gleason</b>

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE	BLOWS PER FT	
approx. el. 9.0	Surficial ASPHALT									*New York City BC Classification numbers in parenthesis Added water D = 2'
	Brown f.-c. GRAVEL, trace f.-c. sand, silt, and red brick (11-65)*		5	S1	SS	4	4 4 5 5		9	PID = 0.1 ppm
	Brown/black f.-m. SAND, trace silt, coarse sand, and f. gravel/coal (11-65)		10	S2	SS	3.5	4 2 5 2		7	PID = 14 ppm
	Gray silty CLAY, trace roots and shell (11-65)		15	S3	SS	24	2 1 1 1		2	PID = 0.4 ppm
	Gray silty CLAY, some roots/wood (11-65)		20	S4	SS	24	WOH WOH 2 1		2	WOH: Weight of hammer Added mud D = 20' PID = 0.2 ppm
	Brown f.-m. SAND, trace silt and m. gravel (7-65)		25	S5	SS	13	9 14 18 18		32	PID = 17.2 ppm, visible petroleum like material sheen
	Brown f.-m. SAND (7-65)		30	S6	SS	24	19 29 38 30		67	PID = 250 ppm, visible petroleum like material
	Brown silty f. SAND (8-65)		35	S7	SS	17	10 16 13 14		29	PID = 40 ppm, visible petroleum like material
	Brown SILT, trace f. sand and clay (10-65)		40	S8	SS	15	20 17 17 18		34	PID = 32 ppm

PROJECT		PROJECT NO.							
Gowanus Development		1503701							
LOCATION		ELEVATION AND DATUM							
Brooklyn, NY		Approx. el. 9.0 [BBHDD]							
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	
			45	S9	SS	17	7 6 12 14	18	PID = 8 ppm, visible petroleum like material Minor rig chatter
	Gray/brown f.-m. SAND, trace silt (7-65)		50	S10	SS	20	12 13 13 15	26	PID = 20 ppm, slightly visible petroleum like material
	Gray/brown f.-m. SAND (7-65)		55	S11	SS	20	9 7 8 10	15	PID = 10.8 ppm
	Gray/brown f.-m. SAND (7-65)		60	S12	SS	18	9 12 10 11	22	PID = 5.9 ppm
	Brown f.-m. SAND, some silt, trace clay (7-65)		65	S13	SS	15	31 16 19 27	35	Rig chatter D = 63.5' - 65' "Copper" brown petroleum like material floating on the surface of wash tub PID = 6.2 ppm
	Red brown f.-c. sandy SILT, some clay, trace f. gravel (10-65)		70	S14	SS	14	24 29 27 21	56	Major rig chatter D = 65' - 70' PID = 8.6 ppm
	Red brown f.-m. SAND, trace silt, clay, and m. gravel (7-65)		75	S15	SS	14	23 22 21 28	43	Minor rig chatter D = 70' - 75' PID = 43 ppm
	Red brown f.-m. SAND, trace silt, clay, and f. gravel (7-65)		80						Rig chatter D = 75' - 83'
	Red brown f.-m. SAND, trace silt, clay, and c. sand (7-65)		85	S16	SS		43 30 39 38	69	PID = 6 ppm
	Boring terminated D = 85'								Borehole grouted upon completion
			90						

PROJECT <b>Gowanus Development</b>		PROJECT NO. <b>1503701</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>Approx el. 10.1 [BBHDD]</b>	
DRILLING EQUIPMENT <b>Mobile B61 Truck Mounted Rig</b>		DATE STARTED <b>10/19/98</b>	DATE FINISHED <b>10/19/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" Tri-Cone Roller Bits w/water</b>		NUMBER OF SAMPLES -----	DIST. -----
CASING DIAMETER (in) -----	CASING DEPTH(ft) -----	WATER LEVEL (ft.) <b>▽</b> -----	UNDIST. -----
SAMPLER -----		COMPLETION DEPTH <b>1 ft.</b>	
SAMPLER HAMMER -----		DRILLING FOREMAN <b>Ernest Thomas/Desmond Williams</b>	
WEIGHT(lbs) -----	DROP(in) -----	INSPECTING ENGINEER <b>Gary L. Gleason</b>	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST. BL/ft	N-VALUE BLOWS PER FT.		
approx el. 10.1	2.5" ASPHALT 6.5" Black f.-c. SAND and GRAVEL (11-65)* 3" COBBLE/BOULDER (6-65)									*New York City BC Classification numbers in parenthesis Added water D = 0.5' Hard/slow drilling D = 0.75' - 1' Drill equipment refusal D = 1'
	Boring terminated D = 1'		5							
			10							
			15							
			20							
			25							
			30							
			35							
			40							

PROJECT <b>Gowanus Development</b>			PROJECT NO. <b>1503701</b>		
LOCATION <b>Brooklyn, NY</b>			ELEVATION AND DATUM <b>Approx. el. 10.1 [BBHDD]</b>		
DRILLING EQUIPMENT <b>Mobile B61 Truck Mounted Rig</b>			DATE STARTED <b>10/19/98</b>	DATE FINISHED <b>10/19/98</b>	COMPLETION DEPTH <b>80 ft.</b>
SIZE AND TYPE OF BIT <b>4 7/8" (0'-3') and 3 7/8" Tri-Cone Roller Bits</b>			NUMBER OF SAMPLES <b>13</b>	DIST. <b>13</b>	UNDIST. -----
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>			CASING DEPTH(ft) <b>13</b>	WATER LEVEL (ft.) <b>8</b>	COMPL. <b>24 HR.</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>			DRILLING FOREMAN <b>Ernest Thomas/Desmond Williams</b>		
SAMPLER HAMMER <b>140</b>			INSPECTING ENGINEER <b>Gary L. Gleason</b>		
DROP(in) <b>30</b>					

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BLU/in	N-VALUE BLOWS PER FT		
approx. el. 10.1	Surficial ASPHALT									*New York City BC Classification numbers in parenthesis Rig chatter 0 = 0' - 3'
	Black f.-c. SAND, trace silt, f. gravel, and red brick (11-65)*		5	S1	SS	13	10 6 9 8	15		PID = 5 ppm, petroleum like material odor
	Inferred miscellaneous FILL (11-65)		10		SS	0	2 1 1 1	2		Added mud D = 10'
	Gray/brown organic SILT/PEAT, trace f. gravel (11-65)		15	S2	SS	10	2 2 2 1	4		PID = 0.1 ppm, petroleum like material odor
	Gray silty CLAY, trace shell and organics/root (11-65)		20	S3	SS	21	WOH WOH WOH WOH	WOH		WOH: Weight of hammer PID = 0 ppm
	Gray silty CLAY, trace shell and organics (11-65)		25	S4	SS	15	2 2 2 2	4		PID = 0 ppm
	Brown silty f. SAND, trace clay (8-65)		30	S5	SS	15	3 4 7 8	11		PID = 0.5 ppm, slight petroleum like material odor
	Gray f.-m. SAND (7-65)		35	S6	SS	20	13 18 18 15	36		PID = 95 ppm, visible petroleum like material w/odor
	Brown/gray f. sandy SILT, trace clay (10-65)		40	S7	SS	15	9 12 9 16	21		PID = 8 ppm, petroleum like material odor

PROJECT		PROJECT NO.							
Gowanus Development		1503701							
LOCATION		ELEVATION AND DATUM							
Brooklyn, NY		Approx. el. 10.1 [BBHDD]							
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/in	N-VALUE BLOWS PER FT	
	Brown silty f. SAND, trace clay (8-65)		45	S8	SS	14	8 11 13 14	24	PID = 5.2 ppm, petroleum like material odor
	Brown silty f.-m. SAND, trace clay (7-65)		50	S9	SS	17	12 13 18 24	31	PID = 6.5 ppm, petroleum like material odor
	Brown/gray f.-c. SAND, trace f. gravel (7-65)		55	S10	SS	13	9 12 14 15	26	PID = 0.6 ppm, slight petroleum like material odor
	Gray/brown f.-c. SAND (7-65)		60	S11	SS	14	13 18 18 20	36	PID = 1.2 ppm, petroleum like material odor
	Gray/brown SILT, some clay, trace f. sand (10-65)		65	S12	SS	15	10 9 18 20	27	PID = 0.2 ppm
	Red brown f.-c. SAND, trace silt and f. gravel (6-65)		70	S13	SS	7	21 24 80 100/3"	104	PID = 0.7 ppm, petroleum like material odor Spoon refusal D = 69.5' Rig chatter D = 69.5' and 73'
	Red brown f.-c. SAND, some silt and clay, trace f. gravel (7-65)		75	S14	SS	7	28 21 15 18	36	PID = 0.1 ppm Minor rig chatter D = 73' - 78'
	Red brown clayey SILT, trace f. sand, trace m. gravel (10-65)		80	S15	SS	18	18 19 13	32	PID = 0.3 ppm, petroleum like material odor
	Boring terminated D = 80'								Borehole grouted upon completion
			85						
			90						

PROJECT Gowanus Development			PROJECT NO. 1503701								
LOCATION Brooklyn, NY			ELEVATION AND DATUM Approx. el. 10.4 [BBHDD]								
DRILLING EQUIPMENT CME 75 Truck Mounted Rig			DATE STARTED 10/16/98		DATE FINISHED 10/19/98		COMPLETION DEPTH 73 ft.				
SIZE AND TYPE OF BIT 4 7/8" (0'-3') and 3 7/8" Tri-Cone Roller Bits			NUMBER OF SAMPLES		DIST. 14		UNDIST. -----		CORE -----		
CASING DIAMETER (in) 4 1/2" OD 4" ID		CASING DEPTH(ft) 10		WATER LEVEL (ft.) V -----		FIRST -----		COMPL V -----		24 HR. V 6.5	
SAMPLER 2" OD 1 3/4" ID Split Spoon (SS)			DRILLING FOREMAN Tommy Gregory/Chris Mitchell								
SAMPLER HAMMER 140		WEIGHT(lbs) 140		DROP(in) 30		INSPECTING ENGINEER Gary L. Gleason					

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR RESIST	BL/IN	N-VALUE BLOWS PER FT	
prox. el. 10.4	Surficial ASPHALT									*New York City BC Classification numbers in parenthesis Black drill water w/ petroleum like material odor D = 1.5' - 5'
	Black/brown f.-c. SAND, some silt, trace f. gravel/coal, wood/organics, and red brick (11-65)*		5	S1	SS	5	2 8 8		14	PID = 0.2 ppm, petroleum like material odor
	Black and white f. GRAVEL/COAL, trace m.-c. sand (11-65)		10	S2	SS	TRACE	1 WOH WOH		1	WOH: Weight of hammer PID = 3 ppm, petroleum like material odor Over drove spoon to a/d in Sample recovery
	Black and white f. GRAVEL/COAL, trace m.-c. sand and glass (11-65)		15	S3	SS	TRACE	1 2 1		3	PID = 4 ppm, petroleum like material odor Added mud D = 15'
	Gray silty CLAY, trace shell and f. gravel (11-65)		20	S4	SS	14	1 WOH WOH WOH		WOH	PID = 0.4 ppm, petroleum like material odor
	Gray silty CLAY, trace shell (11-65)		25	S5	SS	8	1 WOH WOH WOH		WOH	PID = 7.2 ppm, petroleum like material odor
	Gray SILT, trace clay, f.-m. sand, f.-m. gravel/coal, and shell (10-65)		30	S6	SS	22	9 12 12 9		24	PID = 8 ppm, slight petroleum like material odor
	Brown f.-m. SAND (7-65)		35	S7	SS	16	22 23 22 13		45	PID = 190 ppm, visible petroleum like material w/ odor
	Brown f.-m. SAND, trace silt and coal (7-65)		40	S8	SS	19	20 15 15 15 20		30	PID = 2.5 ppm, petroleum like material

PROJECT		PROJECT NO.								
Gowanus Development		1503701								
LOCATION		ELEVATION AND DATUM								
Brooklyn, NY		Approx. el. 10.4 [BBHDD]								
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/ft	N-VALUE BLOWS /FOOT	PIPET	
	Brown f. SAND, trace silt (8-65)		45	S9	SS	15	16 14 18 16	32	PID = 5 ppm, petroleum like material odor Added mud D = 46'	
	Brown f. SAND, trace silt (8-65)		50	S10	SS	12	18 20 26 28	46	PID = 1.6 ppm, petroleum like material odor	
	Gray f.-m. SAND (7-65)		55	S11	SS	24	17 14 15 21	29	PID = 1 ppm, petroleum like material odor	
	Brown f.-c. SAND (7-65)		60	S12	SS	13	29 32 25 21	57	PID = 9 ppm, petroleum like material odor	
	Gray/brown f.-c. SAND, trace f.-m. gravel (6-65)		65	S13	SS	13	28 41 59 63	100	PID = 0.6 ppm, slight petroleum like material odor Rig chatter D = 66.5' - 68.5'	
	Red brown SILT, some f. sand, trace clay (10-65)		70	S14	SS	10	30 37 47 50	84	Rig chatter D = 70' - 73' PID = 0.9 ppm, slight petroleum like material odor Very hard/slow drilling D = 72' - 73' Drilling equipment refusal D = 73'	
	Red brown f.-c. SAND, trace silt, f.-m. gravel, and clay (6-65)									
	Boring terminated D = 73'		75						Bore hole grouted upon completion	
			80							
			85							
			90							

PROJECT <b>Gowanus Development</b>		PROJECT NO. <b>1503701</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>Approx. el. 10.6 [BBHDD]</b>	
DRILLING EQUIPMENT <b>Mobile B61 Truck Mounted Rig</b>		DATE STARTED <b>10/15/98</b>	DATE FINISHED <b>10/16/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" (0'-1') and 3 7/8" Tri-Cone Roller Bits</b>		NUMBER OF SAMPLES <b>16</b>	UNDIST. -----
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH(ft) <b>13</b>	WATER LEVEL (ft.) <b>9</b>	COMPL. -----
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>		DRILLING FOREMAN <b>Ernest Thomas/Desmond Williams</b>	
SAMPLER HAMMER <b>140</b>	WEIGHT(lbs)	DROP(in) <b>30</b>	INSPECTING ENGINEER <b>Gary L. Gleason</b>

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/ft	N-VALUE BLOWS PER FT	
prox. el. 10.6	Sufficial ASPHALT								*New York City BC Classification numbers in parenthesis Added water D = 0.5' Rig chatter D = 1' Petroleum like material/odor and color in drill water D = 1' to 3' PID = 6 ppm, petroleum like material odor
	Black/gray f.-c. SAND, some f.-c. gravel/coal, trace silt and red brick (11-65)*		5	S1	SS	10	13 14 4 3	18	
	Inferred Black/gray f.-c. GRAVEL, trace f.-c. sand, silt, and metal (11-65)		10	S2	SS	0	2 1 WOH 1	1	Trace wood in wash WOH: Weight of hammer PID = 3 ppm, petroleum like material odor Sample S2 spoon tip material
	Gray silty CLAY, some woody roots, trace shell (11-65)		15	S3	SS	17	2 2 2 2	4	PID = 1 ppm, petroleum like material odor
	Gray silty CLAY, trace organics/root (11-65)		20	S4	SS	14	WOR WOR WOR WOR	WOR	WOR: Weight of rods PID = 0.2 ppm, petroleum like material odor
	Brown f. SAND, trace silt and wood (8-65)		25	S5	SS	18	5 6 12 13	20	PID = 6.5 ppm, petroleum like material odor
	Brown/gray f.-c. SAND (7-65)		30	S6	SS	18	13 14 10 6	24	PID = 4 ppm, visible petroleum like material and odor
	Gray/brown f. SAND (8-65)		35	S7	SS	13	9 18 21 20	39	PID = 13 ppm, petroleum like material odor
	Brown/gray f.-m. SAND (7-65)		40	S8	SS	17	11 14 8 13	22	PID = 0.4 ppm, petroleum like material odor

PROJECT		PROJECT NO.							
Gowanus Development		1503701							
LOCATION		ELEVATION AND DATUM							
Brooklyn, NY		Approx. el. 10.6 [BBHDD]							
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	
	Gray/brown f. SAND, trace silt (8-65)		45	S9	SS	18	13 13 14 15	27	PID = 3.9 ppm, petroleum like material oder
	Brown f.-m. SAND, trace silt (7-65)		50	S10	SS	18	10 12 15 18	27	PID = 0.5 ppm, slight petroleum like material oder
	Brown SILT, trace f. sand and clay (10-65)		55	S11	SS	18	11 14 18 20	32	PID = 0.3 ppm, slight petroleum like material oder
	Brown f.-m. SAND, trace silt (7-65)		60	S12	SS	14	17 21 100/3"	121/9"	PID = 0.4 ppm, petroleum like material oder Spoon refusal D = 59' Major rig chatter D = 60'
	Red brown f.-c. SAND, some f.-m. gravel, trace silt and clay (6-65)		65	S13	SS	14	35 51 62 24	113	Rig chatter D = 60' - 63' PID = 0.2 ppm, slight petroleum like material oder Rig chatter D = 63' - 68'
	Red brown f.-c. SAND, trace f.-m. gravel, silt, and clay (7-65)		70	S14	SS	14	41 40 66 100	106	Rig chatter D = 68' - 73' PID = 0.4 ppm, slight petroleum like material oder
	Red brown f.-c. SAND, trace silt, f.-m. gravel, and clay (6-65)		75	S15	SS	16	56 35 50 35	85	PID = 0.1 ppm Major rig chatter D = 76' - 77'
	Red brown f.-c. SAND, trace silt, f. gravel, and clay (6-65)		80	S16	SS	10	41 89 100/5"	89/11"	Spoon refusal D = 79.5' PID = 0 ppm, slight petroleum like materia oder
	Boring terminated D = 79.5'								Borehole grouted upon completion
			85						
			90						

PROJECT <b>Gowanus Development</b>			PROJECT NO. <b>1503701</b>		
LOCATION <b>Brooklyn, NY</b>			ELEVATION AND DATUM <b>Approx. el. 10.6 [BBHDD]</b>		
DRILLING EQUIPMENT <b>CME 75 Truck Mounted Rig</b>			DATE STARTED <b>10/15/98</b>	DATE FINISHED <b>10/16/98</b>	COMPLETION DEPTH <b>82 ft.</b>
SIZE AND TYPE OF BIT <b>4 7/8" (0'-3') and 3 7/8" Tri-Cone Roller Bits</b>			NUMBER OF SAMPLES <b>16</b>	DIST. <b>16</b>	UNDIST. <b>-----</b>
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>			CASING DEPTH(ft) <b>30</b>	WATER LEVEL (ft.) <b>-----</b>	FIRST <b>-----</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>			DRILLING FOREMAN <b>Robert Danielson/Tommy Gregorey/Chris Mitchell</b>		
SAMPLER HAMMER <b>140</b>			INSPECTING ENGINEER <b>Gary L. Gleason</b>		

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT.	
prox. el. 10.6	Surficial ASPHALT								*New York City BC Classification numbers in parenthesis Added water D = 3'
	Inferred miscellaneous FILL with coal (11-65)*		5	S1	SS	0	3 1 1	2	Sample S1 spoon tip material
									WOH: Weight of hammer
	Black/gray f.-m. GRAVEL/COAL, trace f.-c. sand and wood (11-65)		10	S2	SS	2	1 WOH WOH	1	PID = 40 ppm, petroleum light material odor
			15	S3	SS	24	1 WOH 1	1	PID = 0.1 ppm, petroleum like material odor
	Gray silty CLAY, some wood/root, trace shell (11-65)								
	Gray silty CLAY, trace root (11-65)		20	S4	SS	22	1 1 1	2	PID = 0 ppm
			25	S5	SS	20	16 20 19 18	39	PID = 0.2 ppm Added mud D = 27'
	Brown/gray f.-m. SAND, trace silt (7-65)								
	Gray/brown clayey SILT, trace f.-m. sand (10-65)		30	S6	SS	12	6 9 9 13	17	PID = 0.2 ppm
			35	S7	SS	12	20 22 18 19	40	PID = 0.1 ppm, slight petroleum like material odor
	Gray f.-m. SAND (7-65)								
	Gray f.-m. SAND (7-65)		40	S8	SS	14	11 13 12 12	25	PID = 0.5 ppm, petroleum like material odor

ING 1503701.GPJ LANGANFL.GDT 24/1/98

PROJECT		PROJECT NO.							
Gowanus Development		1503701							
LOCATION		ELEVATION AND DATUM							
Brooklyn, NY		Approx. el. 10.6 [BBHDD]							
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	
	Gray/brown f.-m. SAND, trace silt (7-65)		45	S9	SS	14	S13 12 8 7	20	PID = 0.2 ppm, slight petroleum like material odor
	Brown f. SAND (8-65)		50	S10	SS	15	12 15 25 27	40	PID = 0.4 ppm, petroleum like material odor
	Brown f.-m. SAND, trace silt (8-65)		55	S11	SS	18	18 30 34 41	64	PID = 0.2 ppm
	Brown SILT, trace f. sand and clay (10-65)		60	S12	SS	15	25 34 31 44	65	PID = 0.8 ppm, petroleum like material odor
									Rig chatter D = 63.5'
	Red brown c.-f. SAND, some f.-c. gravel, trace silt and clay (6-65)		65	S13	SS	12	82 64 50 54	114	PID = 0.6 ppm Rig chatter D = 65' - 70'
	Red brown silty f.-m. SAND, trace f.-m. gravel and clay (6-65)		70	S14	SS	8	34 50 100/5"	50/11	PID = 0 ppm Spoon refusal D = 71.5' Rig chatter and slow drilling D = 70' - 75'
	Red brown f.-c. SAND and GRAVEL, trace silt and clay (6-65)		75	S15	SS	3	100/3"	R*	PID = 0.7 ppm Major rig chatter Slow drilling
	Red brown fine GRAVEL and f.-c. SAND, some silt, trace clay (6-65)		80	S16	SS	7	38 72 100	172	PID = 0.6 ppm, slight petroleum like material odor
	Boring terminated D = 82'								Borehole grouted upon completion
			85						
			90						

PROJECT <b>Gowanus Development</b>		PROJECT NO. <b>1503701</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>Approx. el. 10.6 [BBHDD]</b>	
DRILLING EQUIPMENT <b>Mobile B61 Truck Mounted Rig</b>		DATE STARTED <b>10/15/98</b>	DATE FINISHED <b>10/15/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" (0'-3') and 3 7/8" Tri-Cone Roller Bits</b>		NUMBER OF SAMPLES <b>17</b>	DIST. <b>17</b>
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH(ft) <b>13</b>	WATER LEVEL (ft.) <b>8</b>	UNDIST. <b>-----</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon</b>		COMPLETION DEPTH <b>80 ft.</b>	
SAMPLER HAMMER <b>140</b>		DRILLING FOREMAN <b>Ernest Thomas/Desmond Williams</b>	
WEIGHT(lbs) <b>140</b>		INSPECTING ENGINEER <b>Gary L. Gleason</b>	
DROP(in) <b>30</b>		CORE <b>24 HR.</b>	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/ft	N-VALUE BLOWS FEET		
prox. el. 10.6	Surficial ASPHALT									*New York City BC Classification numbers in parenthesis Added water D = 0'
	Brown/black f.-c. SAND, trace silt, m. gravel/coal, and red brick (11-65)*		5	S1	SS	5	3	6		PID = 0.1 ppm
	Gray/black f.-c. SAND, trace silt, f. gravel/coal, and glass (11-65)		10	S2	SS	5	2	5		PID = 0 ppm
	Brown/black PEAT (11-65)		15	S3	SS	0	4	2		PID = 0.9 ppm, organic odor Sample S3 from second recovery attempt
	Gray/brown/black f.-m. sandy PEAT, trace silt (11-65)		20	S4	SS	24	4	7		WOH: Weight of hammer PID = 0 ppm PID = 0 ppm
	Gray/brown f. SAND, trace silt (8-65)									Sample S5 6" Lense of Gray/brown SILT, trace clay and f. sand in top of sample
	Brown f.-m. SAND, trace silt (7-65)		25	S6	SS	18	12 16 18 17	34		PID = 0 ppm PID = 0 ppm
	Brown f.-m. SAND (7-65)		30	S7	SS	15	9 10 10 5	20		
	Gray f.-m. SAND, some clay, trace silt (7-65)		35	S8	SS	19	3 3 8 14	11		
	Brown/gray f.-m. SAND (7-65)		40	S9	SS	16	8 14 18 18	32		

PROJECT		Gowanus Development		PROJECT NO.		1503701				
LOCATION		Brooklyn, NY		ELEVATION AND DATUM		Approx. el. 10.6 [BBHDD]				
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA				REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)		
	Gray f.-m. SAND (7-65)		45	S10	SS	16	12 14 19 16	33	Sample S11 12' Lense of Gray/brown silty CLAY, trace f. sand in bottom of sample	
	Gray/brown f.-m. SAND, trace silt (7-65)		50	S11	SS	24	10 9 7 8	16		
	Brown/gray f.-m. SAND, trace silt (7-65)		55	S12	SS	16	17 21 27 30	48		
	Brown/gray f.-c. SAND, trace f.-m. gravel and silt (6-65)		60	S13	SS	15	27 40 31 33	71		
	Red brown silty f.-c. SAND, trace f.-m. gravel (6-65)		65	S14	SS	8	19 29 38 30	67	Rig chatter	
	Red brown f.-c. SAND, trace f.-m. gravel, silt, and clay (6-65)		70	S15	SS	8	50 95 28 37	123		
	Red brown f.-c. SAND, trace silt, clay, and f.-c. gravel (6-65)		75	S16	SS	12	37 48 33 40	81		Rig chatter
	Red brown f.-c. SAND, trace f.-c. gravel, silt, and clay (6-65)		80	S17	SS	9	21 37 62 48	99		
	Boring terminated D = 80'									
			85							
			90							

PROJECT <b>Gowanus Development</b>		PROJECT NO. <b>1503701</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>Approx. el. 10.9 [BBHDD]</b>	
DRILLING EQUIPMENT <b>CME 75 Truck Mounted Rig</b>		DATE STARTED <b>10/14/98</b>	DATE FINISHED <b>10/15/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" (0'-4") and 3 7/8" Tri-Cone Roller Bits</b>		NUMBER OF SAMPLES <b>19</b>	DIST. <b>19</b>
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH (ft) <b>8</b>	WATER LEVEL (ft.) <b>8</b>	UNDIST. <b>8</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon</b>		COMPLETION DEPTH <b>82 ft.</b>	
SAMPLER HAMMER <b>140</b>		DRILLING FOREMAN <b>Greg Marney/Robert Danielson/Tommy Gregorey</b>	
DROP (in) <b>30</b>		INSPECTING ENGINEER <b>Gary L. Gleason</b>	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/IN	N-VALUE BLOWS PER FT.	
prox. el. 10.9	2" ASPHALT								
	Black f.-c. SAND, some f.-m. gravel/coal and red brick, trace silt (11-65)*			S1	SS	6	25 28 39	65	*New York City BC Classification numbers in parenthesis PID = 21 ppm, petroleum like material odor
	Black f.-c. SAND, trace f.-m. gravel/coal, red brick, silt, and wood (11-65)			S2	SS	7	80 85 42 47	127	PID = 4.5 ppm, petroleum like material odor Added water/mud D = 4'
	Black/brown f.-m. GRAVEL/COAL, some f.-c. sand, trace silt and glass (11-65)		5	S3	SS	7	11 2 3	13	PID = 4.5 ppm, petroleum like material odor
	Black/brown f.-c. silty SAND, trace f. gravel/coal (11-65)			S4	SS	3.5	3 3 3	5	PID = 1.5 ppm, petroleum like material odor
	Black/gray f.-c. SAND, some silt and wood, trace f. gravel/coal (11-65)		10	S5	SS	3	3 3 3	6	PID = 0 ppm, petroleum like material odor
			15						
	WOOD, some black/gray f.-c. sand and f. gravel/coal, trace silt and glass (11-65)			S6	SS	2	6 3 3 2	6	PID = 2 ppm, petroleum like material odor
			20						
	Gray/brown f. sandy SILT, trace roots, shell, and clay (11-65)			S7	SS	18	2 3 3 6	9	PID = 0 ppm
			25						
	Brown f.-m. SAND (7-65)			S8	SS	22	20 19 17 17	36	PID = 0 ppm
			30						
	Brown f.-m. SAND (7-65)			S9	SS	11	10 5 7 8	12	Sample S9 6" Lense brown clayey SILT, trace f. sand (10-65) in bottom of sample PID = 0.1 ppm
			35						
	Gray f.-m. SAND, trace silt and clay (7-65)			S10	SS	20	8 11 13 13	24	PID = 0.1 ppm
			40						
	Brown/gray f.-m. SAND (7-65)			S11	SS	16	8 8 7 6	15	PID = 0.3 ppm

DRILLING 1502701.GPJ LANGANEL.GDT 24/1198

PROJECT			PROJECT NO.						
Gowanus Development			1503701						
LOCATION			ELEVATION AND DATUM						
Brooklyn, NY			Approx. el. 10.9 [BBHDD]						
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BLU/in	N-VALUE BLOWS PER FT	
	Brown/gray silty f. SAND sand, trace clay (8-65)		45	S12	SS	19	67 78 88	15	PID = 0.2 ppm PID = 0.3 ppm
	Brown/gray f.-m. SAND, trace silt (7-65)								
	Brown/gray clayey SILT, trace f.-m. sand (10-65)		50	S13	SS	19	33 33 34 35	7	PID = 0.1 ppm Rig chatter D = 53'
	Inferred Red brown f.-c. SAND, some f.-m. gravel, trace silt and clay (6-65)		55	S14	SS	0	40 39 39 35	78	Sample S14 spoon tip material Rig chatter D = 55' - 60'
	Red brown f.-c. SAND, some silt, trace f.-m. gravel and clay (6-65)		60	S15	SS	4	27 43 37 39	80	PID = 0 ppm Rig chatter D = 60' - 65'
	Red brown silty f.-c. SAND, some f.-c. gravel, trace clay (6-65)		65	S16	SS	4	26 33 34 41	67	
	Red brown f.-m. GRAVEL, some f.-c. sand, trace silt (6-65)		70	S17	SS	3	29 65 54 76	119	
	Red brown f.-m. GRAVEL, trace f.-c. sand, silt, and clay (6-65)		75	S18	SS	2	29 58 52 73	110	
	Red brown f.-c. GRAVEL, some f.-c. sand, trace silt and clay (6-65)		80	S19	SS	3	31 32 47 36	79	
	Boring terminated D = 82'								Borehole grouted upon completion
			85						
			90						



1070X

RING 1503701.GPJ LANGANFL.GOT 4/12/98

PROJECT		PROJECT NO.							
Gowanus Development		1503701							
LOCATION		ELEVATION AND DATUM							
Brooklyn, NY		Approx. el. 11.2 [BBHDD]							
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/ft	N-VALUE BLOWS PER FT	
	Brown/gray f.-m. sandy SILT (10-65)		45	S12	SS	11119	7.5 32	8	PID = 0 ppm
	Brown/gray SILT, trace clay and f.-m. sand (10-65)		50	S13	SS	24	2.1 32	3	PID = 0 ppm
	Red brown silty f.-c. SAND, trace clay and f. gravel (7-65)		55	S14	SS	12	10 13 19 16	32	PID = 0 ppm PID = 0 ppm
									Slow/hard drilling D = 59'
	Red brown silty f.-c. SAND, some f.-m. gravel, trace clay (6-65)		60	S15	SS	16	17 25 26 28	51	PID = 0 ppm
	Red brown silty f.-c. SAND, some f.-m. gravel, trace clay (6-65)		65	S16	SS	16	21 49 67 100/5"	116	Spoon refusal D = 67'
	Red brown f.-c. SAND, some f.-m. gravel and silt, trace clay (6-65)		70	S17	SS	5	21 100/6"	100/6"	Spoon refusal 100/6" D = 71'
									Rig chatter
	Red brown f.-c. SAND, some f.-m. gravel, trace silt and clay (6-65)		75	S18	SS	14	40 53 58 38	111	
	Gray f.-c. GRAVEL and red brown f.-c. SAND, trace silt and clay (6-65)		80	S19	SS		66 83 100/5"	83/11	Spoon refusal D = 81.5'
	Boring terminated D = 82'								Borehole grouted upon completion
			85						
			90						

PROJECT <b>Loews @ Gowanus</b>		PROJECT NO. <b>1531601</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>approx. el 11 [BBHDD]</b>	
DRILLING EQUIPMENT <b>Davey Kent DK50RA Track Rig</b>		DATE STARTED <b>12/9/98</b>	DATE FINISHED <b>12/11/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" and 3 7/8" Tri-Cone Roller Bits</b>		COMPLETION DEPTH <b>81 ft.</b>	
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH (ft) <b>18.5</b>	NUMBER OF SAMPLES <b>21</b>	DIST. <b>21</b>
WATER LEVEL (ft.) <b>---</b>		UNDIST. <b>---</b>	CORE <b>---</b>
DRILLING FOREMAN <b>Tom Gregory/Kurt Conlon</b>		COMPL. <b>---</b>	24 HR. <b>8.5</b>
AMPLER <b>Standard Split Spoon (SS) or Shelby Tube (ST)</b>		INSPECTING ENGINEER <b>Gary L. Gleason</b>	
SAMPLER HAMMER <b>140</b>	DROP (in) <b>30</b>		

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	NUMBER	TYPE	RECOV. (in)	PENETR. RESIST. (psi)	BLUENESS	N-VALUE	REMARKS
el 11	Inferred 4.5" CONCRETE			S1	SS	4.5	10 24 24 100/3"		48	*New York City BC Classification numbers in parenthesis Hard slow drilling on concrete first 4.5" S1 SS Tip plugged with rocklike material (in S1 jar) PID = 580 ppm Added water D=0.25" Spoon refusal D=2" Rig chatter D=2" Petroleum like material floating in wash tub D=5" PID = 820 ppm
	Brown f.-m. SAND, trace c. sand, f. gravel, and silt (11-65)*		5	S2	SS	8	10 17 7 9		18	
	Brown f.-m. SAND, trace c. sand (11-65)									
0.0	Brown f.-m. SAND, trace c. sand (11-65)		10	S3	SS	11	2 3 3 2		6	Started casing D=10" PID = 320 ppm PID = 420 ppm
	Brown f.-m. SAND, trace organics/root, f.-m. gravel, clay, silt, and c. sand (11-65)									Advanced casing D=10"-13.5"
	Gray silty CLAY, some organics/root (11-65)		15	S5	SS	16	2 1 1 2		2	PP = 0.3-0.6 tsf PID = 150 ppm
	Gray silty CLAY, trace organics/root (11-65)			T1	ST	30	PUSH PUSH PUSH WOH			PP = 0.2-0.3 tsf TV = 0.23 tsf WOH : Weight of Hammer
	Gray silty CLAY, trace organics/root (11-65)		20	S6	SS	24	2 3 4		5	PP = 0.2-0.3 tsf PID = 480 ppm
	Brown SILT, trace f. sand and clay (10-65)		25	S7	SS	17	8 7 14 21		21	PID = 660 ppm
	Brown/gray CLAY and SILT, trace f. sand (10-65)		30	S8	SS	18	8 8 7 10		15	S8 4" Lense of Brown f. SAND, trace silt and clay (8-65) w/ PID = 580 ppm in top of SS PP = 1.2-2.1 tsf PID = 720 ppm S10 2' Gray f. SAND, trace clay and silt w/ PID = 850 ppm in bottom of SS Visible petroleum like material D=30'-32'
	Brown f. SAND, trace silt and clay (8-65)		35	S11	SS	15	14 20 22 16		42	PID = 380 ppm
	Brown f. SAND, trace silt and clay (8-65)		40	S12	SS	16	12 13 12 13		25	Brown f. sandy SILT, trace clay in SS tip PID = 330 ppm Traces visible petroleum like material

**Langan**

Engineering and Environmental Services

LOG OF BORING

LB1

SHEET 2 OF 2

PROJECT		PROJECT NO.								
Loews @ Gowanus		1531601								
LOCATION		ELEVATION AND DATUM								
Brooklyn, NY		approx. el 11 [BBHDD]								
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BT. 100	N-VALUE BLOWS 50/100		
	Brown f. sandy SILT, trace clay (10-65)		45	S13	SS	17	17 17 15 20	32	PID = 570 ppm	
	Brown SILT, trace clay and f. sand (10-65)		50	S15	SS	15	14 15 22 26	37	PID = 540 ppm PID = 850 ppm Trace visible petroleum like material	
	Brown f. SAND, trace silt (8-65)									
	Brown f. SAND, trace m. sand (7-65)		55	S16	SS	14.5	11 16 16 17	32	PID = 710 ppm	
	Gray f. SAND, trace m.-c. sand (7-65)		60	S17	SS	13.5	15 22 20 23	42	Brown/gray SILT, trace f. sand and clay in SS tip PID = 530 ppm Trace visible petroleum like material near bottom of SS tip Minor on/off rig chatter D=60.5'-63'	
	Brown f. sandy SILT, trace clay (10-65)		65	S18	SS	13	19 23 23 26	46	PID = 1240 ppm	
	Red brown f. sandy SILT, some f. sand, trace clay (10-65)		70	S19	SS	15.5	20 20 28 28	57	PID = 950 ppm	
	Inferred Red brown f.-c. SAND, trace f.-m. gravel (7-65)								On/off rig chatter D=73'-74.5'	
	Inferred BOULDER (6-65)		75						Slow/hard drilling D=74.5'-75.5' w/ rig chatter	
	Red brown f. SAND, trace silt, f. gravel, m.-c. sand, and clay (6-65)			S20	SS	13	31 35 100/25	68/11	PID = 900 ppm Spoon refusal D=77.5' Slow/hard drilling D=77.5'-78.75'	
	Inferred BOULDER (6-65)									
	Red brown and brown f.-m. SAND, trace f.-m. gravel, c. sand, silt, and clay		80	S21	SS	24	19 41 36 36	77	PID = 1200 ppm	
	Boring terminated D=81'									
			85							
			90							

DRILLING 1531601 GPI LANGANFL G01 22/12/98



**Langan**  
Engineering and Environmental Services

LOG OF BORING LB2

SHEET 1 OF 2

PROJECT <b>Loews @ Gowanus</b>		PROJECT NO. <b>1531601</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM approx. el 11 [BBHDD]	
DRILLING EQUIPMENT <b>Davey Kent DK50RA Track Rig</b>		DATE STARTED <b>12/8/98</b>	DATE FINISHED <b>12/9/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" and 3 7/8" Tri-Cone Roller Bits</b>		COMPLETION DEPTH <b>80 ft.</b>	
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH (ft) <b>13.5</b>	NUMBER OF SAMPLES <b>20</b>	DIST. <b>20</b>
		UNDIST. <b>---</b>	CORE <b>---</b>
		WATER LEVEL (ft.) <b>---</b>	FIRST <b>---</b>
		COMPL. <b>---</b>	24 HR. <b>6.5</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>		DRILLING FOREMAN <b>Tom Gregory/Kurt Conlon</b>	
SAMPLER HAMMER <b>140</b>		INSPECTING ENGINEER <b>Gary L. Gleason</b>	
WEIGHT (lbs) <b>140</b>		DROP (in) <b>30</b>	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	NUMBER	TYPE	RECOV. (%)	PENETR. RESIST BL/ft	N-VALUE BLOWS PER FT	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
prox. el 11	4" CONCRETE			S1	SS	13.5	32 28 24 24	52	*New York City BC Classification numbers in parenthesis Started drilling w/ water PID = 650 ppm On/off rig chatter D = 0.75'-5'
	Brown and black f. SAND, trace silt, f.-c. sand, f. gravel, and coal (11-65)*		5	S2	SS	13	10 7 9 7	18	PID = 102 ppm
	Black and brown c. SAND and f. GRAVEL/COAL, trace f.-m. sand and silt (11-65)		10	S3	SS	8	2 1 4 8	5	PID = 9 ppm PID = 10.2 ppm
0.0	Gray silty CLAY, some brown peat, trace f. sand (11-65)		15	S4	SS	18	4 3 3 2	6	PID = 19.6 ppm
	Brown/black f. SAND, some silt, trace clay (11-65)		20	S5	SS	24	11 10 7 8	18	PID = 400 ppm Added mud D = .15'
	Brown f. sandy SILT, trace clay (11-65)		25	S6	SS	15	4 4 7 5	8	PP = 0.6 - 1.25 tsf PID = 19.7 ppm PID = 40 ppm
	Gray/brown PEAT, trace f. sand, silt, and clay (11-65)		30	S7	SS	19.5	14 16 22 22	38	PID = 9 ppm
	Gray silty CLAY, trace organics/root (11-65)		35	S8	SS	16	8 7 12 12	19	PID = 330 ppm Visible petroleum like material
	Gray f. SAND, some clay, trace silt (8-65)		40	S9	SS	18			PID = 800 ppm
	Brown/gray f. SAND, some silt, trace clay (8-65)			S10	SS				PID = 20 ppm
	Brown f.-m. sandy SILT, trace clay (10-65)			S11	SS				
	Brown f. SAND, trace m. sand (7-65)			S12	SS				
	Brown/gray f. SAND, trace m. sand, clay, and silt (8-65)								

PROJECT			PROJECT NO.							
Loews @ Gowanus			1531601							
LOCATION			ELEVATION AND DATUM							
Brooklyn, NY			approx. el 11 (BBHDD)							
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/ft	N-VALUE BL/ft	BLOWS BL/ft	
	Brown f. sandy SILT, trace clay (10-65)		45	S13	SS	18	8 10 11 13		21	PID = 500 ppm
	Brown f. sandy SILT, trace clay (10-65)		50	S14	SS	14	15 19 22 28		41	PID = 1020 ppm
	Brown SILT, trace f. sand and clay (10-65)		55	S15	SS	17	19 24 24 25		48	PID = 830 ppm Gray/brown f. SAND, trace silt in S15 SS
	Brown f. SAND, trace m. sand and silt (7-65)		60	S16	SS	18	11 17 17 13		34	PID = 50 ppm Slightly visible petroleum like material
	Brown f. SAND, trace m.-c. sand, f. gravel, and silt (7-65)		65	S17	SS	14	17 44 44 28		88	PID = 600 ppm Visible petroleum like material
	Brown f.-m. SAND, trace c. sand, f. gravel, and silt (7-65)		70	S18	SS	5.5	14 13 16 22		29	PID = 880 ppm Rig chatter D = 72.5' - 75' Very slow/hard drilling D = 72.5' - 73.5'
	Inferred boulder (6-65)									
	Red brown f. SAND, some m.-c. gravel, trace silt, m.-c. sand, f. gravel, and clay (6-65)		75	S19	SS	11	22 26 32 23		58	PID = 600 ppm
	Red brown f. SAND, trace silt and clay (8-65)			S20	SS	6	32 32 25 29		57	PID > 2000 ppm
	Boring terminated D = 80'		80							Borehole grouted upon completion
			85							
			90							

DRILLING 1531601.GPJ LAINGANFL.GDT 22/12/98

PROJECT <b>Loews @ Gowanus</b>		PROJECT NO. <b>1531601</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>approx. el 11 (BSHDD)</b>	
DRILLING EQUIPMENT <b>Davey Kent DK50RA Track Rig</b>		DATE STARTED <b>12/8/98</b>	DATE FINISHED <b>12/9/98</b>
SIZE AND TYPE OF BIT <b>HW Rock Core and Tri-Cone Roller Bits</b>		COMPLETION DEPTH <b>80.5 ft.</b>	
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH (ft) <b>19.5</b>	NUMBER OF SAMPLES <b>18</b>	DIST. <b>18</b>
		UNDIST. <b>---</b>	CORE <b>---</b>
		WATER LEVEL (ft.) <b>---</b>	FIRST <b>---</b>
		COMPL. <b>---</b>	24 HR. <b>---</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>		DRILLING FOREMAN <b>Gus Suri/Mike Chizmar</b>	
SAMPLER HAMMER <b>140</b>	WEIGHT (lbs) <b>140</b>	INSPECTING ENGINEER <b>Gary L. Gleason</b>	
	DROP (in) <b>30</b>		

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
NUMBER	TYPE	RECOV. (%)	PENETR. RESIST. (blows)	4-VALUE	BLOWS	RESIST.				
approx. el 11	6" CONCRETE w/ wire mesh									*New York City BC Classification numbers in parenthesis
	Inferred miscellaneous FILL (11-65)									Started coring w/ water
	Black/gray f.-m. SAND, trace silt, c. sand, f. gravel, and coal (11-65)									PID = 125 ppm
										Slightly visible petroleum like material
										Orloff rig chatter D = 1' - 5'
	Brown f.-m. SAND, trace red brick and silt (11-65)									Petroleum like material floating in wash tub
										O = 5'
										PID = 84 ppm
	Brown c. SAND, some f. gravel, trace clay, silt, and f.-m. sand (11-65)									PID = 155 ppm
										Slightly visible petroleum like material
	Brown f.-c. SAND, some gravel, trace clay and silt (11-65)									Added mud D = 15'
										PID = 55 ppm
										Slightly visible petroleum like material
	Brown f.-c. SAND and f. GRAVEL, some clay, trace silt (11-65)									Refusal D = 20'
	Inferred CONCRETE									Hard drilling D = 20.25' - 20.75'
										PID = 340 ppm
										Visible petroleum like material
										Added mud D = 20'
	Brown SILT, trace clay, f. sand, and f. gravel (10-65)									PID = 220 ppm
	Brown/gray SILT, trace clay and f. sand (10-65)									Hole too tight D = 23' to get rods down so removed existing casing and drilled to D = 30' w/ 4 7/8" bit, then spun/cored casing to D = 19.5'
										PID = 45 ppm
										Slightly visible petroleum like material
	Brown f. SAND, trace silt and clay (8-65)									PID = 480 ppm
	Brown f. sandy SILT, trace clay (10-65)									PID = 640 ppm

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Engineering and Environmental Services

LOG OF BORING

LB3

SHEET 2 OF 2

PROJECT		Loews @ Gowanus		PROJECT NO.		1531601			
LOCATION		Brooklyn, NY		ELEVATION AND DATUM		approx. el 11 [BBHDD]			
ELEV. (M)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/in	N-VALUE BLOWS 30 CM	
	Brown f. SAND, trace silt (8-65)		45	S11	SS	12	11 18 16 10	20	PID 25 ppm  S11 4" Lense of brown SILT, trace clay and f. sand (10-65) w/ PID = 55 ppm in bottom of SS
	Brown f.-m. SAND (7-65)		50	S12	SS	14	10 11 12 17	23	PID = 90 ppm
	Brown f. SAND, trace m.-c. sand (7-65)		55	S13	SS	8.5	11 14 19 17	33	PID = 9.8 ppm
	Brown f. SAND, trace m.-c. sand and silt (7-65)		60	S14	SS	11.5	13 17 17 19	34	PID = 280 ppm PID = 210 ppm
	Brown/gray SILT, trace clay and f. sand (10-65)								
	Red brown f. SAND, some silt, trace f. gravel, m.-c. sand, and clay (7-65)		65	S16	SS	5	23 100/3"	100/3"	Spoon refusal D = 66' w/ bouncing Rig chatter D = 68' PID = 95 ppm
	Red brown f.-m. SAND, trace c. sand and f. gravel (7-65)		70	S17	SS	8	17 40 22 21	62	PID = 510 ppm PID = 800 ppm
	Red brown SILT, trace f. gravel, f.-c. sand, and clay (10-65)								
	Inferred BOULDER		75						Minor on/off rig chatter D = 72' - 76.5'
	Inferred Red brown f.-c. SAND, trace f. gravel, silt, and clay (7-65)		80		SS	0	58 83 100/3"	53/11	Spoon refusal D = 80.5' Borehole grouted upon completion
	Boring terminated D=80.5'								
			85						
			90						



PROJECT <b>Loews @ Gowanus</b>		PROJECT NO. <b>1531601</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>approx. el 11 [BBHDD]</b>	
DRILLING EQUIPMENT <b>Davey Kent DK50RA Track Rig</b>		DATE STARTED <b>12/3/98</b>	DATE FINISHED <b>12/7/98</b>
SIZE AND TYPE OF BIT <b>HW and NQ Rock Cores and Tri-Cone Roller Bits</b>		COMPLETION DEPTH <b>80 ft.</b>	
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH (ft) <b>24</b>	NUMBER OF SAMPLES <b>16</b>	DIST. <b>16</b>
		UNDIST. <b>----</b>	CORE <b>----</b>
		WATER LEVEL (ft) <b>17</b>	FIRST <b>17</b>
		COMPL. <b>17</b>	24 HR. <b>6.7</b>
SAMPLER <b>Standard Split Spoon (SS) or Shelby Tube (ST)</b>		DRILLING FOREMAN <b>Gus Suri/Mike Chizmar</b>	
SAMPLER HAMMER	WEIGHT (lbs) <b>140</b>	DROP (in) <b>30</b>	INSPECTING ENGINEER <b>Gary L. Gleason</b>

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL	DEPTH SCALE	NUMBER	TYPE	RECOV. (ft)	PENETR. RESIST. BL/ft	N-VALUE BLOW/FT	REMARKS
approx. el 11	5.5" CONCRETE w/ wire mesh								New York City BC Classification numbers in parenthesis Stained coring with water Spoon refusal D=2' PID = 400 ppm COBBLE fragment in D=1'-3' SS tip
0.0	Inferred miscellaneous FILL (11-65) Black/brown f.-c. SAND, trace silt, red brick, l.-c. gravel/coal (11-65) Very c. CONCRETE			S1	SS	8	17 82 85/1.5'	577.5	
			5						Lost majority of water D=2'-12'
			10						
	Inferred CONCRETE								Hard/slow drilling D=12'-13.5' Broke through concrete D=13.5'
	Inferred WOOD (11-65)		15						WOOD in wash D=13.5'-25' w/ slow drilling
	WOOD FIBERS, trace gray f. sand (11-65)			S2	ST	5	PUSH PUSH PUSH PUSH		One bend/dent in end of tube D=17'-19' PID = 58 ppm Petroleum like material odor
	WOOD FIBERS (11-65)		20	S3	SS	3	12 10 10 11	20	Added mud D=20' PID = 7.2 ppm Petroleum like material odor
	WOOD FIBERS (11-65)		25	S4	SS	14	18 23 23 24	44	Petroleum like material odor D=25'-25.5' PID = 5.4 ppm
	Brown f. SAND, trace silt and clay (8-65)								
	Brown f. SAND, trace silt (8-65)		30	S5	SS	10	13 20 23 15	40	PID = 148 ppm Visible petroleum like material Visible petroleum like material
	Brown f. SAND, trace silt (8-65)		35	S6	SS	7	7 8 8 8	16	PID = 90 ppm Visible petroleum like material Visible petroleum like material
	Brown f. SAND, trace m. sand, silt, and clay (7-65)		40	S7	SS	14.5	10 10 12 12	22	PID = 9.2 ppm



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LOG OF BORING

LB4

SHEET 2 OF 2

PROJECT		PROJECT NO.								
Loews @ Gowanus		1531601								
LOCATION		ELEVATION AND DATUM								
Brooklyn, NY		approx. el 11 [BBHDD]								
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	REC'D (G)	PENETR. RESIST	BL/ft	N-VALUE BLOWS FEET	
	Brown f. SAND, trace silt and clay (8-65)		45	S8	SS	16	12 17 13		29	PID = 1.8 ppm
	Brown SILT, some f. sand, trace m. sand and clay (10-65)		50	S9	SS	15.5	13 15 21 21		36	PID = 368 ppm
	Brown f. sandy SILT, trace m. sand (10-65)		55	S11 S10	SS	11	13 16 18 18		36	PID = 7 ppm PID = 13.5 ppm
	Brown f. SAND, trace m. sand and silt (7-65)		60	S12	SS	11	12 16 16 15		32	PID = 5.2 ppm Slightly visible petroleum like material
	Brown/gray f. SAND, trace m. sand and silt (7-65)		65	S13	SS	11	25 39 33 45		72	Rig chatter D=64.5'-65' PID = 780 ppm On/off rig chatter D=65'-70'
	Red brown f.-m. SAND, trace f. gravel, c. sand, silt, and clay (7-65)		70	S14	SS	12	32 55 56 67		111	Added mud D = 70' PID = 1 ppm On/off rig chatter D=70'-75'
	Red brown f.-m. SAND, trace f.-m. gravel, c. sand, and silt (7-65)		75	S15	SS	2.5	100/4.5		R*	*Spoon refusal D=75.5' PID = 4.6 ppm On/off rig chatter D=75'-78'
	Red brown c. SAND, some f.-m. sand and f.-m. gravel, trace silt (8-65)		80	S16	SS	14.5	40 53 87 102		140	C. GRAVEL in S16 SS tip PID = 0.4 ppm Borehole grouted upon completion
	Red brown f.-m. gravelly f.-m. SAND, trace c. sand and silt (6-65)									
	Boring terminated D=80'									
			85							
			90							

PROJECT <b>Loews @ Gowanus</b>		PROJECT NO. <b>1531601</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>approx. el 11 (BBHDD)</b>	
DRILLING EQUIPMENT <b>Davey Kent DK50RA Track Rig</b>		DATE STARTED <b>12/4/98</b>	DATE FINISHED <b>12/8/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" and 3 7/8" Tri-Cone Roller Bits</b>		COMPLETION DEPTH <b>80 ft.</b>	
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH (in) <b>30.5</b>	NUMBER OF SAMPLES <b>15</b>	DIST. <b>15</b>
		UNDIST. <b>---</b>	CORE <b>---</b>
		WATER LEVEL (ft.) <b>---</b>	FIRST <b>---</b>
		COMPL. <b>---</b>	24 HR. <b>---</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>		DRILLING FOREMAN <b>Tom Gregory/Kurt Conlon</b>	
SAMPLER HAMMER	WEIGHT (lbs) <b>140</b>	DROP (in) <b>30</b>	INSPECTING ENGINEER <b>Gary L. Gleason</b>

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DBPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (%)	PENETR. RESIST BL/ft	K-VALUE BLOWS /ft	LOG CORR.	
approx. el 11	4.5" CONCRETE									*New York City BC Classification numbers in parenthesis Began drilling with water *Spoon refusal D=1' 50/0.5" w/ bouncing PID = 49 ppm Sample S1 Gray f.-c. SAND and c. GRAVEL FRAGMENT, trace silt from SS lb Hard/slow drilling w/ on/off rig chatter D=1'-5" and Red wash water D=2.5'-5" *Spoon refusal D=5.5' 90/4" w/ bouncing PID = 20 + ppm Hard/slow drilling w/ on/off rig chatter and red wash water D=5'-10'
0.0	5.5" DENSE GRADED AGGREGATE			S1	SS	0	50/0.5		R*	
	3.5" CONCRETE									
	2.5" DENSE GRADED AGGREGATE									
	Red BRICK (11-65) Inferred Red BRICK									Hard/slow drilling w/ on/off rig chatter D=1'-5" and Red wash water D=2.5'-5" *Spoon refusal D=5.5' 90/4" w/ bouncing PID = 20 + ppm Hard/slow drilling w/ on/off rig chatter and red wash water D=5'-10'
	(Red f.-c. SAND, trace silt and clay) Inferred red BRICK (11-65)		5	S2	SS	4	90/4		R*	
			10	S3	SS	3	100/3		R*	
	(Red f.-c. SAND, trace f. gravel and silt) Inferred red BRICK (11-65)									
	Inferred red BRICK (11-65)		15							*Spoon refusal D=10' 100/3" w/ bouncing PID = 21 ppm  Hard/slow drilling w/ on/off rig chatter and red wash water D=10'-27.5'  Petroleum like material in wash water D=27.5' Hard drilling D=28'-28.5'
	Inferred red BRICK (11-65)		20							
	Inferred red BRICK (11-65)		25							
			30	S4	SS	17	100/3	12		
	Gray f.-m. SAND, trace c. sand (11-65)									PID = 20 ppm Visible petroleum like material Gray f. sandy SILT, trace clay and m. sand in S4 SS lb Added mud D=30'  PP = 1.2-1.5 lsf PID = 9.8 ppm PID = 180 ppm
	Gray silty CLAY, trace f. sand (11-65)		35	S6 S5	SS	19	4 5 23 28	28		
	Gray/brown f. SAND, trace m. sand and silt (7-65)									
	Brown/gray silty f. SAND (8-65)		40	S7	SS	13	11 11 13 13	24		

**Langan**

Engineering and Environmental Services

LOG OF BORING

LB5

SHEET 2 OF 2

PROJECT		PROJECT NO.								
Loews @ Gowanus		1531601								
LOCATION		ELEVATION AND DATUM								
Brooklyn, NY		approx. el 11 [BBHDD]								
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. in	PENETR RESIST	BLDG	N-VALUE BLOWS FEET	
	Brown/gray SILT, some f. sand, trace clay (10-65)		45	S8	SS	12.5	11 15 13 24		34	PP = No reading PID = 400 ppm
	Gray/brown f. SAND, some silt, trace m. sand (7-65)		50	S9	SS	15	13 19 22 23		41	PID = 1.2 ppm
	Gray/brown f.-m. SAND, trace silt (7-65)		55	S10	SS	8	8 16 13 22		35	PID = 2.2 ppm  Hard drilling D=58'-60'
	Brown f.-c. SAND, trace f.-m. gravel and silt (6-65)		60	S11	SS	9	12 17 27 38		44	PID = 0.4 ppm  On/off rig chatter D=60'-65'
	Red brown f. SAND, some silt, trace m.-c. sand and f. gravel (7-65)		65	S12	SS	15	18 20 25 26		45	PID = 8.2 ppm  On/off rig chatter D=65'-70'
	Red brown f.-m. SAND, some f.-m. gravel, trace c. sand and silt (6-65)		70	S13	SS	6	62 35 57 31		102	PID = 3.3 ppm  On/off rig chatter D = 70'-75'
	Red brown f.-c. SAND, trace f.-m. gravel and silt (6-65)		75	S14	SS	7	22 49 25 13		74	PID = 0.4 ppm  On/off rig chatter D=75'-78'
	Red brown f.-m. SAND, trace silt, c. sand, and f. gravel (7-65)		80	S15	SS	8	26 24 29 15		52	PID = 340 ppm
	Boring terminated D=80'									Borehole grouted upon completion
			85							
			90							

DRILLING 1531601.GPJ LANGRANFLG.DOT 7/1/99

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Engineering and Environmental Services

LOG OF BORING

LB6

SHEET

1

OF 2

PROJECT <b>Loews @ Gowanus</b>		PROJECT NO. <b>1531601</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>approx. el 11 [BBHDD]</b>	
DRILLING EQUIPMENT <b>Davey Kent DK50RA Track Rig</b>		DATE STARTED <b>11/24/98</b>	DATE FINISHED <b>11/25/98</b>
SIZE AND TYPE OF BIT <b>HW Rock Core and Tri-Cone Roller Bits</b>		NUMBER OF SAMPLES <b>16</b>	COMPLETION DEPTH <b>77 ft.</b>
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH (ft) <b>13.5</b>	WATER LEVEL (ft.) <b>FIRST</b>	UNDIST. CORE <b>24 HR.</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>		DRILLING FOREMAN <b>Gus Surl/Mike Chizmar</b>	
SAMPLER HAMMER <b>140</b>	DROP (in) <b>30</b>	INSPECTING ENGINEER <b>Gary L. Gleason</b>	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	REC'D (in)	PENETR. RESIST BLAS	Q-VALUE BLOWS FOOT	SECRET	
approx. el 11	5" CONCRETE w/ wire mesh Inferred Miscellaneous FILL (11-65) Black/brown f.-c. SAND, trace f.-c. gravel/coal and silt (11-65)			S1	SS	14	24 21 14 12	35		"New York City BC Classification numbers in parenthesis Started coring w/ water PID = 16.4 ppm
	Brown f.-c. SAND, trace f.-m. gravel/coal and silt (11-65)		5	S2	SS	4	7 7 5	12		Trace wood and red brick in wash D=6.25'-10' PID = 5.5 ppm  Rig chatter D=7.25'-8.25' Lost some water D=7.25'-10' Added mud D-10' PID = 11.8 ppm
	Brown/black f.-c. SAND, trace silt, c. gravel/coal, and organics/wood fibers (11-65)		10	S3	SS	11.5	12 4 5 20	9		PID = 4.2 ppm PID = 18.3 ppm
	Brown f.-c. SAND, some silt and clay, trace f.-m. gravel (11-65)		15	SS S4	SS	16	1 2 2 3	4		PID = 5 ppm
	Brown, gray, and black PEAT, trace silt and clay (11-65)		20	S6	SS	17	2 1 2 3	3		PID = 20 ppm
	Brown f. SAND, some silt, trace clay (8-65)		25	S7	SS	13	11 12 16 15	28		PID = 30 ppm
	Gray/brown f. SAND, trace silt (8-65)		30	S8	SS	14.5	7 8 8 7	18		PP = 0.8-1.4 lsi PID = 11.2 ppm
	Brown and gray f.-m. SAND, some silt, trace clay (7-65)		35	S9	SS	17	4 6 17 20	23		0.5" of Gray CLAY, trace f. sand and silt (9-65) in top of S10 SS sample PID = 550 ppm
	Gray/brown f.-m. SAND (7-65)		40	S10	SS	16.5	10 17 15 16	32		
	Gray CLAY, trace f. sand and silt (9-65)									
	Brown f. SAND, trace silt (8-65)									



PROJECT		PROJECT NO.								
Loews @ Gowanus		1531601								
LOCATION		ELEVATION AND DATUM								
Brooklyn, NY		approx. el 11 (BBHDD)								
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BLDN	N-VALUE	BLOWS FEET	
	Brown SILT, some f. sand, trace clay (10-65)		45	S11	SS	14	16 19 13 14		32	PID = 1.4 ppm
	Gray/black f.-m. SAND, trace silt (7-65)		50	S12	SS	18	20 24 25 22		49	PID = 1.2 ppm
	Inferred COBBLE (6-65)		55	-	SS	0	162/4"		R*	Rig chatter D=53.75'-55' *Spoon refusal D=55' Rig chatter D=55'-55.25'
										Minor rig chatter D=58.75'
	Red brown f. SAND, some f.-c. gravel, trace m.-c. sand and silt (6-65)		60	S13	SS	111	130 58 51 65		109	PID = 400 ppm Slow/hard drilling D=62.25'-62.5' On/off rig chatter D=60'-65'
	Red brown f. SAND, some f.-c. gravel, trace m.-c. sand and silt (6-65)		65	S14	SS	6	94 39 26 28		65	PID = 155 ppm On/off rig chatter D=65'-70'
	Red brown f. SAND, some f.-m. gravel, trace m.-c. sand and silt (6-65)		70	S15	SS	13	62 100 93 37		193	PID = 410 ppm Minor on/off rig chatter D=70'-75'
	Red brown f.-c. GRAVEL and f.-c. SAND, trace silt (6-65)		75	S16	SS	14	100 88 77 55		165	PID = 380 ppm Borehole grouted upon completion
	Boring terminated D=77'									
			80							
			85							
			90							

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Engineering and Environmental Services

LOG OF BORING

LB7

SHEET 1 OF 2

PROJECT <b>Loews @ Gowanus</b>		PROJECT NO. <b>1531601</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>approx. el 11 [BBHDD]</b>	
DRILLING EQUIPMENT <b>Davey Kent DK50RA Track Rig</b>		DATE STARTED <b>11/19/98</b>	DATE FINISHED <b>11/24/98</b>
SIZE AND TYPE OF BIT <b>HW and NQ Rock Cores and Tri-Cone Roller Bit</b>		NUMBER OF SAMPLES <b>18</b>	UNDIST. <b>1</b>
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH (ft) <b>7</b>	WATER LEVEL (ft.) <b>FIRST 1</b>	COMPL. <b>24 HR.</b>
SAMPLER <b>Standard Split Spoon (SS) or Shelby Tube (ST)</b>		DRILLING FOREMAN <b>Gus Suri/Mike Chizmar</b>	
SAMPLER HAMMER <b>140</b>	DROP (in) <b>30</b>	INSPECTING ENGINEER <b>Gary L. Gleason</b>	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (ft)	PENETR. RESIST. (psi)	W-VALUE (blows/ft)	
approx. el 11	5" CONCRETE w/ wire mesh								"New York City BC Classification numbers in parenthesis Started coring w/ water Lost some water D = 1.5' PID = 400 ppm Petroleum like material odor On/off rig chatter D = 1.5' - 4.5' Petroleum like material in wash D = 4.75'
	5" CONCRETE			S1	SS	7	28 47 54 20	101	
	Inferred miscellaneous FILL (11-65)* Gray/black f.-c. SAND, some silt (11-65)								
	Black SILT/PETROLEUM LIKE MATERIAL, some c. sand, and white cement fragments, trace f.-m. sand and clay (11-65)		5	S2	SS	2	4 2 1 50/1*	3	Spoon refusal 50/1" w/ bouncing D = 6' PID = 480 ppm A 18" x 4" x 1/4" piece of vertical steel on a 1/2" thick base plate D = 7' w/ 2" wide horizontal pieces of steel, which were cut, at the top inside and bottom outside D = 6' - 7' Lost some water D = 8' - 9.25' Added mud D = 9.25' Drilled through WOOD and lost circulation D = 9.75' WOR: Weight of rods WOR went from D = 10' - 15'
0.0	Piece of STEEL								
0.0	Inferred miscellaneous FILL (11-65)								
0.0	0.5" STEEL								WOH: Weight of hammer Sample S4 SS tip material PID = 590 ppm WOH went from D = 15' - 17.5'
	CONCRETE								
	Petroleum like material treated WOOD (11-65)		10		SS	0	WOH WOH WOH WOH	WOR	
	Inferred WOOD (11-65)								Visible petroleum like material w/ odor Pushing became more difficult D = 19.25' Added mud D = 20' PID = 920 ppm
	Inferred Brown PEAT, some silt (11-65)								
	Inferred Brown PEAT, some silt (11-65)		15	S4	SS	0	WOH WOH WOH WOH	WOH	
	Brown PEAT, some silt (11-65)			T1	ST	24	PUSH PUSH PUSH PUSH	PUSH	PID = 700 ppm Trace wood fibers in wash D = 27' - 30.5' Tight fit for bit D = 27' - 30.5'
	Brown/gray f. SAND, some silt (8-65)		20	S5	SS	19	1 4 3 4	6	
	Brown f. SAND, some silt (8-65)								
	Brown f. SAND, trace silt and clay (8-65)		25	S6	SS	11	34 33 45	75	1' of WOOD FIBERS, trace f.-m. sand w/ PID = 170 ppm in top of SS PID = 750 ppm Brown SILT, trace clay and f. sand in SS tip D = 32.5'
	Brown f.-m. SAND, trace silt (7-65)		30	S8 S7	SS	7	18 19 11 12	30	PP = 0.1 - 0.3 tsf PID = 640 ppm PP = 0.5 - 0.9 tsf PID = 320 ppm
	Brown SILT, trace clay and f. sand (10-65)		35	S10 S9	SS	18	4 2 4 2	5	PP = 0.4 - 0.65 tsf PID > 2000 ppm
	Gray CLAY, some silt (9-65)								
	Gray/brown CLAY, some silt, trace f. sand (9-65)		40	S11	SS	17	WOH 2 2 4	4	

PROJECT		PROJECT NO.							
Loews @ Gowanus		1531601							
LOCATION		ELEVATION AND DATUM							
Brooklyn, NY		approx. el 11 (BBHDD)							
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (%)	PENETR. RESIST BLDR	SI-VALUE BLOWS FSD-FT	
	Brown CLAY, some silt, trace f. sand (9-65)		45	S12	SS	13	4 4 4	8	PP = 0.5 - 0.65 lbf PID = 170 ppm
	Brown f. SAND, trace silt (8-65)		50	S13	SS	14	13 23 21 13	56	PID = 550 ppm Rig chatter D = 52.25' - 53'
	Brown f.-c. SAND, trace silt and f.-m. gravel (6-65)		55	S14	SS	10.5	20 20 24 20	44	PID = 710 ppm
	Red brown f.-c. SAND, trace silt and f.-m. gravel (6-65)		60	S15	SS	8	10 38 31 22	67	Added mud D = 57' - 58' Rig chatter D = 57.5 - 58' PID = 40 ppm
	Red brown f.-c. SAND, some f.-m. gravel, trace silt (6-65)		65	S16	SS	8	28 42 22 13	64	On/off rig chatter D = 60' - 65' PID = 640 ppm
	Red brown f.-c. SAND, some f.-m. gravel, trace silt (6-65)		70	S17	SS	7.5	45 26 22 24	46	On/off rig chatter D = 65' - 70' PID = 20 ppm
	Red brown f.-c. SAND, some f.-m. gravel, trace silt (6-65)		75	S18	SS	8	58 28 22 24	50	On/off rig chatter D = 70' - 75' PID = 540 ppm
	Boring terminated D = 77'								Borehole grouted upon completion
			80						
			85						
			90						



PROJECT Loews @ Gowanus		PROJECT NO. 1531601	
LOCATION Brooklyn, NY		ELEVATION AND DATUM approx. el 11 [BBHDD]	
DRILLING EQUIPMENT Davey Kent DK50RA Track Rig		DATE STARTED 11/18/98	DATE FINISHED 11/19/98
SIZE AND TYPE OF BIT HW and NQ Rock Cores and Tri-Cone Roller Bits		COMPLETION DEPTH 55 ft.	
CASING DIAMETER (in) 4 1/2" OD 4" ID		CASING DEPTH (ft) 19.5	
SAMPLER 2" OD 1 3/4" ID Split Spoon (SS)		NUMBER OF SAMPLES 14	DIST. UNDIST.
SAMPLER HAMMER WEIGHT (lbs) 140		WATER LEVEL (ft.) FIRST V	COMPL. V
DROP (in) 30		CORE 24 HR. V 3.6	
DRILLING FOREMAN Gus Surl/Mike Chizmar		INSPECTING ENGINEER Gary L. Gleason	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (%)	PENETR RESIST BL/IN	N-VALUE BLOWS FEET/FT		
approx. el 11	5" CONCRETE w/ wire mesh									*New York City BC Classification numbers in parenthesis Started coring w/ water Lost some water D = 2'
	CONCRETE DEBRIS and inferred miscellaneous FILL (11-65)*									Lost water D = 2' - 2"
	Red BRICK, some gray c. sand, trace f. gravel, concrete, tan brick, gray f.-m. sand, and white tile (11-65)			S1	SS	4.5	12 9 10 24	19		PID = 82 ppm
0.0	Red BRICK, some c. sand, trace f.-m. sand and gravel (11-65)		5	S2	SS	1	25/3	R*		Lost water D = 2' - 6.5' *Spoon refusal 28/5" w/ bouncing D = 4.5' Hard/slow drilling w/ rig chatter D = 4.5' - 5' PID = 135 ppm
0.0	CONCRETE									
	Inferred reinforced CONCRETE									
	Gray c. SAND, trace coal, concrete, red brick, gray f.-m. sand, f.-m. gravel, and glass (11-65)			S3	SS	3	6 4 7 4	11		PID = 15 ppm
			10							
	Gray c. SAND, trace coal, red brick, gray f.-m. sand, silt, and f. gravel (11-65)			S4	SS	1	3 4 3 5	5		PID = 260 ppm
	Gray c. SAND, some coal, trace red brick, gray f.-m. sand, silt, and f. gravel (11-65)		15	S5	SS	9	3 12 23 3	5		PID = 52 ppm
	Brown PEAT (11-65)									
			20							Added mud D = 20"
	Brown f. sandy SILT, (trace clay (10-65)			S6	SS	6	4 6 4 5	10		PID = 30 ppm
			25							
	Brown f.-m. SAND, trace silt (7-65)			S7	SS	6	29 31 33 28	64		PID = 11 ppm
			30							WOH: Weight of hammer Over drilled to D = 30'-5" resulting in WOH blow count PID = 38 ppm
	Gray/brown SILT, some f. sand, trace m. sand and clay (10-65)			S8	SS	5	4 4 4 4	13		
			35							
	Brown/gray SILT, some clay, trace f. sand (10-65)			S10 S9	SS	17	4 4 4 4	6		PP - No reading PID = 420 ppm PP = 0.4 tsf PID = 340 ppm
	Brown/gray silty CLAY, trace f. sand (9-65)									
			40							
	Brown/gray silty CLAY, trace f. sand (9-65)			S11	SS	19	4 2 4 4	6		pp = 0.3 - 0.4 tsf PID = 108 ppm

DRILLING LOG 1531601.GPJ LANEANFL.DDT 7/1/04

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LOG OF BORING

LB8

SHEET

2

OF

2

PROJECT		PROJECT NO.								
Loews @ Gowanus		1531601								
LOCATION		ELEVATION AND DATUM								
Brooklyn, NY		approx. el 11 [BBHDD]								
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. FOI	PENETR RESIST BL/ft	WCH FOI	WCH FOI	
	Brown/gray silty CLAY, trace f. sand (9-65)		45	S12	SS	19	2 WOH 3	1	PP = No reading - 0.2 tsf PID = 810 ppm	
	Brown/gray silty CLAY, trace f. sand (9-65)		50	S13	SS	17	WOH 9 17	9	PP = 0.2 - 0.7 tsf PID = 400 ppm	
	Brown f.-m. SAND, trace gray silt and clay (7-65)		55	S14	SS	11	14 14 13 16	27	PID = 520 ppm	
	Boring terminated D = 55'								Borehole grouted upon completion	
			60							
			65							
			70							
			75							
			80							
			85							
			90							

BORING 1531601 GP3 LANGANFL CDT 7/1/93







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LOG OF BORING **LB9**

SHEET **1** OF **2**

PROJECT <b>Loews @ Gowanus</b>		PROJECT NO. <b>1531601</b>	
LOCATION <b>Brooklyn, NY</b>		ELEVATION AND DATUM <b>approx. el 11 [BBHDD]</b>	
DRILLING EQUIPMENT <b>Davey Kent DK50RA Track Rig</b>		DATE STARTED <b>11/16/98</b>	DATE FINISHED <b>11/18/98</b>
SIZE AND TYPE OF BIT <b>4 7/8" (0' - 5') and 3 7/8" Tri-Cone Roller Bits</b>		NUMBER OF SAMPLES <b>14</b>	COMPLETION DEPTH <b>57 ft.</b>
CASING DIAMETER (in) <b>4 1/2" OD 4" ID</b>	CASING DEPTH (ft) <b>13.5</b>	WATER LEVEL (ft.) <b>---</b>	UNDIST. <b>---</b>
SAMPLER <b>2" OD 1 3/4" ID Split Spoon (SS)</b>		FIRST <b>---</b>	CORE <b>---</b>
SAMPLER HAMMER <b>140</b>		DRILLING FOREMAN <b>Gus Suri/Mike Chizmar</b>	
WEIGHT (lbs) <b>140</b>		INSPECTING ENGINEER <b>Gary L. Gleason</b>	
DROP (in) <b>30</b>		COMPL. <b>---</b>	
		24 HR. <b>4.6</b>	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	NUMBER	TYPE	RECOV. (in)	PENETR. RESIST. BL/ft	N-VALUE BLOWS/FT	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
approx. el 11	4" CONCRETE								*New York City BC Classification numbers in parenthesis Started drilling w/ water Lost some water D=2.5' D=0'-4.5' : Slow/hard drilling and wash water Gray cement/concrete color NX Rock Core Barrel used D=4'-4.5' : 6" Concrete core recovered Lost some water D=4.5' Attempted a 2nd SS to acquire some form a sample: Only gray sand wash was recovered, Sample S1 PID = 2 ppm Overdrove SS 7'-10' to aid in recovery Sample S2 SS for material
0.0	Inferred DENSE GRADED AGGREGATE CONCRETE								
	Inferred miscellaneous FILL (11-65)*		5	S1	SS	0	4	12	Overdrove SS 0'-10'-13' to aid in recovery PID = 3.3 ppm
	Inferred Gray c. SAND/COAL, trace silt, f.-m. sand, clay, f. gravel, and organics (11-65)			S2	SS	0	2	4	
	Gray c. SAND/COAL, trace f.-m. sand, silt, and f. gravel (11-65)		10	S3	SS	4	2	5	Added mud D=15' PID = 0 ppm PID = 0 ppm
	Gray silty, organic/rooty CLAY (11-65)		15	S4	SS	16.5	2	4	
	Brown/gray PEAT (11-65)								PID = 38 ppm
	Brown SILT, trace clay and f. sand (10-65)		20	S8	SS	10.5	0	19	
	Inferred Brown/gray f.-m. SAND, trace silt (7-65)		25		SS	0	27	59	PID = 0 ppm
	Brown/gray f.-m. SAND, trace silt (7-65)			S7	SS	17	24	65	
	Brown f.-m. SAND, trace silt and clay		30	S8	SS	7	11	20	PID = 0.2 ppm
	Gray/brown silty CLAY, trace f.-m. sand (9-65)		35	S9	SS	17.5	4	10	
	Brown/gray f.-m. SAND, trace silt (7-65)		40	S10	SS	10.5	18	20	PID = 0 ppm
							10		

PROJECT		PROJECT NO.							
Loews @ Gowanus		1531601							
LOCATION		ELEVATION AND DATUM							
Brooklyn, NY		approx. el 11 (BBHDD)							
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA					REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOV. (in)	PENETR. RESIST. BLANK	N-VALUE BLOWS PER FT	
	Brown/gray SILT, some f. sand, trace clay (10-85)		45	S11	SS	19	15	12	PID = 0 ppm
	Brown/gray f. sandy SILT, trace f. gravel (10-65)		50	S12	SS	15	15	31	PID = 0 ppm
	Brown/gray f.-m. SAND, trace silt (7-65)			S13	SS	15	15		PID = 0 ppm
	Brown f.-m. SAND, trace silt (7-65)		55	S14	SS	15	17 19 23 22	42	PID = 0 ppm
	Boring terminated D=57"		60						Borehole grouted upon completion
			65						
			70						
			75						
			80						
			85						
			90						

PROJECT Loews @ Gowanus		PROJECT NO. 1531601	
LOCATION Brooklyn, NY		ELEVATION AND DATUM approx. el 11 [BBHDO]	
DRILLING EQUIPMENT Davey Kent DK50RA Track Rig		DATE STARTED 11/19/98	DATE FINISHED 11/24/98
SIZE AND TYPE OF BIT HW and NO Rock Cores and Tri-Cone Roller Bit		COMPLETION DEPTH 77 ft.	
CASING DIAMETER (in) 4 1/2" OD 4" ID	CASING DEPTH (in) 7	NUMBER OF SAMPLES 18	UNDIST. 1
		WATER LEVEL (ft.) FIRST	CCMPL. 24 HR.
SAMPLER Standard Solist Spoon (SS) or Shelby Tube (ST)		DRILLING FOREMAN Gus Suri/Mike Chizmar	
SAMPLER HAMMER 140	WEIGHT (lbs) 140	DROP (in) 30	INSPECTING ENGINEER Gary L. Gleason








ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	RECOVER (in)	PENETRA RESIST (lb/in)	N-VALUE (blows)	REMARKS	
approx. el 11	5" CONCRETE w/ wire mesh									*New York City BC Classification numbers in parenthesis Started coring w/ water Lost some water @ = 1.5' PID = 400 ppm Petroleum like material odor On/off rig chatter @ = 1.5' - 4.5' Petroleum like material in wash @ = 4.75'
	5" CONCRETE									
	Inferred miscellaneous FILL (11-65) Gray/black f.-c. SAND, some silt (11-65)			S1	SS	7	23 47 54 20	101		
0.0	Black SILT/PETROLEUM LIKE MATERIAL, some c. sand, and white cement fragments, trace f.-m. sand and clay (11-65)		5	S2	SS	2	4 2 1 10/1"	3		Spoon refusal 50/1" w/ bouncing @ = 6" PID = 480 ppm A 16" x 4" x 1/4" piece of vertical steel on a 1/2" thick base plate @ = 7" w/ 2" wide horizontal pieces of steel, which were cut, at the top inside and bottom outside @ = 6" - 7"
0.0	Piece of STEEL									Lost some water @ = 8' - 9.25' Added mud @ = 9.25' Drilled through WOOD and lost circulation @ = 9.75' WOR: Weight of rods WOR went from @ = 10' - 15'
0.0	Inferred miscellaneous FILL (11-65)									
0.0	0.5" STEEL									
	CONCRETE									WOH: Weight of hammer Sample S4 SS tip material PID = 590 ppm WOH went from @ = 15' - 17.5'
	Petroleum like material treated WOOD (11-65)		10		SS	0	WOR WOR WOR WOR	WOR		
	Inferred WOOD (11-65)									
	Inferred Brown PEAT, some silt (11-65)									Visible petroleum like material w/ odor Pushing became more difficult @ = 19.25' Added mud @ = 20' PID = 920 ppm
	Inferred Brown PEAT, some silt (11-65)		15	S4	SS	0	WOH WOH WOH WOH	WOH		PID = 700 ppm Trace wood fibers in wash @ = 27' - 30.5' Tight fit for bit @ = 27' - 30.5'
	Brown PEAT, some silt (11-65)									
	Brown/gray f. SAND, some silt (8-65)			T1	ST	24	PUSH PUSH PUSH PUSH	PUSH		1" of WOOD FIBERS, trace f.-m. sand w/ PID = 170 ppm in top of SS PID = 750 ppm Brown SILT, trace clay and f. sand in SS flp @ = 32.5'
	Brown f. SAND, some silt (8-65)		20	S5	SS	19	3 3 3 3	8		
	Brown f. SAND, trace silt and clay (8-65)		25	S8	SS	11	34 42 33 40	75		PP = 0.1 - 0.3 tsf PID = 640 ppm PP = 0.6 - 0.9 tsf PID = 320 ppm
	Brown f.-m. SAND, trace silt (7-65)		30	S8 S7	SS	7	18 19 11 12	30		PP = 0.4 - 0.85 tsf PID > 2000 ppm
	Brown SILT, trace clay and f. sand (10-65)		35	S10 S9	SS	18	3 3 3 3	5		
	Gray CLAY, some silt (9-65)									
	Gray/brown CLAY, some silt, trace f. sand (9-65)		40	S11	SS	17	WOR 2 2 4	4		



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LOG OF BORING LB7

SHEET 2 OF 2

PROJECT		PROJECT NO.								
Loews @ Gowanus		1531601								
LOCATION		ELEVATION AND DATUM								
Brooklyn, NY		approx. el 11 [88HDD]								
ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA						REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
				NUMBER	TYPE	REC'D. (ft)	PENETR. RESIST	BLDGA	N-VALUE BLOWS 30.0 CT	
	Brown CLAY, some silt, trace f. sand (9-65)		45	S12	SS	13	4 4 4	8	PP = 0.5 - 0.65 lsf PID = 170 ppm	
	Brown f. SAND, trace silt (8-65)		50	S13	SS	14	13 21 21	56	PID = 550 ppm Rig chatter D = 52.25' - 53'	
	Brown f.-c. SAND, trace silt and f.-m. gravel (6-65)		55	S14	SS	10.5	24 28 24	44	PID = 710 ppm	
	Red brown f.-c. SAND, trace silt and f.-m. gravel (6-65)		60	S15	SS	8	18 38 31 22	67	Added mud D = 57' - 58' Rig chatter D = 57.5 - 58' PID = 40 ppm	
	Red brown f.-c. SAND, some f.-m. gravel, trace silt (6-65)		65	S16	SS	8	28 42 22 19	64	On/off rig chatter D = 60' - 65' PID = 640 ppm	
	Red brown f.-c. SAND, some f.-m. gravel, trace silt (6-65)		70	S17	SS	7.5	43 26 22 24	46	On/off rig chatter D = 65' - 70' PID = 20 ppm	
	Red brown f.-c. SAND, some f.-m. gravel, trace silt (6-65)		75	S18	SS	8	38 28 22 24	50	On/off rig chatter D = 70' - 75' PID = 540 ppm	
	Boring terminated D = 77'								Borehole grouted upon completion	
			80							
			85							
			90							