

EnviroTrac

Environmental Services

July 16, 2001

Mr. Patrick Vecchione
Retaco Holding Corporation
362 Kingsland Avenue
Brooklyn, NY 11222

Re: Preliminary Investigation Report
Former Parking Garage
438 W. 18th Street
New York, NY
NYSDEC Spill No. 01-03363

Dear Mr. Vecchione:

On June 28, 2001 EnviroTrac Ltd., on behalf of Verizon, Inc. investigated suspect contaminated soil at the above referenced location. A Verizon representative contacted the New York State Department of Environmental Conservation spill Hotline. The site was assigned Spill No. 01-03363. The building was a former two-story parking garage. Excavation activities were being conducted under the direction of Tishman Interior Builders, on the first floor. The north side of the building contained an excavation area approximately 20' W x 17' L x 6' D. Soil generated from the excavation was piled directly south of the excavation. Pipes and conduit were noted protruding into the south end of the excavation approximately 1' – 3' below grade. It was noted that there was groundwater in the bottom of the excavation area. Trenching was conducted throughout the majority of the concrete floor to accommodate future drainage pipes. The trenches are approximately 3' wide by 1' – 4' deep. Soil generated from the trenching activities was piled adjacent to the trenches. Excavation within the building was limited by the existence of structural footings/columns throughout the floor plan.

The soil from the large excavated area was screened with a field photoionization detector (PID). The results are as follows:

North wall:	33 ppm
South wall:	403 ppm
East wall:	16 ppm
West wall:	19 ppm

One (1) groundwater sample was collected and sent to a New York State Department of Health ELAP certified laboratory for analysis for Volatile Organics and Semi-Volatile Organics. As of this date, the analysis has not been completed.

On July 12, 2001 EnviroTrac Ltd. returned to the site, on behalf of the property owner Retaco Holding Corporation, to remove the stockpiled soil created from the excavation. In addition, areas that displayed high PID readings within the trenches were excavated

to the furthest extent possible without undermining structures. Approximately 60 yards of contaminated soil was transferred to three Middlesex Trucking vehicles via Allied Waste Services and properly disposed at Soil Remediation of Philadelphia (SRP). Five (5) soil samples were collected from the excavation area and select trenches. Refer to the attached diagram for sample locations. These samples were sent to a New York State Department of Health ELAP certified laboratory and will be analyzed for Volatile Organics via EPA Method 8021 (STARS) and Semi-Volatile Organics EPA Method 8270 BN (STARS). Continuous air monitoring for volatile organics via a PID was conducted throughout the construction activities.

In addition, a sample was collected from a 55-gallon drum that was located on the second floor and contained an unknown oil-like liquid. Analysis of this liquid will be performed to satisfy disposal facility requirements. Once characterized, the drum will be properly manifested and transported to an approved disposal facility.

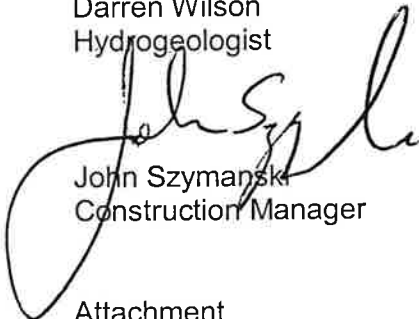
Upon completion of all analyses and acquisition of manifests and photographs, a more detailed report of activities and findings will be prepared and forwarded to your attention, the NYSDEC and Verizon representatives.

If you have any questions, please do not hesitate to call me.

Sincerely,
EnviroTrac Ltd.



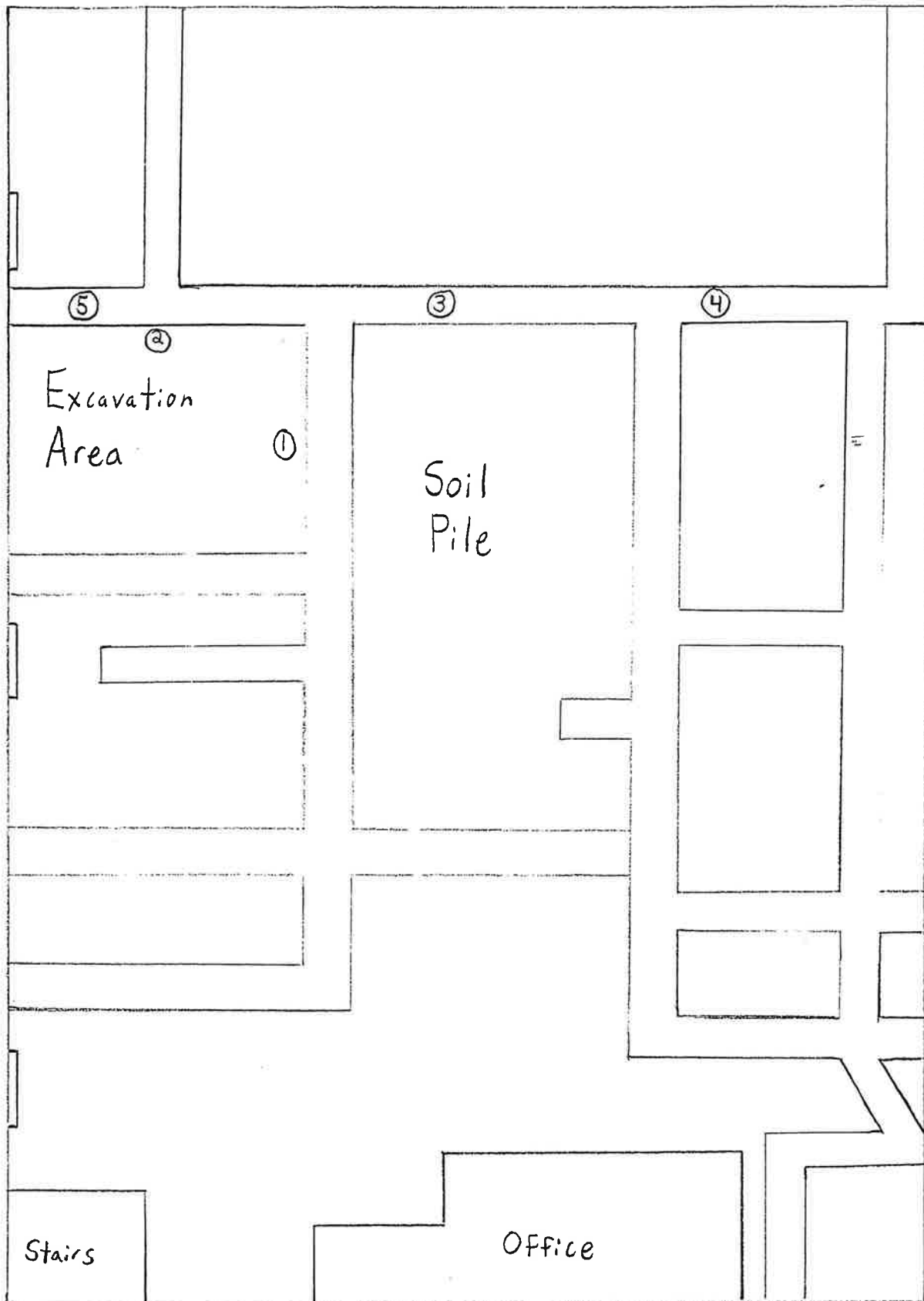
Darren Wilson
Hydrogeologist



John Szymanski
Construction Manager

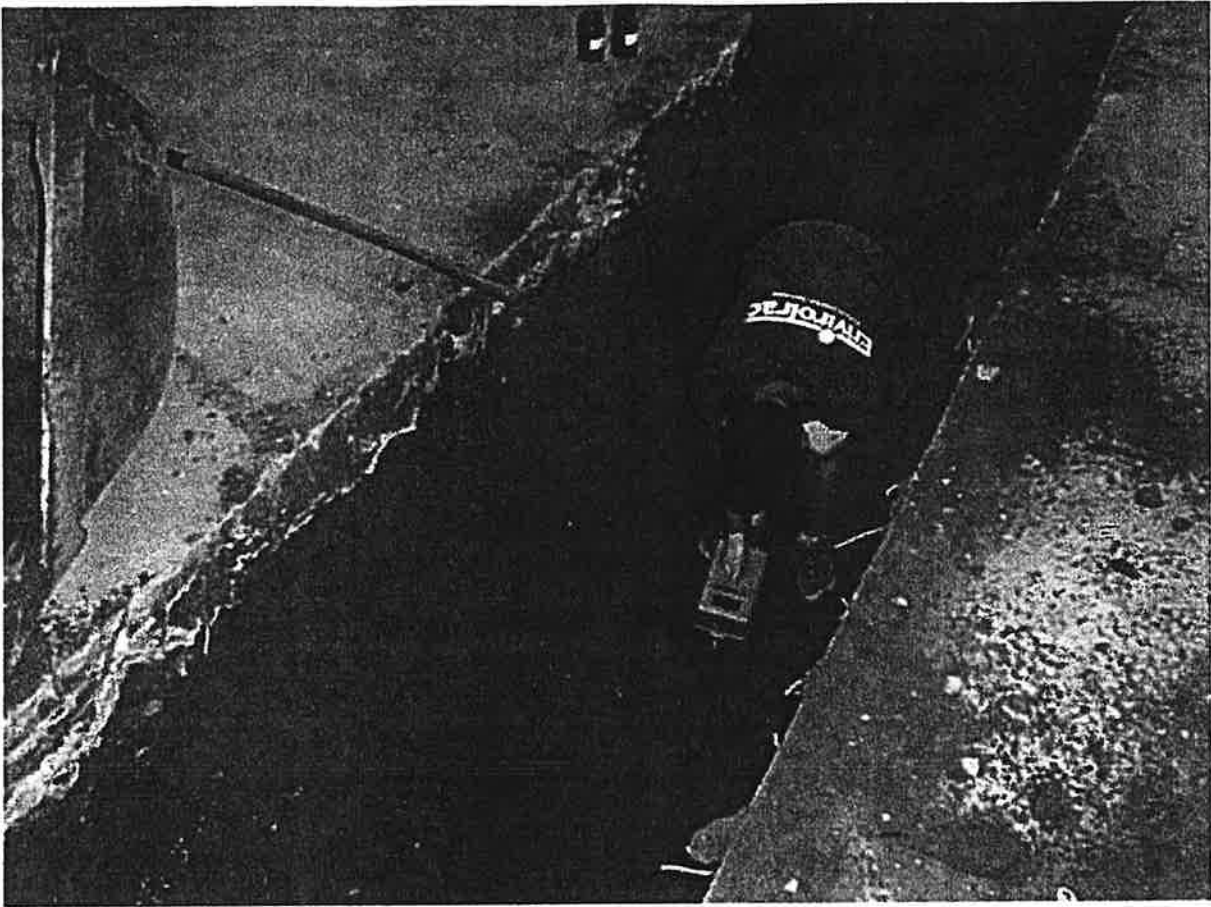
Attachment

Not To Scale

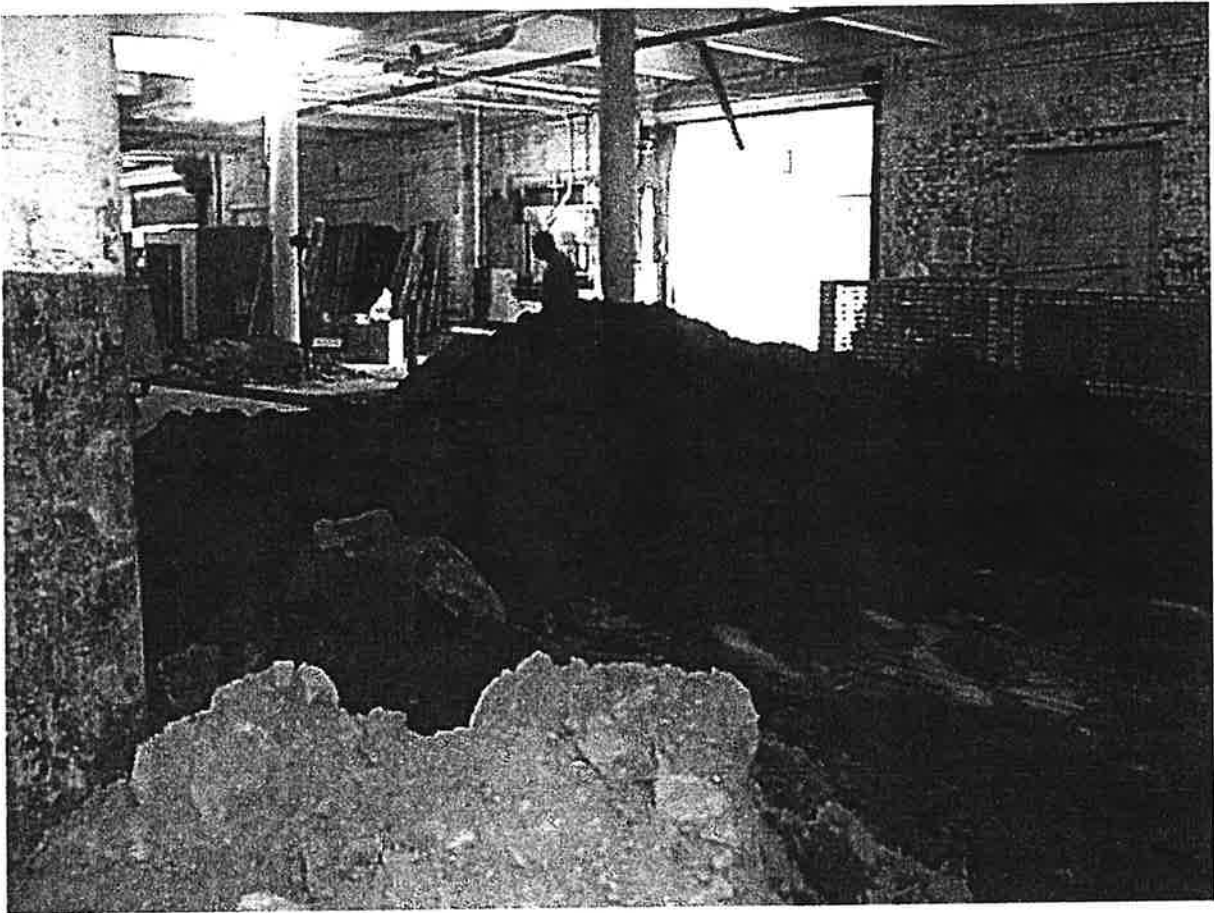


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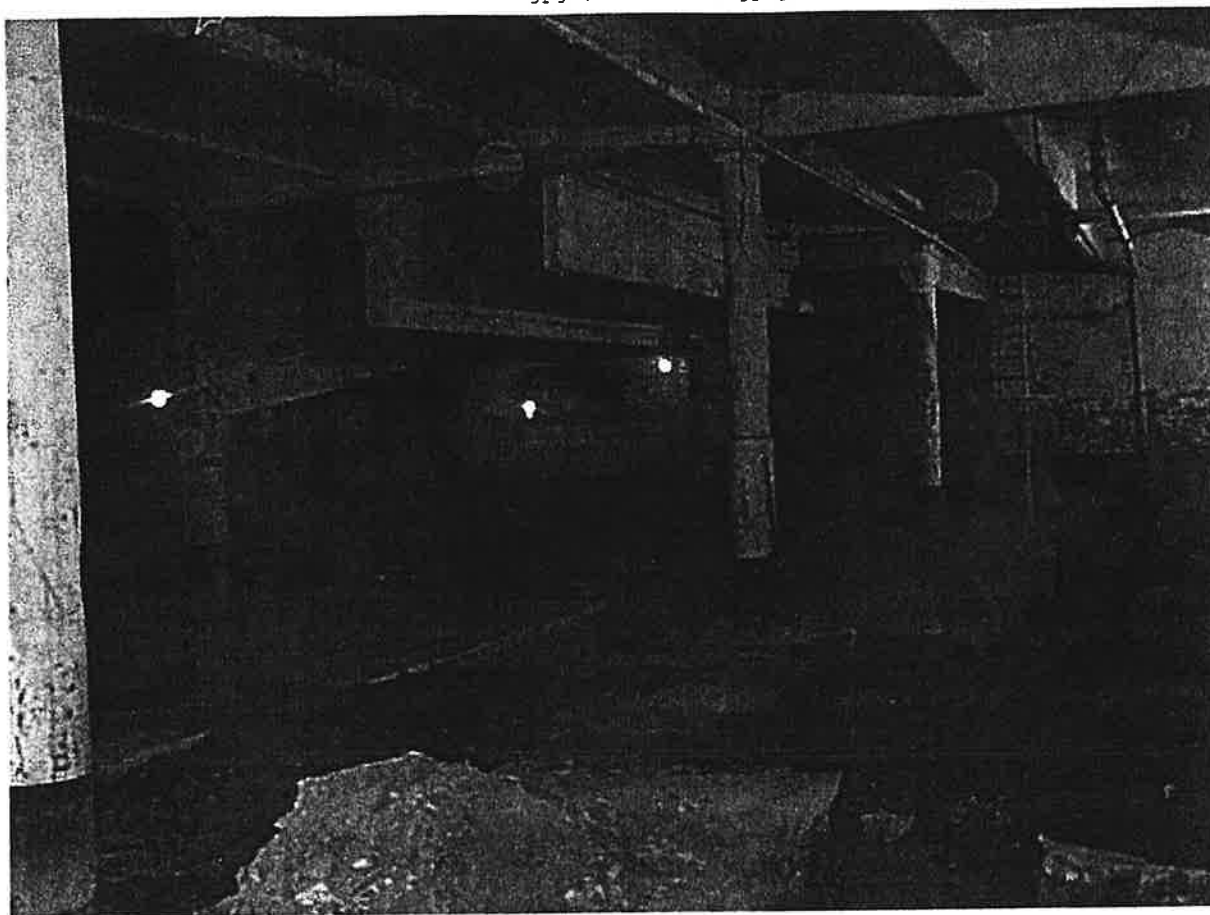
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Pic00006.jpg (640x480x16M jpeg)





SITE ACTIVITIES AND INVESTIGATION REPORT

**FORMER PARKING GARAGE
438 W. 18TH STREET
NEW YORK, NEW YORK**

NYSDEC # 01-03363

August 2001

Prepared For:

Retaco Holding Corporation
362 Kingsland Avenue
Brooklyn, NY 11222

Prepared By:

EnviroTrac Ltd.
80 B Air Park Drive
Ronkonkoma, New York 11779

***A Full Service Environmental Consulting
and Contracting Firm***



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- A. Laboratory Data
- B. Waste Manifests and Weight Tickets
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1. INTRODUCTION

The following Site Activities and Investigation Report supplements the Preliminary Investigation Report dated July 16, 2001, prepared by EnviroTrac Ltd. (ET). This Report summarizes the analytical results of both soil and groundwater sampling performed at the above-referenced property (herein referred to as the site).

2. SITE DESCRIPTION

2.1. Background

On June 28, 2001 EnviroTrac Ltd., on behalf of Verizon, Inc. investigated suspect contaminated soil at the site. Following the discovery of petroleum impacted soil during construction activities, a representative of Verizon contacted the New York State Department of Environmental Conservation (NYSDEC) Spill Hotline. The site was assigned Spill No. 01-03363 as a result of this incident.

The building was a former two-story parking garage. Excavation activities were being conducted under the direction of Tishman Interiors Corporation, on the first floor. The north side of the building contained an excavation area approximately 20' W x 17' L x 6' D. Soil generated from the excavation was piled directly south of the excavation. Pipes and conduit were noted protruding into the south end of the excavation approximately 1' – 3' below grade. It was noted that there was groundwater within the bottom of the excavation area. Trenching was conducted throughout the majority of the concrete floor to accommodate future drainage pipes. The trenches are approximately 3' wide by 1' – 4' deep. Soil generated from the trenching activities was piled adjacent to the trenches. Excavation within the building was limited by the existence of structural footings/columns throughout the floor plan. Site photographs are attached in Appendix C.

3. FIELD ACTIVITIES / INVESTIGATION

On July 12, 2001 on behalf of the property owner, Retaco Holding Corporation, a total of 85.25 tons of non-hazardous petroleum impacted soil was removed from the site and properly disposed at the Soil Remediation of Philadelphia (SRP) facility. The manifests and weight tickets are attached in Appendix B.

Soil from the excavation and trench areas was previously screened in the field with a photo-ionization detector (PID). The screening results were as follows:

North wall: 33 ppm	East wall: 16 ppm	Trench: 634 ppm
South wall: 403 ppm	West wall: 19 ppm	

Based on the PID readings, a total of five soil samples were collected from within the excavation and trench areas (see Figure 1). The soil samples were submitted to a New York State certified laboratory for analysis of volatile and semi-volatile organic compounds (VOCs & SVOCs) using EPA Method 8021 and 8270, respectively.

The excavation was backfilled with clean recycled concrete aggregate material to stabilize an undermined support column on the south wall of the excavation.

4. RESULTS

4.1. Soil and Groundwater Sampling

Based on laboratory analysis, VOCs and SVOCs were detected in soil samples #1, #3 and #4 at concentrations exceeding the NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives. Refer to Table 1 for the analytical summary of the soil samples. The laboratory data report is attached in Appendix A.

One groundwater grab sample was collected from within the excavation area and was submitted for laboratory analysis using EPA Methods 8021/8270 and product fingerprint analysis. Based on laboratory analysis, VOCs were detected above NYSDEC Class GA Ground Water Standards. The fingerprint analysis revealed the VOC's detection match for gasoline. Refer to Table 2 for the analytical summary of the ground-water sample. The laboratory data report is attached in Appendix A.

In addition, a damaged drum on the second floor containing an unknown oil-like liquid was sampled for disposal facility requirements. The laboratory data report is attached in Appendix A.

5. RECOMMENDATIONS

Based on the findings of this investigation, EnviroTrac Ltd. recommends a meeting with the NYSDEC and property owner to discuss closure activities for Spill # 01-03363. The 55-gallon drum that is located on the second floor and contains an unknown oil-like liquid should be overpacked in a 85-gallon DOT approved drum, properly manifested, transported and disposed of at an approved disposal facility.

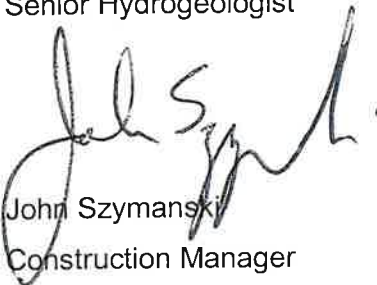
Prepared by:

EnviroTrac Ltd.



Jeff Bohlen

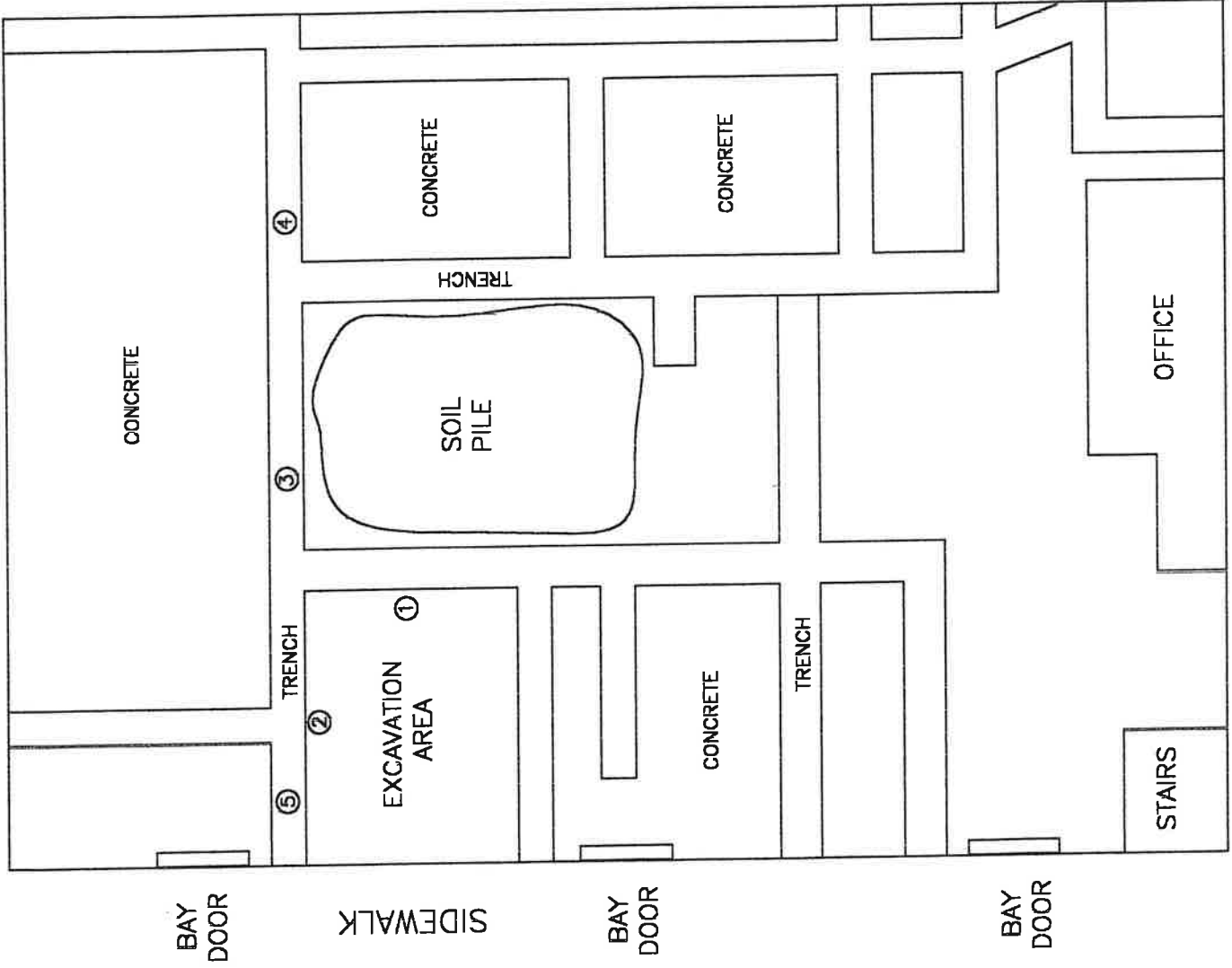
Senior Hydrogeologist



John Szymanski

Construction Manager

WEST 18TH STREET



LEGEND:

○ = SAMPLE LOCATIONS

FIGURE #

1

SITE MAP

REVISION DATE:
AUGUST 2, 2001

SCALE:
NOT TO SCALE

REVISED BY: TB

FORMER PARKING GARAGE
438 W. 18TH STREET
NEW YORK, NEW YORK
NYSDEC SPILL No. 01-03363

Envirotrac
80 B. AIR PARK DRIVE, RONKONKOMA, NEW YORK 11779
PHONE: (631) 471-1500 FAX: (631) 471-6363

Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

07/20/2001

Stars Memo Volatile Compounds - EPA 021

Sample: M1409-2

Client Sample ID: #2

Matrix: Soil

Remarks: See Case Narrative

Analyzed Date: 07/17/2001

Type: Grab

Collected: 07/12/2001 12:05

% Solid: 94.4%

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.38	0.38	ppb	U
71-43-2	Benzene	0.15	0.15	ppb	U
108-88-3	Toluene	0.21	0.21	ppb	U
100-41-4	Ethylbenzene	0.12	0.12	ppb	U
108-38-3	m,p-xylene	0.26	0.26	ppb	U
95-47-6	o-xylene	0.19	0.19	ppb	U
1330-20-7	Xylenes(Total)	0.46	0.46	ppb	U
98-82-8	Isopropylbenzene	0.11	0.11	ppb	U
103-65-1	n-Propylbenzene	0.15	0.15	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	0.11	ppb	U
98-06-6	tert-Butylbenzene	0.16	0.16	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.21	0.21	ppb	U
135-98-8	sec-Butylbenzene	0.13	0.13	ppb	U
99-87-6	p-Isopropyltoluene	0.19	0.19	ppb	U
104-51-8	n-Butylbenzene	0.15	0.15	ppb	U
91-20-3	Naphthalene	0.76	0.76	ppb	U



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

07/20/2001

Stars Memo Volatile Compounds - EPA 021

Sample: M1409-3

Client Sample ID: #3

Matrix: Soil

Type: Grab

Collected: 07/12/2001 13:15

% Solid: 90.6%

Remarks: See Case Narrative

Analyzed Date: 07/17/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	1.99	67.9	ppb	
71-43-2	Benzene	0.77	0.77	ppb	U
108-88-3	Toluene	1.10	7.30	ppb	
100-41-4	Ethylbenzene	0.61	0.61	ppb	U
108-38-3	m,p-xylene	1.38	16.9	ppb	
95-47-6	o-xylene	0.99	122	ppb	
1330-20-7	Xylenes(Total)	2.37	139	ppb	
98-82-8	Isopropylbenzene	0.55	0.55	ppb	U
103-65-1	n-Propylbenzene	0.77	0.77	ppb	U
108-67-8	1,3,5-Trimethylbenzene	15.2	2520	ppb	
98-06-6	tert-Butylbenzene	0.83	46.2	ppb	
95-63-6	1,2,4-Trimethylbenzene	1.10	1.10	ppb	U
135-98-8	sec-Butylbenzene	0.66	15.1	ppb	
99-87-6	p-Isopropyltoluene	0.99	290	ppb	
104-51-8	n-Butylbenzene	0.77	0.77	ppb	U
91-20-3	Naphthalene	3.97	3.97	ppb	U



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

07/20/2001

Stars Memo Volatile Compounds - EPA 021

Sample: M1409-4

Client Sample ID: #4

Matrix: Soil

Remarks: See Case Narrative

Analyzed Date: 07/19/2001

Type: Grab

Collected: 07/12/2001 13:30

% Solid: 94.4%

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	10.6	10.6	ppb	U
71-43-2	Benzene	17.2	17.2	ppb	U
108-88-3	Toluene	18.5	18.5	ppb	U
100-41-4	Ethylbenzene	23.8	159	ppb	
108-38-3	m,p-xylene	40.9	563	ppb	
95-47-6	o-xylene	21.1	160	ppb	
1330-20-7	Xylenes(Total)	58.1	723	ppb	
98-82-8	Isopropylbenzene	25.1	25.1	ppb	U
103-65-1	n-Propylbenzene	40.9	193	ppb	
108-67-8	1,3,5-Trimethylbenzene	14.5	310	ppb	
98-06-6	tert-Butylbenzene	23.8	23.8	ppb	U
95-63-6	1,2,4-Trimethylbenzene	29.0	1040	ppb	
135-98-8	sec-Butylbenzene	26.4	26.4	ppb	U
99-87-6	p-Isopropyltoluene	27.7	352	ppb	
104-51-8	n-Butylbenzene	25.1	282	ppb	
91-20-3	Naphthalene	54.1	1670	ppb	



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

07/20/2001

Total Organic Halides

Sample: M1409-7

Client Sample ID: Unknown Drum

Matrix: Liquid

Type: Grab

Collected: 07/12/2001 15:00

Remarks: See Case Narrative

Analyzed Date: 07/20/2001

Cas No	Analyte	MDL	Concentration	Units	Q
	Total Organic Halides	10.0	211	mg/kg	



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

07/20/2001

Case Narrative

VOLATILES:

The following compounds were calibrated at 25, 50, 100, 150 and 200 ppb levels in the initial calibration curve:

Acetone
2-Butanone
4-Methyl-2-pentanone
2-Hexanone

M&P-Xylenes were calibrated at 10, 40, 100, 200 and 300 ppb levels.

All other compounds were calibrated at 5, 20, 50, 100 and 150 ppb levels.

Samples were quantitated using the continuing calibration standard response factor as opposed to the initial calibration average response factor.

TOX:

Analyzed by American Analytical (NYSDOH #11418)

Reviewed by: _____

[Signature]



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

07/20/2001

ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

- U - The analytical result is a non-detect.
- J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.
- B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
- E - The concentration of the analyte exceeded the calibration range of the instrument.
- D - This flag identifies all compounds identified in an analysis at a secondary dilution.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

- B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).
- U - Entered when the analyte was analyzed for, but not detected.
- J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.

Q - Qualifier specific entries and their meanings are as follows:

- E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

- A - Flame AA
- AS - Semi-automated Spectrophotometric
- AV - Automated Cold Vapor AA
- C - Manual Spectrophotometric
- F - Furnace AA
- NR - when the analyte is not required to be analyzed.
- P - ICP
- T - Titrimetric



ETL

Environmental Testing Laboratories, Inc.

208 Route 109 • Farmingdale • New York 11735

631-249-1456 • Fax: 631-249-8344

CHAIN OF CUSTODY DOCUMENT

M 1409

Project Name: <u>Refaco</u>		Project Manager: <u>J. Symanski</u>		Sampler (Signature): <u>[Signature]</u>		(Print): <u>J. Symanski</u>	
Project Address: <u>438 W. 18th St New York NY</u>							
Client: <u>EnviroTAC, Inc.</u>		JIN: <u>1</u>		Rush by <u>7/23/01</u>			
SAMPLE INFO		Type: SS = Spill Spout, G = Grab, C = Composite, B = Blank		Air - Vol. (Liters)			
Matrix: L = Liquid, S = Soil, SL = Sludge, A = Air, W = Wipe				Include: Flow (CFM)			
ID	Date	Time	Type	Matrix	Sample Location	Total # Cont.	
1	7/12	12:00	G	SS	#1	2	
2	7/12	2:05	G	SS	#2	2	
3	7/12	1:15	G	SS	#3	2	
4	7/12	1:30	G	SS	#4	2	
5	7/12	1:45	G	SS	#5	2	
6	7/12	2:00	G	L	Groundwater	1	
7	7/12	5:00	G	L	Unknown Run	1	
8							
9							
10							
11							
12							
13							
14							
15							
Relinquished by (Signature): <u>[Signature]</u>		Date: <u>7/16/01</u>		Printed Name & Agent: <u>John Symanski</u>		Received by (Signature): <u>[Signature]</u>	
Relinquished by (Signature): <u>[Signature]</u>		Date: <u>7/30</u>		Printed Name & Agent: <u>Symanski</u>		Received for Lab by (Signature): <u>[Signature]</u>	
Comments & Special Instructions: <u>AACTOX / M1394</u>		QA/QC Type:		Number & Type of Containers: <u>2 Amber 10 250ml Amber</u>		Date: <u>7/16/01</u> Printed Name: <u>Ken Berry</u>	
		Preservatives: <u>[Signature]</u>		Temp: <u>50C</u>		Time: <u>11:30</u>	

Sample Summary

EnviroTrac

Verizon, 438 West 18th Street, New York, NY

Job No: E94131

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
E94131-1	06/28/01	13:30 RB	06/30/01	AQ Ground Water	WATER FROM EXCAVATION

Report of Analysis

Client Sample ID: WATER FROM EXCAVATION

Lab Sample ID: E94131-1

Date Sampled: 06/28/01

Matrix: AQ - Ground Water

Date Received: 06/30/01

Method: SW846 8260B

Percent Solids: n/a

Project: Verizon, 438 West 18th Street, New York, NY

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21710.D	5	07/11/01	KNV	n/a	n/a	VS713
Run #2							

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	207	25	ug/l	
71-43-2	Benzene	288	5.0	ug/l	
108-86-1	Bromobenzene	ND	25	ug/l	
74-97-5	Bromochloromethane	ND	25	ug/l	
75-27-4	Bromodichloromethane	ND	5.0	ug/l	
75-25-2	Bromoform	ND	20	ug/l	
74-83-9	Bromomethane	ND	25	ug/l	
78-93-3	2-Butanone (MEK)	ND	25	ug/l	
104-51-8	n-Butylbenzene	ND	25	ug/l	
135-98-8	sec-Butylbenzene	ND	25	ug/l	
98-06-6	tert-Butylbenzene	ND	25	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	ug/l	
108-90-7	Chlorobenzene	ND	10	ug/l	
75-00-3	Chloroethane	ND	25	ug/l	
67-66-3	Chloroform	ND	25	ug/l	
74-87-3	Chloromethane	ND	25	ug/l	
95-49-8	o-Chlorotoluene	ND	25	ug/l	
106-43-4	p-Chlorotoluene	ND	25	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	ug/l	
124-48-1	Dibromochloromethane	ND	25	ug/l	
106-93-4	1,2-Dibromoethane	ND	10	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	25	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	25	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	25	ug/l	
75-71-8	Dichlorodifluoromethane	ND	25	ug/l	
75-34-3	1,1-Dichloroethane	ND	25	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	25	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	25	ug/l	
78-87-5	1,2-Dichloropropane	ND	5.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	25	ug/l	
594-20-7	2,2-Dichloropropane	ND	25	ug/l	
563-58-6	1,1-Dichloropropene	ND	25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WATER FROM EXCAVATION

Lab Sample ID: E94131-1

Date Sampled: 06/28/01

Matrix: AQ - Ground Water

Date Received: 06/30/01

Method: SW846 8260B

Percent Solids: n/a

Project: Verizon, 438 West 18th Street, New York, NY

VOA 8260 List

CAS No.	Compound	Result	RL	Units	Q
100-41-4	Ethylbenzene	155	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	25	ug/l	
98-82-8	Isopropylbenzene	13.2	10	ug/l	
99-87-6	p-Isopropyltoluene	1.8	25	ug/l	J
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	25	ug/l	
74-95-3	Methylene bromide	ND	25	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
91-20-3	Naphthalene	97.0	25	ug/l	
103-65-1	n-Propylbenzene	33.2	25	ug/l	
100-42-5	Styrene	ND	25	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	25	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	ug/l	
127-18-4	Tetrachloroethene	ND	5.0	ug/l	
108-88-3	Toluene	526	5.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	25	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	15	ug/l	
79-01-6	Trichloroethene	ND	5.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	25	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	25	ug/l	
95-63-6	1,2,4-Trimethylbenzene	276	25	ug/l	
108-67-8	1,3,5-Trimethylbenzene	55.6	25	ug/l	
75-01-4	Vinyl chloride	ND	5.0	ug/l	
1330-20-7	Xylene (total)	678	25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		81-118%
17060-07-0	1,2-Dichloroethane-D4	98%		68-124%
2037-26-5	Toluene-D8	99%		85-119%
460-00-4	4-Bromofluorobenzene	100%		75-127%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WATER FROM EXCAVATION
Lab Sample ID: E94131-1
Matrix: AQ - Ground Water
Method: SW846-8015 SW846 3510C
Project: Verizon, 438 West 18th Street, New York, NY

Date Sampled: 06/28/01
Date Received: 06/30/01
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	07/13/01	MSC	07/11/01	OP9771	OP9771
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	Gasoline (C4-C12)	MATCH			
	Turpentine (C9-C11)	NO MATCH			
	Mineral Spirits (C9-C12)	NO MATCH			
	Kerosene (C9-C18)	NO MATCH			
	Diesel Fuel/Fuel oil #2 (C9-C)	NO MATCH			
	Fuel Oil #4 (C11-C24)	NO MATCH			
	Fuel Oil #6 (C11-C26)	NO MATCH			
	Other Patterns	NO MATCH			

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

80B Air Park Drive
Ronkonkoma, NY 11779
(631) 471-1500, Fax - (631) 471-6363
Contact:

94131

Bill To: Verizon-NYC

438 W. 18th St.

 XY, YX

contact: John Quattroli

Verizon - NY
438 W. 18th St.
NY, NY

[illegible]

VO PH VALUE>2

$$\approx 12.5$$

ⓧ

100

12

24 Blue Pass

489

**APPENDIX B
WASTE MANIFESTS AND WEIGHT TICKETS**

ALLIED WASTE SERVICES, INC.

2163 MERRICK AVE., MERRICK, NY 11566 • TEL: 1-800-969-DIRT • FAX: 516-867-6480

Log Number

1588

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name Retaco Holding Corp.

Shipping Location Same

Address 362 Kingsland Ave

Address 438 W. 18th St

Brooklyn, NY

New York, NY

Phone No. _____

Phone No. _____

Approval
Number

Description of Material

Non hazardous petrol
Contaminated soil
Destined for recycling

Codes

Gross Weight

4756

Tare Weight

1300

Net Weight

3456

Net Weight (Tons)

34.56

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name

Signature

Shipment Date

7/12/01

Middlesex Materials Inc

TRANSPORTER

Transporter Name

P.O. Box 124

Driver Name (Print)

BUTCH DUCK

Address

Iselin, NJ 08830

Vehicle License No./State

AC 711P NJ

NJ458

Truck Number

508

State Permit #

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature

Shipment Date

Driver Signature

Delivery Date

7-12-01

7-12-01

Clean Earth of Philadelphia

DESTINATION

Site Name 201 S. 61st. Street, Philadelphia, PA

Phone No. 301220

Address

State Permit #

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Signature

M. Schwartz

7-12-01

Receipt Date

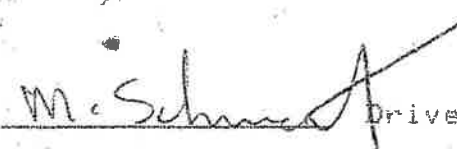
Transaction No. 21007
Clean Earth of Phila., Inc.
3201 S. 61st Street
Philadelphia, Pa. 19153
Have a nice day!

	Date	Time	Scale
In:			0
Out:	07/12/2001	11:18	1

Vehicle ID:	M708	Middlesex	Gross	47.56 tn
Customer ID:	A	Allied Environmental	Tare	13.00 tn (M)
Material ID:	001	Soil	Net:	34.56 tn
Approval ID:	5025	RECTO HOLDING CORP.,		

Operator: S

Operator Signature:



Driver Signature:



Approval Load Count : 1
Approval Net Weight : 34.56 tn

ALLIED WASTE SERVICES, INC.

2163 MERRICK AVE., MERRICK, NY 11566 • TEL: 1-800-969-DIRT • FAX: 516-867-6480

Log Number

1588

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name Betaco Holding Corp.

Shipping Location Same

Address 362 Kingsland Ave

Address 438 W. 18th St

Brooklyn, NY

New York, NY

Phone No. _____

Phone No. _____

Approval
Number

Description of Material

Codes

Gross Weight

49.36

Tare Weight

13.80

Net Weight

35.56

Net Weight (Tons)

35.56

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name John V. S.

Signature

7/12/01
Shipment Date

TRANSPORTER

Transporter Name Middlesex Materials Inc

Driver Name (Print) Erica H. M.

Address P.O. Box 124

Vehicle License No./State 11F553H

Iselin, NJ 08830

Truck Number 706

State Permit # NJ458

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature Erica H. M.

Shipment Date 7/12/01

Driver Signature Erica H. M.

Delivery Date 7/12/01

Clean Earth of Philadelphia DESTINATION

Site Name 3201 S. 61st. Street, Philadelphia, PA

Phone No. 301220

Address _____

State Permit # _____

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

M. Schwartz

Name of Authorized Agent

Signature

CONTRACTOR

Receipt Date

Transaction No.
21017

Clean Earth of Phila., Inc.
3201 S. 61st Street
Philadelphia, Pa. 19153
Have a nice day!

In:	Date	Time	Scale
Out:	07/12/2001	02:27	0 1

Vehicle ID: M706
Customer ID: A
Material ID: 001
Approval ID: 5025

Middlesex
Allied Environmental
Soil
RECTO HOLDING CORP.,

Gross:	49.36 tn
Tare:	13.80 tn (M)
Net:	35.56 tn

Operator: 5

Operator Signature: M. Schwartz Driver Signature: Eventy M.

Approval Load Count : 2
Approval Net Weight : 70.12 tn

ALLIED WASTE SERVICES, INC.

2163 MERRICK AVE., MERRICK, NY 11566 • TEL: 1-800-969-DIRT • FAX: 516-867-6480

NON-HAZARDOUS MATERIAL MANIFEST

Log Number

TRK 710

GENERATOR

Generator Name Rafaco Holdings Corp. Shipping Location _____
Address 362 Kingsland Ave Address _____
Brooklyn, NY 11222
Phone No. (718) 0391-5300 Phone No. _____

Approval Number

Description of Material

Codes

Gross Weight

28.63

Tare Weight

13.56

Net Weight

15.13

Net Weight (Tons)

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name

Signature

Shipment Date

TRANSPORTER

Transporter Name Middlesex

Driver Name (Print)

Address ISBL, W, NT

Vehicle License No./State

Truck Number

State Permit # NT 458

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature

Shipment Date

Driver Signature

Delivery Date

Site Name

DESTINATION

Phone No.

Address

State Permit #

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Signature

7/12/01

Transaction No.
21019

Clean Earth of Phila., Inc.
3201 S. 61st Street
Philadelphia, Pa. 19153
Have a nice day!

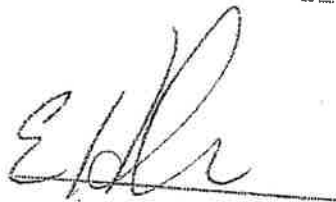
Vehicle ID: M710
Customer ID: A
Material ID: 001
Approval ID: 5025

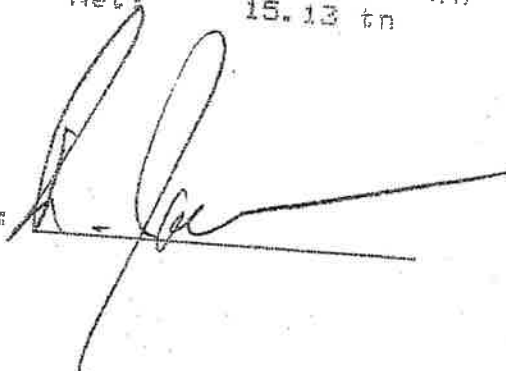
MIDDLESEX
Allied Environmental
Soil
RECTO HOLDING CORP.,

In:	Date	Time	Scale
Out:	07/12/2001	06:37	0 1

Gross:	28.63 tn
Tare:	13.50 tn (M)
Net:	15.13 tn

Operator: 5

Operator Signature: 

Driver Signature: 

Approval Load Count : 3
Approval Net Weight : 85.25 tn

**APPENDIX C
PHOTO DOCUMENTATION**

Photograph Documentation

438 West 18th Street
New York, NY



1. Stockpiled petroleum contaminated soil adjacent to the excavation.



4. View into bottom of excavation with undermined column located to the left.



2. Removal of contaminated soil with a front end loader.



5. Back-filled excavation with clean recycled concrete aggregate to stabilize support column.



3. Loading of contaminated soil onto trucks for transportation to SRP.



6. Hydrogeologist screening trench in Sample location #3 with a PID.



November 30, 2001

Mr. Mark Tibby
New York State DEC
Region II
47-40 21st Street
Long Island City, NY 11101

VIA: HAND DELIVERED

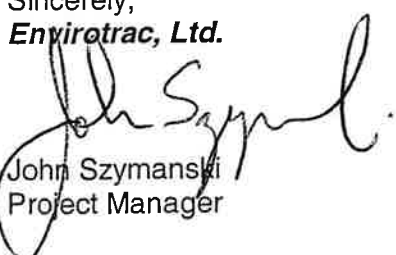
**Re: Former Parking Garage
438 West 18th Street
New York, New York
NYSDEC Spill # 01-03363**

Dear Mr. Tibby:

Enclosed please find the Subsurface Investigation Report for the above-referenced location on behalf of Retaco Holding Corporation. This report contains a site description, field investigation information collected during excavation activities, analyses obtained from subsurface drilling operations and recommendations.

If you have any questions or comments, please do not hesitate to contact me at (631) 471-1500.

Sincerely,
Envirotrac, Ltd.



John Szymanski
Project Manager

Enclosure

cc: Patrick Vecchione – Retaco Holding Corporation
John Quatralli - Verizon

SUBSURFACE INVESTIGATION REPORT

**FORMER PARKING GARAGE
438 W. 18TH STREET
NEW YORK, NEW YORK**

NYSDEC # 01-03363

November 2001

Prepared For:

Retaco Holding Corporation
362 Kingsland Avenue
Brooklyn, NY 11222

Prepared By:

EnviroTrac Ltd.
80 B Air Park Drive
Ronkonkoma, New York 11779

*A Full Service Environmental Consulting
and Contracting Firm*

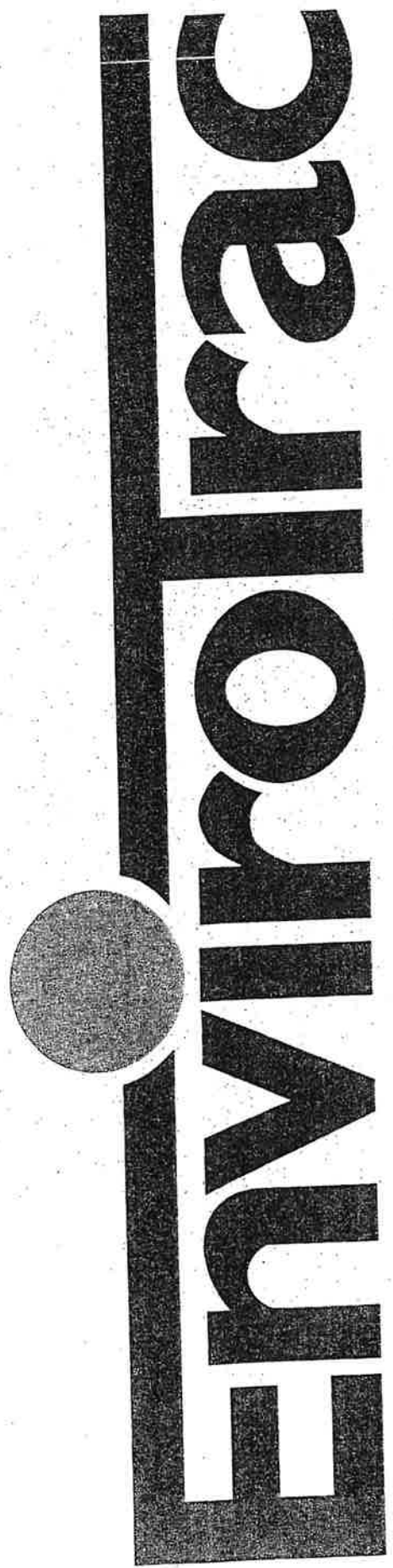


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1. Site Location
2. Soil Sampling Locations
3. Ground-water Sampling Locations
4. Proposed Boring and Monitoring Well Locations

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1. Analytical Summary of Soil Samples
2. Analytical Summary of Ground-water Samples
3. Soil Boring Logs

APPENDICIES

- A. Laboratory Data
- B. Waste Manifests and Weight Tickets
- C. Photo Documentation

1. INTRODUCTION

The following Subsurface Investigation Report supplements the Site Activities and Investigation Report dated August 2001, prepared by EnviroTrac Ltd. (ET). This Report summarizes the analytical results of both soil and ground-water sampling performed at the above-referenced property (herein referred to as the site).

2. SITE DESCRIPTION & BACKGROUND

The current building at the site has been utilized as a parking garage since its construction in 1915. Prior to 1915, the site was a natural gas storage facility owned by the Consolidated Gas Company. The site is located at 440 West 18th Street, Manhattan, New York. The site is surrounded by an automobile repair facility, commercial, and residential properties.

The site is designated as Block 715, Lot 59 and is located approximately one and three-quarters of a mile west of the F.D.R. Drive and the East River, two miles southwest of Central Park, 500 feet east of the Hudson River, and one and one-quarter miles north of the Holland Tunnel (Figure 1). The site includes a total of approximately 39,375 square feet of land.

The site is located south of Central Park and is situated in the Manhattan Prong, a geological region of metamorphosed Paleozoic marine sedimentary rocks. These rocks overlie a billion year old basement metamorphic rock identified as a schist. Locally, the rock is known as the Manhattan Schist, a strongly foliated crystalline rock whose minerals have developed parallelism (align in the same direction) as a result of dynamic metamorphic processes that occurred during its formation.

During renovations and construction activities being performed at the site, EnviroTrac Ltd., on behalf of Verizon, Inc. investigated suspect contaminated soil at the site on June 28, 2001. Following the discovery of petroleum impacted soil during construction activities, a representative of Verizon contacted the New York State Department of Environmental Conservation (NYSDEC) Spill Hotline. The site was assigned Spill No. 01-03363 as a result of this incident.

3. PREVIOUS FIELD ACTIVITIES / INVESTIGATIONS

3.1. Phase 1 Environmental Site Assessment

Langan Engineering and Environmental Services, Inc. (Langan) of Elmwood Park, New Jersey performed a Phase 1 Environmental Site Assessment (ESA) at the site, dated March 31, 2000. The ESA consisted of information obtained through an inspection of the site, conversations with the property representative, local and state officials, assessing of environmental databases, and a review of historical Sanborn Maps.

Five areas of concern that were identified in the ESA include former underground storage tanks (USTs), a former hydraulic lift system, floor drains, previous property use, and suspect asbestos-containing insulation.

The former USTs were removed from the site on December 12, 1993 and included one (1) 4000-gallon diesel tank and five (5) 550-gallon gasoline tanks. Based on a hand drawn map of the tank removals, the five (5) gasoline USTs were located under the northeast corner of the garage and the diesel UST was located between the C and D columns on the west side of the garage. The tanks were removed by Gasoline Installations, Inc. of Inwood, New York and according to a notarized affidavit, from December 28, 1993, no evidence of soil contamination was observed during the tank removals.

The former hydraulic lift system was located in the southwest area of the garage. Remnants of the former lift were observed during the ESA. According to the ESA no information regarding the use of the lift system, whether it was drained of all hydraulic oils or how it was abandoned in place was found. Currently the remnants on the lift system are no longer present at the site.

The floor drains were reportedly connected to the city sewer system according to the ESA. During the ESA no staining was observed in the vicinity of the floor drains. Subsequent to the ESA, the floor drains have been removed by Tishman Interiors Corporation during construction activities. No contamination was reported in conjunction with the removal of the drains.

The site was previously occupied by the Consolidated Gas Company. The site was utilized as a natural gas storage facility which contained two large gas holding tanks and support facilities. These structures were demolished for the construction of the existing building that was erected in 1915.

The suspect asbestos containing insulation was observed during the ESA. The insulation is not a point of concern within the scope of this report but should be removed and disposed of by a licensed contractor if it has not been addressed to date.

According to the ESA there are seven sites with leaking underground storage tanks (LUSTs) within one-eighth of a mile from the site. The LUST sites include Hertz/Penske 493 10th Avenue and Mendon Leasing Corp. 515 West 18th Street, which are located 115 and 167 feet away from the site, respectively. Records indicate that tank failures, associated with either gasoline or diesel fuel, were reported in 1989 for the Hertz site and 1996 for the Mendon site. Both LUST sites may adversely effect the environmental quality at the site.

3.2 Removal of Petroleum-Impacted Soil

Excavation activities were being conducted under the direction of Tishman Interiors Corporation, on the first floor. The north side of the building contained an excavation area approximately 20' W x 17' L x 6' D. Soil generated from the excavation was piled directly south of the excavation. Pipes and conduit were noted protruding into the south end of the excavation approximately 1' – 3' below grade. It was noted that there was ground water within the bottom of the excavation area. Trenching was conducted throughout the majority of the concrete floor to accommodate future drainage pipes. The trenches are approximately 3' wide by 1' – 4' deep. Soil generated from the trenching activities was piled adjacent to the trenches. Excavation within the building was limited by the existence of structural footings/columns throughout the floor plan. Site photographs are attached in Appendix C.

On July 12, 2001 on behalf of the property owner, Retaco Holding Corporation, a total of 85.25 tons of non-hazardous petroleum impacted soil was removed from the site and properly disposed at the Soil Remediation of Philadelphia (SRP) facility. The manifests and weight tickets are attached in Appendix B.

Soil from the excavation and trench areas was previously screened in the field with a photo-ionization detector (PID). The screening results were as follows:

North wall: 33 ppm	East wall: 16 ppm	Trench: 634 ppm
South wall: 403 ppm	West wall: 19 ppm	

Based on the PID readings, a total of five soil samples were collected from within the excavation and trench areas (see Figure 2). The soil samples were submitted to a New York State certified laboratory for analysis of volatile and semi-volatile organic compounds (VOCs & SVOCs) using EPA Methods 8021 and 8270, respectively.

The excavation was backfilled with clean recycled concrete aggregate material to stabilize an undermined support column on the south wall of the excavation.

VOCs and SVOCs were detected in Soil Samples #1, #3 and #4 at concentrations exceeding the NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives. Refer to Table 1 for the analytical summary of the soil samples. The laboratory data report is attached in Appendix A.

One ground-water grab sample was collected from within the excavation area and was submitted for laboratory analysis using EPA Methods 8260/8270 and petroleum product fingerprint analysis (see Figure 3). Based on laboratory analysis, VOCs were detected above NYSDEC TAGM 4046 Ground Water Standards. No SVOCs were detected above the laboratory's method detection limit. The fingerprint analysis revealed a sample match for gasoline. Refer to Table 2 for the analytical summary of the ground-water sample. The laboratory data report is attached in Appendix A.

In addition, a damaged drum on the second floor containing an unknown oil-like liquid was sampled for disposal facility requirements. The laboratory data report is attached in Appendix A.

3.3 Removal of Damaged Drum

On August 13, 2001, one 55-gallon drum was removed from the site by Able Environmental Service. The drum was overpacked in a 85-gallon DOT approved drum and transported for

disposal to AB Oil Service, Ltd. of Bohemia, New York. The manifest is attached in Appendix B.

4. SUBSURFACE INVESTIGATION

On August 21, 2001, EnviroTrac Ltd. performed an onsite Subsurface Investigation that included the collection of soil and ground water samples for laboratory analysis. Twelve (12) borings were advanced using a Geoprobe. One (1) soil sample (see Figure 2) and one (1) ground-water sample (see Figure 3) was collected from each borehole. Each boring was logged and the soil samples collected were submitted to a New York State certified laboratory for analysis of VOCs and SVOCs using EPA Methods 8021 and 8270, respectively. The ground water samples were submitted to a New York State certified laboratory for analysis of VOCs using EPA Method 8021. Refer to Table 3 for the summary of the boring logs.

Based on laboratory analysis, VOCs and SVOCs were detected in soil samples from Borings B1 and Borings B4 through B11 at concentrations exceeding the NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives. Soil samples collected from Borings B2, B3, and B12 contained concentrations of VOCs and SVOCs below NYSDEC TAGM #4046 Soil Cleanup Objectives. Refer to Table 1 for the analytical summary of the soil samples. The laboratory data report is attached in Appendix A.

VOCs were detected in ground-water samples from all Borings, B-1 through B-12, at concentrations exceeding the NYSDEC TAGM #4046 Ground Water Standards. Refer to Table 2 for the analytical summary of the ground water samples. The laboratory data report is attached in Appendix A.

5. ADDITIONAL REMOVAL OF PETROLEUM IMPACTED SOIL

An additional sixty (60) cubic yards of contaminated soil was removed from the site during late August and throughout September 2001. The soil was removed during excavations associated with construction activities. The soils were removed on August 27TH, September 5TH, 21ST and 22ND, 2001. All soils were placed in 15 cubic yard roll-off containers and

removed to AB Oil Service by National Waste Disposal Corporation. The waste manifests are attached in Appendix B.

6. RECOMMENDATIONS

Based on a culmination of the findings of these investigations, EnviroTrac Ltd. recommends performing additional soil and ground-water sampling for delineation purposes and remedial design. Five borings will be advanced using a Geoprobe and one (1) soil sample and one (1) ground-water sample will be collected per borehole (see Figure 4). Additionally, eight (8) medium specification monitoring wells, each to a total depth of approximately fifteen (15) feet below grade, will be installed at the site (see Figure 4). The monitoring wells would be used to calculate ground-water flow direction, check for the presence of free-phase petroleum product, and to obtain ground-water samples for analysis of VOCs and SVOCs using EPA Methods 8021 and 8270 BN (STARS) compounds only.

Prepared by:

EnviroTrac Ltd.

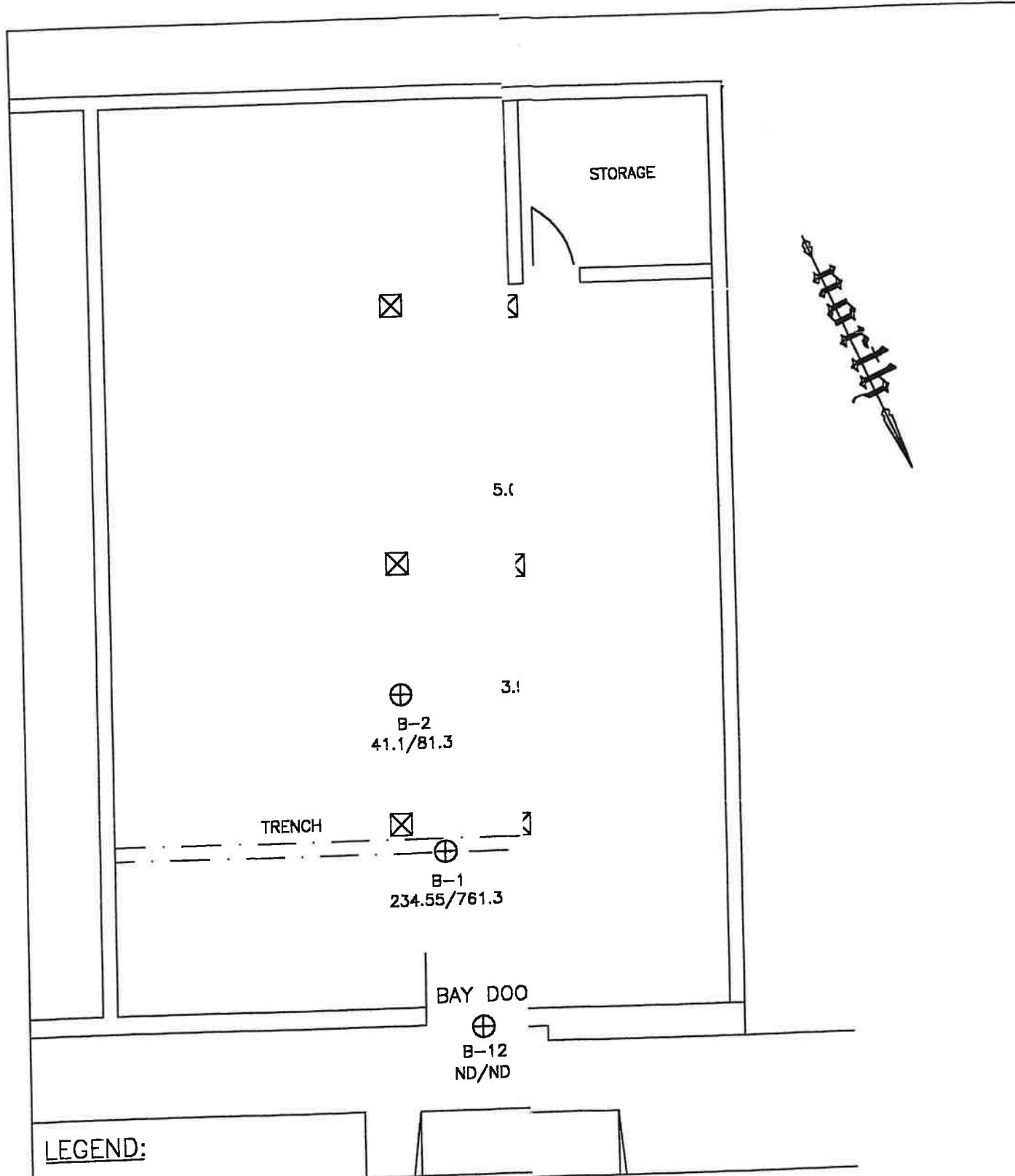
John Szymanski

Construction Manager



Name: JERSEY CITY
 Date: 11/8/101
 Scale: 1 inch equals 1333 feet

Location: 040° 43' 58.3" N 074° 01' 09.3" W
 Caption: Figure 1 - Site Location Map



LEGEND:

- ⊗ = COLUMN LOCATIONS
- ⊕ = EXISTING BORING LOCATION
- = GRAB
- RESULTS IN ug/L
- ND = NOT DETECTED

 AREA OF EXCAVATION

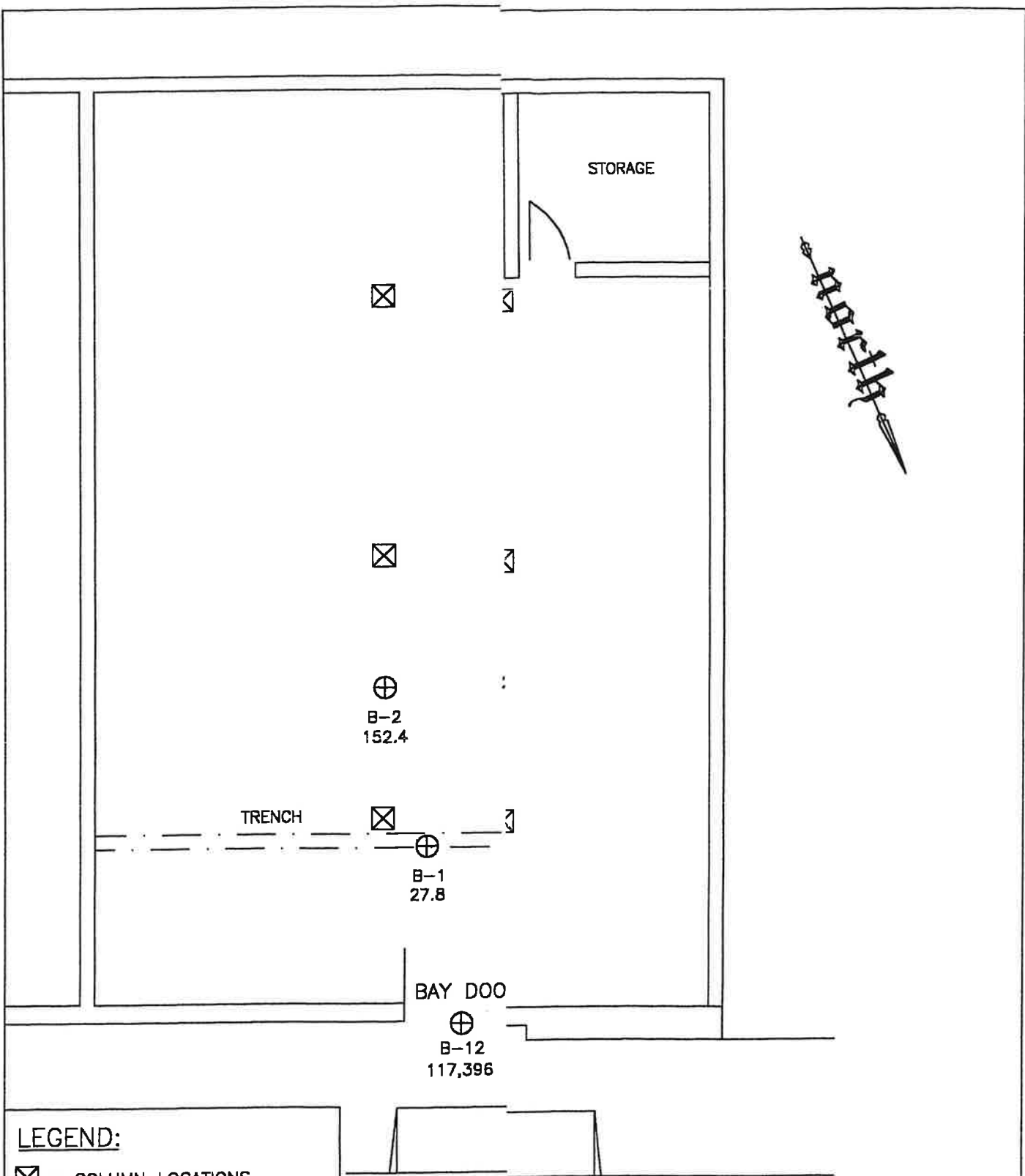
SULTS OF NEW GEOPROBE,
L MONITORING WELLS MAY BE INSTALLED

FIGURE #

2

EnviroTrac

RD R. AIR PARK DRIVE, RONKONKOMA, NEW YORK 11779



LEGEND:

⊗ = COLUMN LOCATIONS

⊕ = BORING LOCATION

○ = GRAB

RESULTS IN ug/L

ND = NOT DETECTED



AREA OF EXCAVATION

SULTS OF NEW GEOPROBE,
- MONITORING WELLS MAY BE INSTALLED



FIGURE #

3

EnviroTrac

80 B. AIR PARK DRIVE, RONKONKOMA, NEW YORK 11779

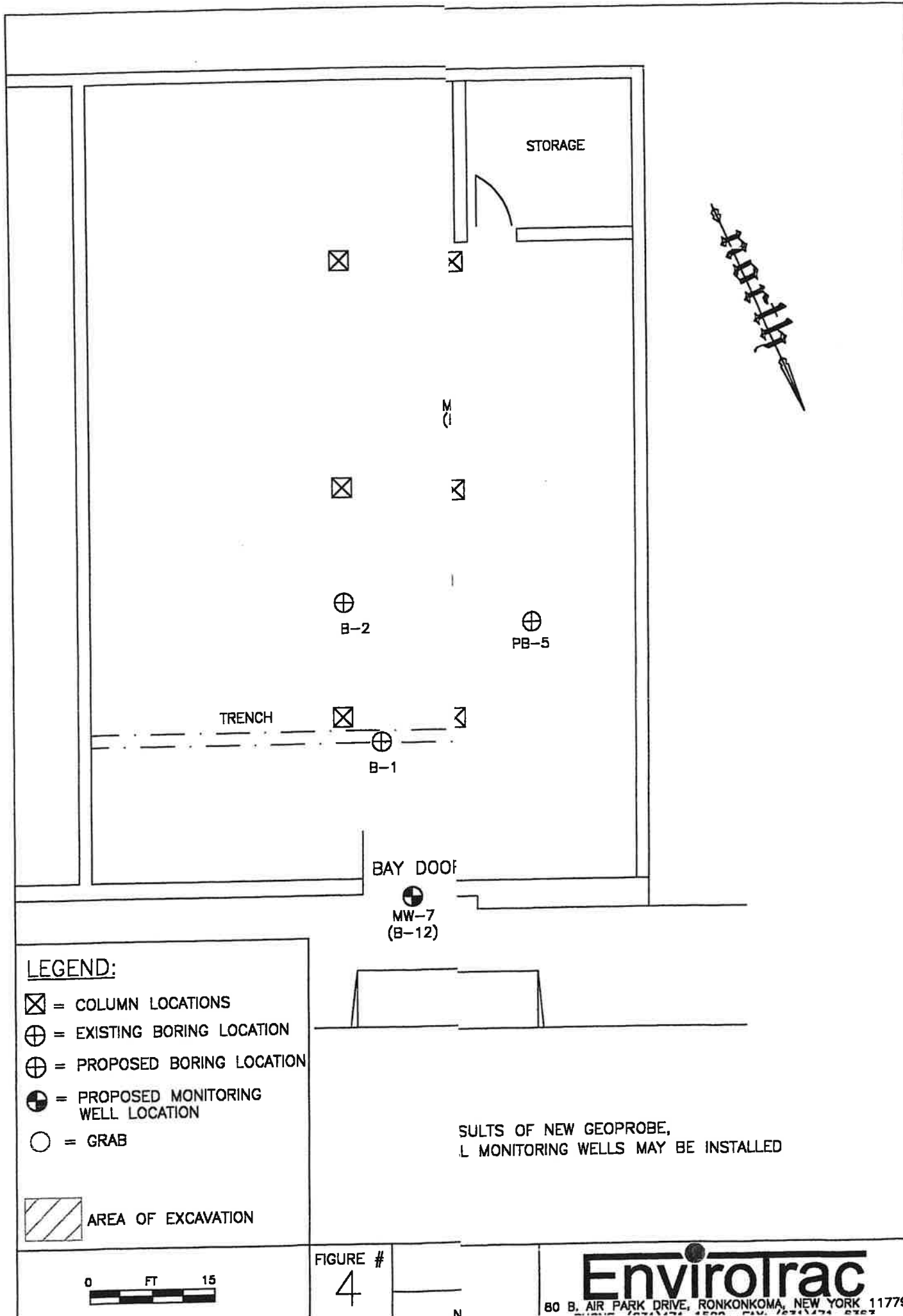


Table 1 - Analytical Summary of Soil Samples

438 West 18th Street
New York, New York

Analytical Parameter	Sample #1	Sample #2	Sample #3	Sample #4	Sample #5	B-1 (8 ft bg)	B-2 (8 ft bg)	B-3 (4 ft bg)	B-4 (8 ft bg)	B-5 (8 ft bg)	B-6 (4 ft bg)	B-7 (8 ft bg)	B-8 (8 ft bg)	B-9 (4 ft bg)	B-10 (8 ft bg)	B-11 (8 ft bg)	B-12 (8 ft bg)	NYSDEC TAGM* Objectives
MTBE	ND	ND	67.9	ND	ND	ND	ND	ND	ND	ND	ND	9.7	ND	ND	ND	ND	ND	120
1,2,4-Trimethylbenzene	17,600	ND	ND	1,040	ND	13.2	17.7	ND	0.88	25,300	755	5.1	168,000	2.6	3.3	ND	ND	10,000
1,3,5-Trimethylbenzene	7,550	ND	2,520	310	ND	90	7	ND	4.2	7,470	373	325	55,100	97.8	37.2	ND	ND	3,300
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,010	ND	ND	ND	ND	60 or MDL
Ethylbenzene	ND	ND	ND	159	ND	11.9	ND	ND	ND	1,520	8.9	ND	39,100	ND	ND	ND	ND	5,500
Isopropylbenzene	ND	ND	ND	ND	ND	2.7	ND	ND	ND	561	9	ND	7,380	ND	ND	ND	ND	2,300
Naphthalene	451	ND	ND	1,670	ND	9.1	ND	ND	ND	5,540	624	ND	27,000	ND	4.2	ND	ND	13,000
n-Butylbenzene	2,080	ND	ND	282	ND	12.5	ND	ND	ND	ND	121	ND	ND	ND	ND	ND	ND	10,000
n-Propylbenzene	ND	ND	ND	193	ND	14.3	ND	ND	ND	1,900	40.8	ND	23,800	ND	ND	ND	ND	3,700
p-Isopropyltoluene	1,900	ND	290	352	ND	ND	ND	ND	ND	37.4	ND	ND	ND	ND	ND	ND	ND	10,000
sec-Butylbenzene	ND	ND	15.1	ND	ND	1.6	ND	ND	ND	ND	ND	ND	2,760	ND	ND	ND	ND	10,000
tert-Butylbenzene	ND	ND	46.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10,000
Toluene	ND	ND	7.3	ND	ND	0.95	ND	ND	ND	97.2	ND	ND	1,410	ND	ND	ND	ND	1,500
Total Xylenes	4,600	ND	139	723	ND	78.3	16.4	1	ND	15,200	200	18.6	235,000	3.4	10.3	ND	ND	1,200
Total VOCs	34,481	--	3,086	4,729	--	234.55	41.1	3.9	5.06	57,686.2	2,170.1	358.4	561,560	54.5	54.5	--	--	--
Naphthalene	1,240	142	508	481	31.3	69.6	ND	188	ND	2,040	521	1,150	11,200	399	31.1	61.6	ND	13,000
Acenaphthene	54.8	ND	674	185	ND	ND	ND	ND	ND	103	63.2	52.5	291	28.7	ND	ND	ND	50,000
Anthracene	69.1	ND	638	208	ND	ND	ND	ND	ND	63.3	74.9	115	128	60.6	ND	50.8	ND	50,000
Benzo(a)anthracene	137	ND	440	347	ND	79.3	ND	ND	38.2	61.1	131	277	188	198	31.1	ND	ND	224 or MDL
Benzo(a)pyrene	161	ND	273	344	ND	ND	ND	ND	ND	34.4	93.1	188	67.6	181	24.4	280	ND	61 or MDL
Benzo(b)fluoranthene	133	ND	227	338	ND	108	ND	ND	ND	25.6	98.5	199	50.2	195	22.2	226	ND	61 or MDL
Benzo(g,h,i)perylene	130	ND	126	196	ND	78.3	ND	ND	ND	ND	52.5	113	31.6	75.5	ND	234	ND	50,000
Benzo(k)fluoranthene	114	ND	311	265	ND	71.7	ND	ND	ND	31.1	65.3	202	54.5	157	26.7	252	ND	610 or MDL
Chrysene	158	ND	422	361	32.3	65.9	ND	ND	36	53.3	133	265	105	234	34.4	248	ND	400
Dibenz(a,h)anthracene	ND	ND	83.9	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	53.2	ND	33.5	ND	14.3 or MDL
Fluoranthene	135	24.4	1,330	829	ND	75	46.3	ND	61.1	138	308	650	248	309	51.1	432	ND	50,000
Fluorene	126	ND	904	199	ND	ND	ND	ND	ND	100	66.4	58.2	430	53.2	ND	ND	ND	50,000
Indeno(1,2,3-cd)pyrene	317	ND	129	183	ND	64.1	ND	ND	ND	ND	50.3	ND	26.6	131	ND	203	ND	3,200
Phenanthrene	259	32.8	2,510	867	30.2	45.7	ND	ND	50.2	276	361	410	845	182	41.1	239	ND	50,000
Pyrene	259	27.5	1,100	836	25	83.7	35	ND	64.4	137	315	733	284	340	45.6	373	ND	50,000
Total SVOCs	3,250	226.7	9,676	5,759	118.8	761.3	81.3	188	248.9	3,060.80	2,333.20	4,413	13,763	2,598	306.7	2,634	--	--

Notes:

1. Concentration Units = ug/kg (micrograms per kilogram)
2. Laboratory analysis via EPA Methods 8021 for VOCs & 8270 for SVOCs
3. ND = Not Detected above the detection limit of the laboratory
4. * NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives
5. Shaded box indicates concentration levels at/or above the NYSDEC TAGM 4046 Soil Cleanup Objectives.
6. VOCs = Volatile Organic Compounds
7. SVOCs = Semivolatile Organic Compounds
8. MDL = Method Detection Limit

Table 2 - Analytical Summary of Ground-water Samples

438 West 18th Street
New York, New York

Analytical Parameter	Excavation Grab*	B-1 (14 ft bg)	B-2 (8 ft bg)	B-3 (8 ft bg)	B-4 (12 ft bg)	B-5 (12 ft bg)	B-6 (12 ft bg)	B-8 (12 ft bg)	B-9 (12 ft bg)	B-10 (12 ft bg)	B-12 (12 ft bg)	NYSDEC Groundwater Standards
MTBE	NT	23	140	208	54.4	510	444	581	2,030	78.3	2,250	10
Acetone	207	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	50
Benzene	288	4.8	12.4	28.3	98.1	2,470	199	5,050	4,420	1,580	15,700	0.7
Toluene	526	ND	ND	ND	42	ND	3.1	141	2,740	7.5	22,200	5
Ethylbenzene	155	ND	ND	ND	15.5	2,520	ND	616	1,220	7.1	8,400	5
Total Xylenes	678	ND	ND	ND	78.2	8,620	8	2,730	5,460	19.4	39,800	5
Isopropylbenzene	13.2	ND	ND	ND	2.3	208	3.1	94	95.5	21.6	806	5
1,3,5-Trimethylbenzene	55.6	ND	ND	ND	8.9	708	ND	250	498	ND	5,100	5
n-Propylbenzene	33.2	ND	ND	ND	4.9	470	1.8	200	256	14.2	2,710	5
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2,4-Trimethylbenzene	276	ND	ND	ND	29	3,250	2.8	874	1,730	6.6	16,400	5
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
p-Isopropyltoluene	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	640	5
n-Butylbenzene	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	1,020	5
Naphthalene	97	ND	ND	ND	5.4	639	ND	130	290	9.4	2,370	10
Total VOCs	2,330.8	27.8	152.4	236.3	340.0	19,395	661.8	10,666	18,740	1,744	117,396	--

Notes:

1. Concentration Units = ug/L (micrograms per liter)
2. Laboratory analysis via EPA Method 8021 unless noted.
3. ND = Not detected above the method detection limit of the laboratory
4. Shaded box indicates concentration levels at/or above the NYSDEC TAGM 4046 Ground Water Standards.
5. VOCs = Volatile Organic Compounds
6. ft. bg. = Feet Below Grade
7. * = Laboratory analysis of excavation grab sample via EPA Method 8260.
8. NT = compound was not tested for during laboratory analysis

Fingerprint Analysis of Excavation Grab Sample

Compound	Result
Gasoline	Match
Turpentine	No Match
Mineral Spirits	No Match
Kerosene	No Match
Diesel Fuel/Fuel Oil #2	No Match
Fuel Oil #4	No Match
Fuel Oil #6	No Match
Other Patterns	No Match

Note:

1. Laboratory analysis was performed via EPA Methods 8015 and 3510.

Table 3 - Soil Boring Logs

438 West 18th Street
New York, New York

Boring Location	Depth Below Grade (Ft.)	PID Reading (ppm)	Description of Materials
B-1	0-4	0	Backfill.
	4-8	0	Brown Silty Sand with Rock Fragments.
	8-12	0	Wet, Brown Silty Sand with Rock Fragments.
B-2	0-4	0	Mostly cement. Brown Silty Sand with Rock Fragments.
	4-8	0	Brown Silty Sand with Rock Fragments and Cobbles.
B-3	0-4	2.7	Reddish Brown Silty Sand with Rock Fragments.
	4-8	0	Reddish Brown Silty Sand with Rock Fragments.
B-4	0-4	0	Reddish Brown Silty Sand with Rock Fragments and Cobbles.
	4-8	0	Reddish Brown Silty Sand with Rock Fragments and Cobbles.
B-5	0-4	5.5	Brown Silty Sand with Rock Fragments.
	4-8	357	Brownish Black Silty Sand with Rock Fragments and Cobbles.
B-6	0-4	5.5	Brown Silty Sand with Rock Fragments.
	4-8	357	Brownish Black Silty Sand with Rock Fragments and Cobbles.
B-7	0-4	2.6	Light Brown Silty Sand with Rock Fragments and Cobbles.
	4-8	319	Brown Silty Sand with Rock Fragments and Cobbles.
B-8	0-4	388	Brownish Black Silty Sand with Rock Fragments and Cobbles.
	4-8	507	Gray, Brownish Black Silty Sand with Rock Fragments and Cobbles.
B-9	0-4	450	Brown Silty Sand with Rock Fragments.
	4-8	419	Brown Silty Sand with Rock Fragments and Cobbles.
B-10	0-4	0	Brown Silty Sand with Rock Fragments.
	4-8	0	Brown Silty Sand with Rock Fragments.
B-11	0-4	0	Brown Silty Sand with Rock Fragments and Cobbles.
	4-8	0	Brown Silty Sand with Rock Fragments and Cobbles.
B-12	0-4	0	Reddish Brown Silty Sand with Rock Fragments and Cobbles.
	4-8	0	Reddish Brown Silty Sand with Rock Fragments and Cobbles.

**APPENDIX A
LABORATORY DATA**

07/20/2001

Custody Document: M1409

Received: 07/16/2001 14:30
Sampled by: John Szymanski

Client: Envirotrac Env Services

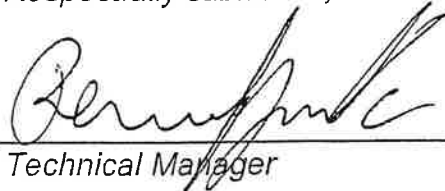
80 B Air Park Drive
Ronkonkoma,
NY 11779

Project: Retaco

438 W. 18th Street
New York,
NY

Manager: John Szymanski

Respectfully submitted,


Technical Manager

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
VA Cert. # 108
NH Cert. # 252592-BA
RI Cert. # 161



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

07/20/2001

Stars Memo Volatile Compounds - EPA 021

Sample: M1409-1

Client Sample ID: #1

Matrix: Soil

Type: Grab

Collected: 07/12/2001 12:00

% Solid: 91.2%

Remarks: See Case Narrative

Analyzed Date: 07/17/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	46.6	46.6	ppb	U
71-43-2	Benzene	21.9	21.9	ppb	U
108-88-3	Toluene	19.2	19.2	ppb	U
100-41-4	Ethylbenzene	30.1	30.1	ppb	U
108-38-3	m,p-xylene	57.5	4450	ppb	
95-47-6	o-xylene	27.4	347	ppb	
1330-20-7	Xylenes(Total)	98.6	4800	ppb	
98-82-8	Isopropylbenzene	34.3	34.3	ppb	U
103-65-1	n-Propylbenzene	28.8	28.8	ppb	U
108-67-8	1,3,5-Trimethylbenzene	27.4	7650	ppb	
98-06-6	tert-Butylbenzene	32.9	32.9	ppb	U
95-63-6	1,2,4-Trimethylbenzene	23.3	17600	ppb	
135-98-8	sec-Butylbenzene	21.9	21.9	ppb	U
99-87-6	p-Isopropyltoluene	32.9	1900	ppb	
104-51-8	n-Butylbenzene	19.2	2080	ppb	
91-20-3	Naphthalene	19.2	451	ppb	



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07/20/2001

Stars Memo Volatile Compounds - EPA 021**Sample:** M1409-2

Client Sample ID: #2

Matrix: Soil

Type: Grab

Collected: 07/12/2001 12:05

% Solid: 94.4%

Remarks: See Case Narrative

Analyzed Date: 07/17/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.38	0.38	ppb	U
71-43-2	Benzene	0.15	0.15	ppb	U
108-88-3	Toluene	0.21	0.21	ppb	U
100-41-4	Ethylbenzene	0.12	0.12	ppb	U
108-38-3	m,p-xylene	0.26	0.26	ppb	U
95-47-6	o-xylene	0.19	0.19	ppb	U
1330-20-7	Xylenes(Total)	0.46	0.46	ppb	U
98-82-8	Isopropylbenzene	0.11	0.11	ppb	U
103-65-1	n-Propylbenzene	0.15	0.15	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	0.11	ppb	U
98-06-6	tert-Butylbenzene	0.16	0.16	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.21	0.21	ppb	U
135-98-8	sec-Butylbenzene	0.13	0.13	ppb	U
99-87-6	p-Isopropyltoluene	0.19	0.19	ppb	U
104-51-8	n-Butylbenzene	0.15	0.15	ppb	U
91-20-3	Naphthalene	0.76	0.76	ppb	U



07/20/2001

Stars Memo Volatile Compounds - EPA 021

Sample: M1409-3

Client Sample ID: #3

Matrix: Soil

Type: Grab

Collected: 07/12/2001 13:15

% Solid: 90.6%

Remarks: See Case Narrative

Analyzed Date: 07/17/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	1.99	67.9	ppb	
71-43-2	Benzene	0.77	0.77	ppb	U
108-88-3	Toluene	1.10	7.30	ppb	
100-41-4	Ethylbenzene	0.61	0.61	ppb	U
108-38-3	m,p-xylene	1.38	16.9	ppb	
95-47-6	o-xylene	0.99	122	ppb	
1330-20-7	Xylenes(Total)	2.37	139	ppb	
98-82-8	Isopropylbenzene	0.55	0.55	ppb	U
103-65-1	n-Propylbenzene	0.77	0.77	ppb	U
108-67-8	1,3,5-Trimethylbenzene	15.2	2520	ppb	
98-06-6	tert-Butylbenzene	0.83	46.2	ppb	
95-63-6	1,2,4-Trimethylbenzene	1.10	1.10	ppb	U
135-98-8	sec-Butylbenzene	0.66	15.1	ppb	
99-87-6	p-Isopropyltoluene	0.99	290	ppb	
104-51-8	n-Butylbenzene	0.77	0.77	ppb	U
91-20-3	Naphthalene	3.97	3.97	ppb	U



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07/20/2001

Stars Memo Volatile Compounds - EPA 021

Sample: M1409-4

Client Sample ID: #4

Matrix: Soil

Remarks: See Case Narrative

Analyzed Date: 07/19/2001

Type: Grab

Collected: 07/12/2001 13:30

% Solid: 94.4%

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	10.6	10.6	ppb	U
71-43-2	Benzene	17.2	17.2	ppb	U
108-88-3	Toluene	18.5	18.5	ppb	U
100-41-4	Ethylbenzene	23.8	159	ppb	
108-38-3	m,p-xylene	40.9	563	ppb	
95-47-6	o-xylene	21.1	160	ppb	
1330-20-7	Xylenes(Total)	58.1	723	ppb	
98-82-8	Isopropylbenzene	25.1	25.1	ppb	U
103-65-1	n-Propylbenzene	40.9	193	ppb	
108-67-8	1,3,5-Trimethylbenzene	14.5	310	ppb	
98-06-6	tert-Butylbenzene	23.8	23.8	ppb	U
95-63-6	1,2,4-Trimethylbenzene	29.0	1040	ppb	
135-98-8	sec-Butylbenzene	26.4	26.4	ppb	U
99-87-6	p-Isopropyltoluene	27.7	352	ppb	
104-51-8	n-Butylbenzene	25.1	282	ppb	
91-20-3	Naphthalene	54.1	1670	ppb	



07/20/2001

Stars Memo Volatile Compounds - EPA 021

Sample: M1409-5

Client Sample ID: #5

Matrix: Soil

Type: Grab

Collected: 07/12/2001 13:45

% Solid: 95.9%

Remarks: See Case Narrative

Analyzed Date: 07/18/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.37	0.37	ppb	U
71-43-2	Benzene	0.15	0.15	ppb	U
108-88-3	Toluene	0.21	0.21	ppb	U
100-41-4	Ethylbenzene	0.11	0.11	ppb	U
108-38-3	m,p-xylene	0.26	0.26	ppb	U
95-47-6	o-xylene	0.19	0.19	ppb	U
1330-20-7	Xylenes(Total)	0.45	0.45	ppb	U
98-82-8	Isopropylbenzene	0.10	0.10	ppb	U
103-65-1	n-Propylbenzene	0.15	0.15	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.10	0.10	ppb	U
98-06-6	tert-Butylbenzene	0.16	0.16	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.21	0.21	ppb	U
135-98-8	sec-Butylbenzene	0.12	0.12	ppb	U
99-87-6	p-Isopropyltoluene	0.19	0.19	ppb	U
104-51-8	n-Butylbenzene	0.15	0.15	ppb	U
91-20-3	Naphthalene	0.75	0.75	ppb	U



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07/20/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M1409-1

Client Sample ID: #1

Matrix: Soil

Remarks:

Analyzed Date: 07/18/2001

Type: Grab

Collected: 07/12/2001 12:00

% Solid: 91.2%

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	90.8	1240	ppb	
83-32-9	Acenaphthene	94.7	54.8	ppb	J
86-73-7	Fluorene	96.3	135	ppb	
85-01-8	Phenanthrene	77.2	317	ppb	
120-12-7	Anthracene	78.7	69.1	ppb	J
206-44-0	Fluoranthene	69.6	216	ppb	
129-00-0	Pyrene	57.7	259	ppb	
56-55-3	Benzo(a)anthracene	55.0	137	ppb	
218-01-9	Chrysene	54.8	158	ppb	
205-99-2	Benzo(b)fluoranthene	90.0	133	ppb	
207-08-9	Benzo(k)fluoranthene	73.0	114	ppb	
50-32-8	Benzo(a)pyrene	59.6	161	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	69.7	126	ppb	
53-70-3	Dibenzo(a,h)anthracene	65.6	65.6	ppb	U
191-24-2	Benzo(g,h,i)perylene	58.1	130	ppb	



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07/20/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M1409-2

Client Sample ID: #2

Matrix: Soil

Remarks:

Analyzed Date: 07/18/2001

Type: Grab

Collected: 07/12/2001 12:05

% Solid: 94.4%

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	87.7	142	ppb	
83-32-9	Acenaphthene	91.5	91.5	ppb	U
86-73-7	Fluorene	93.0	93.0	ppb	U
85-01-8	Phenanthrene	74.6	32.8	ppb	J
120-12-7	Anthracene	76.1	76.1	ppb	U
206-44-0	Fluoranthene	67.3	24.4	ppb	J
129-00-0	Pyrene	55.7	27.5	ppb	J
56-55-3	Benzo(a)anthracene	53.2	53.2	ppb	U
218-01-9	Chrysene	53.0	53.0	ppb	U
205-99-2	Benzo(b)fluoranthene	87.0	87.0	ppb	U
207-08-9	Benzo(k)fluoranthene	70.5	70.5	ppb	U
50-32-8	Benzo(a)pyrene	57.6	57.6	ppb	U
193-39-5	Indeno(1,2,3-cd)pyrene	67.4	67.4	ppb	U
53-70-3	Dibenzo(a,h)anthracene	63.3	63.3	ppb	U
191-24-2	Benzo(g,h,i)perylene	56.1	56.1	ppb	U



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07/20/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M1409-3

Client Sample ID: #3

Matrix: Soil

Type: Grab

Collected: 07/12/2001 13:15

% Solid: 90.6%

Remarks:

Analyzed Date: 07/18/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	91.4	508	ppb	
83-32-9	Acenaphthene	95.4	674	ppb	
86-73-7	Fluorene	96.9	904	ppb	
85-01-8	Phenanthrene	77.7	2510	ppb	
120-12-7	Anthracene	79.3	638	ppb	
206-44-0	Fluoranthene	70.1	1330	ppb	
129-00-0	Pyrene	58.1	1100	ppb	
56-55-3	Benzo(a)anthracene	55.4	440	ppb	
218-01-9	Chrysene	55.2	422	ppb	
205-99-2	Benzo(b)fluoranthene	90.6	227	ppb	
207-08-9	Benzo(k)fluoranthene	73.5	311	ppb	
50-32-8	Benzo(a)pyrene	60.0	273	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	70.2	129	ppb	
53-70-3	Dibenzo(a,h)anthracene	66.0	83.9	ppb	
191-24-2	Benzo(g,h,i)perylene	58.5	126	ppb	



07/20/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M1409-4

Client Sample ID: #4

Matrix: Soil

Type: Grab

Collected: 07/12/2001 13:30

% Solid: 94.4%

Remarks:

Analyzed Date: 07/18/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	87.7	481	ppb	
83-32-9	Acenaphthene	91.5	185	ppb	
86-73-7	Fluorene	93.0	199	ppb	
85-01-8	Phenanthrene	74.6	867	ppb	
120-12-7	Anthracene	76.1	208	ppb	
206-44-0	Fluoranthene	67.3	829	ppb	
129-00-0	Pyrene	55.7	836	ppb	
56-55-3	Benzo(a)anthracene	53.2	347	ppb	
218-01-9	Chrysene	53.0	361	ppb	
205-99-2	Benzo(b)fluoranthene	87.0	338	ppb	
207-08-9	Benzo(k)fluoranthene	70.5	265	ppb	
50-32-8	Benzo(a)pyrene	57.6	344	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	67.4	183	ppb	
53-70-3	Dibenzo(a,h)anthracene	63.3	120	ppb	
191-24-2	Benzo(g,h,i)perylene	56.1	196	ppb	



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07/20/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M1409-5

Client Sample ID: #5

Matrix: Soil

Type: Grab

Collected: 07/12/2001 13:45

% Solid: 95.9%

Remarks:

Analyzed Date: 07/18/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	86.3	31.3	ppb	J
83-32-9	Acenaphthene	90.1	90.1	ppb	U
86-73-7	Fluorene	91.6	91.6	ppb	U
85-01-8	Phenanthrene	73.4	30.2	ppb	J
120-12-7	Anthracene	74.9	74.9	ppb	U
206-44-0	Fluoranthene	66.2	66.2	ppb	U
129-00-0	Pyrene	54.9	25.0	ppb	J
56-55-3	Benzo(a)anthracene	52.3	52.3	ppb	U
218-01-9	Chrysene	52.1	32.3	ppb	J
205-99-2	Benzo(b)fluoranthene	85.6	85.6	ppb	U
207-08-9	Benzo(k)fluoranthene	69.5	69.5	ppb	U
50-32-8	Benzo(a)pyrene	56.7	56.7	ppb	U
193-39-5	Indeno(1,2,3-cd)pyrene	66.3	66.3	ppb	U
53-70-3	Dibenzo(a,h)anthracene	62.4	62.4	ppb	U
191-24-2	Benzo(g,h,i)perylene	55.3	55.3	ppb	U



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07/20/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M1409-6

Client Sample ID: Ground Water

Collected: 07/12/2001 14:00

Matrix: Liquid

Type: Grab

Remarks:

Analyzed Date: 07/18/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	3.00	3.00	ppb	U
83-32-9	Acenaphthene	5.10	5.10	ppb	U
86-73-7	Fluorene	6.10	6.10	ppb	U
85-01-8	Phenanthrene	3.60	3.60	ppb	U
120-12-7	Anthracene	4.10	4.10	ppb	U
206-44-0	Fluoranthene	5.40	5.40	ppb	U
129-00-0	Pyrene	4.70	4.70	ppb	U
56-55-3	Benzo(a)anthracene	4.40	4.40	ppb	U
218-01-9	Chrysene	3.20	3.20	ppb	U
205-99-2	Benzo(b)fluoranthene	7.90	7.90	ppb	U
207-08-9	Benzo(k)fluoranthene	7.00	7.00	ppb	U
50-32-8	Benzo(a)pyrene	3.30	3.30	ppb	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.40	3.40	ppb	U
53-70-3	Dibenzo(a,h)anthracene	4.20	4.20	ppb	U
191-24-2	Benzo(g,h,i)perylene	3.80	3.80	ppb	U



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07/20/2001

PCB (Aroclor) Compounds - EPA 8082/608

Sample: M1409-7

Client Sample ID: Unknown Drum

Collected: 07/12/2001 15:00

Matrix: Liquid

Type: Grab

Remarks:

Analyzed Date: 07/20/2001

Cas No	Analyte	MDL	Concentration	Units	Q
12674-11-2	PCB 1016	256	256	ppb	U
11104-28-2	PCB 1221	192	192	ppb	U
11141-16-5	PCB 1232	160	160	ppb	U
53469-21-9	PCB 1242	192	192	ppb	U
12672-29-6	PCB 1248	128	128	ppb	U
11097-69-1	PCB 1254	96.2	96.2	ppb	U
11096-82-5	PCB 1260	192	192	ppb	U



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07/20/2001

Flash Point (Ignitability)

Sample: M1409-7

Client Sample ID: Unknown Drum

Collected: 07/12/2001 15:00

Matrix: Liquid

Type: Grab

Remarks:

Analyzed Date: 07/18/2001

Cas No	Analyte	MDL	Result	Units	Q
	Flash Point	1.00	>100	deg C	



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07/20/2001

Total Organic Halides

Sample: M1409-7

Client Sample ID: Unknown Drum

Collected: 07/12/2001 15:00

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 07/20/2001

Cas No	Analyte	MDL	Concentration	Units	Q
	Total Organic Halides	10.0	211	mg/kg	



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07/20/2001

Case Narrative

VOLATILES:

The following compounds were calibrated at 25, 50, 100, 150 and 200 ppb levels in the initial calibration curve:

Acetone
2-Butanone
4-Methyl-2-pentanone
2-Hexanone

M&P-Xylenes were calibrated at 10, 40, 100, 200 and 300 ppb levels.

All other compounds were calibrated at 5, 20, 50, 100 and 150 ppb levels.

Samples were quantitated using the continuing calibration standard response factor as opposed to the initial calibration average response factor.

TOX:

Analyzed by American Analytical (NYSDOH #11418)

Reviewed by: _____ 



ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

- U - The analytical result is a non-detect.
- J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.
- B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
- E - The concentration of the analyte exceeded the calibration range of the instrument.
- D - This flag identifies all compounds identified in an analysis at a secondary dilution.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

- B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).
- U - Entered when the analyte was analyzed for, but not detected.
- J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.

Q - Qualifier specific entries and their meanings are as follows:

- E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

- A - Flame AA
- AS - Semi-automated Spectrophotometric
- AV - Automated Cold Vapor AA
- C - Manual Spectrophotometric
- F - Furnace AA
- NR - when the analyte is not required to be analyzed.
- P - ICP
- T - Titrimetric



ETL

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CHAIN OF CUSTODY DOCUMENT

M 1409

Project Name: <u>Rotaco</u>		Project Manager: <u>J. Szymanski</u>		Sampler (Signature): <u>[Signature]</u>		(Print): <u>J. Szymanski</u>	
Project Address: <u>438 W. 18th St New York NY</u>							
Client: <u>EnviroTAC JIN</u>							
SAMPLE INFO		*Air - Vol. (Liters) *Air - Vol. (CFM)					
Type: SS = Split Spoon, G = Grab, C = Composite, B = Blank Matrix: L = Liquid, S = Soil, SL = Sludge, A = Air, W = Wipe		Rush by <u>7/23/01</u>					
ID	Date	Time	Type	Matrix	Sample Location	Total # Cont.	
1	7/12	12:00	G	S	#1	2	
2	7/12	2:05	G	S	#2	2	
3	7/12	1:15	G	S	#3	2	
4	7/12	1:30	G	S	#4	2	
5	7/12	1:45	G	S	#5	2	
6	7/12	2:00	G	L	Groundwater	1	
7	7/12	5:00	G	L	Unknown Plume	1	
8							
9							
10							
11							
12							
13							
14							
15							

Relinquished by (Signature): <u>[Signature]</u>		Date: <u>7/16/01</u>		Printed Name & Agent: <u>John Szymanski</u>	
Relinquished by (Signature): <u>[Signature]</u>		Time: <u>2:30</u>		Time: <u>2:30</u>	
Comments & Special Instructions: <u>AAC/TOX/M1394</u>		Date: <u>7/16/01</u>		Printed Name: <u>Ken Bell</u>	
		Time: <u>11:30</u>		Preservatives: <u>Temp: 20.1</u>	
		Number & Type of Containers: <u>2 Am 6, 10 + 50 ml Am 6</u>			

JUL 23 2001

07/19/01

Technical Report for

EnviroTrac

Verizon, 438 West 18th Street, New York, NY

Accutest Job Number: E94131

Report to:

Envirotrac
80 B Air Park Drive
Ronkonkoma, NY 11779

ATTN: John Quatraili

Total number of pages in report: 32



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.


Vincent J. Pugliese
President

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, MA, MD, NC, PA, RI, SC, VA
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Sample Summary

EnviroTrac

Job No: E94131

Verizon, 438 West 18th Street, New York, NY

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
E94131-1	06/28/01	13:30 RB	06/30/01	AQ Ground Water	WATER FROM EXCAVATION

08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3702-3

Client Sample ID: B3-4'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 17:30

% Solid: 86.5%

Remarks: See Case Narrative

Analyzed Date: 08/24/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.42	0.42	ppb	U
71-43-2	Benzene	0.16	0.16	ppb	U
108-88-3	Toluene	0.23	0.23	ppb	U
100-41-4	Ethylbenzene	0.13	0.13	ppb	U
108-38-3	m,p-xylene	0.29	0.29	ppb	U
95-47-6	o-xylene	0.21	1.00	ppb	
1330-20-7	Xylenes(Total)	0.50	1.00	ppb	
98-82-8	Isopropylbenzene	0.12	0.12	ppb	U
103-65-1	n-Propylbenzene	0.16	0.16	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.12	2.90	ppb	
98-06-6	tert-Butylbenzene	0.17	0.17	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.23	0.23	ppb	U
135-98-8	sec-Butylbenzene	0.14	0.14	ppb	U
99-87-6	p-Isopropyltoluene	0.21	0.21	ppb	U
104-51-8	n-Butylbenzene	0.16	0.16	ppb	U
91-20-3	Naphthalene	0.84	0.84	ppb	U



Stars Memo Volatile Compounds-EPA 8021

08/30/2001

Sample: M3702-4

Client Sample ID: B12-8'

Matrix: Soil

Remarks: See Case Narrative

Analyzed Date: 08/27/2001

Type: Split Spoon

Collected: 08/21/2001 18:00

% Solid: 87.8%

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.41	0.41	ppb	U
71-43-2	Benzene	0.16	0.16	ppb	U
108-88-3	Toluene	0.23	0.23	ppb	U
100-41-4	Ethylbenzene	0.13	0.13	ppb	U
108-38-3	m,p-xylene	0.28	0.28	ppb	U
95-47-6	o-xylene	0.21	0.21	ppb	U
1330-20-7	Xylenes(Total)	0.49	0.49	ppb	U
98-82-8	Isopropylbenzene	0.11	0.11	ppb	U
103-65-1	n-Propylbenzene	0.16	0.16	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	0.11	ppb	U
98-06-6	tert-Butylbenzene	0.17	0.17	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.23	0.23	ppb	U
135-98-8	sec-Butylbenzene	0.14	0.14	ppb	U
99-87-6	p-Isopropyltoluene	0.21	0.21	ppb	U
104-51-8	n-Butylbenzene	0.16	0.16	ppb	U
91-20-3	Naphthalene	0.82	0.82	ppb	U



08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3702-5

Client Sample ID: B4-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 18:30

% Solid: 91.6%

Remarks: See Case Narrative

Analyzed Date: 08/24/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.39	0.39	ppb	U
71-43-2	Benzene	0.15	0.15	ppb	U
108-88-3	Toluene	0.22	0.22	ppb	U
100-41-4	Ethylbenzene	0.12	0.12	ppb	U
108-38-3	m,p-xylene	0.27	0.27	ppb	U
95-47-6	o-xylene	0.20	0.20	ppb	U
1330-20-7	Xylenes(Total)	0.47	0.47	ppb	U
98-82-8	Isopropylbenzene	0.11	0.11	ppb	U
103-65-1	n-Propylbenzene	0.15	0.15	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	4.20	ppb	
98-06-6	tert-Butylbenzene	0.16	0.16	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.22	0.86	ppb	
135-98-8	sec-Butylbenzene	0.13	0.13	ppb	U
99-87-6	p-Isopropyltoluene	0.20	0.20	ppb	U
104-51-8	n-Butylbenzene	0.15	0.15	ppb	U
91-20-3	Naphthalene	0.78	0.78	ppb	U



08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3702-6

Client Sample ID: B6-4'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 19:00

Remarks: See Case Narrative

% Solid: 93.4%

Analyzed Date: 08/27/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	1.93	1.93	ppb	U
71-43-2	Benzene	0.75	0.75	ppb	U
108-88-3	Toluene	1.07	1.07	ppb	U
100-41-4	Ethylbenzene	0.59	9.90	ppb	
108-38-3	m,p-xylene	1.34	109	ppb	
95-47-6	o-xylene	0.96	91.5	ppb	
1330-20-7	Xylenes(Total)	2.30	200	ppb	
98-82-8	Isopropylbenzene	0.54	9.00	ppb	
103-65-1	n-Propylbenzene	0.75	40.8	ppb	
108-67-8	1,3,5-Trimethylbenzene	0.54	373	ppb	
98-06-6	tert-Butylbenzene	0.80	0.80	ppb	U
95-63-6	1,2,4-Trimethylbenzene	29.5	755	ppb	
135-98-8	sec-Butylbenzene	0.64	0.64	ppb	U
99-87-6	p-Isopropyltoluene	0.96	37.4	ppb	
104-51-8	n-Butylbenzene	0.75	121	ppb	
91-20-3	Naphthalene	3.85	624	ppb	



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08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3702-7

Client Sample ID: B7-8'

Matrix: Soil

Remarks: See Case Narrative

Analyzed Date: 08/27/2001

Type: Split Spoon

Collected: 08/21/2001 19:30

% Solid: 87.6%

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.82	9.70	ppb	
71-43-2	Benzene	0.32	0.32	ppb	U
108-88-3	Toluene	0.46	0.46	ppb	U
100-41-4	Ethylbenzene	0.25	0.25	ppb	U
108-38-3	m,p-xylene	0.57	0.57	ppb	U
95-47-6	o-xylene	0.41	18.6	ppb	
1330-20-7	Xylenes(Total)	0.98	18.6	ppb	
98-82-8	Isopropylbenzene	0.23	0.23	ppb	U
103-65-1	n-Propylbenzene	0.32	0.32	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.23	325	ppb	
98-06-6	tert-Butylbenzene	0.34	0.34	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.46	5.10	ppb	
135-98-8	sec-Butylbenzene	0.27	0.27	ppb	U
99-87-6	p-Isopropyltoluene	0.41	0.41	ppb	U
104-51-8	n-Butylbenzene	0.32	0.32	ppb	U
91-20-3	Naphthalene	1.64	1.64	ppb	U



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08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3702-8

Client Sample ID: B5-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 20:00

% Solid: 90%

Remarks: See Case Narrative

Analyzed Date: 08/29/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	11.1	138	ppb	
71-43-2	Benzene	18.1	18.1	ppb	U
108-88-3	Toluene	19.5	97.2	ppb	
100-41-4	Ethylbenzene	25.0	1520	ppb	
108-38-3	m,p-xylene	43.1	11500	ppb	
95-47-6	o-xylene	22.2	3670	ppb	
1330-20-7	Xylenes(Total)	61.2	15200	ppb	
98-82-8	Isopropylbenzene	26.4	581	ppb	
103-65-1	n-Propylbenzene	43.1	1900	ppb	
108-67-8	1,3,5-Trimethylbenzene	15.3	7410	ppb	
98-06-6	tert-Butylbenzene	25.0	25.0	ppb	U
95-63-6	1,2,4-Trimethylbenzene	306	25300	ppb	
135-98-8	sec-Butylbenzene	27.8	27.8	ppb	U
99-87-6	p-Isopropyltoluene	29.2	29.2	ppb	U
104-51-8	n-Butylbenzene	26.4	26.4	ppb	U
91-20-3	Naphthalene	57.0	5540	ppb	



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08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3702-9

Client Sample ID: B8-8'

Matrix: Soil

Remarks: See Case Narrative

Analyzed Date: 08/29/2001

Type: Split Spoon

Collected: 08/21/2001 20:30

% Solid: 91.7%

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	10.9	10.9	ppb	U
71-43-2	Benzene	17.7	2010	ppb	
108-88-3	Toluene	19.0	1410	ppb	
100-41-4	Ethylbenzene	245	39100	ppb	
108-38-3	m,p-xylene	423	180000	ppb	
95-47-6	o-xylene	218	55200	ppb	
1330-20-7	Xylenes(Total)	600	235000	ppb	
98-82-8	Isopropylbenzene	25.8	7380	ppb	
103-65-1	n-Propylbenzene	423	23800	ppb	
108-67-8	1,3,5-Trimethylbenzene	150	55100	ppb	
98-06-6	tert-Butylbenzene	24.5	24.5	ppb	U
95-63-6	1,2,4-Trimethylbenzene	300	168000	ppb	
135-98-8	sec-Butylbenzene	27.2	2760	ppb	
99-87-6	p-Isopropyltoluene	28.6	28.6	ppb	U
104-51-8	n-Butylbenzene	25.8	25.8	ppb	U
91-20-3	Naphthalene	559	27000	ppb	



Stars Memo Volatile Compounds-EPA 8021

08/30/2001

Sample: M3702-10

Client Sample ID: B9-4'

Matrix: Soil

Remarks: See Case Narrative

Analyzed Date: 08/27/2001

Type: Split Spoon

Collected: 08/21/2001 21:00

% Solid: 94%

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.38	0.38	ppb	U
71-43-2	Benzene	0.15	0.15	ppb	U
108-88-3	Toluene	0.21	0.21	ppb	U
100-41-4	Ethylbenzene	0.12	0.12	ppb	U
108-38-3	m,p-xylene	0.26	1.80	ppb	
95-47-6	o-xylene	0.19	1.60	ppb	
1330-20-7	Xylenes(Total)	0.46	3.40	ppb	
98-82-8	Isopropylbenzene	0.11	0.11	ppb	U
103-65-1	n-Propylbenzene	0.15	0.15	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	97.8	ppb	
98-06-6	tert-Butylbenzene	0.16	0.16	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.21	2.60	ppb	
135-98-8	sec-Butylbenzene	0.13	0.13	ppb	U
99-87-6	p-Isopropyltoluene	0.19	0.19	ppb	U
104-51-8	n-Butylbenzene	0.15	0.15	ppb	U
91-20-3	Naphthalene	0.76	0.76	ppb	U



08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3702-11

Client Sample ID: B11-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 21:30

% Solid: 92.5%

Remarks: See Case Narrative

Analyzed Date: 08/28/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.39	0.39	ppb	U
71-43-2	Benzene	0.15	0.15	ppb	U
108-88-3	Toluene	0.22	0.22	ppb	U
100-41-4	Ethylbenzene	0.12	0.12	ppb	U
108-38-3	m,p-xylene	0.27	0.27	ppb	U
95-47-6	o-xylene	0.19	0.19	ppb	U
1330-20-7	Xylenes(Total)	0.46	0.46	ppb	U
98-82-8	Isopropylbenzene	0.11	0.11	ppb	U
103-65-1	n-Propylbenzene	0.15	0.15	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	0.11	ppb	U
98-06-6	tert-Butylbenzene	0.16	0.16	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.22	0.22	ppb	U
135-98-8	sec-Butylbenzene	0.13	0.13	ppb	U
99-87-6	p-Isopropyltoluene	0.19	0.19	ppb	U
104-51-8	n-Butylbenzene	0.15	0.15	ppb	U
91-20-3	Naphthalene	0.78	0.78	ppb	U



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08/30/2001

Stars Memo Volatile Compounds-EPA 8021**Sample: M3702-12**

Client Sample ID: B10-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 22:00

% Solid: 90%

Remarks: See Case Narrative

Analyzed Date: 08/24/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.40	0.40	ppb	U
71-43-2	Benzene	0.16	0.16	ppb	U
108-88-3	Toluene	0.22	0.22	ppb	U
100-41-4	Ethylbenzene	0.12	0.12	ppb	U
108-38-3	m,p-xylene	0.28	3.00	ppb	
95-47-6	o-xylene	0.20	7.30	ppb	
1330-20-7	Xylenes(Total)	0.48	10.3	ppb	
98-82-8	Isopropylbenzene	0.11	0.11	ppb	U
103-65-1	n-Propylbenzene	0.16	0.16	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	37.2	ppb	
98-06-6	tert-Butylbenzene	0.17	0.17	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.22	3.30	ppb	
135-98-8	sec-Butylbenzene	0.13	0.13	ppb	U
99-87-6	p-Isopropyltoluene	0.20	0.20	ppb	U
104-51-8	n-Butylbenzene	0.16	0.16	ppb	U
91-20-3	Naphthalene	0.80	4.20	ppb	



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08/30/2001

Stars Memo Volatile Compounds-EPA 8021**Sample:** M3702-13

Client Sample ID: B-1

Matrix: Liquid

Type: Split Spoon

Collected: 08/21/2001 16:30

Remarks: See Case Narrative

Analyzed Date: 08/29/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.080	23.0	ppb	
71-43-2	Benzene	0.13	4.80	ppb	
108-88-3	Toluene	0.14	0.14	ppb	U
100-41-4	Ethylbenzene	0.18	0.18	ppb	U
108-38-3	m,p-xylene	0.31	0.31	ppb	U
95-47-6	o-xylene	0.16	0.16	ppb	U
1330-20-7	Xylenes(Total)	0.44	0.44	ppb	U
98-82-8	Isopropylbenzene	0.19	0.19	ppb	U
103-65-1	n-Propylbenzene	0.31	0.31	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	0.11	ppb	U
98-06-6	tert-Butylbenzene	0.18	0.18	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.22	0.22	ppb	U
135-98-8	sec-Butylbenzene	0.20	0.20	ppb	U
99-87-6	p-Isopropyltoluene	0.21	0.21	ppb	U
104-51-8	n-Butylbenzene	0.19	0.19	ppb	U
91-20-3	Naphthalene	0.41	0.41	ppb	U



08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3702-14

Client Sample ID: B-2

Matrix: Liquid

Type: Split Spoon

Collected: 08/21/2001 17:00

Remarks: See Case Narrative

Analyzed Date: 08/29/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.080	140	ppb	
71-43-2	Benzene	0.13	12.4	ppb	
108-88-3	Toluene	0.14	0.14	ppb	U
100-41-4	Ethylbenzene	0.18	0.18	ppb	U
108-38-3	m,p-xylene	0.31	0.31	ppb	U
95-47-6	o-xylene	0.16	0.16	ppb	U
1330-20-7	Xylenes(Total)	0.44	0.44	ppb	U
98-82-8	Isopropylbenzene	0.19	0.19	ppb	U
103-65-1	n-Propylbenzene	0.31	0.31	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	0.11	ppb	U
98-06-6	tert-Butylbenzene	0.18	0.18	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.22	0.22	ppb	U
135-98-8	sec-Butylbenzene	0.20	0.20	ppb	U
99-87-6	p-Isopropyltoluene	0.21	0.21	ppb	U
104-51-8	n-Butylbenzene	0.19	0.19	ppb	U
91-20-3	Naphthalene	0.41	0.41	ppb	U



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08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3702-15

Client Sample ID: B-3

Matrix: Liquid

Type: Split Spoon

Collected: 08/21/2001 17:30

Remarks: See Case Narrative

Analyzed Date: 08/29/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.80	208	ppb	
71-43-2	Benzene	0.13	28.3	ppb	
108-88-3	Toluene	0.14	0.14	ppb	U
100-41-4	Ethylbenzene	0.18	0.18	ppb	U
108-38-3	m,p-xylene	0.31	0.31	ppb	U
95-47-6	o-xylene	0.16	0.16	ppb	U
1330-20-7	Xylenes(Total)	0.44	0.44	ppb	U
98-82-8	Isopropylbenzene	0.19	0.19	ppb	U
103-65-1	n-Propylbenzene	0.31	0.31	ppb	U
108-67-8	1,3,5-Trimethylbenzene	0.11	0.11	ppb	U
98-06-6	tert-Butylbenzene	0.18	0.18	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.22	0.22	ppb	U
135-98-8	sec-Butylbenzene	0.20	0.20	ppb	U
99-87-6	p-Isopropyltoluene	0.21	0.21	ppb	U
104-51-8	n-Butylbenzene	0.19	0.19	ppb	U
91-20-3	Naphthalene	0.41	0.41	ppb	U



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-1

Client Sample ID: B1-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 16:30

% Solid: 92%

Remarks:

Analyzed Date: 08/28/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	12.0	69.6	ppb	
83-32-9	Acenaphthene	14.1	14.1	ppb	U
86-73-7	Fluorene	13.0	13.0	ppb	U
85-01-8	Phenanthrene	16.3	45.7	ppb	
120-12-7	Anthracene	13.0	13.0	ppb	U
206-44-0	Fluoranthene	19.6	75.0	ppb	
129-00-0	Pyrene	9.78	83.7	ppb	
56-55-3	Benzo(a)anthracene	12.0	79.3	ppb	
218-01-9	Chrysene	16.3	85.9	ppb	
205-99-2	Benzo(b)fluoranthene	29.3	108	ppb	
207-08-9	Benzo(k)fluoranthene	34.8	71.7	ppb	
50-32-8	Benzo(a)pyrene	16.3	16.3	ppb	U
193-39-5	Indeno(1,2,3-cd)pyrene	13.0	64.1	ppb	
53-70-3	Dibenzo(a,h)anthracene	16.3	16.3	ppb	U
191-24-2	Benzo(g,h,i)perylene	14.1	78.3	ppb	



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-2

Client Sample ID: B2-8'

Matrix: Soil

Remarks:

Analyzed Date: 08/27/2001

Type: Split Spoon

Collected: 08/21/2001 17:00

% Solid: 88.6%

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	12.4	12.4	ppb	U
83-32-9	Acenaphthene	14.7	14.7	ppb	U
86-73-7	Fluorene	13.5	13.5	ppb	U
85-01-8	Phenanthrene	16.9	16.9	ppb	U
120-12-7	Anthracene	13.5	13.5	ppb	U
206-44-0	Fluoranthene	20.3	46.3	ppb	
129-00-0	Pyrene	10.2	35.0	ppb	
56-55-3	Benzo(a)anthracene	12.4	12.4	ppb	U
218-01-9	Chrysene	16.9	16.9	ppb	U
205-99-2	Benzo(b)fluoranthene	30.5	30.5	ppb	U
207-08-9	Benzo(k)fluoranthene	36.1	36.1	ppb	U
50-32-8	Benzo(a)pyrene	16.9	16.9	ppb	U
193-39-5	Indeno(1,2,3-cd)pyrene	13.5	13.5	ppb	U
53-70-3	Dibenzo(a,h)anthracene	16.9	16.9	ppb	U
191-24-2	Benzo(g,h,i)perylene	14.7	14.7	ppb	U



08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-3

Client Sample ID: B3-4'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 17:30

% Solid: 86.5%

Remarks:

Analyzed Date: 08/27/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	12.4	188	ppb	
83-32-9	Acenaphthene	14.7	14.7	ppb	U
86-73-7	Fluorene	13.6	13.6	ppb	U
85-01-8	Phenanthrene	16.9	16.9	ppb	U
120-12-7	Anthracene	13.6	13.6	ppb	U
206-44-0	Fluoranthene	20.3	20.3	ppb	U
129-00-0	Pyrene	10.2	10.2	ppb	U
56-55-3	Benzo(a)anthracene	12.4	12.4	ppb	U
218-01-9	Chrysene	16.9	16.9	ppb	U
205-99-2	Benzo(b)fluoranthene	30.5	30.5	ppb	U
207-08-9	Benzo(k)fluoranthene	36.2	36.2	ppb	U
50-32-8	Benzo(a)pyrene	16.9	16.9	ppb	U
193-39-5	Indeno(1,2,3-cd)pyrene	13.6	13.6	ppb	U
53-70-3	Dibenzo(a,h)anthracene	16.9	16.9	ppb	U
191-24-2	Benzo(g,h,i)perylene	14.7	14.7	ppb	U



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-4

Client Sample ID: B12-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 18:00

% Solid: 87.8%

Remarks:

Analyzed Date: 08/27/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	12.5	12.5	ppb	U
83-32-9	Acenaphthene	14.8	14.8	ppb	U
86-73-7	Fluorene	13.7	13.7	ppb	U
85-01-8	Phenanthrene	17.1	17.1	ppb	U
120-12-7	Anthracene	13.7	13.7	ppb	U
206-44-0	Fluoranthene	20.5	20.5	ppb	U
129-00-0	Pyrene	10.3	10.3	ppb	U
56-55-3	Benzo(a)anthracene	12.5	12.5	ppb	U
218-01-9	Chrysene	17.1	17.1	ppb	U
205-99-2	Benzo(b)fluoranthene	30.8	30.8	ppb	U
207-08-9	Benzo(k)fluoranthene	36.4	36.4	ppb	U
50-32-8	Benzo(a)pyrene	17.1	17.1	ppb	U
193-39-5	Indeno(1,2,3-cd)pyrene	13.7	13.7	ppb	U
53-70-3	Dibenzo(a,h)anthracene	17.1	17.1	ppb	U
191-24-2	Benzo(g,h,i)perylene	14.8	14.8	ppb	U



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-5

Client Sample ID: B4-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 18:30

% Solid: 91.6%

Remarks:

Analyzed Date: 08/28/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	12.0	12.0	ppb	U
83-32-9	Acenaphthene	14.2	14.2	ppb	U
86-73-7	Fluorene	13.1	13.1	ppb	U
85-01-8	Phenanthrene	16.4	50.2	ppb	
120-12-7	Anthracene	13.1	13.1	ppb	U
206-44-0	Fluoranthene	19.7	61.1	ppb	
129-00-0	Pyrene	9.83	64.4	ppb	
56-55-3	Benzo(a)anthracene	12.0	38.2	ppb	
218-01-9	Chrysene	16.4	36.0	ppb	
205-99-2	Benzo(b)fluoranthene	29.5	29.5	ppb	U
207-08-9	Benzo(k)fluoranthene	34.9	34.9	ppb	U
50-32-8	Benzo(a)pyrene	16.4	16.4	ppb	U
193-39-5	Indeno(1,2,3-cd)pyrene	13.1	13.1	ppb	U
53-70-3	Dibenzo(a,h)anthracene	16.4	16.4	ppb	U
191-24-2	Benzo(g,h,i)perylene	14.2	14.2	ppb	U



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-6

Client Sample ID: B6-4'

Matrix: Soil

Remarks:

Analyzed Date: 08/27/2001

Type: Split Spoon

Collected: 08/21/2001 19:00

% Solid: 93.4%

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	11.8	521	ppb	
83-32-9	Acenaphthene	13.9	63.2	ppb	
86-73-7	Fluorene	12.8	66.4	ppb	
85-01-8	Phenanthrene	16.1	361	ppb	
120-12-7	Anthracene	12.8	74.9	ppb	
206-44-0	Fluoranthene	19.3	308	ppb	
129-00-0	Pyrene	9.64	315	ppb	
56-55-3	Benzo(a)anthracene	11.8	131	ppb	
218-01-9	Chrysene	16.1	133	ppb	
205-99-2	Benzo(b)fluoranthene	28.9	98.5	ppb	
207-08-9	Benzo(k)fluoranthene	34.3	65.3	ppb	
50-32-8	Benzo(a)pyrene	16.1	93.1	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	12.8	50.3	ppb	
53-70-3	Dibenzo(a,h)anthracene	16.1	16.1	ppb	U
191-24-2	Benzo(g,h,i)perylene	13.9	52.5	ppb	



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-7

Client Sample ID: B7-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 19:30

% Solid: 87.6%

Remarks:

Analyzed Date: 08/28/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	12.6	1150	ppb	
83-32-9	Acenaphthene	14.8	52.5	ppb	
86-73-7	Fluorene	13.7	58.2	ppb	
85-01-8	Phenanthrene	17.1	410	ppb	
120-12-7	Anthracene	13.7	115	ppb	
206-44-0	Fluoranthene	20.5	650	ppb	
129-00-0	Pyrene	10.3	733	ppb	
56-55-3	Benzo(a)anthracene	12.6	277	ppb	
218-01-9	Chrysene	17.1	265	ppb	
205-99-2	Benzo(b)fluoranthene	30.8	199	ppb	
207-08-9	Benzo(k)fluoranthene	36.5	202	ppb	
50-32-8	Benzo(a)pyrene	17.1	188	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	13.7	13.7	ppb	U
53-70-3	Dibenzo(a,h)anthracene	17.1	17.1	ppb	U
191-24-2	Benzo(g,h,i)perylene	14.8	113	ppb	



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-8

Client Sample ID: B5-8'

Matrix: Soil

Remarks:

Analyzed Date: 08/27/2001

Type: Split Spoon

Collected: 08/21/2001 20:00

% Solid: 90%

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	12.2	2040	ppb	
83-32-9	Acenaphthene	14.4	103	ppb	
86-73-7	Fluorene	13.3	100	ppb	
85-01-8	Phenanthrene	16.7	276	ppb	
120-12-7	Anthracene	13.3	63.3	ppb	
206-44-0	Fluoranthene	20.0	136	ppb	
129-00-0	Pyrene	10.0	137	ppb	
56-55-3	Benzo(a)anthracene	12.2	61.1	ppb	
218-01-9	Chrysene	16.7	53.3	ppb	
205-99-2	Benzo(b)fluoranthene	30.0	25.6	ppb	J
207-08-9	Benzo(k)fluoranthene	35.6	31.1	ppb	J
50-32-8	Benzo(a)pyrene	16.7	34.4	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	13.3	13.3	ppb	U
53-70-3	Dibenzo(a,h)anthracene	16.7	16.7	ppb	U
191-24-2	Benzo(g,h,i)perylene	14.4	14.4	ppb	U



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds**Sample: M3702-9**

Client Sample ID: B8-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 20:30

% Solid: 91.7%

Remarks:

Analyzed Date: 08/27/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	109	11200	ppb	
83-32-9	Acenaphthene	14.2	291	ppb	
86-73-7	Fluorene	13.1	430	ppb	
85-01-8	Phenanthrene	16.4	845	ppb	
120-12-7	Anthracene	13.1	128	ppb	
206-44-0	Fluoranthene	19.6	248	ppb	
129-00-0	Pyrene	9.81	284	ppb	
56-55-3	Benzo(a)anthracene	12.0	12.0	ppb	U
218-01-9	Chrysene	16.4	105	ppb	
205-99-2	Benzo(b)fluoranthene	29.4	50.2	ppb	
207-08-9	Benzo(k)fluoranthene	34.9	54.5	ppb	
50-32-8	Benzo(a)pyrene	16.4	67.6	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	13.1	26.2	ppb	
53-70-3	Dibenzo(a,h)anthracene	16.4	16.4	ppb	U
191-24-2	Benzo(g,h,i)perylene	14.2	31.6	ppb	



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-10

Client Sample ID: B9-4'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 21:00

% Solid: 94%

Remarks:

Analyzed Date: 08/28/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	11.7	399	ppb	
83-32-9	Acenaphthene	13.8	28.7	ppb	
86-73-7	Fluorene	12.8	53.2	ppb	
85-01-8	Phenanthrene	16.0	182	ppb	
120-12-7	Anthracene	12.8	60.6	ppb	
206-44-0	Fluoranthene	19.1	309	ppb	
129-00-0	Pyrene	9.57	340	ppb	
56-55-3	Benzo(a)anthracene	11.7	198	ppb	
218-01-9	Chrysene	16.0	234	ppb	
205-99-2	Benzo(b)fluoranthene	28.7	195	ppb	
207-08-9	Benzo(k)fluoranthene	34.0	157	ppb	
50-32-8	Benzo(a)pyrene	16.0	181	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	12.8	131	ppb	
53-70-3	Dibenzo(a,h)anthracene	16.0	53.2	ppb	
191-24-2	Benzo(g,h,i)perylene	13.8	75.5	ppb	



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-11

Client Sample ID: B11-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 21:30

% Solid: 92.5%

Remarks:

Analyzed Date: 08/28/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	11.9	61.6	ppb	
83-32-9	Acenaphthene	14.1	14.1	ppb	U
86-73-7	Fluorene	13.0	13.0	ppb	U
85-01-8	Phenanthrene	16.2	239	ppb	
120-12-7	Anthracene	13.0	50.8	ppb	
206-44-0	Fluoranthene	19.5	432	ppb	
129-00-0	Pyrene	9.73	373	ppb	
56-55-3	Benzo(a)anthracene	11.9	11.9	ppb	U
218-01-9	Chrysene	16.2	248	ppb	
205-99-2	Benzo(b)fluoranthene	29.2	226	ppb	
207-08-9	Benzo(k)fluoranthene	34.6	252	ppb	
50-32-8	Benzo(a)pyrene	16.2	280	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	13.0	203	ppb	
53-70-3	Dibenzo(a,h)anthracene	16.2	33.5	ppb	
191-24-2	Benzo(g,h,i)perylene	14.1	234	ppb	



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08/30/2001

Stars Memo Semivolatile Base Neutral Compounds

Sample: M3702-12

Client Sample ID: B10-8'

Matrix: Soil

Type: Split Spoon

Collected: 08/21/2001 22:00

% Solid: 90%

Remarks:

Analyzed Date: 08/27/2001

Cas No	Analyte	MDL	Concentration	Units	Q
91-20-3	Naphthalene	12.2	31.1	ppb	
83-32-9	Acenaphthene	14.4	14.4	ppb	U
86-73-7	Fluorene	13.3	13.3	ppb	U
85-01-8	Phenanthrene	16.7	41.1	ppb	
120-12-7	Anthracene	13.3	13.3	ppb	U
206-44-0	Fluoranthene	20.0	51.1	ppb	
129-00-0	Pyrene	10.0	45.6	ppb	
56-55-3	Benzo(a)anthracene	12.2	31.1	ppb	
218-01-9	Chrysene	16.7	34.4	ppb	
205-99-2	Benzo(b)fluoranthene	30.0	22.2	ppb	J
207-08-9	Benzo(k)fluoranthene	35.6	26.7	ppb	J
50-32-8	Benzo(a)pyrene	16.7	24.4	ppb	
193-39-5	Indeno(1,2,3-cd)pyrene	13.3	13.3	ppb	U
53-70-3	Dibenzo(a,h)anthracene	16.7	16.7	ppb	U
191-24-2	Benzo(g,h,i)perylene	14.4	14.4	ppb	U



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

08/30/2001

Case Narrative

The following compounds were calibrated at 25, 50, 100, 150 and 200 ppb levels in the initial calibration curve:

Acetone
2-Butanone
4-Methyl-2-pentanone
2-Hexanone

M&P-Xylenes were calibrated at 10, 40, 100, 200 and 300 ppb levels.

All other compounds were calibrated at 5, 20, 50, 100 and 150 ppb levels.

Samples were quantitated using the continuing calibration standard response factor as opposed to the initial calibration average response factor.

Samples M3702-4,11 were analyzed twice with both sets of data indicating a poor recovery of Surrogate (Toluene-d8). Matrix interference was proven.

Reviewed by: Patricia Werner-Els



ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

- U - The analytical result is a non-detect.
- J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.
- B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
- E - The concentration of the analyte exceeded the calibration range of the instrument.
- D - This flag identifies all compounds identified in an analysis at a secondary dilution.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

- B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).
- U - Entered when the analyte was analyzed for, but not detected.
- J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.

Q - Qualifier specific entries and their meanings are as follows:

- E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

- A - Flame AA
- AS - Semi-automated Spectrophotometric
- AV - Automated Cold Vapor AA
- C - Manual Spectrophotometric
- F - Furnace AA
- NR - when the analyte is not required to be analyzed.
- P - ICP
- T - Titrimetric

OTHER QUALIFIERS

- ND - Not Detected
- NA - Not Applicable



ETL

Environmental Testing Laboratories, Inc.
208 Route 109 • Farmingdale • New York 11735
631-249-1456 • Fax: 631-249-8344

CHAIN OF CUSTODY DOCUMENT**M 3702**Project Name: VerizonProject Manager: John Szymanski(Print): Vincent VarrichioProject Address: 438 W. 18th St. NYCClient: Environmental J/N: 1 Rush by 1SAMPLE INFO Type: Split Spoon, G = Grab, C = Composite, B = Blank
Matrix: L = Liquid, S = Soil, SL = Sludge, A = Air, W = Waste*Air - Vol. (liters)
Include: Flow (CFM)

ID Date Time Type Matrix Sample Location

Total # Cont.

1 8/21/02 4:30 SS S B1-8'

2 5:00 B2-8'

3 5:30 B3-4'

4 6:00 B12-8'

5 6:30 B4-8'

6 7:00 B6-4'

7 7:30 B7-8'

8 8:00 B5-8'

9 8:30 B8-8'

10 9:00 B9-4'

11 9:30 B11-8'

12 10:00 B10-8'

13 4:30 SS L B-1

14 5:00 SS L B-2

15 5:30 SS L B-3

Relinquished by (Signature): [Signature] Date: 8/23Printed Name & Agent: Vincent VarrichioReceived by (Signature): [Signature] Date: 8/23Printed Name & Agent: Ben BorgRelinquished by (Signature): [Signature] Date: 8/23Printed Name & Agent: Ben BorgComments & Special Instructions: Number & Type of Containers: 1 + 625/8100M 31-402 4-0005Preservatives: 11 L - 10005 Temp: 50°C Ben Borg 8/23/02

Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

08/30/2001

Custody Document: M3703

Received: 08/23/2001 15:41
Sampled by: Vincent Varricchio

Client: Envirotrac Env Services

80 B Air Park Drive
Ronkonkoma,
NY 11779

Project: Retaco (Verizon)

438 W. 18th Street
New York,
NY

Manager: John Szymanski

Respectfully submitted,

Patricia Werner-Els
Quality Assurance Officer

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
VA Cert. # 108
NH Cert. # 252592-BA
RI Cert. # 161



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

08/30/2001

Stars Memo Volatile Compounds-EPA 8021**Sample:** M3703-1

Client Sample ID: B-4

Matrix: Liquid

Remarks: See Case Narrative

Analyzed Date: 08/30/2001

Collected: 08/21/2001 06:30

Type: Split Spoon

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.34	54.4	ppb	
71-43-2	Benzene	0.16	98.1	ppb	
108-88-3	Toluene	0.14	42.0	ppb	
100-41-4	Ethylbenzene	0.22	15.5	ppb	
108-38-3	m,p-xylene	0.42	55.9	ppb	
95-47-6	o-xylene	0.20	22.3	ppb	
1330-20-7	Xylenes(Total)	0.72	78.2	ppb	
98-82-8	Isopropylbenzene	0.25	2.30	ppb	
103-65-1	n-Propylbenzene	0.21	4.90	ppb	
108-67-8	1,3,5-Trimethylbenzene	0.20	8.90	ppb	
98-06-6	tert-Butylbenzene	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.17	29.0	ppb	
135-98-8	sec-Butylbenzene	0.16	0.16	ppb	U
99-87-6	p-Isopropyltoluene	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	0.14	1.30	ppb	
91-20-3	Naphthalene	0.14	5.40	ppb	



08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3703-2

Client Sample ID: B-5

Matrix: Liquid

Type: Split Spoon

Collected: 08/21/2001 08:00

Remarks: See Case Narrative

Analyzed Date: 08/30/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	8.00	510	ppb	
71-43-2	Benzene	13.0	2470	ppb	
108-88-3	Toluene	14.0	14.0	ppb	U
100-41-4	Ethylbenzene	18.0	2520	ppb	
108-38-3	m,p-xylene	31.0	6950	ppb	
95-47-6	o-xylene	16.0	1670	ppb	
1330-20-7	Xylenes(Total)	44.0	8620	ppb	
98-82-8	Isopropylbenzene	19.0	208	ppb	
103-65-1	n-Propylbenzene	31.0	470	ppb	
108-67-8	1,3,5-Trimethylbenzene	11.0	708	ppb	
98-06-6	tert-Butylbenzene	18.0	18.0	ppb	U
95-63-6	1,2,4-Trimethylbenzene	22.0	3250	ppb	
135-98-8	sec-Butylbenzene	20.0	20.0	ppb	U
99-87-6	p-Isopropyltoluene	21.0	21.0	ppb	U
104-51-8	n-Butylbenzene	19.0	19.0	ppb	U
91-20-3	Naphthalene	41.0	639	ppb	



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3703-3

Client Sample ID: B-6

Matrix: Liquid

Remarks: See Case Narrative

Analyzed Date: 08/30/2001

Type: Split Spoon

Collected: 08/21/2001 07:00

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.80	444	ppb	
71-43-2	Benzene	0.32	199	ppb	
108-88-3	Toluene	0.28	3.10	ppb	
100-41-4	Ethylbenzene	0.44	0.44	ppb	U
108-38-3	m,p-xylene	0.84	5.80	ppb	
95-47-6	o-xylene	0.40	2.20	ppb	
1330-20-7	Xylenes(Total)	1.44	8.00	ppb	
98-82-8	Isopropylbenzene	0.50	3.10	ppb	
103-65-1	n-Propylbenzene	0.42	1.80	ppb	
108-67-8	1,3,5-Trimethylbenzene	0.40	0.40	ppb	U
98-06-6	tert-Butylbenzene	0.48	0.48	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.34	2.80	ppb	
135-98-8	sec-Butylbenzene	0.32	0.32	ppb	U
99-87-6	p-Isopropyltoluene	0.48	0.48	ppb	U
104-51-8	n-Butylbenzene	0.28	0.28	ppb	U
91-20-3	Naphthalene	0.28	0.28	ppb	U



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3703-4

Client Sample ID: B-8

Matrix: Liquid

Type: Split Spoon

Collected: 08/21/2001 08:30

Remarks: See Case Narrative

Analyzed Date: 08/30/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	4.00	581	ppb	
71-43-2	Benzene	6.50	5050	ppb	
108-88-3	Toluene	7.00	141	ppb	
100-41-4	Ethylbenzene	9.00	616	ppb	
108-38-3	m,p-xylene	15.5	2090	ppb	
95-47-6	o-xylene	8.00	642	ppb	
1330-20-7	Xylenes(Total)	22.0	2730	ppb	
98-82-8	Isopropylbenzene	9.50	94.0	ppb	
103-65-1	n-Propylbenzene	15.5	200	ppb	
108-67-8	1,3,5-Trimethylbenzene	5.50	250	ppb	
98-06-6	tert-Butylbenzene	9.00	9.00	ppb	U
95-63-6	1,2,4-Trimethylbenzene	11.0	874	ppb	
135-98-8	sec-Butylbenzene	10.0	10.0	ppb	U
99-87-6	p-Isopropyltoluene	10.5	10.5	ppb	U
104-51-8	n-Butylbenzene	9.50	9.50	ppb	U
91-20-3	Naphthalene	20.5	130	ppb	



08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3703-5

Client Sample ID: B-9

Collected: 08/21/2001 09:00

Matrix: Liquid

Type: Split Spoon

Remarks: See Case Narrative

Analyzed Date: 08/30/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	4.00	2030	ppb	
71-43-2	Benzene	6.50	4420	ppb	
108-88-3	Toluene	7.00	2740	ppb	
100-41-4	Ethylbenzene	9.00	1220	ppb	
108-38-3	m,p-xylene	15.5	4040	ppb	
95-47-6	o-xylene	8.00	1420	ppb	
1330-20-7	Xylenes(Total)	22.0	5460	ppb	
98-82-8	Isopropylbenzene	9.50	95.5	ppb	
103-65-1	n-Propylbenzene	15.5	256	ppb	
108-67-8	1,3,5-Trimethylbenzene	5.50	498	ppb	
98-06-6	tert-Butylbenzene	9.00	9.00	ppb	U
95-63-6	1,2,4-Trimethylbenzene	11.0	1730	ppb	
135-98-8	sec-Butylbenzene	10.0	10.0	ppb	U
99-87-6	p-Isopropyltoluene	10.5	10.5	ppb	U
104-51-8	n-Butylbenzene	9.50	9.50	ppb	U
91-20-3	Naphthalene	20.5	290	ppb	



Environmental Testing Laboratories, Inc.

208 Route 109, Farmingdale NY 11735

Phone - 631-249-1456 Fax - 631-249-8344

08/30/2001

Stars Memo Volatile Compounds-EPA 8021**Sample:** M3703-6

Client Sample ID: B-10

Matrix: Liquid

Remarks: See Case Narrative

Analyzed Date: 08/30/2001

Collected: 08/21/2001 10:00

Type: Split Spoon

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	0.68	78.3	ppb	
71-43-2	Benzene	6.50	1580	ppb	
108-88-3	Toluene	0.28	7.50	ppb	
100-41-4	Ethylbenzene	0.44	7.10	ppb	
108-38-3	m,p-xylene	0.84	14.1	ppb	
95-47-6	o-xylene	0.40	5.30	ppb	
1330-20-7	Xylenes(Total)	1.44	19.4	ppb	
98-82-8	Isopropylbenzene	0.50	21.6	ppb	
103-65-1	n-Propylbenzene	0.42	14.2	ppb	
108-67-8	1,3,5-Trimethylbenzene	0.40	0.40	ppb	U
98-06-6	tert-Butylbenzene	0.48	0.48	ppb	U
95-63-6	1,2,4-Trimethylbenzene	0.34	6.60	ppb	
135-98-8	sec-Butylbenzene	0.32	0.32	ppb	U
99-87-6	p-Isopropyltoluene	0.48	0.48	ppb	U
104-51-8	n-Butylbenzene	0.28	0.28	ppb	U
91-20-3	Naphthalene	0.28	9.40	ppb	



08/30/2001

Stars Memo Volatile Compounds-EPA 8021

Sample: M3703-7

Client Sample ID: B-12

Collected: 08/21/2001 06:00

Matrix: Liquid

Type: Split Spoon

Remarks: See Case Narrative

Analyzed Date: 08/30/2001

Cas No	Analyte	MDL	Concentration	Units	Q
1634-04-4	MTBE	16.0	2250	ppb	
71-43-2	Benzene	26.0	15700	ppb	
108-88-3	Toluene	28.0	22200	ppb	
100-41-4	Ethylbenzene	36.0	8400	ppb	
108-38-3	m,p-xylene	62.0	29000	ppb	
95-47-6	o-xylene	32.0	10800	ppb	
1330-20-7	Xylenes(Total)	88.0	39800	ppb	
98-82-8	Isopropylbenzene	38.0	806	ppb	
103-65-1	n-Propylbenzene	62.0	2710	ppb	
108-67-8	1,3,5-Trimethylbenzene	22.0	5100	ppb	
98-06-6	tert-Butylbenzene	36.0	36.0	ppb	U
95-63-6	1,2,4-Trimethylbenzene	44.0	16400	ppb	
135-98-8	sec-Butylbenzene	40.0	40.0	ppb	U
99-87-6	p-Isopropyltoluene	42.0	640	ppb	
104-51-8	n-Butylbenzene	38.0	1020	ppb	
91-20-3	Naphthalene	82.0	2370	ppb	



08/30/2001

Case Narrative

The following compounds were calibrated at 25, 50, 100, 150 and 200 ppb levels in the initial calibration curve:

Acetone
2-Butanone
4-Methyl-2-pentanone
2-Hexanone

M&P-Xylenes were calibrated at 10, 40, 100, 200 and 300 ppb levels.

All other compounds were calibrated at 5, 20, 50, 100 and 150 ppb levels.

Samples were quantitated using the continuing calibration standard response factor as opposed to the initial calibration average response factor.

Reviewed by: Patricia Werner-Els



ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

- U - The analytical result is a non-detect.
- J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.
- B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
- E - The concentration of the analyte exceeded the calibration range of the instrument.
- D - This flag identifies all compounds identified in an analysis at a secondary dilution.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

- B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).
- U - Entered when the analyte was analyzed for, but not detected.
- J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.

Q - Qualifier specific entries and their meanings are as follows:

- E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

- A - Flame AA
- AS - Semi-automated Spectrophotometric
- AV - Automated Cold Vapor AA
- C - Manual Spectrophotometric
- F - Furnace AA
- NR - when the analyte is not required to be analyzed.
- P - ICP
- T - Titrimetric

OTHER QUALIFIERS

- ND - Not Detected
- NA - Not Applicable



**APPENDIX B
WASTE MANIFESTS AND WEIGHT TICKETS**

Log Number 1588

NON-HAZARDOUS MATERIAL MANIFEST

GENERATOR

Generator Name Retaco Holding Corp. Shipping Location Same
Address 362 Kingsland Ave Address 438 W. 18th St
Brooklyn, NY New York, NY
Phone No. _____ Phone No. _____

Approval Number	Description of Material <u>Non hazardous petrol Contaminated soil Destined for recycling</u>	Codes	Gross Weight <u>47.56</u>	Net Weight (Tons) <u>34.56</u>
			Tare Weight <u>12.00</u>	
			Net Weight <u>34.56</u>	

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name _____ Signature _____ Shipment Date 7/12/01

TRANSPORTER

Transporter Name Middlesex Materials Inc Driver Name (Print) BUTCH DUCK
Address P.O. Box 124 Vehicle License No./State AC 711P NJ
Iselin, NJ 08830 Truck Number 508
NJ458

State Permit # _____

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature [Signature] Shipment Date 7-12-01 Driver Signature [Signature] Delivery Date 7-12-01

DESTINATION

Site Name Clean Earth of Philadelphia Phone No. 301220
201 S. 51st Street, Philadelphia, PA State Permit # _____
Address _____

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent M. Schwartz Signature _____ Receipt Date 7-12-01
CONTRACTOR

Transaction No.
21007

Clean Earth of Phila., Inc.
3201 S. 61st Street
Philadelphia, Pa. 19153
Have a nice day!

In:	Date	Time	Scale
Out:	07/12/2001	11:18	0 1

Vehicle ID: M708
Customer ID: 1A
Material ID: 001
Approval ID: 5025

Middlesex
Applied Environmental
Soil
RECTO HOLDING CORP.,

Gross	Tare	Net
47.55 tn	13.00 tn (M)	34.55 tn

Operator:

Operator Signature:

M. Schmitt

Driver Signature:

[Signature]

Approval Load Count : 1
Approval Net Weight : 34.55 tn

NON-HAZARDOUS MATERIAL MANIFEST

TEL: 1-800-969-DIRT • FAX: 516-867-6480

1588

Generator Name Betaco Holding Corp.

GENERATOR

Address 362 Kingsland Ave

Shipping Location Same

Brooklyn, NY

Address 438 W. 18th St

New York, NY

Phone No. _____

Phone No. _____

Approval Number

Description of Material

Codes

Gross Weight

Tare Weight

Net Weight

Net Weight (Tons)

Non hazardous petrol
Contaminated soil
Destined for recycling

4913.6

13.80

35.56

35.56

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name

Signature

TRANSPORTER

Shipment Date

Transporter Name

Middlesex Materials Inc

Address

P.O. Box 124
Iselin, NJ 08830

Driver Name (Print)

FIERRE MARTIN

Vehicle License No./State

11F553H

Truck Number

706

State Permit #

NJ458

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature

Shipment Date

Driver Signature

Delivery Date

Clean Earth of Philadelphia

DESTINATION

Site Name

1201 S. 61st. Street, Philadelphia, PA

Phone No.

301.220

State Permit #

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

M. Schwartz

Signature

CONTRACTOR

Receipt Date

Name of Authorized Agent

Transaction No.
21017

Clean Earth of Phila., Inc.
3201 S. 61st Street
Philadelphia, Pa. 19153
Have a nice day!

Vehicle ID: M706
Customer ID: A
Material ID: 001
Approval ID: 5025

Middlesex
Allied Environmental
Soil
RECTO HOLDING CORP.,

In: Date Time Scal
Out: 07/12/2001 02:27 0
1

Gross: 49.36 tn
Tare: 13.80 tn (M)
Net: 35.56 tn

Operator: 5

Operator Signature: M. Schwartz Driver Signature: Quentin M.

Approval Load Count : 2
Approval Net Weight : 70.12 tn

ALLIED WASTE SERVICES, INC.

2163 MERRICK AVE., MERRICK, NY 11566 • TEL: 1-800-969-DIRT • FAX: 516-867-6480

NON-HAZARDOUS MATERIAL MANIFEST

Log Number

TRK 710

Generator Name Retech Holdings Corp

GENERATOR

Address 701 Kingsland Ave

Shipping Location

Address

Phone No. (718) 0391-5300

Phone No.

Approval Number

Description of Material

Codes

Gross Weight

28.63

Tare Weight

13.56

Net Weight

15.13

Net Weight (Tons)

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name

Signature

Shipment Date

Transporter Name M. d. d. / S. E. X. M.

TRANSPORTER

Address 1561 W. 1st St

Driver Name (Print)

R. T. Harris

Vehicle License No./State

AF 876, WT

Truck Number

710

State Permit # WT 958

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature

Shipment Date

Driver Signature

Delivery Date

Site Name

S. R. P.

DESTINATION

Address

PL 1A, PA

Phone No.

State Permit #

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Signature

Receipt Date

7/12/01

Transaction No.
21019

Clean Earth of Phila., Inc.
3201 S. 61st Street
Philadelphia, Pa. 19153
Have a nice day!

In: Date Time Scale
Out: 07/12/2001 06:37 0
1

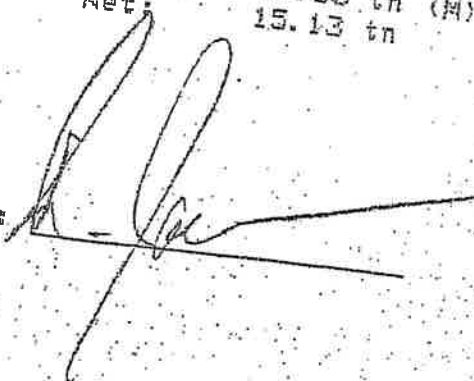
Vehicle ID: M710
Customer ID: A
Material ID: 001
Approval ID: 5025

MIDDLESEX
Allied Environmental
Soil
RECTO HOLDING CORP.

Gross: 25.53 tn
Tare: 13.50 tn (M)
Net: 15.13 tn

Operator: 5

Operator Signature: 

Driver Signature: 

Approval Load Count: 3
Approval Net Weight: 25.25 tn

RETACO HOLDING CORPORATION
362 KINGSLAND AVE.
BROOKLYN, NY 11222
631 471-1500

5. Transporter 1 Company Name
ABLE ENVIRONMENTAL SERVICE

7. Transporter 2 Company Name

9. Designated Facility Name and Site Address
A B OIL SERVICE LTD.
1599 Ocean Avenue
Bohemia, NY 11716

11. Shipping Name and Description

a. **NON REGULATED WASTE SOLID**

GENERATOR

6. US EPA ID Number
NYR00003582
8. US EPA ID Number
10. US EPA ID Number

NYD987023371

A. Transporter's Phone
B. Transporter's Phone
C. Facility's Phone

1A-3
516

516 567-6545

12. Containers
No. Type
13. Total Quantity

501 DM 0565

D. Additional Descriptions for Materials Listed Above

E. Handling Codes Listed Above

501

15. Special Handling Instructions and Additional Information

24 HOUR EMERGENCY # (516) 567-6545

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name
JAMES OWENS
Signature

Month Day Year
12/13/01

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name
Mike Long
Signature

Month Day Year
12/13/01

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Marlene Block
Signature

Month Day Year
12/14/01

ORIGINAL - RETURN TO GENERATOR

Published by and for the EPA, 4000 15th St., NW, Washington, DC 20004-2699

RELACO HOLDING CORPORATION
362 KINGSLAND AVE.
BROOKLYN, NY 11222
Generator's Phone (631) 471-1500

5. Transporter 1 Company Name
NATIONAL WASTE DISPOSAL CORP.

9. Designated Facility Name and Site Address
A B OIL SERVICE LTD.
1599 Ocean Avenue
Bohemia, NY 11716

11. Shipping Name and Description

a. PETROLEUM CONTAMINATED SOIL

GENERATOR

b.
c.
d.

D. Additional Descriptions for Materials Listed Above

15. Special Handling Instructions and Additional Information

24 HOUR EMERGENCY # (516) 567-6545

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: JAMES OWENS For JOHN ENVIROTRAC
Signature: [Signature]

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Brocher
Signature: [Signature]
Month Day Year: 10/8/27/01

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: [Blank]
Signature: [Signature]
Month Day Year: 10/8/27/01

19. Discrepancy Indication Space
Signature: [Signature]
Month Day Year: [Blank]

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: TIM M. HARRY
Signature: [Signature]
Month Day Year: 8/27/01

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS MANIFEST

1. Generator's US EPA ID No.

2. Page 1 of 1

3. Generator's Name and Mailing Address
RETACO HOLDING CORPORATION
362 KINGSLAND AVE.
BROOKLYN, NY 11222

4. Transporter 1 Company Name **631 471-1500**

5. **NATIONAL WASTE DISPOSAL CORP.**

6. US EPA ID Number **NY 0000038092**

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address
A B OIL SERVICE LTD.
1599 Ocean Avenue
Bohemia, NY 11716

10. US EPA ID Number

11. Shipping Name and Description **NY D 9 8 7 0 2 3 3 7 1**

A. Transporter's Phone **1A-372**

B. Transporter's Phone **516 588-0**

C. Facility's Phone **516 567-6545**

GENERATOR

	12. Containers		13. Total Quantity	14. Unit Wt/Vol
	No.	Type		
a. PETROLEUM CONTAMINATED SOIL				
b.				
c.				
d.				
D. Additional Descriptions for Materials Listed Above				
E. Handling Codes Listed Above				

15. Special Handling Instructions and Additional Information
24 HOUR EMERGENCY # (516) 567-6545

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name **John V. Symanski** Signature **John V. Symanski** Month **12** Day **15** Year **01**

17. Transporter 1 Acknowledgement of Receipt of Materials
 Printed/Typed Name **Thomas Delbec** Signature **Thomas Delbec** Month **10** Day **05** Year **01**

18. Transporter 2 Acknowledgement of Receipt of Materials
 Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name **TIM HANCOCK** Signature **Tim Hancock** Month **9** Day **20** Year **01**

ORIGINAL - RETURN TO GENERATOR

UNIVERSITY MICROFILMS
SERIALS ACQUISITION
300 N ZEEB RD
ANN ARBOR MI 48106-1500

Generator's Name and Mailing Address
RETACO HOLDING CORPORATION
362 KINGS LAND AVE.
BROOKLYN, NY 11222

Manifest Document No. **050289**
2. Page 1

4. Generator's Phone () **631 471-1500**

5. Transporter 1 Company Name
NATIONAL WASTE DISPOSAL CORP.

6. US EPA ID Number
NY0000380923

A. Transporter's Phone **1A-372**
B. Transporter's Phone **516 588-**

9. Designated Facility Name and Site Address
A B OIL SERVICE LTD.
1599 Ocean Avenue
Bohemia, NY 11716

8. US EPA ID Number
10. US EPA ID Number

C. Facility's Phone

11. Shipping Name and Description

NYD987023371

516 567-6545

a. **PETROLEUM CONTAMINATED SOIL**

12. Containers		13. Total Quantity	U Wt
No.	Type		
001CM	00015 Y	N816	

GENERATOR

D. Additional Descriptions for Materials Listed Above

E. Handling Codes Listed Above

15. Special Handling Instructions and Additional Information

24 HOUR EMERGENCY (516) 567-6545

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name **John V. Szymanski** Signature **John V. Szymanski**

Month Day Year
19 12 10

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature

Month Day Year

19. Discrepancy Indication Space

Month Day Year

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name Signature

Month Day Year

ORIGINAL - RETURN TO GENERATOR

TRANSPORTER

FACILITY

Generator's Name and Mailing Address
RETACO HOLDING CORPORATION
362 KINGSLAND AVE.
BROOKLYN, NY 11222

4. Transporter 1 Company Name
631 471-1500

7. Transporter 2 Company Name
NATIONAL WASTE DISPOSAL CORP.

9. Designated Facility Name and Site Address
A B OIL SERVICE LTD.
1599 Ocean Avenue
Bohemia, NY 11716

11. Shipping Name and Description
PETROLEUM CONTAMINATED SOIL

12. Containers
No. Type 13. Total Quantity
001 CM 000 15 Y
N816

GENERATOR

D. Additional Descriptions for Materials Listed Above

15. Special Handling Instructions and Additional Information
24 HOUR EMERGENCY # (516) 567-6545

E. Handling Codes Listed Above

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name
John V. Szymanski
Signature
[Signature]

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
[Signature]

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
[Signature]

19. Discrepancy Indication Space

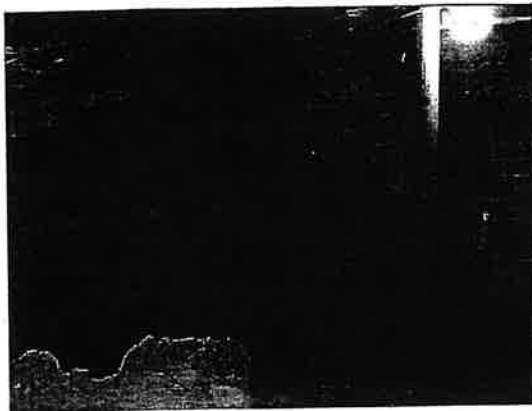
20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
[Signature]

ORIGINAL - RETURN TO GENERATOR

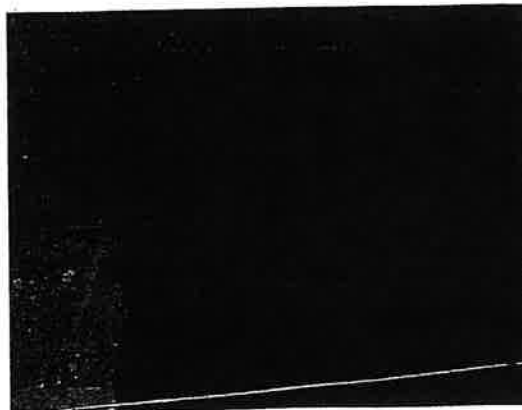
**APPENDIX C
PHOTO DOCUMENTATION**

Photograph Documentation

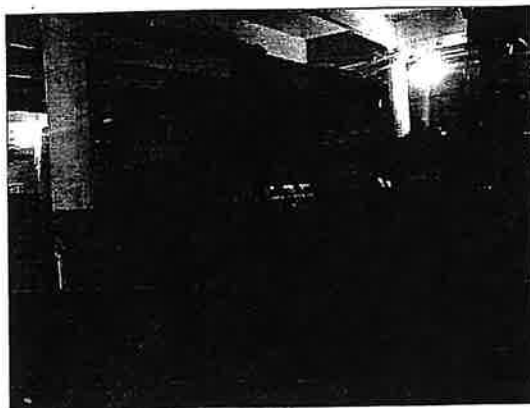
438 West 18th Street
New York, NY



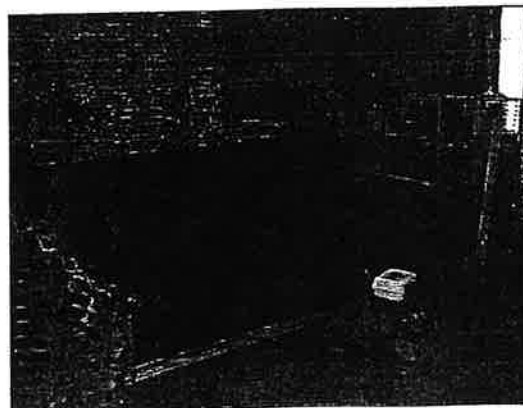
1. Stockpiled petroleum contaminated soil adjacent to the excavation.



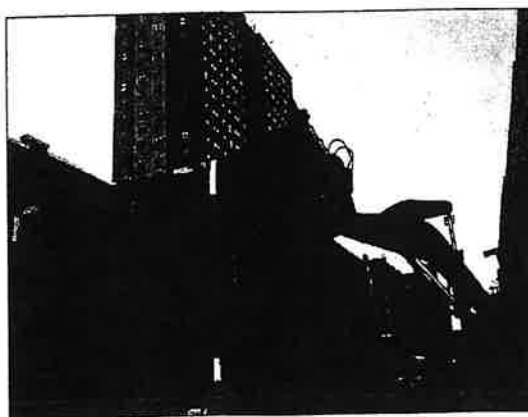
4. View into bottom of excavation with undermined column located to the left.



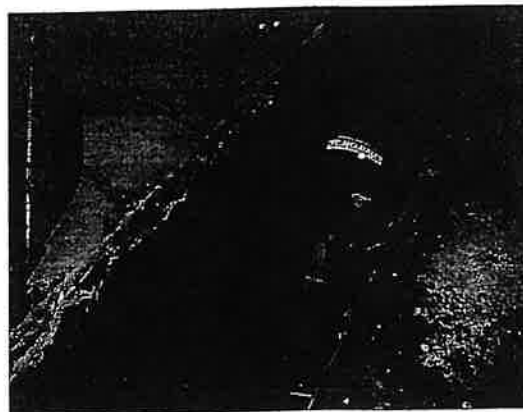
2. Removal of contaminated soil with a front end loader.



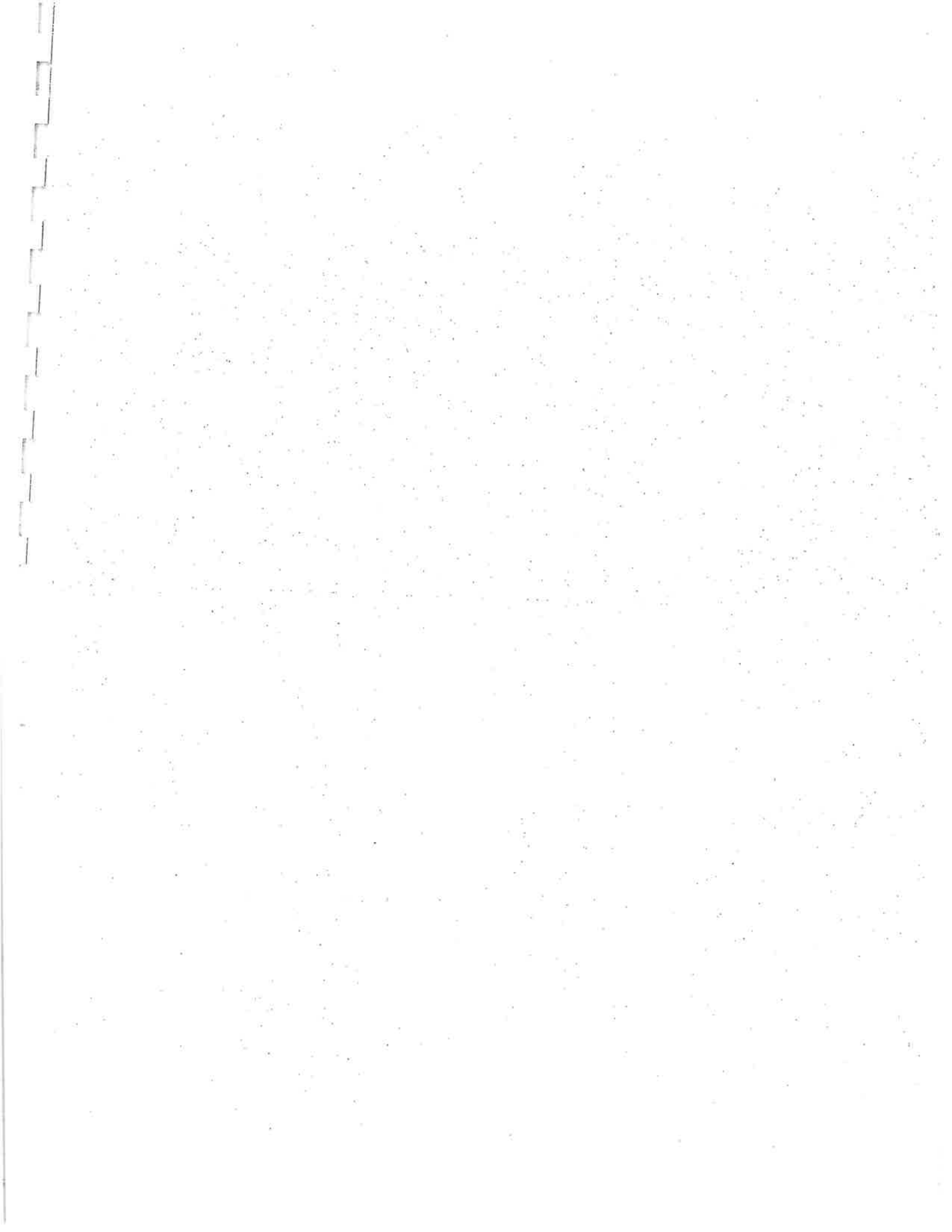
5. Back-filled excavation with clean recycled concrete aggregate to stabilize support column.



3. Loading of contaminated soil onto trucks for transportation to SRP.



6. Hydrogeologist screening trench in Sample location #3 with a PID.





January 9, 2002

Mr. Mark Tibbe
New York State DEC
Region II
47-40 21st Street
Long Island City, NY 11101

VIA: HAND DELIVERED

**Re: Former Parking Garage
438 West 18th Street
New York, New York
NYSDEC Spill # 01-03363**

Dear Mr. Tibbe:

Please find enclosed a Supplemental Site Plan for the above-referenced location on behalf of Retaco Holding Corporation. This plan identifies additional soil/groundwater borings and recently installed monitoring well locations in accordance with the recommendations included in the Subsurface Investigation Report dated November, 2001.

If you have any questions or comments, please do not hesitate to contact me at (631) 471-1500.

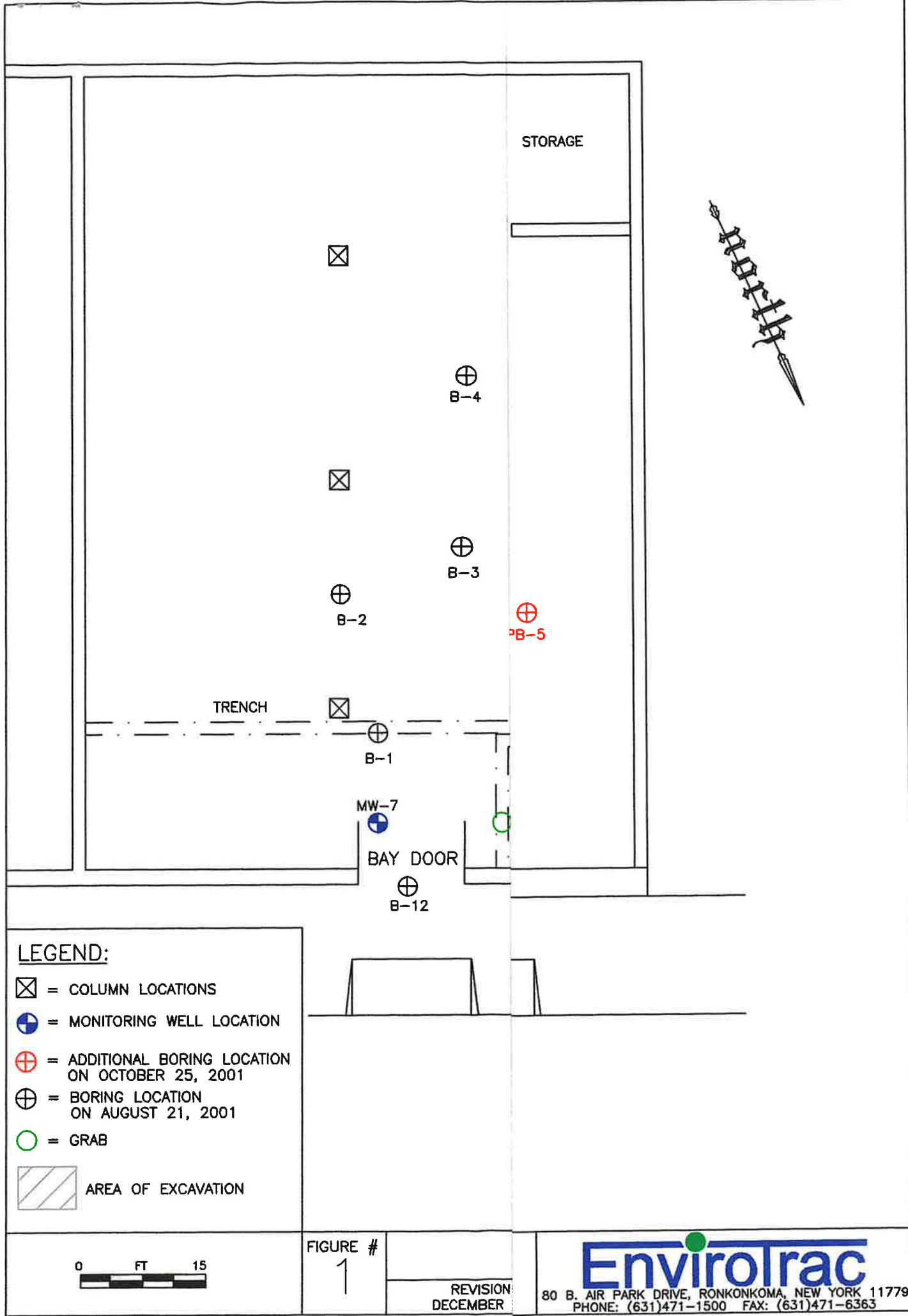
Sincerely,
Envirotrac, Ltd.



John Szymanski
Project Manager

Enclosure

cc: Patrick Vecchione -- Retaco Holding Corporation
John Quatrali - Verizon





January 9, 2002

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New York State DEC
Region II
47-40 21st Street
Long Island City, NY 11101

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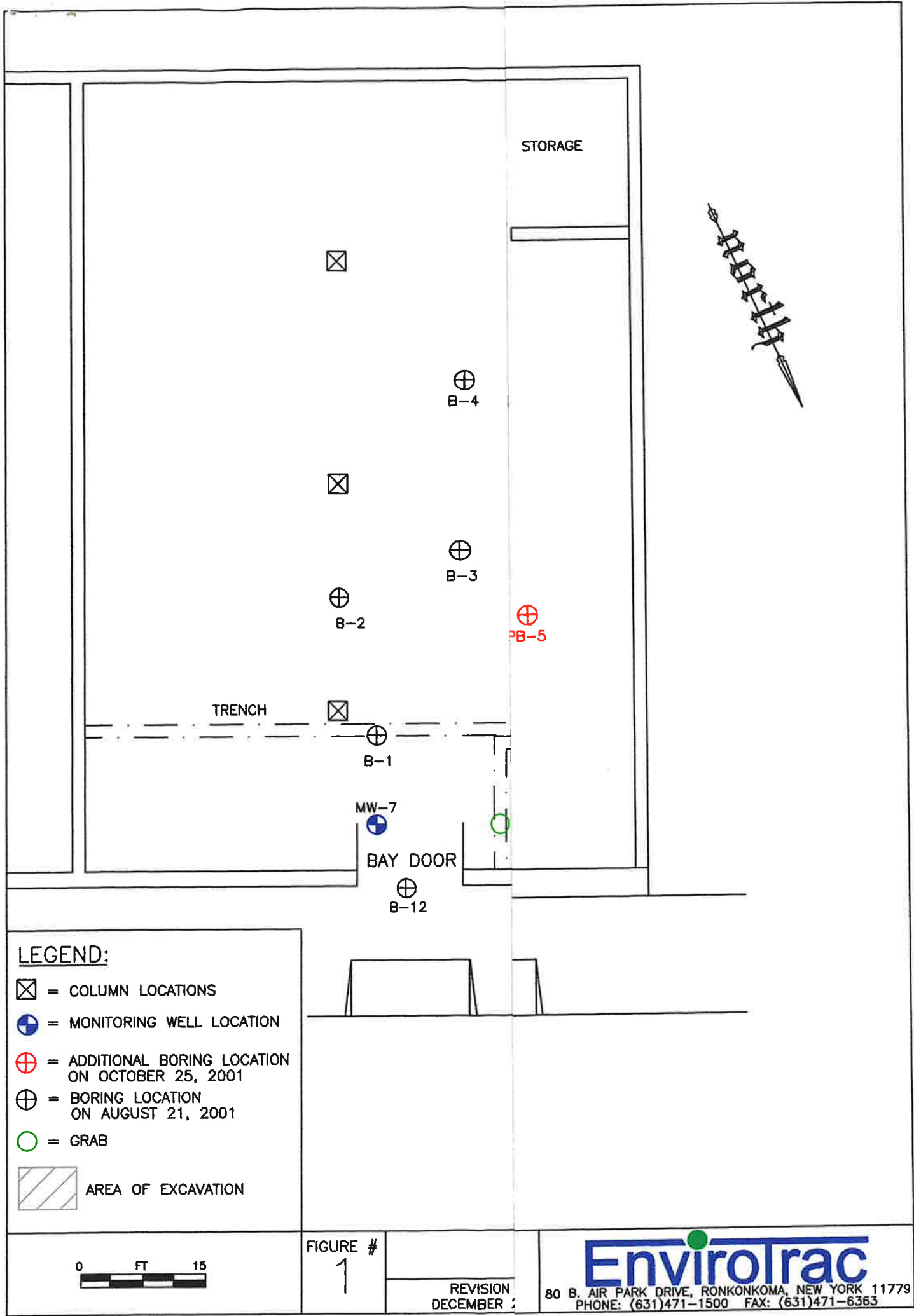
Sincerely,
Envirotrac, Ltd.



John Szymanski
Project Manager

Enclosure

cc: Patrick Vecchione – Retaco Holding Corporation
John Quatrali - Verizon



EnviroTrac

Environmental Services

January 9, 2002

Mr. Mark Tibbe
New York State DEC
Region II
47-40 21st Street
Long Island City, NY 11101

VIA: HAND DELIVERED

**Re: Former Parking Garage
438 West 18th Street
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NYSDEC Spill # 01-03363**

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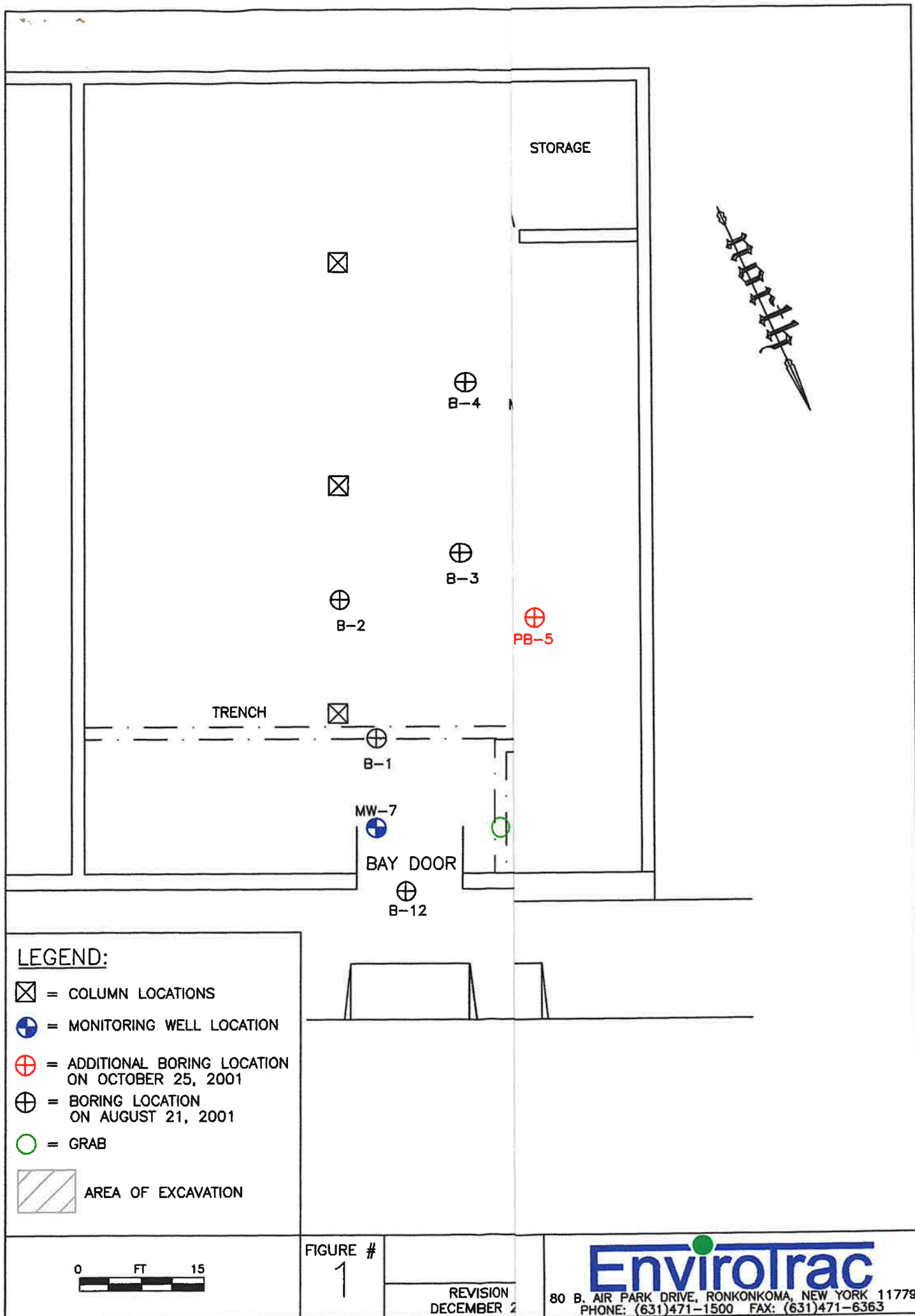
Sincerely,
Envirotrac, Ltd.



John Szymanski
Project Manager

Enclosure

cc: Patrick Vecchione – Retaco Holding Corporation
John Quatrali - Verizon



EnviroTrac

Environmental Services

January 9, 2002

Mr. Mark Tibbe
New York State DEC
Region II
47-40 21st Street
Long Island City, NY 11101

VIA: HAND DELIVERED

**Re: Former Parking Garage
438 West 18th Street
New York, New York
NYSDEC Spill # 01-03363**

Dear Mr. Tibbe:

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If you have any questions or comments, please do not hesitate to contact me at (631) 471-1500.

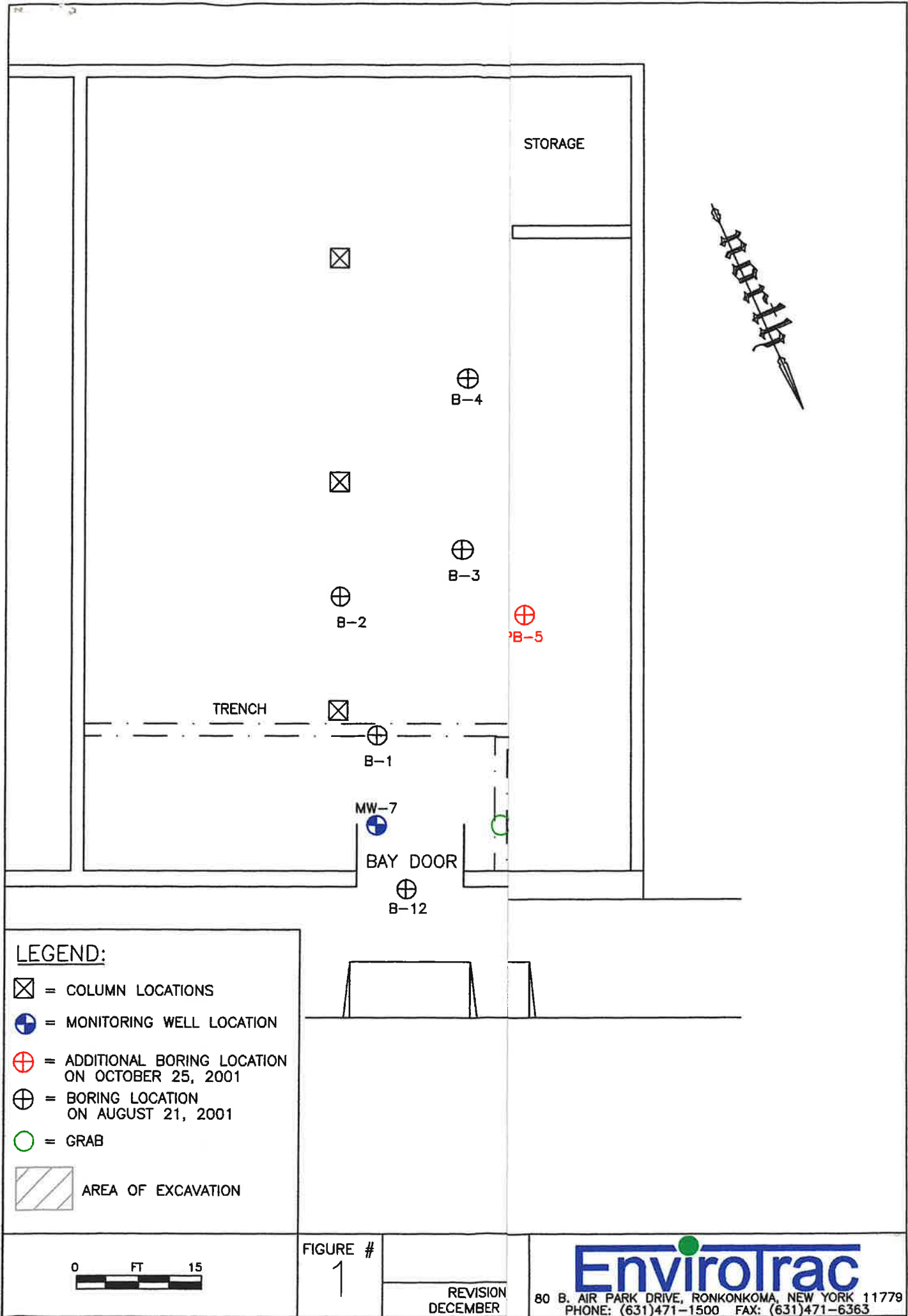
Sincerely,
Envirotrac, Ltd.



John Szymanski
Project Manager

Enclosure

cc: Patrick Vecchione – Retaco Holding Corporation
John Quatrali - Verizon



LEGEND:

-  = COLUMN LOCATIONS
-  = MONITORING WELL LOCATION
-  = ADDITIONAL BORING LOCATION ON OCTOBER 25, 2001
-  = BORING LOCATION ON AUGUST 21, 2001
-  = GRAB
-  AREA OF EXCAVATION



FIGURE #
1

REVISION
DECEMBER

EnviroTrac

80 B. AIR PARK DRIVE, RONKONKOMA, NEW YORK 11779
PHONE: (631)471-1500 FAX: (631)471-6363



January 20, 2002

Mr. Patrick Vecchione
Retaco Holding Corporation
362 Kingsland Avenue
Brooklyn, NY 11222

Re: Ground-water Monitoring Data
Former Parking Garage
438 W. 18th Street
New York, NY
NYSDEC Spill No. 01-03363

Dear Mr. Vecchione:

Please find enclosed the results of the ground-water sampling conducted at the above-referenced location on January 18, 2002. For your convenience, I have summarized the results in a Table format. The shaded boxes indicate detected compounds above the NYSDEC Groundwater Standards. I will forward a hard copy of the laboratory data upon receipt.

If you have any questions, please do not hesitate to call me.

Sincerely,
EnviroTrac Ltd.

A handwritten signature in blue ink, appearing to read "John Szymanski".

John Szymanski
Construction Manager

Table A - Summary of Detected Compounds in Groundwater Monitoring Wells

Retaco Holding Corp.
438 W. 18th Street
New York, NY
NYSDEC Spill No. 01-03363

Analytical Parameter	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	NYSDEC Groundwater Standards
MTBE	201	105	694	2,360	820	416	24.3	238	186	139	10
Benzene	4,720	1,580	2,850	1,140	2,890	612	125	3,830	206	ND	0.7
Toluene	ND	ND	492	8.1	782	504	139	11,300	120	7.1	5
Ethylbenzene	105	99	425	13.6	1,180	2,100	298	5,060	326	146	5
m,p-xylene	41.4	61.2	3,660	36.8	7,070	7,750	1,200	18,800	3,020	87.9	5
o-xylene	8	10.4	1,110	9.2	2,280	2,160	536	6,760	1,230	21	5
Total Xylenes	49.4	71.6	4,790	46	9,350	9,910	1,740	25,600	4,250	109	5
Isopropylbenzene	18.8	12.6	46.4	22	97	111	24	309	39	47.6	5
n-Propylbenzene	10	ND	27.6	18	201	284	55.9	942	67	35.3	5
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	1,040	24.3	5
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2,4-Trimethylbenzene	ND	21.6	1,010	ND	2,850	3,010	509	6,170	2,090	33.8	5
sec-Butylbenzene	ND	ND	ND	ND	ND	12	ND	ND	ND	ND	5
p-Isopropyltoluene	ND	ND	ND	1,210	ND	11.1	12.9	ND	ND	20.5	5
n-Butylbenzene	ND	ND	ND	ND	63.5	ND	ND	282	ND	ND	5
Naphthalene	75.2	70.6	189	195	530	444	137	1,240	530	73.9	10
Total VOCs	5,179.40	1,960.40	10,524	5,012.70	18,763.50	17,414.10	3,061.10	54,931	8,854	636.4	--
Naphthalene	24.3	23	95.9	53	494	238	33.9	5,460,000	461	41.8	10
Acenaphthene	3.8	5.7	6.7	4.9	20.5	2.6	0.27	31,500	22.8	26.4	20
Flourene	1.8	2.4	3.8	2.2	19.2	1.7	0.22	33,600	19.5	13.3	50
Phenanthrene	0.85	0.49	3	1.6	29.4	1.1	0.34	46,000	17.7	8.1	50
Anthracene	0.23	0.21	0.53	ND	4.2	0.21	ND	7,260	2.8	1.1	50
Flouanthene	ND	ND	0.8	ND	7.1	ND	ND	11,500	4.8	0.5	50
Pyrene	ND	ND	0.6	ND	7.2	ND	ND	14,900	5.5	ND	50
Benzo(a)anthracene	ND	0.21	ND	ND	1.9	ND	ND	5,360	1.7	ND	0.002
Chrysene	ND	ND	ND	ND	2.1	ND	ND	5,120	1.7	ND	0.002
Benzo(b)flouranthene	ND	ND	ND	ND	1.5	ND	ND	2,500	0.98	ND	0.002
Benzo(k)flouranthene	ND	ND	ND	ND	0.93	ND	ND	3,100	0.96	ND	0.002
Benzo(a)pyrene	ND	ND	ND	ND	1.6	ND	ND	3,930	1.3	ND	0.002
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	0.64	ND	ND	ND	0.55	ND	0.002
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Benzo(g,h,i)perylene	ND	ND	ND	ND	0.63	ND	ND	ND	0.75	ND	5
Total SVOCs	30.98	32.01	111.33	61.7	590.90	243.61	34.73	5,624,770	542.04	91.2	--

Notes:

1. Concentration Units = ug/l (micrograms per liter) or ppb (parts per billion).
2. Laboratory analysis via EPA Methods 8021/8270
3. ND = Not Detected
4. Shaded box indicates concentration levels at/or above the NYSDEC Ground Water Standards.
5. VOCs = Volatile Organic Compounds
6. SVOCs = Semi Volatile Organic Compounds



Environmental Services
80 B Air Park Drive, Ronkonkoma, NY 11779
(631) 471-1500 (631) 471-6363 fax

Fax

To: MENDY From: DAVE LORTHOIR
Fax: (718) 349-2514 Pages (including cover): 10
Phone: _____ Date: 8/11/03
Re: _____ CC: _____

☐ Urgent ☐ Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments : _____

*Site Summary Report
438 West 18th Street, New York, NY
NYSDEC, Reg. II*

1.0 INTRODUCTION

The following report is a summary of the history and work performed at the above-referenced property (herein referred to as the site). The current building at the site has been utilized as a parking garage since its construction in 1915. The site is located at 440 West 18th Street, Manhattan, New York. The site is currently owned by Retaco Holding Corp. of Brooklyn, NY.

On June 28, 2001, during renovation and construction activities being performed at the site, suspect contaminated soil was encountered at the site. The renovations included the installation of an elevator. Following the discovery of petroleum-impacted soil a representative of Verizon, the building's occupant, contacted the New York State Department of Environmental Conservation (NYSDEC) Spill Hotline. The site was assigned Spill No. 01-03363 as a result of this incident.

2.0 PREVIOUS FIELD ACTIVITIES / INVESTIGATIONS

2.1. Phase 1 Environmental Site Assessment

Langan Engineering and Environmental Services, Inc. (Langan) of Elmwood Park, New Jersey performed a Phase 1 Environmental Site Assessment (ESA) at the site, dated March 31, 2000. A short summary of this report follows.

Six USTs were removed from the site on December 12, 1993 and included one (1) 4000-gallon diesel tank and five (5) 550-gallon gasoline tanks. The tanks were removed by Gasoline Installations, Inc. of Inwood, New York and according to a notarized affidavit, from December 28, 1993, no evidence of soil contamination was observed during the tank removals. The former tank field was in the vicinity of the new elevator.

According to the ESA there are seven sites with leaking underground storage tanks (LUSTs) within one-eighth of a mile from the site. The LUST sites include Hertz/Penske 493 10th Avenue and Mendon Leasing Corp. 515 West 18th Street, which are located 115 and 167 feet away from the site, respectively. Records indicate that tank failures, associated with either gasoline or diesel fuel, were reported in 1989 for the Hertz site and 1996 for the Mendon site.

Both LUST sites may adversely effect the environmental quality at the site. A complete summary of the ESA can be found in the Subsurface Investigation Report submitted to the NYSDEC by EnviroTrac in November 2001.

2.2 Removal of Petroleum-Impacted Soil

In June 2001, Tishman Interiors Corporation encountered contaminated soil during excavation activities. The impacted soil was separated and staged on site. Excavation within the building was limited by the existence of structural footings/columns throughout the floor plan. PID readings ranged from 16 to 634 ppm. Soil sampling indicated VOC and SVOC concentrations exceeding NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives in three of the samples.

One ground-water grab sample was collected from within the excavation area and was submitted for laboratory analysis using EPA Methods 8260/8270 and petroleum product fingerprint analysis. Based on laboratory analysis, VOCs were detected above NYSDEC TAGM 4046 Ground Water Standards. No SVOCs were detected above the laboratory's method detection limit. The fingerprint analysis revealed a sample match for gasoline.

On July 12, 2001, on behalf of the property owner Retaco Holding Corporation, a total of 85.25 tons of non-hazardous petroleum impacted soil was removed from the site and properly disposed at the Soil Remediation of Philadelphia (SRP) facility. A complete summary of the impacted soil removal can be found in the Subsurface Investigation Report (EnviroTrac, November 2001).

2.3 Subsurface Investigation

On August 21, 2001, EnviroTrac Ltd. performed an onsite Subsurface Investigation that included the collection of soil and ground water samples for laboratory analysis. Twelve (12) borings were advanced using a Geoprobe. One soil sample and ground-water sample was collected from each borehole.

Based on laboratory analysis, nine of the twelve soil samples exhibited concentrations of VOCs and SVOCs exceeding their respective NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives. VOCs were detected in ground-water samples from all twelve borings, at

concentrations exceeding the NYSDEC TAGM #4046 Ground Water Standards. As previously mentioned, a copy of this report is on file at the NYSDEC.

2.4 Additional Removal of Petroleum Impacted Soil

An additional sixty (60) cubic yards of contaminated soil was removed from the site during late August and throughout September 2001. The soil was removed during excavations associated with construction activities. The soils were removed on August 27TH, September 5TH, 21ST and 22ND, 2001. All soils were placed in 15 cubic yard roll-off containers and removed to AB Oil Service by National Waste Disposal Corporation.

2.5 Well Installation/Monitoring

EnviroTrac supervised the installation of ten (10) monitoring wells in December, 2001. These wells were gauged and sampled in January, 2002. Depth to water on-site ranged from 3.70 to 11.69 ft. below grade (bg). Free-phase product was detected in MW-8 at a thickness of 0.01 ft. **Table 1** summarizes well gauging data.

All ten (10) wells, MW-1 through MW-10, had VOC and SVOC concentrations exceeding NYSDEC TAGM #4046 Ground Water Standards. Total dissolved VOC concentrations ranged from 636.4 parts per billion (ppb) (MW-10) to 54,931 ppb (MW-8). Total dissolved Semi-VOC concentrations ranged from 30.98 ppb (MW-1) to 5,624,770 ppb (MW-8). Total BTEX concentrations ranged from 262.1 ppb (MW-10) to 45,790 ppb (MW-8). Total MTBE concentrations ranged from 24.3 ppb (MW-7) to 2,360 ppb (MW-4). **Tables 2 & 3** summarize ground-water sampling results. **Figures 1 & 2** display sampling and gauging data.

An additional round of monitoring and sampling occurred in March, 2002. Depth to water on-site ranged from 3.72 to 10.84 ft. bg Free-phase product was detected in MW-8 at a thickness of 0.12 ft. **Table 1** summarizes well gauging data.

All ten (10) wells, MW-1 through MW-10, had VOC and SVOC concentrations exceeding NYSDEC TAGM #4046 Ground Water Standards. Total dissolved VOC concentrations ranged from 569.80 ppb (MW-7) to 36,124 ppb (MW-10). Total dissolved Semi-VOC concentrations ranged from 20.35 ppb (MW-7) to 6,203,630 ppb (MW-8). Total BTEX concentrations ranged from 418.3 ppb (MW-7) to 29,730 ppb (MW-8). Total MTBE

*Site Summary Report
438 West 18th Street, New York, NY
NYSDEC, Reg. II*

concentrations ranged from ND (MW-7 & MW-9) to 1,980 ppb (MW-4). **Tables 2 & 3** summarize ground-water sampling results. **Figures 1 & 2** display sampling and gauging data.

Copies of the quarterly monitoring reports were sent to the NYSDEC. The quarterly monitoring and sampling program was put on hold in the summer of 2002, pending the performance and results of a fingerprint analysis.

2.6 Fingerprint Analysis

In October 2002, a product sample was collected from MW-8 for product characterization. The sample was sent to Worldwide Geosciences, Inc. of Houston, Texas. The signature characteristics of the MW-8 sample are indicative of a gasoline produced no later than 1985.

3.0 CONCLUSIONS & RECOMMENDATIONS

A review of Figure 1 indicates that ground-water flow in the vicinity of the site is to the north. The on-site monitoring wells upgradient and crossgradient of the former tank pit, now occupied by the elevator shaft, all exhibit concentrations of total VOCs that exceed 1,000 ppb. Given this information it is EnviroTrac's opinion that ground-water in the vicinity of the site has been regionally impacted by the historically industrial usage of the area.

The results of the quarterly monitoring indicates that only one well, MW-8, has exhibited minor amounts of floating product.

Given the above data and conclusions, EnviroTrac is recommending that the monitoring wells at the site be monitored on a month basis for the presence of product only. Should the monitoring wells at the site remain free of product for a period of six consecutive months, EnviroTrac will request a no-further action letter from the Department.

Based on a review of this data, EnviroTrac Ltd. recommends performing monthly monitoring of all wells for at least six months.

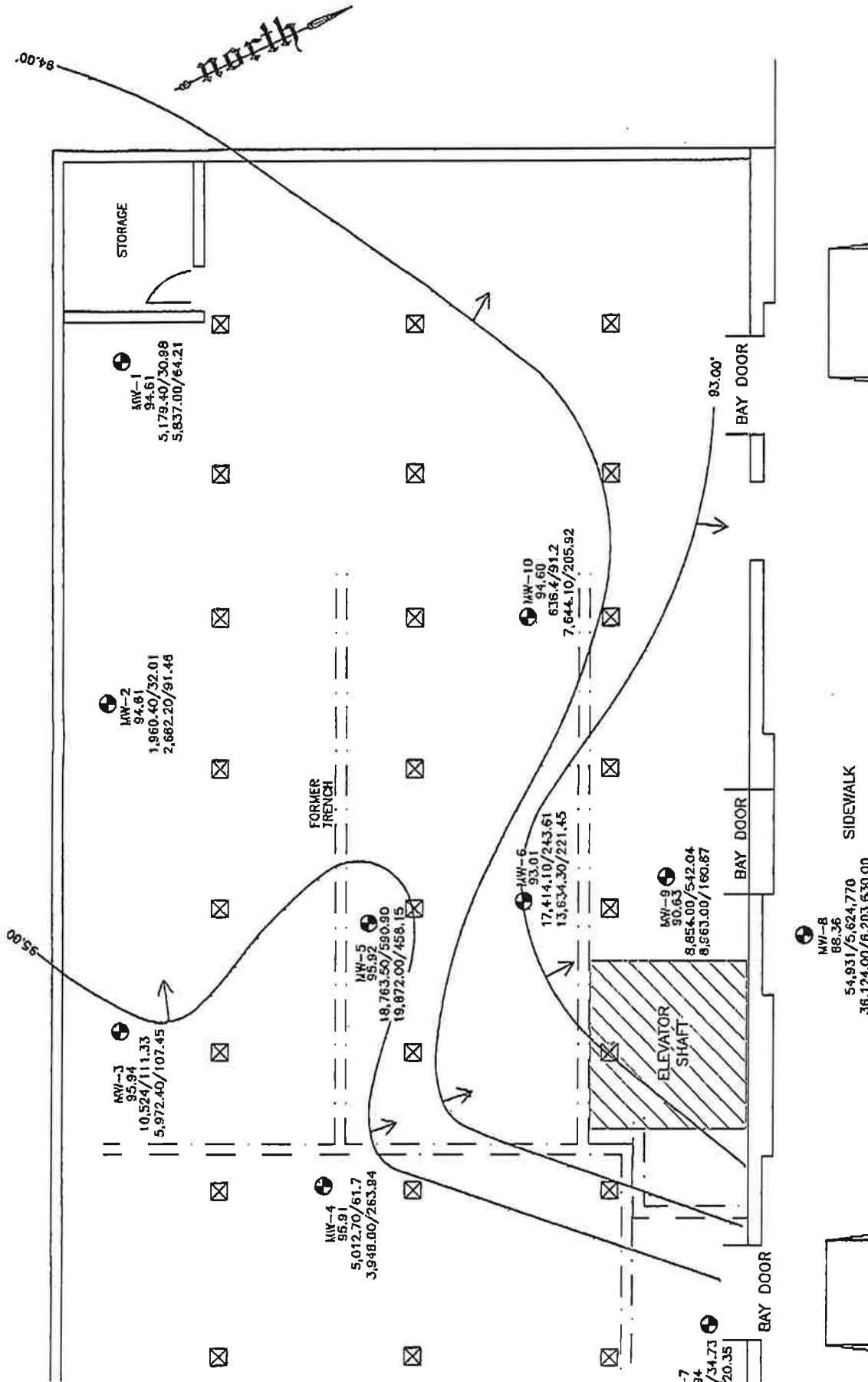


FIGURE #
1

TOTAL DISSOLVED VOCs / SVOCs IN GROUND-WATER
AND GROUND-WATER ELEVATION

FORMER PARKING GARAGE
438 W. 18TH STREET
NEW YORK, NEW YORK
NYSDEC SPILL No. 01-03363

REVISION DATE:
AUGUST 8, 2003

SCALE:
1" = 15 FEET

REVISED BY: TB

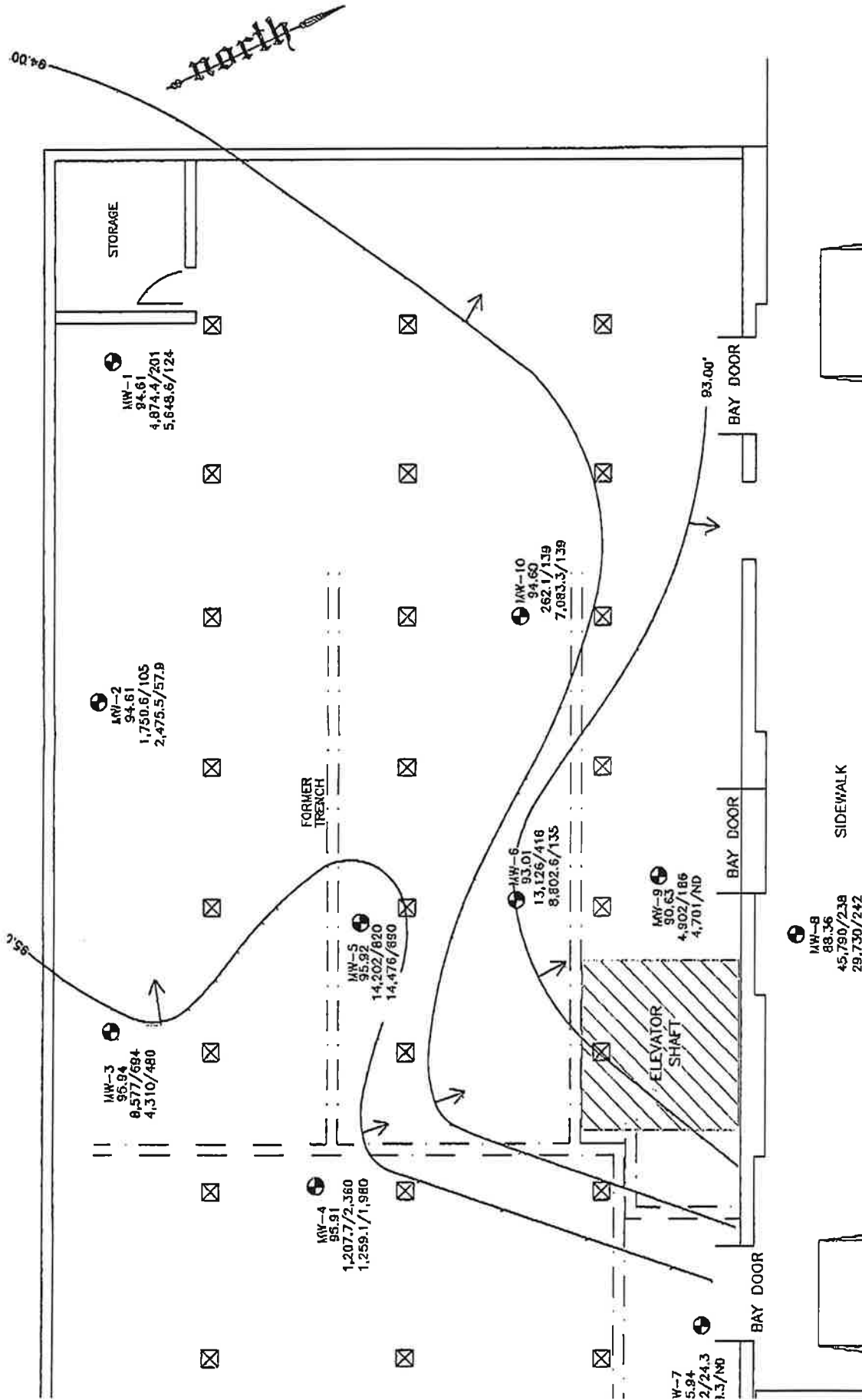


FIGURE #	2
FORMER PARKING GARAGE 438 W. 18TH STREET NEW YORK, NEW YORK NYSDEC SPILL No. 01-03363	TOTAL DISSOLVED BTEX/MTBE IN GROUND-WATER AND GROUND-WATER ELEVATION
REVISION DATE: AUGUST 8, 2003	SCALE: 1" = 15 FEET
REVISION BY: TB	

Table 1 - Well Gauging Data

*Retaco Holding Corp.
438 W. 18th Street
New York, NY*

Well Location	Top of Casing Elevation (ft. relative)	Date Measured	Depth to Product (ft. bc.)	Depth to Water (ft. bc.)	Product Thickness (ft.)	Water Table Elevation (ft. relative)
1	100.77	1/10/02	-	6.69	-	94.08
		1/18/02	-	6.81	-	93.96
		3/6/02	-	6.16	-	94.61
2	100.83	1/10/02	-	6.75	-	94.08
		1/18/02	-	6.88	-	93.95
		3/6/02	-	6.22	-	94.61
3	100.30	1/10/02	-	4.33	-	95.97
		1/18/02	-	4.68	-	95.62
		3/6/02	-	4.36	-	95.94
4	100.00	1/10/02	-	4.04	-	95.96
		1/18/02	-	4.38	-	95.62
		3/6/02	-	4.09	-	95.91
5	100.70	1/10/02	-	4.75	-	95.95
		1/18/02	-	5.08	-	95.62
		3/6/02	-	4.78	-	95.92
6	100.61	1/10/02	-	6.36	-	94.25
		1/18/02	-	8.07	-	92.54
		3/6/02	-	7.60	-	93.01
7	99.66	1/10/02	-	3.70	-	95.96
		1/18/02	-	4.04	-	95.62
		3/6/02	-	3.72	-	95.94
8	99.20	1/10/02	9.40	9.41	0.01	89.79
		1/18/02	10.58	10.59	0.01	88.61
		3/6/02	10.72	10.84	0.12	88.36
9	100.83	1/10/02	-	9.27	-	91.56
		1/18/02	-	11.69	-	89.14
		3/6/02	-	10.20	-	90.63
10	100.38	1/10/02	-	6.32	-	94.06
		1/18/02	-	6.48	-	93.90
		3/6/02	-	5.78	-	94.60

Notes:

1. ft. relative = feet relative to an arbitrary datum point.
2. ft. bc. = feet below casing
3. (-) = Not Detected
4. Wells surveyed on 1/10/02.

Table 2 - Summary of Ground-Water VOC's

Relaco Holding Corp.
438 W. 18th Street
New York, NY

Analytical Parameter	Date Sampled	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	NYSDEC Groundwater Standards
MTBE	1/18/02	201	105	594	2,360	820	416	24.3	238	186	139	10
	3/6/02	124	579	480	1,980	880	435	ND	242	ND	139	
Benzene	1/18/02	4,720	1,330	2,850	1,140	2,890	812	125	3,830	208	ND	0.7
	3/6/02	5,530	2,310	2,100	1,220	3,180	203	ND	1,910	148	6,700	
Toluene	1/18/02	ND	ND	492	81	782	504	139	11,300	120	7.1	5
	3/6/02	ND	3.70	145	5.5	556	29.6	6.10	6,740	245	5.9	
Ethylbenzene	1/18/02	105	89	475	13.6	1,180	2,100	288	5,060	326	146	5
	3/6/02	89.3	103	435	11.3	1,390	1,090	43.2	2,680	338	228	
m,p-xylene	1/18/02	414	612	3,630	36.8	7,070	7,750	1,200	18,800	3,020	87.9	5
	3/6/02	292	493	1,320	22.3	7,850	6,010	244	13,400	2,100	131	
o-xylene	1/18/02	8	10.4	1,110	9.2	2,280	2,160	536	6,760	1,230	21	5
	3/6/02	ND	9.50	307	ND	2,060	1,420	125	4,950	867	19.4	
Total Xylenes	1/18/02	49.4	74.6	4,790	46	9,350	9,910	1,740	25,500	4,250	108	5
	3/6/02	292	58.8	1,630	22.3	9,710	7,430	369	18,400	3,970	150	
Isopropylbenzene	1/18/02	18.8	12.8	46.4	22	97	111	24	309	39	47.6	5
	3/6/02	ND	17.1	64.4	23.9	102	35.7	ND	133	ND	60.5	
n-Propylbenzene	1/18/02	10	ND	27.6	18	201	284	55.9	942	67	35.3	5
	3/6/02	ND	3.40	119	25	207	253	5.80	336	180	50.3	
1,3,5-Trimethylbenzene	1/18/02	ND	ND	ND	ND	ND	ND	ND	ND	1,030	24.9	5
	3/6/02	ND	8.2	186	ND	751	803	26.3	982	903	41.0	
tert-Butylbenzene	1/18/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
	3/6/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,4-Trimethylbenzene	1/18/02	ND	21.6	1,010	ND	2,850	3,010	509	6,170	2,030	338	5
	3/6/02	ND	16.1	583	ND	2,570	2,940	69.2	3,770	2,320	56.6	
sec-Butylbenzene	1/18/02	ND	ND	ND	ND	ND	12	ND	ND	ND	ND	5
	3/6/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
p-Isopropyltoluene	1/18/02	ND	ND	ND	ND	ND	11.1	12.9	ND	ND	20.5	5
	3/6/02	ND	ND	ND	389	ND	ND	37.0	ND	ND	28.0	
n-Butylbenzene	1/18/02	ND	ND	ND	ND	63.5	ND	ND	282	ND	ND	5
	3/6/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Naphthalene	1/18/02	75.2	70.6	189	195	530	434	137	1,240	530	73.9	10
	3/6/02	54.4	99.0	233	291	516	603	40.5	981	482	185	
Total VOCs	1/18/02	5,179.40	1,960.40	10,524.00	5,012.70	18,763.50	17,414.10	3,061.10	54,931.00	8,854.00	636.40	-
	3/6/02	5,837.00	2,682.20	5,972.40	3,948.00	19,872.00	13,634.30	569.80	36,124.00	8,963.00	7,644.10	-

Notes:

1. Concentration Units = ug/l (micrograms per liter) or ppb (parts per billion).
2. Laboratory analysis via EPA Methods 8021/8270
3. ND = Not Detected
4. Shaded box indicates concentration levels at/or above the NYSDEC Ground Water Standards.
5. VOCs = Volatile Organic Compounds

Table 3 - Summary of Ground-Water Semi-VOC's

Relatac Holding Corp.
438 W. 18th Street
New York, NY

Analytical Parameter	Date Sampled	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	NYSDEC Groundwater Standards
Naphthalene	1/18/02	24.3	23	95.8	53	494	238	339	5,460,000	461	34.16	10
	3/6/02	53.2	62.6	168.2	236	377	275	196	5,980,000	139	125	
Acenaphthene	1/18/02	3.8	5.7	6.7	4.9	20.5	2.6	0.27	31,500	223	26.4	20
	3/6/02	6.4	16.2	9.2	15.7	14.5	2.6	0.24	50,500	7.2	39.5	
Fluorene	1/18/02	1.8	2.4	3.8	2.2	19.2	1.7	0.22	33,800	19.5	13.3	50
	3/6/02	2.8	8.00	5.9	7.2	13.1	1.8	0.22	50,500	4.8	20.7	
Phenanthrene	1/18/02	0.85	0.49	3	1.6	29.4	1.1	0.34	46,000	17.7	8.1	50
	3/6/02	1.80	3.1	1.8	3.9	21.9	1.5	0.29	67,200	4.5	16.6	
Anthracene	1/18/02	0.23	0.21	0.53	ND	4.2	0.21	ND	72,500	2.8	1.1	50
	3/6/02	ND	0.84	0.89	0.44	16.1	0.33	ND	13,500	1.0	2.5	
Fluoranthene	1/18/02	ND	ND	0.8	ND	7.1	ND	ND	11,500	4.8	0.5	50
	3/6/02	ND	0.30	0.83	0.28	5.5	ND	ND	16,700	1.4	0.94	
Pyrene	1/18/02	ND	ND	0.6	ND	7.2	ND	ND	14,900	5.5	ND	50
	3/6/02	0.21	0.26	0.63	0.21	4.7	0.22	ND	19,500	1.7	0.58	
Benzo(a)anthracene	1/18/02	ND	0.21	ND	ND	1.9	ND	ND	5,360	1.7	ND	0.002
	3/6/02	ND	ND	ND	ND	1.5	ND	ND	ND	0.61	ND	
Chrysene	1/18/02	ND	ND	ND	ND	2.1	ND	ND	5,120	1.7	ND	0.002
	3/6/02	ND	ND	ND	ND	1.6	ND	ND	5,790	0.65	ND	
Benzo(b)fluoranthene	1/18/02	ND	ND	ND	ND	1.5	ND	ND	2,500	0.98	ND	0.002
	3/6/02	ND	ND	ND	ND	0.76	ND	ND	ND	ND	ND	
Benzo(k)fluoranthene	1/18/02	ND	ND	ND	ND	0.93	ND	ND	3,100	0.95	ND	0.002
	3/6/02	ND	ND	ND	ND	0.78	ND	ND	ND	ND	ND	
Benzo(a)pyrene	1/18/02	ND	ND	ND	ND	1.6	ND	ND	3,930	1.1	ND	0.002
	3/6/02	ND	ND	ND	ND	0.73	ND	ND	ND	ND	ND	
Indeno(1,2,3-cd)pyrene	1/18/02	ND	ND	ND	ND	0.54	ND	ND	ND	0.55	ND	0.002
	3/6/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibenzo(a,h)anthracene	1/18/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002
	3/6/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzo(g,h,i)perylene	1/18/02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
	3/6/02	ND	ND	ND	ND	0.63	ND	ND	ND	ND	ND	
Total SVOCs	1/18/02	30.98	32.01	111.33	61.7	590.90	249.61	34.73	5,624,770	542.04	91.2	5
	3/6/02	64.21	91.46	107.45	263.94	458.15	221.45	20.35	6,203,630	160.87	205.92	-

Notes:

1. Concentration Units = ug/l (micrograms per liter) or ppb (parts per billion).
2. Laboratory analysis via EPA Methods 802.1/8270
3. ND = Not Detected
4. Shaded box indicates concentration levels at or above the NYSDEC Ground Water Standards.
5. SVOCs = Semi Volatile Organic Compounds

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21ST Street, Long Island City, NY 11101-5407
Phone: (718) 482-4898 • **FAX:** (718) 482-6358
E-Mail: wxsun@gw.dec.state.ny.us



FAX

To: Rose c/o Patrick Vecchione - Retaco Holding Corp.
Fax #: 718-389-2149
Phone #: 718-391-5300
Pages: 5 including this cover page
From: Joe Sun - NYSDEC
Subject: Former Parking Garage at 438 W. 18th Street, New York, NY
(Spill #: 01-03363)

Date: January 8, 2004

Enclosed please find DEC's letter, Corrective Action Plan and Stipulation Agreement for the above spill number.

Please call me if you have any questions.



Joe Sun, P.E.

cc: Dave Lorthioir-EnviroTrac

**New York State Department of Environmental Conservation
Hazardous Waste and Petroleum Remediation Section
Division of Environmental Remediation**

47-40 21st Street, Long Island City, NY 11101-5407

Phone: (718)482-4898 • FAX: (718)482-6358

Website: www.dec.state.ny.us



Erin M. Crotty
Commissioner

January 8, 2003

Mr. Patrick Vecchione
Retaco Holding Corporation
362 Kingsland Avenue
Brooklyn, NY 11222

Re: Former Parking Garage
438 W. 18th Street
New York, NY
NYSDEC Spill #: 01-03363

Dear Mr. Vecchione:

The New York State Department of Environmental Conservation has received and reviewed the Site Summary Report of August 2003 for the above site and requires the following:

1. Delineation of Soil and Groundwater Contamination: A subsurface investigation to adequately characterize site hydrogeology and to **completely** delineate the full extent of petroleum contamination both on-site and off-site must be performed. The investigation at a minimum must include installation of borings/well: west of MW-8, east of MW-8 and north of MW-8. The soil will be sampled continuously with a PID. The deepest dry soil sample or the sample with the highest PID reading in each boring/well will be sent for EPA Method 8260 VOC/8270 SVOC analyses and the results will be sent to the Department. A water sample will be obtained at each boring location and submitted for EPA Method 8260 VOC/8270 SVOC analyses. If contaminated soil extends to the water table a monitoring well will be installed. Prior to installation all utilities will be located and marked out. A report summarizing the findings of the subsurface investigation including boring logs, well installation logs, sample analyticals, site plan, conclusions and recommendations must be submitted to the Department. Additional borings/monitoring wells may be required by the Department upon review of the investigation report.

2. Surrounding Property Sketch: A surrounding property sketch including property layout and usage must be submitted to the Department. North arrow and scale must also be included on the Site Plan.

The purpose of this letter is to obtain your commitment to cleanup and remove the discharge of petroleum which occurred at 438 W. 18th Street, New York, New York. As a result of an investigation undertaken by this Department, we believe that you are responsible for this discharge.

In an effort to bring about the timely and appropriate cleanup of this discharge, we have enclosed a Stipulation agreement for your signature. This agreement delineates the work that needs to be done and a schedule for such work. This agreement also includes the required discharge or emission levels that would

normally be required for this type of activity. If this agreement is signed, no separate permits will be required. This allows the remediation to start promptly without delays that may be caused by having to obtain Department permits.

By signing the attached Stipulation agreement, you are not admitting that you caused the discharge or admitting liability for this discharge under Article 12 of the Navigation Law. The sole purpose of the Stipulation is to effectuate the remediation of this discharge in an expeditious fashion. If you choose not to sign this agreement, the Department will hire a contractor to perform the required remediation. This will result in your being billed for the actual costs incurred by the State for this activity.

This agreement will not affect your right to pursue any claims you may have against other parties as a result of this discharge. Additionally, in the event that you are not a responsible party under Article 12 of the Navigation Law, this agreement will not prevent you from filing a claim against the New York Environmental Protection and Spill Compensation Fund.

You should be advised that your agreement to cleanup this discharge does not affect the Department's right to pursue any claims that the Department may have against you for penalties based on violations of the Navigation Law or the Environmental Conservation Law arising out of this discharge of petroleum. However, by signing this agreement, you have not waived any defenses you may have to any such claims.

If you choose to perform the remediation of this discharge, please sign the attached Stipulation and return it to my attention. **If we have not received the signed Stipulation by February 9, 2004, we will proceed as discussed above to hire a contractor to perform the required remediation.** If you have any questions concerning this matter, please call my office at (718) 432-4898.

Guidance for Petroleum Spill Stipulation Agreement may be obtained by calling the number referenced above or at www.dec.state.ny.us/website/der/spills/guidance/STIPguidance.pdf.

Sincerely,



Joe Sun, P.E.
Environmental Engineer .
Environmental Remediation Division
Region 2

cc: Jennifer Rommel, NYSDEC
Dave Rubinton, NYSDEC
Dave Lorthioir, EnviroTrac

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**STIPULATION PURSUANT TO SECTION 17-0303 OF THE ENVIRONMENTAL
CONSERVATION LAW AND SECTION 176 OF THE NAVIGATION LAW BY:**

Retaco Holding Corporation, Respondent

SPILL NO. 01-03363

1. The Department of Environmental Conservation is the agency responsible for the cleanup and removal of discharges of petroleum pursuant to Article 12 of the Navigation Law and Article 17 of the Environmental Conservation Law.
2. Respondent has agreed to cleanup and remove a discharge of petroleum which occurred at 438 West 18th Street, New York, New York by taking the steps and according to the conditions set forth in the Corrective Action Plan attached to this Stipulation.
3. This Stipulation does not affect the Department's right to pursue any claims that the Department may have against Respondent, including but not limited to, claims for alleged violations of the Navigation Law or the Environmental Conservation Law. This Stipulation does not affect any defenses that Respondent may have to any such claims.
4. Respondent, without admitting liability, consents to the issuance of this Stipulation, waives the right to notice and hearing with respect to the issuance and entry of this Stipulation as provided by law, and agrees to be bound by the terms of this Stipulation, including any attachments thereto.
5. This Stipulation is equivalent to an order pursuant to ECL §§17-0303 and a directive pursuant to NL §176 and is enforceable as such.
6. The Corrective Action Plan may be modified in writing as may be agreed between the parties. The Corrective Action Plan may be modified by the Department in the same manner as a Department permit.
7. The effective date of this Stipulation is the date it is signed by the Department.

Date_____
Respondent's signature *_____
Respondent's Title (if corporation)_____
Date_____
Regional Director or Regional Spill Engineer, Region ____

* NOTE: If stipulation is with a corporation, the respondent must be an official, authorized corporate representative.

Corrective Action Plan for Spill No. 01-03363

1. Respondent shall immediately conduct liquid-phase hydrocarbon (LPH) monitoring and recovery visits on a weekly basis or as needed until the LPH product has been completely recovered and removed from the site. The LPH recovery technology that may be utilized can include enhanced fluid recovery (EFR) events, hand bailing or passive recovery bailers.

2. Within 60 days of the effective date of this Order, Respondent shall submit to the Department, for its approval, an Investigation Summary Report that completely delineates soil and groundwater contamination both on-site and off-site. A summary property sketch including property layout and usage must be submitted to the Department. The investigation will be approved by the Department if the contamination was adequately delineated.

3. Within 45 days of the approval in writing by the Department of the Investigation Summary Report, Respondent shall submit a Remediation Action Plan (RAP) to the Department. The RAP shall detail the work proposed to remediate all contaminated media. The RAP shall also include an Operation, Maintenance and Monitoring Plan (OMMP) in accordance with DER-10 Technical Guidance for Site Investigation and Remediation drafted 12/25/02, available on the Department's website: www.dec.state.ny.us. The Department shall either approve or disapprove the plan and specifications in writing. If the submittal is disapproved, the Department shall specify any deficiencies and required modifications. Within 30 days of receipt of the Department's disapproval notice, Respondent shall submit a revised RAP which addresses the Department's comments correcting all deficiencies identified in the disapproval notice.

4. Within 45 days of receipt of the Department's notice of approval of the RAP, submitted pursuant to paragraph 3 above, Respondent shall implement the approved RAP referenced in paragraphs 3 above.

5. The approved RAP shall be made part of the Stipulation agreement between Respondent and the Department.

Any modifications to this Corrective Action Plan must be approved in advance by the Department.

SUBSURFACE INVESTIGATION REPORT

**FORMER PARKING GARAGE
438 W. 18TH STREET
NEW YORK, NEW YORK**

NYSDEC # 01-03363

March 30, 2005

Prepared For:

Retaco Holding Corporation
362 Kingsland Avenue
Brooklyn, NY 11222

Prepared By:

EnviroTrac Ltd.
80 B Air Park Drive
Ronkonkoma, New York 11779

*A Full Service Environmental Consulting
and Contracting Firm*



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2. Site Plan
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3. Groundwater Semi-Volatile Organic Compound Analytical Summary

APPENDICES

- A. Monitoring Well Logs
- B. Laboratory Data

1.0 INTRODUCTION

EnviroTrac Ltd. (EnviroTrac) was retained by Retaco Holding Corporation (Retaco) to perform the installation and sampling of three groundwater monitoring wells at 438 W. 18th Street, Manhattan, New York (the site). A Site Location Map is provided as Figure 1. This Report summarizes and documents the installation of the monitoring wells, as well as the analytical results of both soil and groundwater sampling performed at the site.

The current building at the site has been utilized as a parking garage since its construction in 1915. The site was part of a gas conversion facility owned by the Consolidated Gas Company and was utilized for the storage and maintenance of vehicles. The site is surrounded by an automobile repair facility, commercial, and residential properties.

The site is designated as Block 715, Lot 59 and is located approximately one and three-quarters of a mile west of the F.D.R. Drive and the East River, two miles southwest of Central Park, 500 feet east of the Hudson River, and one and one-quarter miles north of the Holland Tunnel.

Six USTs were removed from the site on December 12, 1993. These included one (1) 4000-gallon diesel tank and five (5) 550-gallon gasoline tanks. The tanks were removed by Gasoline Installations, Inc. of Inwood, New York and, according to a notarized affidavit dated December 28, 1993, no evidence of soil contamination was observed during the tank removals. Based on a hand drawn map of the tank removals provided by Gasoline Installations, the five gasoline USTs were located under the northeast corner of the garage and the diesel UST was located on the west side of the garage.

1.1 Regional Geology and Hydrogeologic Characteristics

The site is located south of Central Park and is situated in the Manhattan Prong, a geological region of metamorphosed Paleozoic marine sedimentary rocks. These rocks overlie billion year old basement metamorphic rock identified as a schist. Locally, the rock is known as the Manhattan Schist, a strongly fabricate crystalline rock whose minerals have developed parallelism as a result of dynamic metamorphic processes that occurred during its formation.

Depth to groundwater at the site varies from six to twelve feet below grade. Groundwater in the area of concern was estimated to be approximately 11 feet below grade. Previous investigations have indicated that the groundwater gradient beneath the site is variable, and groundwater beneath the site flows generally to the north-northwest. The regional groundwater flow is most likely to the west, towards the Hudson River.

1.2 Previous Investigations

A total of ten groundwater monitoring wells were installed during previous investigations. Nine of these wells are still located at the site. The tenth well, MW-6, was abandoned due to water, from leaking underground pipes, overflowing from the well.

The nine existing monitoring wells were last sampled on January 17, 2004 and April 13, 2004. The results of this sampling indicated that all of the monitoring wells exhibited concentrations of BTEX and MTBE. Most notable were wells MW-8 and MW-9. These two wells exhibited groundwater elevations that were approximately eight feet lower than the other seven monitoring wells. MW-8 and MW-9 also exhibited concentrations of BTEX that were noticeably higher than the surrounding wells.

The reason for the difference in groundwater elevation at the site is unknown. Most likely it is either due to a natural subterranean change in bedrock or the removal of bedrock during construction activities.

1.3 Purpose and Scope of the Investigation

The purpose of this investigation was to further delineate the extent of contamination at the site and to determine if contamination has spread from the site. In addition, one well would be placed in an upgradient or crossgradient location to help determine if off-site sources are contributing to the contamination discovered at the site.

The scope of the investigation involved installing three monitoring wells in the exterior portions of the site. Prior to the work EnviroTrac met with Mr. Joe Sun of the New York State Department of Environmental Conservation (NYSDEC) to determine the locations of the wells. Two monitoring wells would be installed in the northern sidewalk of West 18th Street, one near the eastern edge of the building and one near the western edge of the building. The third well would be installed in the southern sidewalk of West 18th Street.

2.0 INSTALLATION OF MONITORING WELLS

The three new monitoring wells, identified as MW-11 through 13 were installed on February 10, 2005 utilizing Geoprobe direct push techniques. MW-11 was installed in the sidewalk on the south side of West 18th Street, approximately 68 feet west of MW-8. Well MW-12 was installed in the sidewalk on the south side of West 18th Street, approximately 61 feet east of MW-8. MW-13 was installed in the sidewalk on the north side of West 18th Street, approximately 41 feet west of MW-8.

Wells MW-11 and MW-13 were installed utilizing "drill and drop" methods. No soil samples were obtained during the installation of these wells. Initially, each bore hole was hand dug to a depth of five feet. The soils encountered during the hand digging consisted of fill material. None of the soils exhibited a petroleum odor. A hollow two-inch diameter rod with a disposable end cap was then driven by the Geoprobe to the desired depth of 19 feet and the monitoring wells were installed. The wells are constructed of 1.5-inch diameter PVC casing and screen, with a gravel pack and bentonite seal. Well Construction Logs for MW-11 through 13 are presented in Appendix A.

When the hand excavating began for MW-12, the soil/fill material removed from the bore hole exhibited a noticeable petroleum odor. It was then decided to perform a soil boring prior to installing the monitoring well. The boring was sampled continuously from 5 to 15 feet below grade. All soils encountered consisted of a gray, discolored medium to fine grained sand, which may have been fill material. The groundwater table was encountered at approximately 12 feet below grade. A soil sample was obtained from between 10 – 12 feet below grade and stored in the appropriate container for laboratory analysis. After the boring was completed MW-12 was installed in the same manner as MW-11 and MW-13.

After the installation was completed, all monitoring wells were then developed and surveyed. A Site Plan, showing the locations of all wells, is provided as Figure 2.

2.1 Soil Laboratory Analysis

The soil sample obtained during the installation of MW-12 was transported under proper chain of custody procedures to EcoTest Laboratories (N. Babylon, NY) and analyzed according to EPA Method 8021 (STARS List) and EPA Method 8270 (STARS List). The

results of this analysis indicated that none of the targeted compounds were present above their respective Method Detection Limits.

Due to the elevated Method Detection Limit (MDL) of the 8270 analysis, an additional review of the laboratory data was requested by EnviroTrac. This review, which is also documented in Appendix B, indicates that no traces of fuel oil or diesel fuel are present in the soil sample.

3.0 GROUNDWATER SAMPLING

The three new monitoring wells and MW-8 were sampled on February 15, 2005. All work was performed according to NYSDEC protocol. Prior to the sampling all accessible monitoring wells at the site were gauged for depth to water. Wells MW-1 and MW-10 were inaccessible due to vehicles being parked on top of them.

3.1 Groundwater Gradient Map

The groundwater monitoring information obtained on February 15th is summarized in Table 1. The information was also utilized to generate a Groundwater Gradient Map, which is presented as Figure 3.

A review of Figure 3 indicates that groundwater at the site is flowing to the north. The three new monitoring wells (MW-11, 12 & 13) exhibited groundwater elevations similar to MW-8 & 9. Thus, the Groundwater Gradient Map indicates that the northern and southern portions of the site exhibit relatively shallow groundwater gradients, but the northern and southern portions are separated by an area of steep groundwater gradient.

3.2 Groundwater Laboratory Analysis

The groundwater samples collected from MW-8, MW-11, MW-12 and MW-13 were transported under proper chain of custody procedures to EcoTest Laboratories and analyzed according to EPA Method 8021 (STARS List) and EPA Method 8270 (STARS List). The results of these analysis have been tabulated and are presented as Tables 2 and 3. Copies of the Laboratory analysis are presented in Appendix B.

A review of Table 2 indicates that wells MW-8, MW-11 and MW-12 all exhibited concentrations of VOCs, including MTBE and BTEX, that exceeded their respective Groundwater standards, as found in the NYSDEC's Technical Administrative Guidelines Memorandum (TAGM) #4046. MW-13 exhibited MTBE at a concentration of 32 μ g/L.

A review of Table 3 indicates that wells MW-8, MW-11 and MW-12 exhibited concentrations of Naphthalene that slightly exceeded its respective groundwater standard of 10 μ g/L. Well MW-13 did not exhibit any detectable concentrations of the targeted SVOCs.

4.0 CONCLUSIONS

Based upon the information and data presented in this report and the review of previous investigations performed at the site, EnviroTrac has made the following observations;

- Prior to its current usage, the site was part of a gas conversion facility owned by the Consolidated Edison Gas Company. ConEd also reportedly utilized the site for vehicle maintenance and refueling. The site is currently surrounded by an automobile repair facility, commercial, and residential properties.
- A notarized affidavit from Gasoline Installations, Inc. indicated that no evidence of soil contamination was observed during the removal of the former tanks in 1993.
- Laboratory analysis of the soil sample from MW-12 did not indicate the presence of the targeted STARS List compounds. This could indicate that the odor emitted by the soil in this area is not associated with the former tanks removed from the site.
- Groundwater beneath the site is flowing to the north-northwest. Based upon the site's proximity to the Hudson River, it is EnviroTrac's opinion that the overall groundwater flow in the vicinity of the site is to the west, towards the Hudson River.
- Wells downgradient of the former tank locations (MW-5, MW-8, MW-9 and MW-11) have currently and/or historically exhibited concentrations of VOCs that exceed NYSDEC Groundwater Standards.

- Wells that are upgradient or crossgradient of the former USTs (MW-1, MW-2, MW-3, MW-7 and MW-12) also currently and/or historically exhibited concentrations of VOCs that exceed NYSDEC Groundwater Standards.
- Five of the monitoring wells in the northern portion of the site (MW-8, MW-9, MW-11, MW-12, and MW-13) exhibit groundwater elevations that are approximately three to five feet lower than the monitoring wells in the southern portion of the site. The reason for this difference is unknown, but could be indicative of a different groundwater flow pattern in this portion of the site (i.e. from east to west instead of north to south).
- Well MW-12, which exhibited high concentrations of VOCs and is located in the area of lower groundwater elevation, is located in an area crossgradient/upgradient of the former tanks.

Based upon the above, it is EnviroTrac's conclusion that off-site sources are responsible for the groundwater contamination beneath the site. This is evidenced by the presence of contamination in upgradient and crossgradient wells. Most notable is well MW-12, which exhibits elevated concentrations of VOCs, yet is crossgradient of the former tank locations. Possible past and current sources of contamination include, but are not limited to, the former gas conversion plant and Midtown Chelsea Auto Repair, which is located adjacent to eastern site boundary.



80 B AIR PARK DRIVE, RONKONKOMA, NEW YORK 11779
PHONE: (631)471-1500 FAX: (631)471-6363

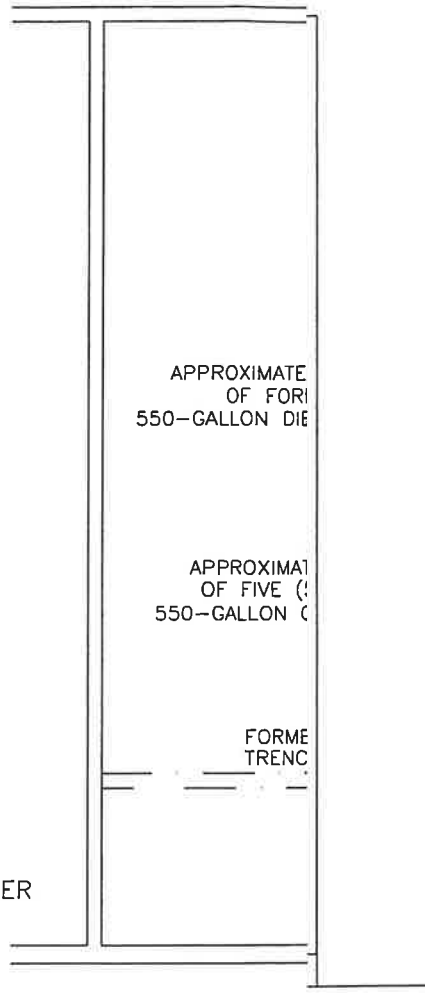
VERI
438 WEST
MANHATTAN

REVISION DATE:
MARCH 30, 2005

NC

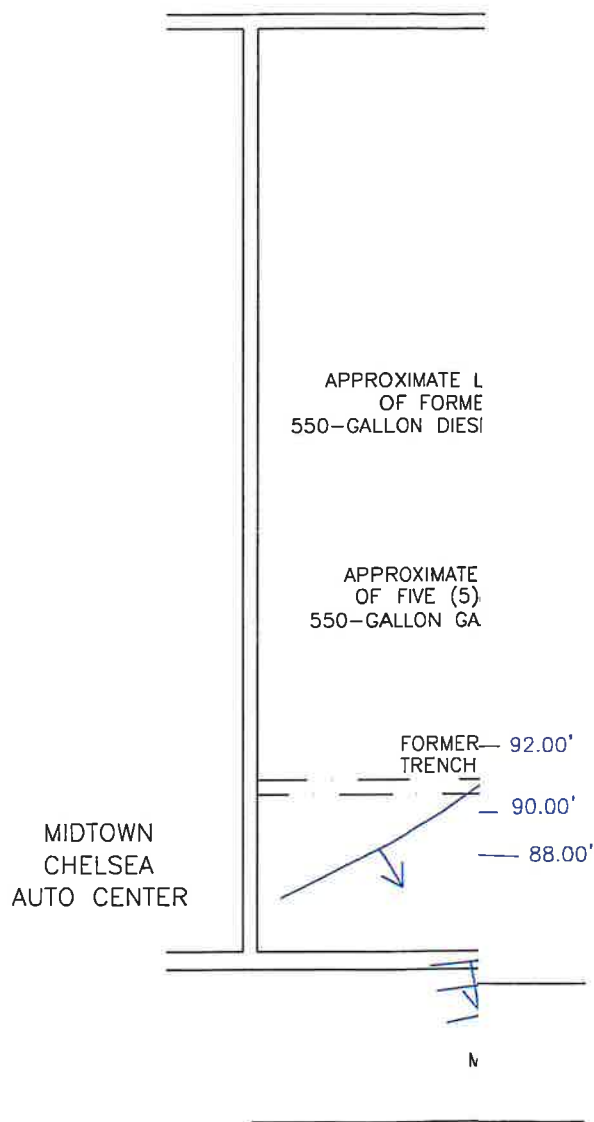
FIGURE #

1



LEGEND:

- = COLUMN LOCATIONS
- = MONITORING WELL LOCATION
- AREA OF EXCAVATION



LEGEND:

☒ = COLUMN LOCATIONS

⊕ = MONITORING WELL LOCATION

▨ AREA OF EXCAVATION

CONTOUR INTERVAL = 2.00 FEET

SAMPLE WELL:

⊕ MW-7 = WELL ID.

93.78 = GROUND-WATER ELEVATION

MIDTOWN
CHELSEA
AUTO CENTER

APPROXIMATE
OF FORM
550-GALLON DIE!

APPROXIMATE
OF FIVE (5)
550-GALLON G.

FORMER
TRENCH

MW-
N
N
N
7,330/

LEGEND:

☒ = COLUMN LOCATIONS

⊕ = MONITORING WELL LOCATION

▨ AREA OF EXCAVATION

NS = NOT SAMPLED

SAMPLE WELL:

⊕ MW-7 = WELL ID.

702.3/205 = BTEX/MTBE
ON JANUARY 17, 2004

727.1/61.3 = BTEX/MTBE
ON APRIL 13, 2004

NS = BTEX/MTBE ON
FEBRUARY 15, 2005

EnviroTrac
80 B. AIR PARK DRIVE, RONKONKOMA, NEW YORK 11779
PHONE: (631)471-1500 FAX: (631)471-6363

0 FT
1" = 2'

REVISION DATE:
MARCH 30, 2005

SC/
1" = 2'

ON FEBRUARY 15, 2005

FIGURE #

4

Table 1
Groundwater Gauging Data
February 15, 2005
438 W. 18th Street

Monitoring Well	Top of Casing Elevation (ft)	Depth to Product (ft)	Depth to Water (ft)	Water Table Elevation (ft. relative)
MW-1	100.77	ND	NM	NA
MW-2	100.83	ND	7.48	93.35
MW-3	100.30	ND	1 5.50	94.80
MW-4	100.00	ND	6.21	93.79
MW-5	100.70	ND	6.91	93.79
MW-6	100.61	NM	NM	NA
MW-7	99.66	ND	5.88	93.78
MW-8	99.20	ND	10.85	88.35
MW-9	100.83	ND	12.64	88.19
MW-10	100.38	ND	NM	NA
MW-11	98.69	ND	10.35	88.34
MW-12	99.86	ND	11.58	88.28
MW-13	98.55	ND	10.26	88.29

ND – Not Detected NM – Not Monitored NA – Not Applicable

Table 2
Groundwater Laboratory Analysis (VOCs)
438 W. 18th Street

Compound	MW-8	MW-11	MW-12	MW-13	Groundwater Standard
MTBE	70	520	180	32	10
Benzene	1,900	9,600	3,000	<1	0.7
Toluene	2,000	910	430	<1	5.0
Ethyl Benzene	650	2,300	1,000	<1	5.0
m&p Xylene	7,900	5,800	2,700	<2	NA
o Xylene	3,600	750	230	<1	NA
Xylene	12,000	6,600	2,900	<3	5.0
Isopropylbenzene	85	120	99	<1	5.0
n-Propylbenzene	77	260	210	<1	5.0
135-Trimethylbenzene	1,400	380	350	<1	5.0
124-Trimethylbenzene	3,900	1,300	1,300	<1	5.0
sec-Butylbenzene	<50	<50	<50	<1	5.0
p-Isopropyltoluene	<50	<50	<50	<1	5.0
n-Butylbenzene	<50	<50	<50	<1	5.0
Naphthalene (v)	1,100	460	580	<1	10
tert-Butylbenzene	<50	<50	<50	<1	5.0

NA – Not Applicable All units in ug/l Groundwater Standards from TAGM 4046.

Table 3
Groundwater Laboratory Analysis (SVOCs)
438 W. 18th Street

Compound	MW-8	MW-11	MW-12	MW-13	Groundwater Standard
Naphthalene (sv)	130	94.0	80	<1.0	10.0
Acenaphthylene	<10.0	<10.0	<10.0	<1.0	50.0
Acenaphthene	<10.0	<10.0	<10.0	<1.0	20.0
Fluorene	<10.0	<10.0	<10.0	<1.0	50.0
Phenanthrene	<10.0	<10.0	<10.0	<1.0	50.0
Anthracene	<10.0	<10.0	<10.0	<1.0	50.0
Fluoranthene	<10.0	<10.0	<10.0	<1.0	50.0
Pyrene	<10.0	<10.0	<10.0	<1.0	50.0
Benzo(a)anthracene	<10.0	<10.0	<10.0	<1.0	.002
Chrysene	<10.0	<10.0	<10.0	<1.0	.002
Benzo(b)fluoranthene	<10.0	<10.0	<10.0	<1.0	.002
Benzo(k)fluoranthene	<10.0	<10.0	<10.0	<1.0	.002
Benzo(a)pyrene	<10.0	<10.0	<10.0	<1.0	.002
Indeno(1,2,3-cd)pyrene	<10.0	<10.0	<10.0	<1.0	.002
Dibenzo(a,h)anthracene	<10.0	<10.0	<10.0	<1.0	50.0
Benzo(ghi)perylene	<10.0	<10.0	<10.0	<1.0	5.0

NA – Not Applicable

MDL – Method Detection Limit

**APPENDIX A
MONITORING WELL LOGS**

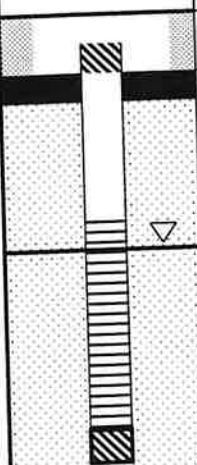
Geologic Log and Well Construction Details

WELL ID: MW-11

ENVIROTRAC LTD.

80 B Air Park Drive, Ronkonkoma, NY 11779

Client: Retaco		Depth to Water (ft. from measuring pt.)		Site Elevation Datum
Site Name: W. 18th St.	Address: 438 W. 18th St., NY, NY	Date: 2/15/2005	DTW: 10.35	
Drilling Company: Associated Environmental	Method: Hollow Stem Auger			Measuring Point Elevation
Date Started: 2/10/2005	Date Completed: 2/10/2005			
Completion Depth: 19'	ENVIROTRAC Geologist: Dave Lorthioir			

MONITORING WELL CONSTRUCTION (NTS) MW-11	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION
		Recovery (ft.)	Blows per 6 in.	OVM (ppm)	
	0	NM	NM	NM	0'-5' Fill; dry, no odor (Hand dug)
	5	NM	NM	NM	5'-19' Not recorded
	10	NM	NM	NM	
	15	NM	NM	NM	
	20				
Well Construction Details Bottom of well (ft. bg): 19' Screen material: 1.5" PVC Screen slot size (in.): 0.20 Screen zone (ft. bg): 19' to 10' Casing material: 1.5" PVC Sand pack (type): Morie #2 Sand pack (ft bg): 19' to 6' Seal (type): Bentonite Seal (ft. bg): 3' to 2' Surface seal (type): Cement Surface seal (ft. bg): 1' to 0'					
LEGEND:  Cement  Bentonite Seal  Gravel pack (morie #2)  Screen  End/Top Cap					

NTS - Not to Scale NM - Not Measured DTW - Depth to Water ND - Not Detected ft. bg - Feet below grade

Geologic Log and Well Construction Details

WELL ID: MW-12

ENVIROTRAC LTD.

80 B Air Park Drive, Ronkonkoma, NY 11779

Client: Retaco		Depth to Water (ft. from measuring pt.)		Site Elevation Datum	
Site Name: W. 18th St.		Address: 438 W. 18th St., NY, NY		Date 2/15/2005	DTW 11.58
Drilling Company: Associated Environmental		Method: Hollow Stem Auger		Measuring Point Elevation	
Date Started: 2/10/2005		Date Completed: 2/10/2005			
Completion Depth: 19'		ENVIROTRAC Geologist: Dave Lorthioir			

MONITORING WELL CONSTRUCTION (NTS) MW-12	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION
		Reco- very (ft.)	Blows per 6 in.	OVM (ppm)	
	0	NM	NM	NM	<u>0'-5'</u> Fill, gray SAND ; dry, petroleum like odor (Hand dug)
	5	NM	NM	NM	<u>5'-12'</u> Not recorded
	10	NM	NM	NM	<u>12'-19'</u> Gray fine to medium SAND ; wet, petroleum like odor
	15	NM	NM	NM	
	20				
<u>Well Construction Details</u> Bottom of well (ft. bg): 19' Screen material: 1.5" PVC Screen slot size (in.): 0.20 Screen zone (ft. bg): 19' to 10' Casing material: 1.5" PVC Sand pack (type): Morie #2 Sand pack (ft bg): 19' to 6' Seal (type): Bentonite Seal (ft. bg): 3' to 2' Surface seal (type): Cement Surface seal (ft. bg): 1' to 0'					

LEGEND:
 Cement
 Bentonite Seal
 Gravel pack (morie #2)
 Screen
 End/Top Cap

NTS - Not to Scale NM - Not Measured DTW - Depth to Water ND - Not Detected ft. bg - Feet below grade

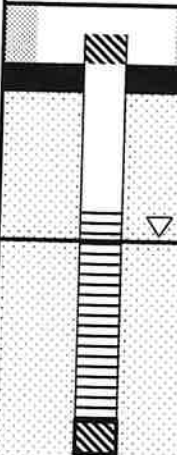
Geologic Log and Well Construction Details

WELL ID: MW-13

ENVIROTRAC LTD.

80 B Air Park Drive, Ronkonkoma, NY 11779

Client: Retaco	Address: 438 W. 18th St., NY, NY	Depth to Water (ft. from measuring pt.)	Site Elevation Datum
Site Name: W. 18th St.	Method: Hollow Stem Auger	Date 2/15/2005	DTW 10.26
Drilling Company: Associated Environmental	Date Started: 2/10/2005	Date Completed: 2/10/2005	Measuring Point Elevation
Completion Depth: 19'	ENVIROTRAC Geologist: Dave Lorthoir		

MONITORING WELL CONSTRUCTION (NTS) MW-13	DEPTH (ft below grade)	SAMPLES			SOIL DESCRIPTION
		Reco- very (ft.)	Blows per 6 in.	OVM (ppm)	
	0	NM	NM	NM	0'-5' Fill; dry, no odor (Hand dug)
	5	NM	NM	NM	5'-19' Not recorded
	10	NM	NM	NM	
	15	NM	NM	NM	
	20				
Well Construction Details Bottom of well (ft. bg): 19' Screen material: 1.5" PVC Screen slot size (in.): 0.20 Screen zone (ft. bg): 19' to 10' Casing material: 1.5" PVC Sand pack (type): Morie #2 Sand pack (ft bg): 19' to 6' Seal (type): Bentonite Seal (ft. bg): 3' to 2' Surface seal (type): Cement Surface seal (ft. bg): 1' to 0'					

LEGEND:

-  Cement
-  Bentonite Seal
-  Gravel pack (morie #2)
-  Screen
-  End/Top Cap

NTS - Not to Scale NM - Not Measured DTW - Depth to Water ND - Not Detected ft. bg - Feet below grade

**APPENDIX B
LABORATORY DATA**

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.250573.01

02/28/05

Envirotrac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779
ATTN: Dave Lorthioir

MAR 04 2005

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:02/10/05 RECEIVED:02/18/05

MATRIX:Soil

SAMPLE: MW-12

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylether	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
Benzene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
Toluene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
Ethyl Benzene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
m + p Xylene	ug/Kg	< 11	02/24/05	5.5555	EPA8021
o Xylene	ug/Kg	< 5.6	02/24/05	11.111	EPA8021
Xylene	ug/Kg	< 17	02/24/05	5.5555	EPA8021
Isopropylbenzene	ug/Kg	< 5.6	02/24/05	16.666	EPA8021
n-Propylbenzene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
135-Trimethylbenzene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
124-Trimethylbenzene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
sec-Butylbenzene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
p-Isopropyltoluene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
n-Butylbenzene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
Naphthalene(v)	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021
tert-Butylbenzene	ug/Kg	< 5.6	02/24/05	5.5555	EPA8021

% Solids

90

02/22/05 0.1 SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 3887

NYSDOH ID # 10320

Page 1 of 2

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO. 250573.01

02/28/05

Envirotrac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D: 02/10/05 RECEIVED: 02/18/05

MATRIX: Soil

SAMPLE: MW-12

Results reported on a dry weight basis

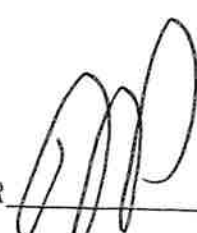
ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	< 330		02/23/05	333.33	EPA8270
Acenaphthylene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Acenaphthene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Fluorene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Phenanthrene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Anthracene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Fluoranthene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Pyrene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Benzo(a)anthracene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Chrysene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Benzo(b)fluoranthene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Benzo(k)fluoranthene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Benzo(a)pyrene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	< 330		02/23/05	333.33	EPA8270
Benzo(ghi)perylene	ug/Kg	< 330		02/23/05	333.33	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR





ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

FAX COVER SHEET

DATE: 03/24/05

FROM: TOM POWELL

E-MAIL: ecotestlab@aol.com

WEBSITE: ECOTESTLABS.COM

RE: Samples did not require cleanup so we were able to look for indications of fuel oil. 250785 shows some indication of possible fuel oil (not a lot) while 250573.01 shows none.

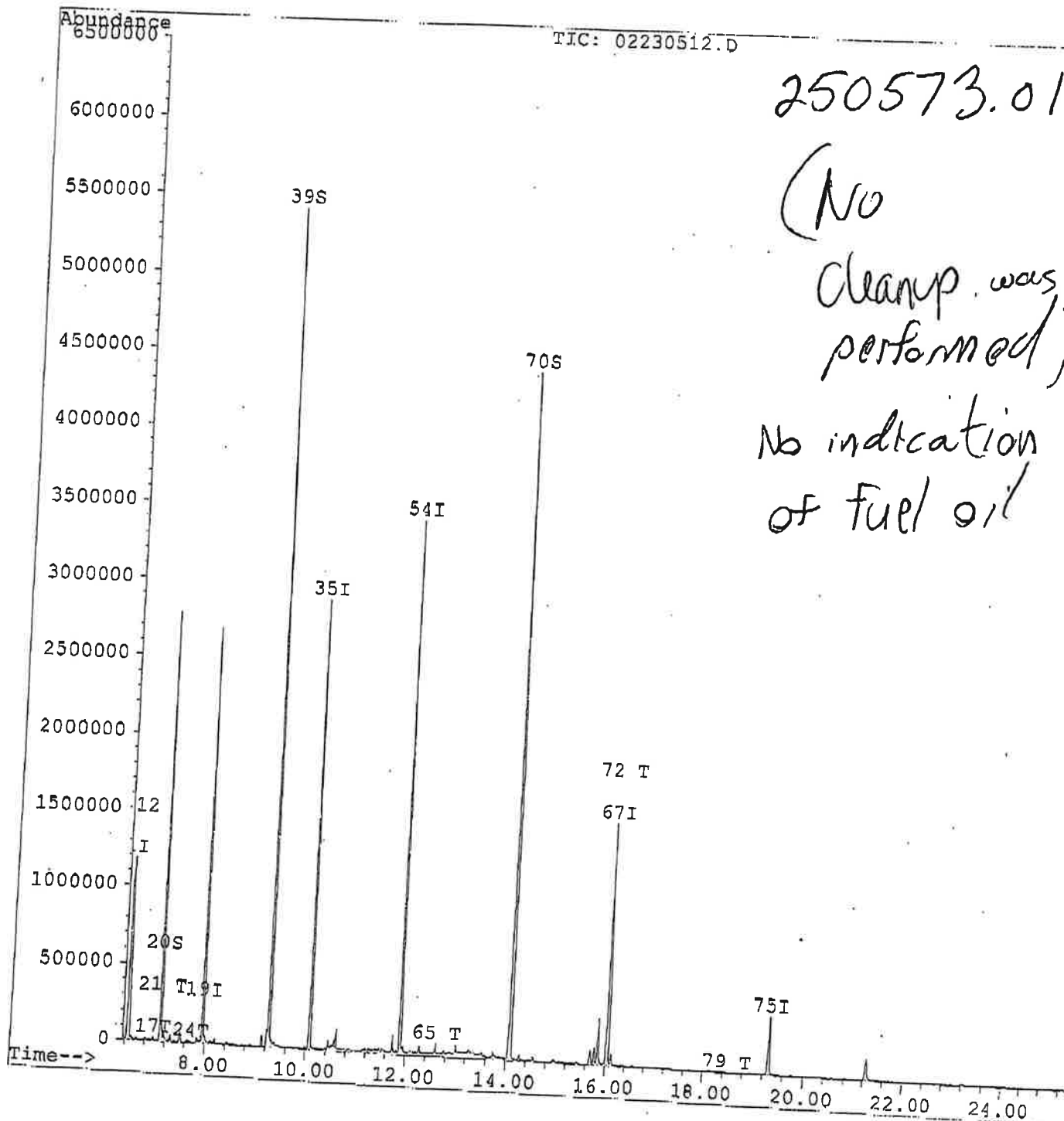
TO: DAVE LORTHIOIR
COMPANY: ENVIROTRAC
ADDRESS:

FAX NO:
Number of Pages: 3 (Including Coversheet)

NOTE: If you have any questions or have not received this clearly or completely, please call (631) 422-5777

Data File : C:\~1TAPE\SVGCMS3\FEB05T\022305\02230512.D Vial: 13
Acq On : 23 Feb 105 5:24 pm Operator: J. Aquilina
Sample : bn smp 573.01*300 3.3g pah Inst : SVGCMS#3
Misc : Multiplr: 1.00
Quant Time: Feb 24 9:06 19105

Method : C:\HPCHEM\1\METHODS\G3031405.M
Title : BASE/NEUTRALS & ACID EXTRACTABLES
Last Update : Tue Mar 15 09:18:39 2005
Response via : Multiple Level Calibration



ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.250573.02

02/28/05

Envirotrac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:02/15/05 RECEIVED:02/18/05

MATRIX:Water SAMPLE: MW-8

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylether	ug/L	70		02/23/05	50	EPA8021
Benzene	ug/L	1900		02/23/05	50	EPA8021
Toluene	ug/L	2000		02/23/05	50	EPA8021
Ethyl Benzene	ug/L	650		02/23/05	50	EPA8021
m + p Xylene	ug/L	7900		02/23/05	50	EPA8021
o Xylene	ug/L	3600		02/23/05	100	EPA8021
Xylene	ug/L	12000		02/23/05	50	EPA8021
Isopropylbenzene	ug/L	85		02/23/05	150	EPA8021
n-Propylbenzene	ug/L	77		02/23/05	50	EPA8021
135-Trimethylbenzene	ug/L	1400		02/23/05	50	EPA8021
124-Trimethylbenzene	ug/L	3900		02/23/05	50	EPA8021
sec-Butylbenzene	ug/L	< 50		02/23/05	50	EPA8021
p-Isopropyltoluene	ug/L	< 50		02/23/05	50	EPA8021
n-Butylbenzene	ug/L	< 50		02/23/05	50	EPA8021
Naphthalene(v)	ug/L	1100		02/23/05	50	EPA8021
tert-Butylbenzene	ug/L	< 50		02/23/05	50	EPA8021

cc:

REMARKS:

LRL=Laboratory Reporting Limit

DIRECTOR



rn = 3889

NYSDOH ID # 10320

Page 1 of 2

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.250573.02

02/28/05

Envirotrac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:02/15/05 RECEIVED:02/18/05

MATRIX:Water SAMPLE: MW-8

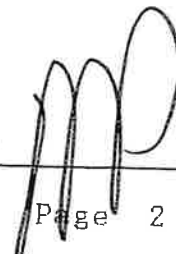
ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	130		02/23/05	10	EPA8270
Acenaphthylene	ug/L	< 10		02/23/05	10	EPA8270
Acenaphthene	ug/L	< 10		02/23/05	10	EPA8270
Fluorene	ug/L	< 10		02/23/05	10	EPA8270
Phenanthrene	ug/L	< 10		02/23/05	10	EPA8270
Anthracene	ug/L	< 10		02/23/05	10	EPA8270
Fluoranthene	ug/L	< 10		02/23/05	10	EPA8270
Pyrene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(a)anthracene	ug/L	< 10		02/23/05	10	EPA8270
Chrysene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(b)fluoranthene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(k)fluoranthene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(a)pyrene	ug/L	< 10		02/23/05	10	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 10		02/23/05	10	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(ghi)perylene	ug/L	< 10		02/23/05	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



rn = 3890

NYSDOH ID # 10320

Page 2 of 2

ECOTEST LABORATORIES, INC.

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.250573.03

02/28/05

ATTN: Envirotrac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779
Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:02/15/05 RECEIVED:02/18/05

MATRIX:Water SAMPLE: MW-11

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylEther	ug/L	520		02/23/05	50	EPA8021
Benzene	ug/L	9600		02/23/05	50	EPA8021
Toluene	ug/L	910		02/23/05	50	EPA8021
Ethyl Benzene	ug/L	2300		02/23/05	50	EPA8021
m + p Xylene	ug/L	5800		02/23/05	100	EPA8021
o Xylene	ug/L	750		02/23/05	50	EPA8021
Xylene	ug/L	6600		02/23/05	150	EPA8021
Isopropylbenzene	ug/L	120		02/23/05	50	EPA8021
n-Propylbenzene	ug/L	260		02/23/05	50	EPA8021
135-Trimethylbenzene	ug/L	380		02/23/05	50	EPA8021
124-Trimethylbenzene	ug/L	1300		02/23/05	50	EPA8021
sec-Butylbenzene	ug/L	< 50		02/23/05	50	EPA8021
p-Isopropyltoluene	ug/L	< 50		02/23/05	50	EPA8021
n-Butylbenzene	ug/L	< 50		02/23/05	50	EPA8021
Naphthalene(v)	ug/L	460		02/23/05	50	EPA8021
tert-Butylbenzene	ug/L	< 50		02/23/05	50	EPA8021

cc:

REMARKS:

LRL=Laboratory Reporting Limit

rn = 3891

NYSDOH ID # 10320

DIRECTOR

Page 1 of 2

ECOTEST LABORATORIES, INC.

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

ENVIRONMENTAL TESTING

Email: ecotestlab@aol.com

Website: www.ecotestlabs.com

LAB NO.250573.03

02/28/05

ATTN: Envirotrac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779
Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:02/15/05 RECEIVED:02/18/05

MATRIX:Water SAMPLE: MW-11

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	94		02/23/05	10	EPA8270
Acenaphthylene	ug/L	< 10		02/23/05	10	EPA8270
Acenaphthene	ug/L	< 10		02/23/05	10	EPA8270
Fluorene	ug/L	< 10		02/23/05	10	EPA8270
Phenanthrene	ug/L	< 10		02/23/05	10	EPA8270
Anthracene	ug/L	< 10		02/23/05	10	EPA8270
Fluoranthene	ug/L	< 10		02/23/05	10	EPA8270
Pyrene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(a)anthracene	ug/L	< 10		02/23/05	10	EPA8270
Chrysene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(b)fluoranthene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(k)fluoranthene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(a)pyrene	ug/L	< 10		02/23/05	10	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 10		02/23/05	10	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(ghi)perylene	ug/L	< 10		02/23/05	10	EPA8270

cc:

REMARKS:

LRL=Laboratory Reporting Limit

rn = 3892

NYSDOH ID # 10320

DIRECTOR

Page 2 of 2

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.250573.04

02/28/05

Envirot rac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779
ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:02/15/05 RECEIVED:02/18/05

MATRIX:Water SAMPLE: MW-12

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylether	ug/L	180		02/23/05	50	EPA8021
Benzene	ug/L	3000		02/23/05	50	EPA8021
Toluene	ug/L	430		02/23/05	50	EPA8021
Ethyl Benzene	ug/L	1000		02/23/05	50	EPA8021
m + p Xylene	ug/L	2700		02/23/05	50	EPA8021
o Xylene	ug/L	230		02/23/05	100	EPA8021
Xylene	ug/L	2900		02/23/05	50	EPA8021
Isopropylbenzene	ug/L	99		02/23/05	150	EPA8021
n-Propylbenzene	ug/L	210		02/23/05	50	EPA8021
135-Trimethylbenzene	ug/L	350		02/23/05	50	EPA8021
124-Trimethylbenzene	ug/L	1300		02/23/05	50	EPA8021
sec-Butylbenzene	ug/L	< 50		02/23/05	50	EPA8021
p-Isopropyltoluene	ug/L	< 50		02/23/05	50	EPA8021
n-Butylbenzene	ug/L	< 50		02/23/05	50	EPA8021
Naphthalene(v)	ug/L	580		02/23/05	50	EPA8021
tert-Butylbenzene	ug/L	< 50		02/23/05	50	EPA8021

cc:

REMARKS:

LRL=Laboratory Reporting Limit

rn = 3893

NYSDOH ID # 10320

DIRECTOR

Page 1 of 2

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.250573.04

02/28/05

Envirotrac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:02/15/05 RECEIVED:02/18/05

MATRIX:Water SAMPLE: MW-12

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	80		02/23/05	10	EPA8270
Acenaphthylene	ug/L	< 10		02/23/05	10	EPA8270
Acenaphthene	ug/L	< 10		02/23/05	10	EPA8270
Fluorene	ug/L	< 10		02/23/05	10	EPA8270
Phenanthrene	ug/L	< 10		02/23/05	10	EPA8270
Anthracene	ug/L	< 10		02/23/05	10	EPA8270
Fluoranthene	ug/L	< 10		02/23/05	10	EPA8270
Pyrene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(a)anthracene	ug/L	< 10		02/23/05	10	EPA8270
Chrysene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(b)fluoranthene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(k)fluoranthene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(a)pyrene	ug/L	< 10		02/23/05	10	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 10		02/23/05	10	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 10		02/23/05	10	EPA8270
Benzo(ghi)perylene	ug/L	< 10		02/23/05	10	EPA8270

cc:

REMARKS:

LRL=Laboratory Reporting Limit

rn = 3894

NYSDOH ID # 10320

DIRECTOR

Page 2 of 2

ECOTEST LABORATORIES, INC.

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com
LAB NO. 250573.05 02/28/05

ATTN: Envirotrac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779
Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO
SOURCE OF SAMPLE:
COLLECTED BY: Client

DATE COL'D: 02/15/05 RECEIVED: 02/18/05

MATRIX: Water SAMPLE: MW-13

ANALYTICAL PARAMETERS

ter. ButylMethylether
Benzene
Toluene
Ethyl Benzene
m + p Xylene
o Xylene
Xylene
Isopropylbenzene
n-Propylbenzene
135-Trimethylbenzene
124-Trimethylbenzene
sec-Butylbenzene
p-Isopropyltoluene
n-Butylbenzene
Naphthalene(v)
tert-Butylbenzene

UNITS	RESULT
ug/L	32
ug/L	< 1
ug/L	< 1
ug/L	< 1
ug/L	< 2
ug/L	< 1
ug/L	< 3
ug/L	< 1
ug/L	< 1
ug/L	< 1
ug/L	< 1
ug/L	< 1
ug/L	< 1
ug/L	< 1
ug/L	< 1
ug/L	< 1

FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	2	EPA8021
	02/23/05	1	EPA8021
	02/23/05	3	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021
	02/23/05	1	EPA8021

cc:

REMARKS:

LRL=Laboratory Reporting Limit

rn = 3895

NYSDOH ID # 10320

DIRECTOR

Page 1 of 2

ECOTEST LABORATORIES, INC.

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

ENVIRONMENTAL TESTING

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO. 250573.05

02/28/05

Envirotac Limited
80 B Air Park Drive
Ronkonkoma, NY 11779
ATTN: Dave Lorthioir

SOURCE OF SAMPLE: RETACO
SOURCE OF SAMPLE:
COLLECTED BY: Client

PO#:

MATRIX: Water SAMPLE: MW-13

DATE COL'D: 02/15/05 RECEIVED: 02/18/05

ANALYTICAL PARAMETERS		UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)		ug/L	< 1		02/22/05	1	EPA8270
Acenaphthylene		ug/L	< 1		02/22/05	1	EPA8270
Acenaphthene		ug/L	< 1		02/22/05	1	EPA8270
Fluorene		ug/L	< 1		02/22/05	1	EPA8270
Phenanthrene		ug/L	< 1		02/22/05	1	EPA8270
Anthracene		ug/L	< 1		02/22/05	1	EPA8270
Fluoranthene		ug/L	< 1		02/22/05	1	EPA8270
Pyrene		ug/L	< 1		02/22/05	1	EPA8270
Benzo(a)anthracene		ug/L	< 1		02/22/05	1	EPA8270
Chrysene		ug/L	< 1		02/22/05	1	EPA8270
Benzo(b)fluoranthene		ug/L	< 1		02/22/05	1	EPA8270
Benzo(k)fluoranthene		ug/L	< 1		02/22/05	1	EPA8270
Benzo(a)pyrene		ug/L	< 1		02/22/05	1	EPA8270
Indeno(1,2,3-cd)pyrene		ug/L	< 1		02/22/05	1	EPA8270
Dibenzo(a,h)anthracene		ug/L	< 1		02/22/05	1	EPA8270
Benzo(ghi)perylene		ug/L	< 1		02/22/05	1	EPA8270

cc:

REMARKS:

LRL=Laboratory Reporting Limit

rn = 3896

NYSDOH ID # 10320

DIRECTOR

Page 2 of 2

MODE = MEMORY TRANSMISSION

START=MAY-02 16:02

END=MAY-02 16:04

FILE NO. = 019

STN NO.	COM	ABBR NO.	STATION NAME/TEL.NO.	PAGES	DURATION
001	OK	2	16314716363	003/003	00:01:09"

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FAX COVER LETTER

Date: 5/2/05

Deliver to: DAVID LORTHOIR

Fax #: 631-471-6363

From: MENDY TAFFEL

Fax#: (718) 389-2149

Total of 3 pages, including this cover page.

SUBJECT: 438 W. 18th STREET - VERIZON

Message: AS PER PAT VECCHIONE'S SUGGESTION,
PLEASE REVIEW THE LETTER FROM DEC.

DATED 4/28/05, AND EXPECT A CALL FROM
PAT AT APPROXIMATELY 11AM TUESDAY, MAY 3, 2005,

CC: PAT VECCHIONE

New Jersey
Carlstadt
Newark

Manhattan
Chelsea

Brooklyn
Greenpoint
Park Slope
Canarsie

The Bronx
Hunts Point

***** -COMM. JOURNAL- ***** DATE MAY-02-2005 ***** TIME 16:06 *** P.01

MODE = MEMORY TRANSMISSION

START=MAY-02 16:04

END=MAY-02 16:06

FILE NO. = 020

STN NO.	COM	ABBR NO.	STATION NAME/TEL. NO.	PAGES	DURATION
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PAT



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FAX COVER LETTER

Date: 5/2/05

Deliver to: DAVID LORTHOIR

Fax #: 631-471-6363

From: MENDY TAFFEL

Fax#: (718) 389-2149

Total of 3 pages, including this cover page.

SUBJECT: 438 W. 18th STREET - VERIZON

Message: AS PER PAT VECCHIONE'S SUGGESTION
PLEASE REVIEW THE letter FROM DEC.

DATED 4/28/05, AND EXPECT A CALL FROM
PAT AT APPROXIMATELY 11AM TUESDAY, MAY 3, 2005,

CC: PAT VECCHIONE

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Newark

Manhattan
Chelsea

Brooklyn
Greenpoint
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Canarsie

The Bronx
Hunts Point

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New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21ST Street, Long Island City, NY 11101-5407
Phone: (718) 482-4965 • FAX: (718) 482-4962
Website: www.dec.state.ny.us



Denise M. Sheehan
Acting
Commissioner

April 28, 2005

BY CERTIFIED MAIL

Leonard Morrow, Esq.
225 Broadway, Suite 1202
New York, NY 10007

Re: 438 West 18th Street, New York, New York; NYSDEC Spill No. 01-03363

Dear Mr. Morrow:

The New York State Department of Environmental Conservation ("the Department") has reviewed the submitted Subsurface Investigation Report (SIR) prepared by your consultant, EnviroTrac, dated March 30, 2005 for the above-referenced spill site. The Department disagrees with EnviroTrac's conclusion that off-site sources are responsible for the groundwater contamination beneath the site. This decision is based on factors including, but not limited to, the following:

1. The two highest concentrations of contaminated groundwater were found at Monitoring Wells MW-8 and MW-11, which are located at the **down-gradient** of the former underground storage tanks ("UST"s). These two wells had BTEX concentrations of 16,550 ug/l and 19,410 ug/l, respectively – higher concentrations than the BTEX concentration of 7,330 ug/l for Monitoring Well MW-12, which is located at the **cross-gradient** of the former USTs.
2. The second item under Section 4.0 of the Conclusion states that, "A notarized affidavit from Gasoline Installations, Inc. indicated that no evidence of soil contamination was observed during the removal of the former tanks in 1993."¹ The statement from the

¹ The Department has no record that a tank closure assessment report was submitted, as required by state law, when the USTs were closed and removed in December 1993. Moreover, there is an apparent violation of Federal law as per the Federal Environmental Protection Assessment Requirement at 40 CFR 280.72 (a): "Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the underground storage tank (UST) site."

affidavit is in contrast to the analytical results from the contaminated soil and groundwater data shown in the Site Activities and Investigation Report, prepared by EnviroTrac, dated August 2001. In the August 2001 Report, soil samples taken in the excavation area of the elevator shaft and from trench which were located down-gradient and immediately adjacent to the former USTs had VOC and SVOC concentrations exceeding NYSDEC guidelines. In the groundwater grab sample, also collected within the excavation area, VOCs were detected above NYSDEC groundwater standards. The report also stated that the fingerprint analysis revealed a VOC match for gasoline.

3. The third paragraph of the March 30, 2005 report under Section 4.0 of the Conclusion states, "Laboratory analysis of the soil sample from MW-12 did not indicate the presence of the target STAR List components. This could indicate that the odor emitted by the soil in the area is not associated with the former tanks removed from the site." The Department cannot concur with this statement since no soil analytical data was included in the report. Secondly, TAGM 4046, not START Memo #1, should be used to analyze the soil and groundwater samples.
4. The groundwater samples taken by EnviroTrac, as reported in the March 30, 2005 report, confirm a very high concentration of BTEX compounds at 16,550 ug/L, and a concentration of MTBE at 70 ug/l in groundwater monitoring well MW-8 – one of the hot spots on the Site – and very low PAH levels, at 130 ug/L (Naphthalene), in the same well. Based on this analysis, the Department concludes that the subject spill is the result of the petroleum contamination associated with the five 550-gallon gasoline USTs and one 4000-gallon diesel UST at the Site – and not the result of the MGP process.

Again, as I stressed in my March 16, 2005 letter, Retaco is responsible for the petroleum contamination associated with the USTs. Retaco must therefore enter into the Stipulation agreement and Corrective Action Plan, and submit an Investigation Summary Report followed by a Remedial Action Plan, as previously communicated to you. The Department must receive the signed Stipulation by May 16, 2005 or we will commence enforcement proceedings. If you have any questions, please contact Joe Sun at 718-482-4898 or myself at 718-482-4089.

Very truly yours,



John K. Urda
Assistant Regional Attorney

cc: Koon Tang (NYSDEC)
Joe Sun (NYSDEC)
Patrick Vecchione (Retaco)

Leonard Morrow, P.C.
225 Broadway – Suite 1202
New York, N.Y. 10007

212 964-4140 x 303
Fax 212 964-8296
lmpc@verizon.net

Facsimile Transmission

Date: June 7, 2005

To: John K. Urda
Assistant Regional Attorney
NYS Dep't of Environmental Conservation

Fax No. 718 482-4962

Number of pages transmitted including cover sheet: 3

Re: 438 W 18th St., NY, NY Spill No. 01-03363

Herewith is a copy of Envirotrac's letter sent to the DEC's Joe Sun today.

In regard to the proposed stipulation, Envirotrac is prepared to submit a remedial action plan within the next two weeks. If the plan is acceptable to the DEC, it would then be incorporated into the stipulation.

Postponement of the deadline to sign the stipulation for a period of two weeks would be appreciated.

Please reply.

cc: Retaco Holding Corporation

This message is intended only for the use of the addressee and may contain information that is privileged or confidential. If you are not the intended recipient, you are hereby notified that any disseminated distribution or copying of this communication is strictly prohibited. If you have received this communication in error, notify us immediately by telephone and return the original message to us at the above address by mail. Thank you.

Jun. 7. 2005 3:00PM

No. 1366 P. 2

EnviroTrac
Environmental Services

June 6, 2005

Mr. Joe Sun
New York State Department of Environmental Conservation
Region II
47-40 21st Street
Long Island City, NY 11101

Re: Verizon Facility
438 W, 18th Street, New York, NY

Dear Mr. Sun:

The purpose of this letter is to provide you with general information and data regarding EnviroTrac's proposed usage of Bioremediation at the above referenced site. The intent of the Bioremediation program will be to reduce the concentrations of VOCs in the area of the elevator shaft until they are equal to the site background VOC concentrations observed in other portions of the site.

EnviroTrac has selected to utilize microbial products produced by Micro-Bac International, Inc. (Round Rock, Texas). In addition to the microorganisms, EnviroTrac may also utilize an Oxygen Release Material (ORM). The ORM is marketed as Ixper 75C and is manufactured by Solvay.

A treatability study will be performed by Micro-Bac to determine which of their products will have the greatest impact upon the VOCs. A groundwater sample will be obtained by EnviroTrac and shipped to the Micro-Bac laboratory in Texas. The sample will then be divided into even volumes and different Micro-Bac products will be introduced into the samples. The samples will then be allowed to incubate for seven days. The results of the treatability study will indicate which microbial product(s) will be utilized at the site.

The microorganisms will be installed utilizing the existing monitoring wells. The microorganisms will be installed in wells MW-4, MW-5, MW-7, MW-8, MW-9, MW-11 and MW-12. Some of the selected wells (MW-4, 5 and 7) are upgradient of the elevator shaft area. Installing the microorganisms in these three wells should allow them to migrate towards the elevator shaft area, allowing for a more through remediation of the elevator shaft area.

Prior to installing the microorganisms, groundwater samples will be obtained from the monitoring wells and analyzed for VOCs. In addition, dissolved oxygen readings will be obtained from all wells. This information will be used as a baseline standard.

It is possible that ORM may be used at the site in conjunction with the microorganisms. If this is required, the ORM will be introduced through the monitoring wells approximately two to three weeks after the installation of the microorganisms. The ORM provides a slow oxygen release mechanism that will stimulate microbial activity.

Jun. 7. 2005 3:00PM

No. 1366 P. 3

Mr. Sun
Page Two

Dissolved oxygen levels at the site will be monitored on a monthly basis. Microbial activity will be monitored on a quarterly basis utilizing the Micro-Bac Activity Check. EnviroTrac is proposing to analyze selected groundwater samples for VOCs on a quarterly basis to monitor the effectiveness of the program.

If you have any questions regarding this letter please do not hesitate to contact me.

Sincerely,
Envirotrac, Ltd.



Dave Lorthioir
Project Manager

cc Mr. Leonard Morrow
Mr. Patrick Vecchione

The logo for EnviroTrac, featuring the word "EnviroTrac" in a bold, sans-serif font. A small black circle is positioned above the letter "i" in "Trac".



Environmental Services

80 B Air Park Drive, Ronkonkoma, New York 11779
(631) 471-1500 (631) 471-6363 fax

Fax

To ROSE From: DAVE LORTHOIR
Fax: 718 389-2149 Pages (Incl. Cover): 3
Phone: _____ Date: 6/6/05
Re _____ CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments:

ROSE - PLEASE PASS THIS
LETTER ON TO PAT + MENDY.

ALSO, PLEASE ASK PAT TO CALL
ME AFTER HE READS IT.

THANKS

DAVE

PAT
718-762-8700/206

DRAFT

June 6, 2005

Mr. Joe Sun
New York State Department of Environmental Conservation
Region II
47-40 21st Street
Long Island City, NY 11101

Re: **Verizon Facility**
438 W. 18th Street, New York, NY

DRAFT

Dear Mr. Sun:

The purpose of this letter is to provide you with general information and data regarding EnviroTrac's proposed usage of Bioremediation at the above referenced site. The intent of the Bioremediation program will be to reduce the concentrations of VOCs in the area of the elevator shaft until they are equal to the site background VOC concentrations observed in other portions of the site.

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Mr. Sun
Page Two

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If you have any questions regarding this letter please do not hesitate to contact me.

Sincerely,
Envirotrac, Ltd.

DRAFT

Dave Lorthioir
Project Manager

DRAFT

*1 yr. or 2
10-15 M
+ quarterly*



Environmental Services

80 B Air Park Drive, Ronkonkoma, NY 11779
(631) 471-1500 (631) 471-6363 fax

Fax

To: Pat Vecchione	From: Dave Lorthioir
Fax: 718 389-2149	Pages (including cover): 1
Phone:	Date: June 3, 2005
Re: 438 W. 18 th Street	CC: Mandy Taffel, Lenny Morrow

☐ Urgent ☐ Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• **Comments :**

Pat

Joe Sun returned my call today. He said that he will agree to a reasonable bioremediation program using the existing wells at the site. We need to bring the higher levels down to the background levels. I also told him that you were anxious about the DEC forcing you to install more wells and chase the spill to the Hudson River. Joe replied that he would not require any more wells at this time but might ask for one more to the west of the building at a later date. He said he would not make you chase the spill any further than that.

I asked him if he could put this in writing to us but he declined, saying that the Stipulation Agreement must be signed first.

Joe said that he has dealt with Mendon in the past (he mentioned some site in the Bronx, maybe Garrison Ave?) and he will keep to his word.

Call me with any questions.

Dave Lorthioir

MODE = MEMORY TRANSMISSION

START=MAY-31 15:08

END=MAY-31 15:09

FILE NO. = 200

STN NO.	COM	ADDR NO.	STATION NAME/TEL.NO.	PAGES	DURATION
001	OK		16314716363	003/003	00:00'59"

- ***** -

- *****

Facsimile

Date: May 31, 2005

✓ To: Pat Vecchione

Fax:

From: Mendy
Retaco Realty

Fax: 718-349-2514

Pages: 3 (including this cover sheet):

Subject: 438 West 18th Street NYDEC SPILL #01-03363

Message:

Herewith is a copy of the DEC letter dated 5/26/05

Please note they require a signed stipulation by

6/10/05. Please contact David of Envirotec and

myself to decide what action to take.

✓ cc: David Lorthioir - fax 631-471-6363
Lenny Morrow - fax 212-964-8296

MODE = MEMORY TRANSMISSION

START=MAY-31 15:06

END=MAY-31 15:07

FILE NO.= 198

STN NO.	COM	ABBR NO.	STATION NAME/TEL.NO.	PAGES	DURATION
001	OK		12129648296	001/001	00:00'25"

Facsimile

Date: May 31, 2005

To: Pat Vecchione

Fax:

From: Mendy
Retaco Realty

Fax: 718-349-2514

Pages: 3 (including this cover sheet):

Subject: 438 West 18th Street NYDEC SPILL #01-03363

Message:

Herewith is a copy of the DEC letter dated 5/26/05

Please note they require a signed stipulation by

6/10/05. Please contact David of Envirotec and

myself to decide what action to take.

cc: David Lorthioir - fax 631-471-6363
✓ Lenny Morrow - fax 212-964-8296

MAY 27 2005 9:42AM

NYS DEC

NO. 0246 P. 2

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21st Street, Long Island City, NY 11101-5407
Phone: (718) 482-4965 • FAX: (718) 482-4962
Website: www.dec.state.ny.us



Denise M. Sheehan
Acting
Commissioner

May 26, 2005

BY FACSIMILE 212-964-8296

Leonard Morrow, Esq.
225 Broadway, Suite 1202
New York, NY 10007

Re: 438 West 18th Street, New York, New York; NYSDEC Spill No. 01-03363

Dear Mr. Morrow:

The New York State Department of Environmental Conservation ("the Department") has reviewed the March 30, 2005 Subsurface Investigation Report ("SIR") prepared by your client's consultant, EnviroTrac, for the above-referenced spill site. The Department disagrees with EnviroTrac's conclusion that off-site sources are responsible for the groundwater contamination beneath the site. This decision is based on factors including, but not limited to, the following:

1. The two highest concentrations of contaminated groundwater were found at Monitoring Wells MW-8 and MW-11, which are located at the down-gradient of the former underground storage tanks ("UST"s). These two wells had BTEX concentrations of 16,550 ug/l and 19,410 ug/L, respectively – higher concentrations than the BTEX concentration of 7,330 ug/L for Monitoring Well MW-12, which is located at the cross-gradient of the former USTs.
2. The second item under Section 4.0 of the SIR Conclusion states that, "A notarized affidavit from Gasoline Installations, Inc. indicated that no evidence of soil contamination was observed during the removal of the former tanks in 1993."¹ The statement from the affidavit is in contrast to the analytical results from the

¹ The Department has no record that a tank closure assessment report was submitted, as required by state law, when the USTs were closed and removed in December 1993. Moreover, there is an apparent violation of Federal law as per the Federal Environmental Protection Assessment Requirement at 40 CFR 280.72 (a): "Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the underground storage tank (UST) site."

contaminated soil and groundwater data shown in the August 2001 Site Activities and Investigation Report, prepared by EnviroTrac. In the August 2001 Report, soil samples taken in the excavation area of the elevator shaft and from trench which were located down-gradient and immediately adjacent to the former USTs had VOC and SVOC concentrations exceeding NYSDEC guidelines. In the groundwater grab sample, also collected within the excavation area, VOCs were detected above NYSDEC groundwater standards. The report also stated that the fingerprint analysis revealed a VOC match for gasoline.

3. The third paragraph of the March 30, 2005 report under Section 4.0 of the Conclusion states, "Laboratory analysis of the soil sample from MW-12 did not indicate the presence of the target STAR List components. This could indicate that the odor emitted by the soil in the area is not associated with the former tanks removed from the site." The Department cannot concur with this statement since no soil analytical data was included in the report. Secondly, TAGM 4046, not START Memo #1, should be used to analyze the soil and groundwater samples.
4. The groundwater samples taken by EnviroTrac, as reported in the March 30, 2005 report, confirm a very high concentration of BTEX compounds at 16,550 ug/L, and a concentration of MTBE at 70 ug/L in groundwater monitoring well MW-8 – one of the hot spots on the Site – and very low PAH levels, at 130 ug/L (Naphthalene), in the same well. Based on this analysis, the Department concludes that the subject spill is the result of the petroleum contamination associated with the five 550-gallon gasoline USTs and one 4000-gallon diesel UST at the Site – and not the result of the MGP process.

Again, as I stressed in my March 16, 2005 letter, Retaco is responsible for the petroleum contamination associated with the USTs. Retaco must therefore enter into the Stipulation agreement and Corrective Action Plan, and submit an Investigation Summary Report followed by a Remedial Action Plan, as previously communicated to you. The Department must receive the signed Stipulation by June 10, 2005 or we will commence enforcement proceedings. If you have any questions, please contact Joe Sun at 718-482-4898 or myself at 718-482-4089.

Very truly yours,



John K. Urda
Assistant Regional Attorney

cc: Koon Tang (NYSDEC)
Joe Sun (NYSDEC)



Environmental Services

80 B Air Park Drive, Ronkonkoma, New York 11779
(631) 471-1500 (631) 471-6363 fax

Fax

To MENDY From: DAVE LORTHOIN
Fax: 718 349-2514 Pages (incl. Cover): 2
Phone: _____ Date: 5/3/05
Re _____ CC: _____

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments:

[Handwritten signatures and notes]
The first signature appears to be "P. [unclear]". Below it is a long, sweeping horizontal line. Underneath that line is another signature, which looks like "Jim Brown".

TANKS & PUMPS
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LIFTS & AIR EQUIPMENT

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GASOLINE INSTALLATIONS, INC.

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(516) 371-2743 • (718) 647-7443
FAX # (516) 239-6124

KENT-MOORE TESTS
HYDROSTATIC TESTS
RECOVERY WORK
PERMITS

BROOKLYN OFFICE & WAREHOUSE
22071 SHEPHERD AVENUE
BROOKLYN, N.Y. 11208

December 13, 1993

Division of Fire Prevention
250 Livingston Street
Room 413
Brooklyn, New York 11201

Attn: Insp. M. Reardon

RE: Mendon Leasing
438 W. 18th Street
New York, New York

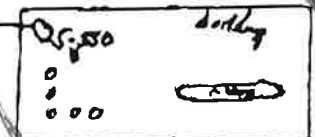
A F F I D A V I T

Please be advised that on December 12, 1993, One 4000 gallon Diesel tank,
and Five 550 Gasoline tanks were removed from above location.
No evidence of Soil Contamination.

Respectfully,
GASOLINE INSTALLATIONS, INC.

WAYNE M. BARONE LICENSE # 237

NOTE TANK
CONFIGURATION



NOTARY

Sworn to before me this
28th day of December 1993.

Notary

Wayne M. Barone
Notary Public State of New York
No. 4887967
Qualified Nassau County
Commission Expires 7/18/95

W. 18 ST
NOTE STR

MODE = MEMORY TRANSMISSION

START=JUN-15 10:49

END=JUN-15 10:50

FILE NO.= 151

STN NO.	COM	ABBR NO.	STATION NAME/TEL.NO.	PAGES	DURATION
001	OK		16314716363	004/004	00:01'21"

REALTY COMPANY

362 Kingsland Ave Brooklyn, NY 11222 Office 718-391-5323

FAX TRANSMITTAL

Reply Fax No. (718) 389-2149

If any part of this transmission is illegible, please call (718) 391-5323
The Contents of this Transmission are Confidential

DATE: June 15, 2005
TO: Dave Lorthioir
COMPANY: ExviroTrac

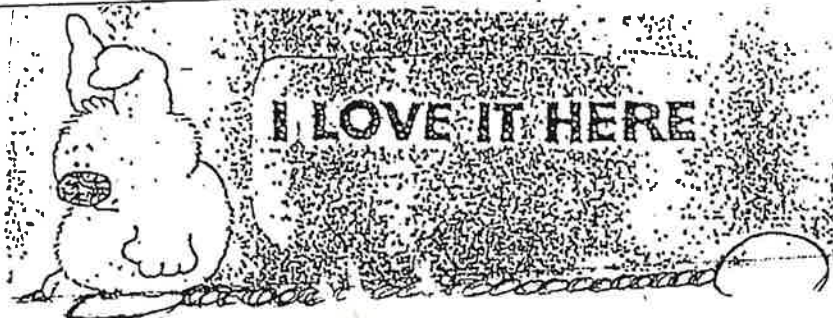
(631)
FAX: 471-6363

FROM: Mandy
PAGES: 4 (INCLUDING THIS COVER SHEET)

RE: 438 W. 18th Street

COMMENTS/MESSAGES

For your records



RETACO HOLDING CORP.

362 Kingsland Ave Brooklyn, NY 11222 Office 718-391-5300

FAX TRANSMITTAL

Reply Fax No. (718) 349-2514

If any part of this transmission is illegible, please call (718) 391-5300
The Contents of this Transmission are Confidential.

Fax (718) 482-4962

3 pages

To: John K. Urda / Assistant Regional Attorney
New York State Department of Environmental Conservation
From: Mendy Taffel
Date: June 14, 2005
Re: 438 West 18th Street, New York, NY
NYSDEC Spill No. 01-03363

Dear Mr. Urda,

We are herewith faxing you a sign Stipulation together with the
Corrective Action Plan for Spill No. 01-03363. The original will
be mailed to you directly.

Very truly yours,

Mendy

Cc: Leonard Morrow, P.C. – fax (212) 964-8296

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STIPULATION PURSUANT TO SECTION 17-0303 OF THE ENVIRONMENTAL CONSERVATION LAW AND SECTION 176 OF THE NAVIGATION LAW BY:

Retaco Holding Corporation, Respondent

SPILL NO. 01-03363

1. The Department of Environmental Conservation is the agency responsible for the cleanup and removal of discharges of petroleum pursuant to Article 12 of the Navigation Law and Article 17 of the Environmental Conservation Law.

2. Respondent has agreed to cleanup and remove a discharge of petroleum which occurred at 438 West 18th Street, New York, New York by taking the steps and according to the conditions set forth in the Corrective Action Plan attached to this Stipulation.

3. This Stipulation does not affect the Department's right to pursue any claims that the Department may have against Respondent, including but not limited to, claims for alleged violations of the Navigation Law or the Environmental Conservation Law. This Stipulation does not affect any defenses that Respondent may have to any such claims.

4. Respondent, without admitting liability, consents to the issuance of this Stipulation, waives the right to notice and hearing with respect to the issuance and entry of this Stipulation as provided by law, and agrees to be bound by the terms of this Stipulation, including any attachments thereto.

5. This Stipulation is equivalent to an order pursuant to ECL §17-0303 and a directive pursuant to NL §176 and is enforceable as such.

6. The Corrective Action Plan may be modified in writing as may be agreed between the parties. The Corrective Action Plan may be modified by the Department in the same manner as a Department permit.

7. The effective date of this Stipulation is the date it is signed by the Department.

6/14/05
Date

Murphy Taffel
Respondent's signature *

SVP
Respondent's Title (if corporation)

Date

Regional Director or Regional Spill Engineer, Region _____

* NOTE: If stipulation is with a corporation, the respondent must be an official, authorized corporate representative.

Corrective Action Plan for Spill No. 01-03363

1. Respondent shall immediately conduct liquid-phase hydrocarbon (LPH) monitoring and recovery visits on a weekly basis or as needed until the LPH product has been completely recovered and removed from the site. The LPH recovery technology that may be utilized can include enhanced fluid recovery (EFR) events, hand bailing or passive recovery bailers.
2. Within 60 days of the effective date of this Order, Respondent shall submit to the Department, for its approval, an Investigation Summary Report that completely delineates soil and groundwater contamination both on-site and off-site. A summary property sketch including property layout and usage must be submitted to the Department. The investigation will be approved by the Department if the contamination was adequately delineated.
3. Within 45 days of the approval in writing by the Department of the Investigation Summary Report, Respondent shall submit a Remediation Action Plan (RAP) to the Department. The RAP shall detail the work proposed to remediate all contaminated media. The RAP shall also include an Operation, Maintenance and Monitoring Plan (OMMP) in accordance with DER-10 Technical Guidance for Site Investigation and Remediation drafted 12/25/02, available on the Department's website: www.dec.state.ny.us. The Department shall either approve or disapprove the plan and specifications in writing. If the submittal is disapproved, the Department shall specify any deficiencies and required modifications. Within 30 days of receipt of the Department's disapproval notice, Respondent shall submit a revised RAP which addresses the Department's comments correcting all deficiencies identified in the disapproval notice.
4. Within 45 days of receipt of the Department's notice of approval of the RAP, submitted pursuant to paragraph 3 above, Respondent shall implement the approved RAP referenced in paragraphs 3 above.
5. The approved RAP shall be made part of the Stipulation agreement between Respondent and the Department.

Any modifications to this Corrective Action Plan must be approved in advance by the Department.

MODE = MEMORY TRANSMISSION

START=JUN-14 13:38

END=JUN-14 13:39

FILE NO. = 032

STN NO.	COM	ABBR NO.	STATION NAME/TEL.NO.	PAGES	DURATION
001	OK		17184824962	003/003	00:01'03"

RETACO HOLDING CORP.

362 Kingsland Ave Brooklyn, NY 11222 Office 718-391-5300

FAX TRANSMITTAL

Reply Fax No. (718) 349-2514

If any part of this transmission is illegible, please call (718) 391-5300
The Contents of this Transmission are Confidential.

Fax (718) 482-4962

3 pages

To: John K. Urda / Assistant Regional Attorney
New York State Department of Environmental Conservation

From: Mendy Taffel

Date: June 14, 2005

Re: 438 West 18th Street, New York, NY
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Mendy

Cc: Leonard Morrow, P.C. - fax (212) 964-8296

MODE = MEMORY TRANSMISSION

START=JUN-14 13:40

END=JUN-14 13:45

FILE NO.= 033

STN NO.	COM	ABBR NO.	STATION NAME/TEL.NO.	PAGES	DURATION
001	OK	a	12129648296	003/003	00:01'05"

- ***** -

- *****

RETACO HOLDING CORP.

362 Kingsland Ave Brooklyn, NY 11222 Office 718-391-5300

FAX TRANSMITTAL

Reply Fax No. (718) 349-2514

If any part of this transmission is illegible, please call (718) 391-5300
The Contents of this Transmission are Confidential.

Fax (718) 482-4962

3 pages

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New York State Department of Environmental Conservation

From: Mendy Taffel

Date: June 14, 2005

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Mendy

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RETACO HOLDING CORP.

362 Kingsland Ave Brooklyn, NY 11222 Office 718-391-5300

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3 pages

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4. Respondent, without admitting liability, consents to the issuance of this Stipulation, waives the right to notice and hearing with respect to the issuance and entry of this Stipulation as provided by law, and agrees to be bound by the terms of this Stipulation, including any attachments thereto.

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7. The effective date of this Stipulation is the date it is signed by the Department.

6/14/05
Date

Murphy Taffel
Respondent's signature *

Sec.
Respondent's Title (if corporation)

Date

Regional Director or Regional Spill Engineer, Region ____

* NOTE: If stipulation is with a corporation, the respondent must be an official, authorized corporate representative.

Corrective Action Plan for Spill No. 01-03363

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5. The approved RAP shall be made part of the Stipulation agreement between Respondent and the Department.

Any modifications to this Corrective Action Plan must be approved in advance by the Department.

Leonard Morrow, P.C.
225 Broadway – Suite 1202
New York, N.Y. 10007

212 964-4140 x 303
Fax 212 964-8296
lmpc@verizon.net

Facsimile Transmission

Date: June 14, 2005

To: Mendy Taffel

Fax No.

Number of pages transmitted including cover sheet: 3

Re: Petroleum Spill at 438 W 18th St., NY, NY

Herewith: Stipulation "to remove a discharge of petroleum which occurred at 438 W. 18th St..." and the "Corrective Action Plan for Spill" referred to in ¶2 of the stipulation.

Note that the Plan calls for delineation of off-site groundwater contamination, which implies removal of same.

To comply with the DEC's demand, sign the stipulation and fax same and the Plan to John K. Urda, Assistant Regional Attorney at the DEC (fax no. 718 482-4962). Advise him in a cover fax that the original copy will be mailed. Please provide me with a copy of the fax.

This message is intended only for the use of the addressee and may contain information that is privileged or confidential. If you are not the intended recipient, you are hereby notified that any disseminated distribution or copying of this communication is strictly prohibited. If you have received this communication in error, notify us immediately by telephone and return the original message to us at the above address by mail. Thank you.



Environmental Services

80 B Air Park Drive, Ronkonkoma, New York 11779
(631) 471-1500 (631) 471-6363 fax

Fax

To: MENDY From: DAVE LORTHOIR
Fax: 718 229-6310 Pages (incl. Cover): 4
Phone: _____ Date: 10/26/05
Re: W. 18 ST. CC: _____
☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments:

MENDY — HERE IS A DRAFT COPY
OF THE RAP FOR W. 18 ST. PLEASE
CALL ME WITH ANY QUESTIONS/COMMENTS.
I WILL SEND THE RAP TO JOE SUN
AFTER YOU + PAT HAVE OK'D IT.
WISHING YOU A SPEEDY RECOVERY

DAVE

EnviroTrac

Environmental Services

October 25, 2005

Mr. Joe Sun
New York State Department of Environmental Conservation
Region II
47-40 21st Street
Long Island City, NY 11101

DRAFT

Re: Remedial Action Plan
Verizon Facility
438 West 18th Street
New York, NY
NYSDEC Spill No. 01-03363

Dear Mr. Sun:

Pursuant to the request made by the New York State Department of Environmental Conservation (NYSDEC), EnviroTrac Ltd. has prepared the following Remedial Action Plan (RAP) for the above referenced subject property (Figure 1). The RAP includes the use of Bioremediation for in-situ remediation of residual petroleum-impacted soil and groundwater at the subject property.

The most recent groundwater sampling performed at the site indicates BTEX concentrations of up to 19,410 ppb in downgradient portions of the site. Previous sampling events in 2004 and 2005 have indicated that BTEX concentrations in upgradient portions of the site (MW-1, MW-2, MW-3, MW-4 and MW-5) vary from the low hundreds (263.85 ppb in MW-2, April 2004) to 4,071.8 ppb (MW-5, January 2004). The most recent groundwater quality data, collected on February 16, 2005, is presented in Figure 1.

Given the above information, it appears that the groundwater in the vicinity of the site is contaminated by multiple sources. Thus, it will be impossible to thoroughly remediate that site as petroleum contamination from off-site sources will constantly migrate onto the site. Therefore, it is EnviroTrac's plan to remediate groundwater at the site until background conditions, as defined by the upgradient wells, exist across the site.

The Scope of Work includes the following tasks:

1. Treatability Study
2. Injection of Bioremediation Culture;
3. Operation, Maintenance and Monitoring Plan (OMMP), and;
4. Report preparation.

TECHNOLOGY OVERVIEW

After extensive research and review, EnviroTrac has selected to utilize bio-remediation products manufactured by Micro-Bac International (Round Rock, Tx.). Products manufactured by Micro-

Bac contain bacteria strains that utilize enzymes to mineralize any present hydrocarbons, reducing them to cell biomass, carbon dioxide and water.

Bacterial bioremediation products are injected into on-site monitoring wells located in the targeted areas. In some instances specific nutrients, formulated to promote bacterial colony growth, are also injected into the wells. Water is then injected into the wells to force the bacteria and nutrients to disperse into the aquifer. The bacteria then flourishes, spreading throughout the impacted area and causing a rapid natural attenuation of petroleum hydrocarbons.

SCOPE OF WORK

DRAFT

Task 1. Treatability Study

Several different bacterial cultures are manufactured by Micro-Bac. Each culture is targeted towards a different type of petroleum hydrocarbon (i.e. gasoline versus fuel oil versus grease). Therefore, it is prudent to perform a Treatability Study to determine which culture will degrade the specific on-site petroleum hydrocarbons the best. It should be noted that since all of the cultures contain several different strains of bacteria (some with as many as 15), some of the cultures are considered "crossovers", able to degrade more than one type of petroleum hydrocarbon.

A composite groundwater sample was obtained from the downgradient wells on September 26, 2005. The sample was then shipped to Micro-Bac for the Treatability Study. The sample was divided into five even portions, one of which was utilized as a control. Different bacterial products were then introduced to the other four samples. The samples were allowed to incubate for seven days and were then microscopically examined.

The results of the study indicated that two of the cultures manufactured by Micro-Bac, with added nutrients, exhibited a good number of bacteria with very good activity. One culture, M-1000H*, is a crossover culture that is usually targeted towards diesel fuel but can also degrade gasoline. The second culture, M-1000BX, is usually utilized to degrade gasoline and solvents. A copy of the Treatability Study is attached.

Task 2. Injection of Bioremediation Culture

A total of five 55-gallon drums of bacterial culture will be injected into selected wells at the site. EnviroTrac will utilize a mixture of the M-1000H* and the M-1000BX cultures with TriPhasic 12 nutrients. As pumps which utilize impellers have been found to damage the bacteria cultures, the cultures and nutrients will be gravity-fed into the selected wells.

Even volumes of the cultures will be introduced into downgradient wells MW-7, MW-8, MW-9, MW-11 and MW-12. In addition, lesser volumes of the bacterial cultures will be introduced via wells MW-4 and MW-5. After the cultures are introduced, water will be pumped into the wells to evenly disperse the bacterial cultures across the uppermost 10 feet of saturated soils.

Task 3. Operation, Maintenance and Monitoring Plan (OMMP)

Prior to bacterial culture injection, the network of monitoring wells will be gauged for depth to water, dissolved oxygen (DO) and sampled for BTEX & MTBE via EPA Method 8021. Following the bacterial culture injection, well gauging and sampling for the above-mentioned parameters will be conducted on a six-month basis. If warranted, the bacterial activity in the vicinity of the monitoring wells will also be checked after one-year.

The data gathered from the gauging and groundwater sampling will be used to evaluate the need for additional bacterial injection, if required.

The logo for EnviroTrac, featuring the word "EnviroTrac" in a bold, sans-serif font. A stylized circular graphic element is positioned above the letter 'i' in "Trac".

Task 4. Reporting

The data obtained from the groundwater gauging and sampling will be summarized in semi-annual reports.

Schedule

Following NYSDEC approval of the RAP, the schedule for implementing the RAP is as follows:

1. Install bacterial cultures. Estimated time frame is 1 day on-site.
2. Semi-annual well gauging and groundwater sampling. Estimated time frame is 1 day on-site per event.

If you have any questions, please contact me.

Sincerely,
EnviroTrac Ltd.

DRAFT

David Lorthioir
Project Manager

cc Mendy Taffel (Retaco)
Pat Vecchione (Retaco)

Attachments





Environmental Services

80 B Air Park Drive, Ronkonkoma, New York 11779
(631) 471-1500 (631) 471-6363 fax

Fax

To MENDY From: DAVE LORTHOIN
 Fax: 718 349-2514 Pages (incl. Cover):
 Phone: Date: 9/6/05
 Re CC:

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments:

REVISED LETTER FOR W. 18 ST.

EnviroTrac

Environmental Services

September 2, 2005

Mr. Patrick Vecchione
Retaco Holding Corp.
362 Kingsland Avenue
Brooklyn, NY 11222

Re: Revised Cost Estimate
Spill #01-03363
Verizon, 438 West 18th Street, New York, NY

Dear Mr. Vecchione:

As per our recent conversation this letter is intended to provide you with a revised cost estimate to perform Bioremediation at the above referenced site. The scope of work has not changed from our original estimate dated August 18, 2005. EnviroTrac is proposing the following steps:

EnviroTrac will perform a treatability study at the site. This study will consist of obtaining a groundwater sample from the site and shipping it to Micro-Bac International, a manufacturer of bio-remediation products. Micro-Bac will then determine which one of their products works best on the petroleum contamination at the site. The cost of the treatability study is \$480.00. ~~X~~

EnviroTrac will then generate a Remedial Action Plan (RAP), as required by the NYSDEC. The RAP will be submitted to Mr. Joe Sun of the NYSDEC for approval. The plan will detail EnviroTrac's proposal to utilize Micro-Bac bacterial products at the site and to monitor groundwater at the site for at least one year. The cost to generate the RAP is \$720.00.

After the RAP is approved by the NYSDEC, EnviroTrac will purchase and inject the bioremediation products. At this time we cannot determine the exact cost to purchase the bioremediation material because the treatability study must be performed. Based upon my site meeting with Micro-Bac it is estimated that the area to be treated is approximately 1,980 cubic yards and will require 450 gallons of bacterial products and 27 containers of nutrients. The original estimate of \$22,950.00 to purchase the material is based upon this amount.

It is possible to perform the bioremediation in phases. In the first phase EnviroTrac will purchase ½ of the suggested amount from Micro-Bac at an estimated cost of \$12,000.00. After one year the situation can be re-assessed and if more bacterial products are needed they can be purchased at this time.

Page Two

Please also be aware that the following issues could change our estimated cost to purchase the material:

- Treatability study: This estimated cost to purchase the bacteria is based upon the price for their more expensive products. If the treatability study shows that one of their cheaper products works better this cost could decrease by approximately 10-20 %.
- Shipping: Costs to ship this material is rising due to rising fuel costs.

The labor and equipment to perform the injection will cost \$2,060.00.

If approved by the NYSDEC, EnviroTrac will gauge and sample the monitoring for VOCs and SVOCs every six months. A report, detailing the results of the sampling, will then be sent to the NYSDEC. The cost of the semi-annual sampling and report is anticipated to be will be \$5,230.00 per sampling event. This cost includes the laboratory analysis of 12 samples. After the first sampling event EnviroTrac will recommend reducing the number of samples to the DEC, reducing the cost for future reports.

Please call me to discuss this letter.

Sincerely,
EnviroTrac Ltd.



David Lorthioir
Project Manager

EnviroTrac

Environmental Services

August 18, 2005

Mr. Patrick Vecchione
Retaco Holding Corp.
362 Kingsland Avenue
Brooklyn, NY 11222

Re: Spill #01-03363
Verizon, 438 West 18th Street, New York, NY

Dear Mr. Vecchione:

The purpose of this letter is to provide you with information and estimated costs to perform Bioremediation at the above referenced site. EnviroTrac is proposing the following steps:

EnviroTrac will perform a treatability study at the site. This study will consist of obtaining a groundwater sample from the site and shipping it to Micro-Bac International, a manufacturer of bio-remediation products. Micro-Bac will then determine which one of their products works best on the petroleum contamination at the site. The cost of the treatability study is \$480.00.

EnviroTrac will then generate a Remedial Action Plan (RAP), as required by the NYSDEC. The RAP will be submitted to Mr. Joe Sun of the NYSDEC for approval. The plan will detail EnviroTrac's proposal to utilize Micro-Bac bacterial products at the site and to monitor groundwater at the site for at least one year. The cost to generate the RAP is \$900.00.

After the RAP is approved by the NYSDEC, EnviroTrac will purchase and inject the bioremediation products. At this time we cannot determine the exact cost to purchase the bioremediation material because the treatability study must be performed. Based upon my site meeting with Micro-Bac, they calculate the cost to purchase the needed materials (both bacteria and nutrients) will be approximately \$22,950.00. This estimated cost is based upon the price for their more expensive products. If the treatability study shows that one of their cheaper products works better this cost could decrease by approximately 10-20 %.

The labor and equipment to perform the injection will cost \$2,250.00.

If approved by the NYSDEC, EnviroTrac will gauge and sample the monitoring for VOCs and SVOCs every six months. A report, detailing the results of the sampling, will then be sent to the NYSDEC. The cost of the semi-annual sampling and report will be \$5,880.00 per sampling event.

80 B Air Park Drive, Ronkonkoma, New York 11779 (631) 471-1500 Fax: (631) 471-6363 www.envirotrac.com

Page Two

Also, one year after the injection (during the second semi-annual sampling event) EnviroTrac will also perform an activity check on the bioremediation. This analysis will cost \$50.00 and will indicate if any additional nutrients are needed.

Please call me to discuss this letter.

Sincerely,
EnviroTrac Ltd.



David Lorthioir
Project Manager



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EnviroTrac

Environmental Services

August 18, 2005

Mr. Patrick Vecchione
Retaco Holding Corp.
362 Kingsland Avenue
Brooklyn, NY 11222

Re: Spill #01-03363
Verizon, 438 West 18th Street, New York, NY

Dear Mr. Vecchione:

The purpose of this letter is to provide you with information and estimated costs to perform Bioremediation at the above referenced site. EnviroTrac is proposing the following steps:

EnviroTrac will perform a treatability study at the site. This study will consist of obtaining a groundwater sample from the site and shipping it to Micro-Bac International, a manufacturer of bio-remediation products. Micro-Bac will then determine which one of their products works best on the petroleum contamination at the site. The cost of the treatability study is \$480.00.

EnviroTrac will then generate a Remedial Action Plan (RAP), as required by the NYSDEC. The RAP will be submitted to Mr. Joe Sun of the NYSDEC for approval. The plan will detail EnviroTrac's proposal to utilize Micro-Bac bacterial products at the site and to monitor groundwater at the site for at least one year. The cost to generate the RAP is \$900.00.

After the RAP is approved by the NYSDEC, EnviroTrac will purchase and inject the bioremediation products. At this time we cannot determine the exact cost to purchase the bioremediation material because the treatability study must be performed. Based upon my site meeting with Micro-Bac, they calculate the cost to purchase the needed materials (both bacteria and nutrients) will be approximately \$22,950.00. This estimated cost is based upon the price for their more expensive products. If the treatability study shows that one of their cheaper products works better this cost could decrease by approximately 10-20 %.

The labor and equipment to perform the injection will cost \$2,250.00.

If approved by the NYSDEC, EnviroTrac will gauge and sample the monitoring for VOCs and SVOCs every six months. A report, detailing the results of the sampling, will then be sent to the NYSDEC. The cost of the semi-annual sampling and report will be \$5,880.00 per sampling event.

Page Two

Also, one year after the injection (during the second semi-annual sampling event) EnviroTrac will also perform an activity check on the bioremediation. This analysis will cost \$50.00 and will indicate if any additional nutrients are needed.

Please call me to discuss this letter.

Sincerely,
EnviroTrac Ltd.

David L. Luth

David Lorthioir
Project Manager

A piece of paper with a blue border, heavily scribbled over with dark ink. The scribbles are dense and cover most of the page. Some numbers are visible through the ink, including '900', '300', '800', '50', '100', and '357'. There are also some faint, illegible markings that appear to be 'A' and 'B'.

EnviroTrac

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38,390

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21ST Street, Long Island City, NY 11101-5407
Phone: (718) 482-4898 • FAX: (718) 482-6358
Email: skanders@gw.dec.state.ny.us • Website: www.dec.state.ny.us



December 13, 2005

Mr. Patrick Vecchione
Retaco Holding Corporation
362 Kingsland Avenue
Brooklyn, NY 11222

Re: Former Parking Garage
438 W. 18th Street
New York, NY
NYSDEC Spill #: 01-03363

Reference: 1) Remedial Action Plan for 438 W. 18th Street, New York, NY, prepared by
EnviroTrac Environmental Services, dated October 25, 2005.

Dear Mr. Vecchione,

The New York State Department of Environmental Conservation (the Department) has reviewed the Remedial Action Plan (RAP) prepared by your consultant, EnviroTrac Environmental Services (EnviroTrac) for the above referenced site. EnviroTrac proposed to use bio-remediation products manufactured by Micro-Bac International. Bacterial cell cultures will be injected into MW-7, MW-8, MW-9, MW-11, and MW-12. Groundwater monitoring and reporting will be conducted semi-annually.

The Department approves the RAP.

The Department requires five days advanced notice of any work at the site.

If you have any questions concerning this matter, please call my office at (718) 482-4898.

Sincerely,



Sarah Andersen
Environmental Engineer
NYSDEC- region 2
Environmental Remediation Division

cc: Joe Sun (NYSDEC)
David Lorthioir (EnviroTrac)



Denise M. Sheehan
Commissioner

New York State Department of Environmental Conservation

Division of Environmental Remediation, Region 2

47-40 21ST Street, Long Island City, NY 11101-5407

Phone: (718) 482-4898 • FAX: (718) 482-4847

Email: skanders@gw.dec.state.ny.us Website: www.dec.state.ny.us

January 11, 2007

Mr. Patrick Vecchione
Retaco Holding Corporation
362 Kingsland Avenue
Brooklyn, NY 11222

Re: Former Parking Garage
438 W. 18th Street, New York, NY
NYSDEC Spill #: 01-03363

Dear Mr. Vecchione,

The New York State Department of Environmental Conservation (the Department) has reviewed the letter regarding NYSDEC Spill #: 01-03363, located at 438 W. 18th Street, in New York, NY, submitted by EnviroTrac Environmental Services, dated December 29, 2006. The report indicated that groundwater monitoring occurred on October 23, 2006. Contaminant concentrations exceeding the Department's groundwater standards were found in all wells sampled. Four of the thirteen wells were dry. These wells have historically had high contaminant concentrations. Three of the four dry monitoring wells were re-gauged on November 17, 2006, and were found to still be dry. A microbial check was not performed on the wells that were infused with bioremediation products because many of these wells were found to be dry.

The Department requires by **March 12, 2007**, as per DER-10 Technical Guidance for Site Investigation and Remediation (<http://www.dec.state.ny.us/website/der/index.html>):

- *Groundwater delineation:* The installation of new monitoring wells on the sidewalk adjacent to dry monitoring wells MW's - 8, 11 and 12.
- Groundwater monitoring of pH, dissolved oxygen, oxidation/reduction potential, and conductivity.
- Triannual groundwater monitoring and reporting. Triannual reports must be submitted, summarizing the findings of a subsurface investigation including groundwater sampling, boring logs, well installation logs, sample analyticals, site plan including groundwater flow direction and surrounding area investigation, conclusions and recommendations. Please submit both electronic and paper copies of reports. Additional borings/monitoring wells may be required by the Department upon review of the investigation report.

The Department requires five days advanced notice of any work at the site.

If you have any questions concerning this matter, please contact me at (718) 482-4898 or skcarlso@gw.dec.state.ny.us.

Sincerely,



Sarah Carlson
Environmental Engineer
NYSDEC- Region 2
Environmental Remediation Division

cc: Joe Sun, NYSDEC
David Lorthior, EnviroTrac
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Remedial Bureau C
Division of Environmental Remediation

STATUS REPORT

**FORMER PARKING GARAGE
438 W. 18TH STREET
NEW YORK, NEW YORK**

NYSDEC # 01-03363

June 20, 2007

Prepared For:

Retaco Holding Corporation
362 Kingsland Avenue
Brooklyn, NY 11222

Prepared By:

EnviroTrac Ltd.
80 B Air Park Drive
Ronkonkoma, New York 11779

***A Full Service Environmental Consulting
and Contracting Firm***



DRAFT 1/3

June 20, 2007

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1. Site Location Map
2. Site Plan
3. Groundwater Gradient Map
4. Dissolved BTEX/MTBE in Groundwater

TABLES

1. Groundwater Volatile Organic Compound Analytical Summary
2. Groundwater Semi-Volatile Organic Compound Analytical Summary

APPENDICES

- A. Consolidated Edison Report
- B. Laboratory Data

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FOR
FINAL
June 4, 2009

1.0 INTRODUCTION

EnviroTrac Ltd. (EnviroTrac) was retained by Retaco Holding Corporation (Retaco) to sample the groundwater monitoring wells at 438 W. 18th Street, Manhattan, New York (the site). A Site Location Map is provided as Figure 1. This Report summarizes and documents the March 2007 gauging and sampling of the monitoring wells, as well as new information regarding the site provided by The Consolidated Edison Company of New York, Inc. (Consolidated Edison or Con Ed).

The current building at the site has been utilized as a parking garage since its construction in 1915. The site was part of a gas conversion facility owned by the Consolidated Gas Company and was utilized for the storage and maintenance of vehicles. Currently, the site is occupied by Verizon Communications as a parking garage and office space. The site is surrounded by an automobile repair facility, commercial and residential properties.

The site is designated as Block 715, Lot 59 and is located approximately one and three-quarters of a mile west of the F.D.R. Drive and the East River, two miles southwest of Central Park, 500 feet east of the Hudson River, and one and one-quarter miles north of the Holland Tunnel.

Six USTs were removed from the site on December 12, 1993. These included one (1) 4000-gallon diesel tank and five (5) 550-gallon gasoline tanks. The tanks were removed by Gasoline Installations, Inc. of Inwood, New York and, according to a notarized affidavit dated December 28, 1993, no evidence of soil contamination was observed during the tank removals. Based on a hand drawn map of the tank removals provided by Gasoline Installations, the five gasoline USTs were located under the northeast corner of the garage and the diesel UST was located on the east side of the garage.

1.1 Regional Geology

The site is located south of Central Park and is situated in the Manhattan Prong, a geological region of metamorphosed Paleozoic marine sedimentary rocks. These rocks overlie billion year old basement metamorphic rock identified as a schist. Locally, the rock is known as the Manhattan Schist, a strongly fabricated crystalline rock whose minerals have developed parallelism as a result of dynamic metamorphic processes that occurred during its formation.

2.0 CONSOLIDATED EDISON INVESTIGATION

In 2004 and 2005 TRC Environmental Corporation (Lyndhurst, NJ) (TRC) investigated a four block area in the Chelsea section of Manhattan on behalf of Consolidated Edison (Con Ed). This area had been the location of a manufactured gas plant (MGP) in the 1800s. The findings of the investigation were presented in a report titled "Site Characterization Study Report for the Former West 18th Street Gas Works" dated January 2006 (herein identified as the "Con Ed Report" or the "Con Ed Investigation"). Mr. Neil O'Hallaran, of Con Ed, provided Retaco and EnviroTrac with an electronic copy of the report. Mr. O'Hallaran also met with representatives of EnviroTrac and Retaco to further discuss and clarify the findings of the Con Ed Investigation. The full report was printed and reviewed by EnviroTrac. A copy of the report narrative is provided as Appendix A.

According to the Con Ed Report, the former West 18th Gas Works occupied an area bounded by West 16th and West 20th Streets, from the Hudson River to 10th Avenue. In addition, a parcel of land between West 18th Street and West 17th Street, west of 10th Avenue was also part of the facility. This parcel of land is the location of the current 438 W. 18th Street building. The current Retaco property (438 W. 18th Street) is referred to in the Con Ed Report as "Area 1" The Con Ed Report detailed the investigation of six separate areas that made up the entire MGP site. However, only the pertinent information regarding Area 1 of the Con Ed Investigation will be summarized and discussed.

The following information was obtained from the review of the Con Ed report and the discussions with Mr. O'Hallaran:

- Two Gas Holders, designated in the Con Ed Report as Gas Holders No.1 and No. 2, were constructed on the site in the mid to late 1840s and were housed in a brick warehouse-type building. The report indicates that the West 18th Street Gas Works ceased operation a few years into the twentieth century and that the gas holders occupying the Retaco site were razed in 1914. The report is unclear regarding the age of the current building. Section 2.3.3 of the report indicates that the gas holder building was retrofitted and the exterior shell of the building exists today. However, Section 2.5.4 states that the current building was constructed in 1915 as a parking garage.

- Mr. O'Hallaran provided the following details regarding the construction of the gas holders:
 1. The holders were circular in shape, with a diameter that stretched from the southern to the northern wall of the building.
 2. The foundations of the holders were constructed of multiple rows of brick, and extended to a depth of approximately 21 feet below the existing floor of the building.
 3. The holders were not, to his knowledge, connected.
 4. The foundations of the holders possessed a solid bottom of either brick or concrete.
 5. When the holders were razed, the foundations were left in place and were simply filled in with various fill materials/debris.
 6. While these foundations should not be considered "water proof", Mr. O'Hallaran acknowledged that they are "water resistant" and would seriously impede the movement of water between the areas inside the two foundations and the rest of the site.
- Section 4.3.1 of the Con Ed Report stated that test pits installed by TRC within the building had encountered the ring walls (foundation walls) of both gas holders. Also noted was the fact that all borings installed within the footprints of the former gas holders met with refusal at approximately 21 feet below the floor of the building, indicating that the solid holder bottoms were present at this depth.
- Section 4.3.1 of the Con Ed Report also noted that MGP waste-type odors were observed in the soil samples obtained in samples collected from within the holder foundations at depths of 15 feet below grade and deeper. Section 4.3.2.4 indicates that one of the soil samples collected from within the holders (SB-4, 19-21 feet) was submitted for a fingerprint analysis. The results of this analysis indicated that the soil sample contained coal tar.
- Section 4.3.2.1 of the Con Ed Report indicated that the soil sample obtained from SB-2 at 19 to 20.5 ft. bgs and from SB-4 at 19 to 21 ft. bgs both exhibited total VOCs in excess of NYSDEC Guidelines.

- Waste material (coal tar) normally associated with MGP plants was not found in any of the other borings installed outside of the gas holder footprints.

3.0 GROUNDWATER INVESTIGATION

3.1 Historical Investigations

Previous subsurface investigations have resulted in the installation of 13 monitoring wells at the site. One well, MW-6, has been destroyed. Historic sampling events at the site have documented several discrepancies regarding groundwater flow and contamination at the site. Historical groundwater data indicated that most of the wells inside the building (MW-1 through MW-7 and MW-10) exhibited groundwater elevations that were four to five feet higher than the one remaining interior monitoring well (MW-9) and the exterior monitoring wells (MW-8, 11, 12 and 13). In addition, historic VOC concentrations have varied between the two groups. The interior wells have historically exhibited VOC concentrations one magnitude lower than the exterior monitoring wells and MW-9.

EnviroTrac gauged and sampled all monitoring wells at the site on October 23, 2006. A letter report, dated December 29, 2006, documenting the October 2006 sampling event was submitted to the New York State Department of Environmental Conservation (NYSDEC). The results of the groundwater gauging indicated that the exterior group of wells (MW-8, 9, 11, 12 & 13) were either dry or had less than one foot of water in them. The interior wells (MW-1 through MW-7 and MW-10) exhibited groundwater elevations comparable to their historic norms. This data indicated that difference in groundwater elevation between the two groups of monitoring wells was now 12 to 13 feet. A second gauging event performed on November 17, 2006 indicated that the exterior group of monitoring wells was still dry. The cause of the groundwater elevation change in the exterior wells is unknown.

3.2 Site Plan

The information obtained from ConEd prompted EnviroTrac to re-survey to locations of the monitoring well and re-measure all building dimensions to plot the location of the gas holder foundations and to determine which monitoring wells were located within the holders. The re-survey would also allow for the correction of any mistakes to the original site plan, which had been generated prior to the completion of renovations within the building.

The updated Site Plan is provided as Figure 2. The updated Site Plan shows the location of the holder foundations based upon the information provided by Con Ed. Revisions to the Site Plan include the addition of the western portion of the site (utilized by Verizon as office space). In addition, the placement of MW-12 was found to have been improperly shown on the original Site Plan.

A review of Figure 2 indicates that the interior monitoring wells, with the exception of MW-9, are located within the holder foundations. Wells MW-3, 4, 5 and 7 are located within the eastern holder. Former well MW-6 was also located within this holder. Wells MW-1, 2 and 10 are located within the western holder. Well MW-9 is located outside the holder foundations.

3.3 Groundwater Monitoring

All monitoring wells at the site, with the exception of MW-13, were gauged for the presence of free product and depth to water on March 19, 2007. Construction on the property across from the site has temporarily blocked access to MW-13. At this time it was discovered that groundwater elevations had rebounded in the exterior wells and MW-9 and the groundwater elevations in these wells were close to their historic norms. Free product was not detected in any of the monitoring wells.

The groundwater monitoring data was utilized to generate a Groundwater Gradient Map, which is provided as Figure 3. A review of Figure 3 indicates that groundwater in the vicinity of the site is flowing west, towards the Hudson River. However, Figure 3 does not give a component of flow for the area within the holder foundations. This is due to the fact that, as with previous monitoring events, the interior wells (with the exception of MW-9) exhibited elevations that were six to seven feet higher than the exterior wells and MW-9. Since the wells within the eastern holder foundation exhibited groundwater elevations within 0.5 feet of each other and the three wells within the western holder foundation exhibited groundwater elevations within 0.05 feet of each other, groundwater elevations within the holders are essentially level and no flow component is present.

The groundwater elevation within the eastern holder varies from 93.78 feet to 93.25 feet (based upon an assumed topographic elevation of 100 feet above sea level). The groundwater elevation within the western holder varies from 92.56 feet to 92.51 feet.

4.0 GROUNDWATER ANALYSIS

On March 19, 2007, all monitoring wells, with the exception of MW-13, were purged and sampled according to NYSDEC protocol. The groundwater samples were placed in a cooler filled with ice and transported under proper chain of custody procedures to EcoTest Laboratories (N. Babylon, NY). All samples were analyzed for volatile organic compounds (VOCs) according to EPA Method 8021 (STARS List) and semi-volatile organic compounds (SVOCs) according to EPA Method 8270 (STARS List). The results of the analysis have been tabulated and are presented as Table 1 and 2. Copies of the Laboratory analysis are presented in Appendix A.

A review of Table 1 indicates that the monitoring wells located within the holder foundations (MW-1 through MW-7 and MW-10) all exhibit concentrations of VOCs that are either slightly or moderately above NYSDEC Groundwater Standards. Monitoring wells MW-8, MW-9, MW-11 and MW-12 exhibited numerous VOCs at concentrations well above their respective NYSDEC Groundwater Standards. Wells MW-8 and MW-9 exhibit VOC concentrations that are, on average, two and three orders of magnitude greater than those found in MW-1 through MW-7 and MW-10.

A review of Table 2 indicates that only two wells exhibited concentrations of SVOCs exceeding their respective NYSDEC Groundwater Standards. Well MW-8 exhibited Naphthalene at a concentration of 1,200 µg/L and 2-Methylnaphthalene at a concentration of 800 µg/L. Well MW-9 exhibited Naphthalene at a concentration of 4,100 µg/L and 2-Methylnaphthalene at a concentration of 3,000 µg/L.

5.0 DISCUSSION OF FINDINGS

The information provided by Con Ed indicates that two gas holder foundations exist beneath the site. These foundations extend to a depth of approximately 21 feet below the existing floor of the building, which puts them well into the groundwater table. The foundations of the holders possessed a solid bottom of either brick or concrete. When the holders were razed, the foundations were left in place and were simply filled in with various fill materials/debris. While these foundations should not be considered "water proof", their construction would

seriously impede the movement of water between the areas inside the two foundations and the rest of the site.

Monitoring wells MW-1 through MW-7 and MW-10 are located within the footprint of the holder foundations. Historical groundwater data indicated that most of the wells inside the building (MW-1 through MW-7 and MW-10) exhibited groundwater elevations that were four to five feet higher than the one remaining interior monitoring well (MW-9) and the exterior monitoring wells (MW-8, 11, 12 and 13). Monitoring events performed in October and November of 2007 indicated that the exterior group of wells (MW-8, 9, 11, 12 & 13) were either dry while the interior wells (MW-1 through MW-7 and MW-10) exhibited groundwater elevations comparable to their historic norms. This data indicated that difference in groundwater elevation between the two groups of monitoring wells was now 12 to 13 feet. This evidence indicates that the holder foundations are indeed, for the most part, water tight and seriously impeded the migration of groundwater out of the foundations.

As the former USTs at the site were located within the eastern holder foundation, any groundwater contamination should be confined to this area, specifically wells MW-3, MW-4, MW-5 and MW-7. These wells all exhibit moderate to low concentrations of VOCs, especially Benzene. This would indicate that the contamination observed in the exterior wells and MW-9 is originating from a different source. In addition, since Con Ed indicated that the holder foundations were probably not connected, the contamination in the western holder foundation (defined by MW-1, MW-2 and MW-10) is also not related to the former presence of the USTs.

With regard to the eastern holder foundation, while it is apparent that the former USTs did impact upon the groundwater within the foundation, it is EnviroTrac's opinion that the presence of the MGP waste has also contributed to groundwater contamination. The Con Ed report notes the probable presence of MGP waste in the eastern foundation (field observations found in Section 4.3.1). In addition, laboratory analysis indicated that the soil sample obtained from SB-2 at 19 to 20.5 ft. bgs exhibited total VOCs in excess of NYSDEC Guidelines. The depth to groundwater within the eastern holder foundation is approximately 6.5 feet below grade. Thus, the soil sample from SB-2 was obtained from 12.5 to 14 feet below the groundwater table. It is EnviroTrac's opinion that any petroleum hydrocarbons found in the soil at that depth could not have migrated down through the groundwater, especially lighter hydrocarbons such as VOCs. Thus, these VOCs could not be related to the

former USTs, as the bottoms of the USTs were at, or just slightly into, the groundwater table. However, the VOCs contained in the MGP wastes can dissolve into the groundwater and migrate upwards through the saturated soil. Investigations at MGP sites supervised by the NYSDEC have shown that MGP waste does contain benzene, toluene, ethylbenzene and xylene (BTEX) and these compounds have been found to dissolve into groundwater. Therefore, it is EnviroTrac's opinion that the MGP waste contained within the eastern holder foundation is a contributing factor to the contamination found in the groundwater.

With regard to the western holder foundation, the evidence presented in this report indicates that this contamination is not related to the former USTs, as any UST related contamination should be confined to the eastern holder. The presence of MTBE in the samples from MW-1, MW-2 and MW-10 would indicate that some of the contamination can be attributed to gasoline. However, the low concentrations of MTBE would indicate that gasoline is not the only VOC source, and it is probably only a secondary VOC source. As it has been shown that groundwater does not readily migrate out of the holder foundation, any MTBE originating from this area would remain in the holder foundation and not migrate from its source area. Most likely the source of the MTBE is due to water mixing with gasoline on the floor of the parking garage and then either migrating downward through cracks in the concrete or through leaks in the floor drain system.

Section 4.3.2.1 of the Con Ed Report indicated that the soil sample obtained from SB-4 (located within the western holder) at 19 to 21 ft. exhibited total VOCs in excess of NYSDEC Guidelines. As with the eastern holder foundation, it is EnviroTrac's opinion that the VOCs at this depth are not related to the former USTs or any garage related source, and that the MGP waste contained in the western holder foundation is a contributing factor to the contamination found in the groundwater.

With regard to the exterior wells and MW-9, it is EnviroTrac's opinion that, based upon the above discussion, these wells are exhibiting petroleum contamination from an off-site source. This conclusion is also based upon the fact that MW-12, located upgradient of the former USTs and the holder foundations, exhibits VOCs that exceed NYSDEC Groundwater Standards.

6.0 CONCLUSIONS & RECOMMENDATIONS

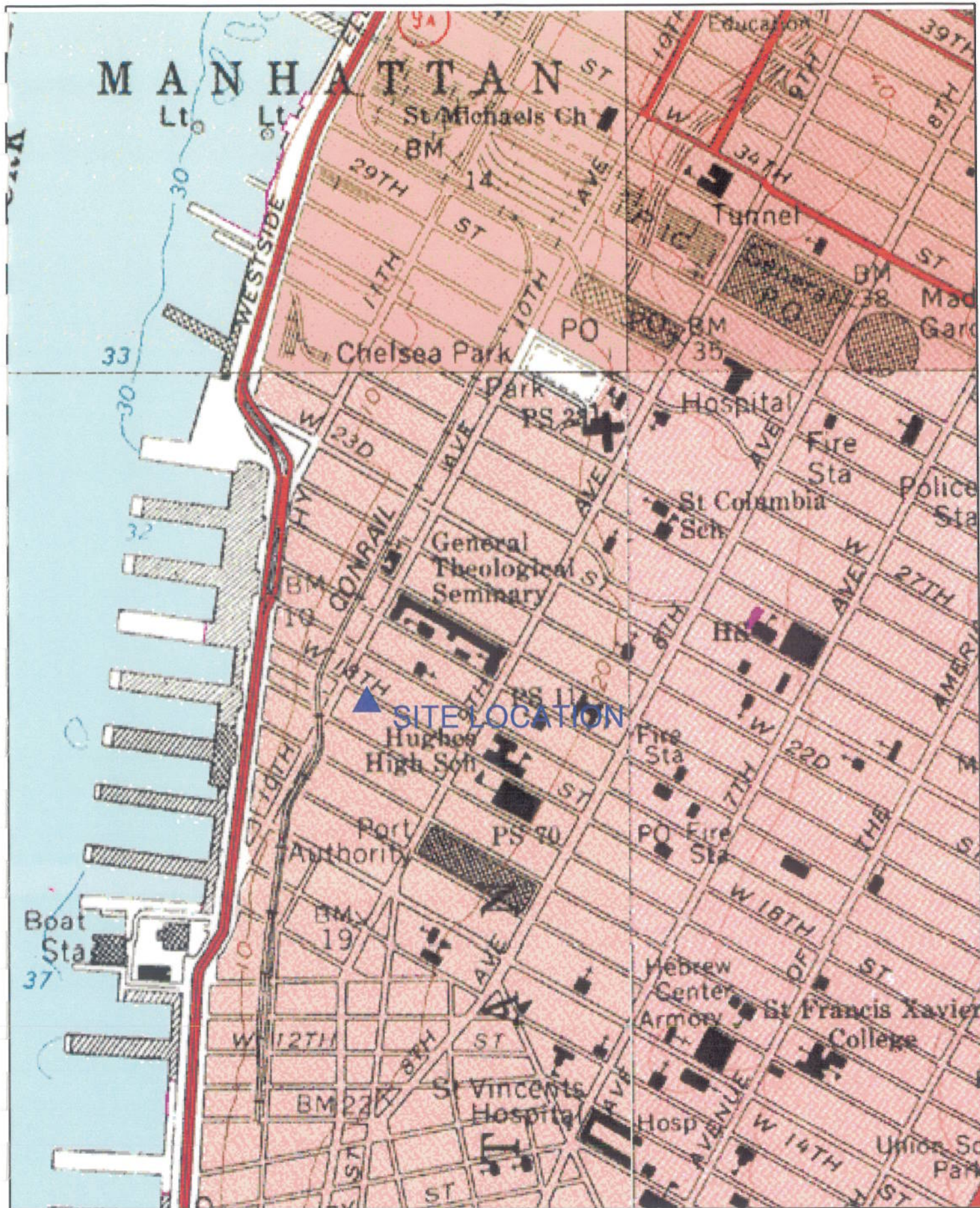
Based upon the above findings, EnviroTrac has made the following conclusions:

While the former USTs contributed to the VOC impact within the footprint of the eastern holder foundation, the MGP waste at the site has also contributed to the VOC impact inside this holder foundation. The Con Ed Investigation addressed all BTEX concentrations within the holders as gasoline related. However, it is EnviroTrac's conclusion that the migration of BTEX / VOCs from the former gasoline USTs (located at the groundwater interface) to an area approximately 14 feet below the groundwater table is not plausible or feasible. The more logical explanation is that the BTEX concentrations in the soil at these depths are a direct result of MGP waste that is present in the holders. BTEX has been known to dissolve from MGP waste into groundwater. Thus, the BTEX concentrations observed in the groundwater within the eastern holder are, to a certain extent, related to the MGP waste.

It is also EnviroTrac's conclusion that MGP Waste discovered by ConEd within the western holder foundation is also a contributing factor to the mildly VOC impacted groundwater within the western holder foundation.

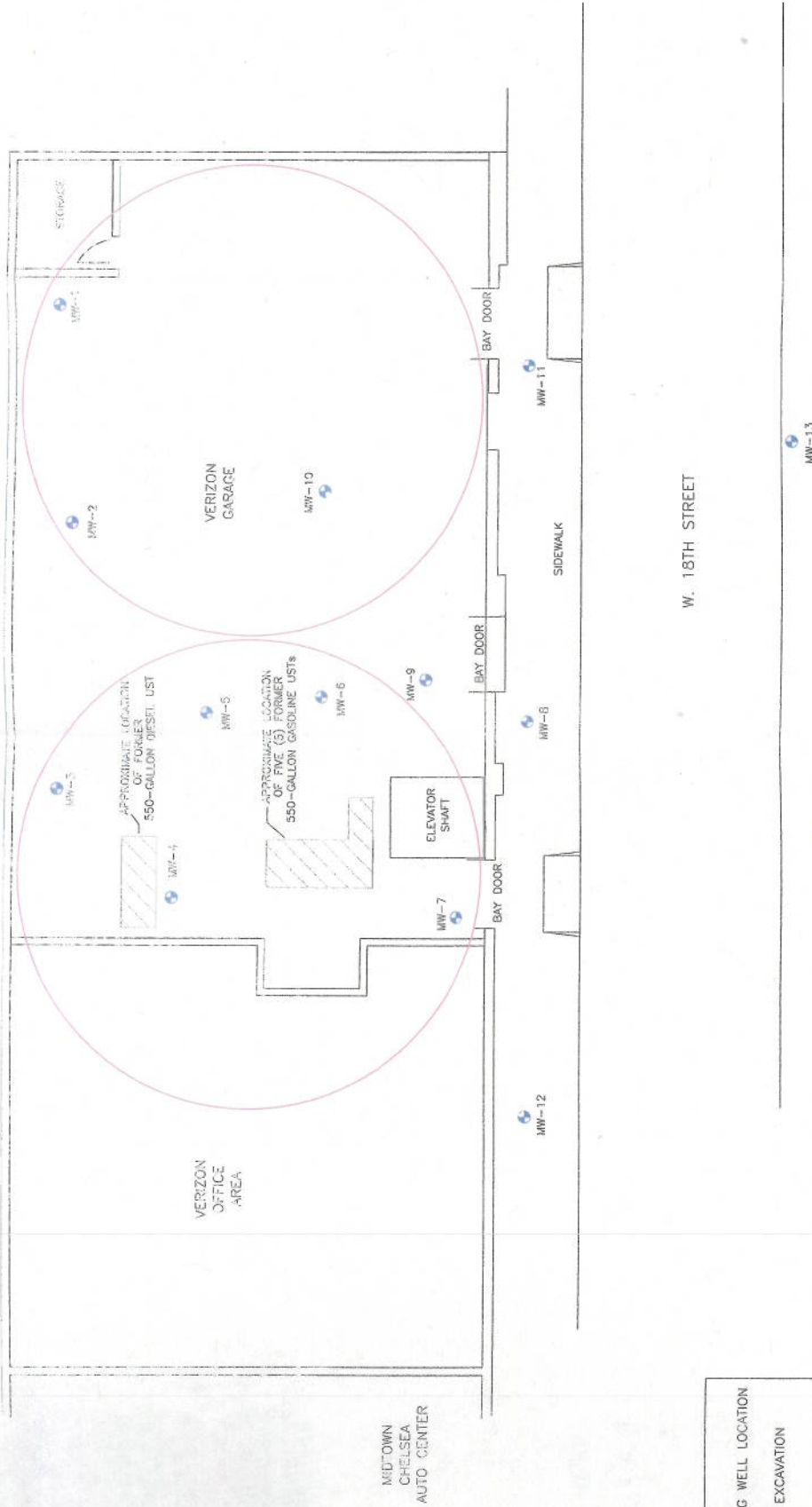
Given that a constant source of VOCs is likely migrating upwards through the groundwater from the MGP waste, it is EnviroTrac's opinion that the Bioremediation program that had been started at the site will probably not be effective, and should be discontinued at this time. This program was based upon the fact that most of the gasoline contaminated source material had been excavated and removed from the site. The program was not designed to remediate a constant source of VOCs, such as the MGP waste. It is also EnviroTrac's recommendation that ConEd be responsible for any future investigation/remediation of the areas within the two holder foundations, as the current, continuous source of VOCs in these areas appears to be MGP waste related.

The VOCs and observed in the exterior wells and MW-9 are resulting from a different source other than the former USTs. This source is most likely off-site. As evidenced by the contamination found in MW-12, which is upgradient of the former USTs, elevated concentrations of VOCs are entering the site from an upgradient source.



Name: BROOKLYN
 Date: 7/5/2007
 Scale: 1 inch equals 800 feet

Location: 040° 44' 45.14" N 074° 00' 11.60" W
 Caption: Figure 1 Site Location



LEGEND:

- Monitoring Well Location
- Area of Excavation
- Former Concrete Tank Foundations
- Former Foundations

Envirolrac
5,002,0001 ROAD, NEW YORK, NY 10001

REVISION	DATE	SCALE	REVISED BY	TB
11/16/17	11/16/17	1" = 20' (1:240)	TB	

FORMER PARKING GARAGE
438 W. 18TH STREET
NEW YORK, NEW YORK
NYSDEC SPILL No. 01-03363

FIGURE #
2

LOCATIONS OF FORMER CON-ED TANK FOUNDATIONS
WITH WATER-TABLE ELEVATIONS

FORMER PARKING GARAGE
438 W. 18TH STREET
NEW YORK, NEW YORK
NYSDEC SPILL No. 01-03363

REVISION DATE: JUNE 22, 2007	SCALE: 1" = 20 FEET	REVISED BY: TB
---------------------------------	------------------------	----------------

ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, TAPPAN, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

LEGEND:

 = MONITORING WELL LOCATION

 AREA OF EXCAVATION

 FORMER CON-ED TANK FOUNDATIONS

 GROUND-WATER CONTOUR LINE (OUTSIDE FOUNDATION)

 GROUND-WATER CONTOUR LINE (INSIDE FOUNDATION)

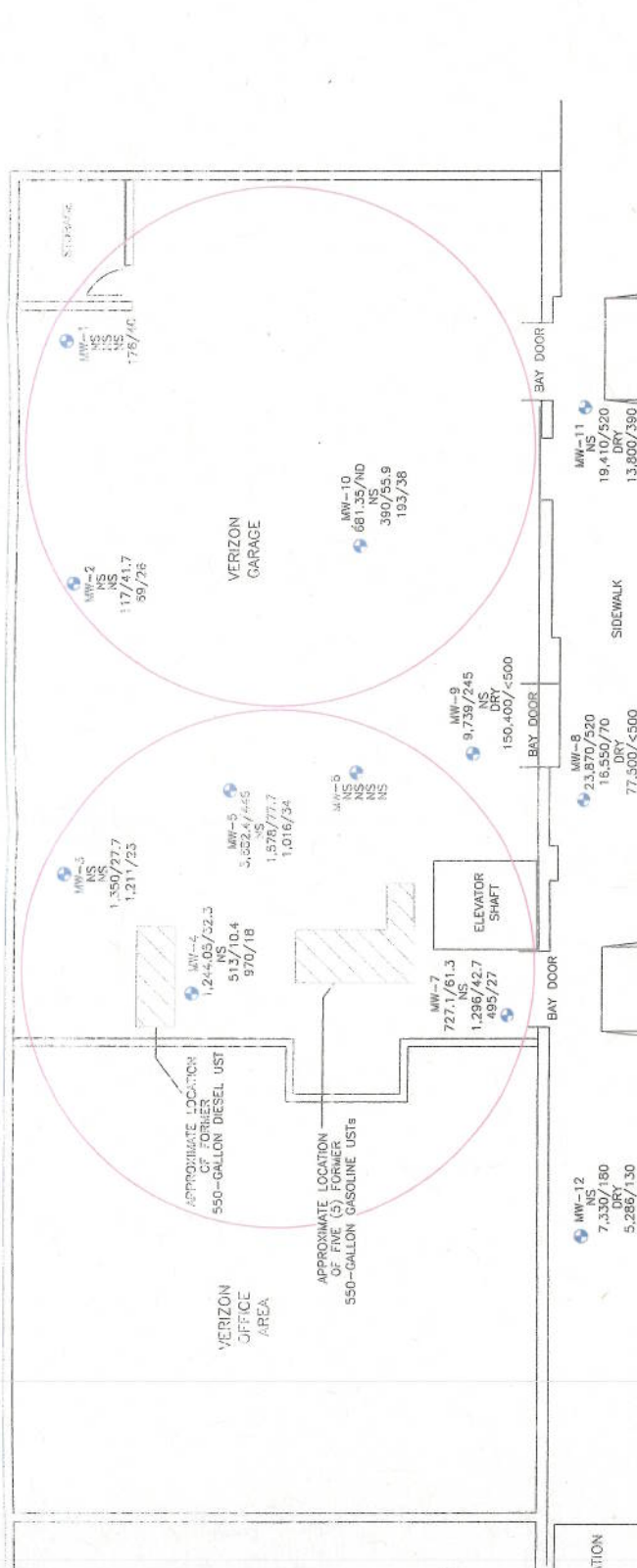
NM = NOT MONITORED

CONTOUR INTERVAL = 1.0 FEET

SAMPLE WELL:

 MW-12 = WELL ID

88.13 = WATER-TABLE ELEVATION IN FEET



LEGEND:

● = MONITORING WELL LOCATION

○ = AREA OF EXCAVATION

○ = FORMER CON-ED

○ = TANK FOUNDATIONS

NS = NOT SAMPLED

SAMPLE WELL:

● MW-7 = WELL ID.

727.1/61.3 = BTEX/MTBE
ON APRIL 13, 2004

NS = BTEX/MTBE ON
FEBRUARY 15, 2005

1.296/42.7 = BTEX/MTBE ON
OCTOBER 23, 2006

495/27 = BTEX/MTBE ON
MARCH 17, 2007

TOTAL BTEX/MTBE RESULTS IN ug/L



5,000 ROUTE 100, SUITE 100, NEW YORK, NY 10013-1001
PHONE: 212.1924.3001 FAX: 212.1924.3001

REVISION DATE:
JUNE 22, 2007

SCALE:
1" = 20 FEET

REVISOR BY: TB

FORMER PARKING GARAGE
438 W. 18TH STREET
NEW YORK, NEW YORK
NYSDEC SPILL No. 01-03363

TOTAL DISSOLVED BTEX/MTBE IN GROUND-WATER ON MARCH 17, 2007

FIGURE #

4

Table 1**Summary of Groundwater Sampling Analytical Results for VOCs in Monitoring Wells on March 19, 2007**

Retaco Building
 438 West 18th Street
 New York, NY

Analytical Parameter	MW-1	MW-2	MW-3	MW-4	MW-5	MW-7	MW-8	MW-9	MW-10	NYSDEC Ground-water Standards
Methyl.tert.ButylEther	40	26	23	18	34	27	<500	<500	38	10
Benzene	170	69	1,200	950	1000	480	2000	6,400	190	0.7
Toluene	<1	<1	4	3	6	3	8,400	20,000	<1	0.7
Ethyl Benzene	<1	<1	1	2	89	2	8,100	18,000	<1	5
m+p Xylene	6	<2	6	12	18	8	43,000	76,000	3	5
o Xylene	<1	<1	<1	3	3	2	16,000	30,000	<1	5
total Xylenes	6	<3	6	15	21	10	59,000	106,000	3	5
isopropylbenzene	7	4	9	15	52	14	1,100	2,900	22	5
n-Propylbenzene	4	3	10	11	77	18	3,400	8,900	22	10
135-Trimethylbenzene	1	<1	<1	2	11	<1	9,800	19,000	<1	5
124 Trimethylbenzene	<1	<1	1	5	54	3	36,000	77,000	<1	10
sec-Butylbenzene	<1	<1	2	<1	7	1	<500	850	2	5
p-Isopropyltoluene	<1	<1	<1	<1	6	<1	<500	<500	<1	10
n-Butylbenzene	<1	<1	2	1	14	2	<500	<500	<1	5
Naphthalene	3	<1	2	5	33	5	6,900	13,000	<1	5
tert-Butylbenzene	<1	<1	<1	<1	<1	<1	<500	<500	<1	5

Notes:

1. VOCs = Volatile Organic Compounds
2. Concentration Units = ug/L (micrograms per liter).
3. Laboratory analysis via EPA Method 8260 (Full List).
4. ND = Not Detected above the method detection limit of the laboratory.
5. - = NYSDEC Ground-water Standard not established.
6. Shaded values indicate concentrations at or above the NYSDEC Ground-water Standards.



Table 1

Summary of Groundwater Sampling Analytical Results for VOCs in Monitoring Wells on March 19, 2007

Retaco Building
438 West 18th Street
New York, NY

Analytical Parameter	MW-11	MW-12	MW-13							NYSDEC Ground-water Standards
Methyl.tert.ButyIEther	390	130	NS							10
Benzene	6,200	3,800	NS							0.7
Toluene	1,000	67	NS							5
Ethyl Benzene	1,700	400	NS							5
m+p Xylene	4,100	1,000	NS							5
o Xylene	780	19	NS							5
total Xylenes	4,900	1019	NS							5
Isopropylbenzene	91	27	NS							5
n-Propylbenzene	200	41	NS							10
135-Trimethylbenzene	370	95	NS							5
124-Trimethylbenzene	1,300	290	NS							10
sec-Butylbenzene	<20	<10	NS							5
p-Isopropyltoluene	<20	<10	NS							10
n-Butylbenzene	<20	<10	NS							5
Naphthalene	270	110	NS							5
tert-Butylbenzene	<20	<10	NS							5

Notes:

1. VOCs = Volatile Organic Compounds
2. Concentration Units = ug/L (micrograms per liter).
3. Laboratory analysis via EPA Method 8260 (Full List).
4. ND = Not Detected above the method detection limit of the laboratory.
5. - = NYSDEC Ground-water Standard not established.
6. Shaded values indicate concentrations at or above the NYSDEC Ground-water Standards.



Table 2

Summary of Groundwater Sampling Analytical Results for SVOCs in Monitoring Wells on March 19, 2007

Retaco Building
438 West 18th Street
New York, NY

Analytical Parameter	MW-1	MW-2	MW-3	MW-4	MW-5	MW-7	MW-8	MW-9	MW-10	NYSDEC Ground-water Standards
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	800.0	3,000.0	ND	50
2-Methylnaphthalene	ND	ND	ND	1.1	ND	ND	ND	ND	ND	5
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
4-Bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	20
Acenaphthene	ND	2.3	4.5	6.8	1.6	3.2	10.0	ND	7.0	20
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
Benzo(ghi)perylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
BenzylButylPhthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Bis(2-chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Bis(2-chloroethyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Bis(2-chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Bis(2-ethylhexyl)phthalate	1.1	7.2	1.9	ND	1.1	ND	ND	ND	ND	-
Carbazole	4.0	ND	ND	1.4	ND	ND	ND	100.0	ND	0.002
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Di-n-Butyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Di-n-octyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Dibenzofuran	ND	ND	1.5	1.5	ND	ND	ND	ND	2.7	5
Diethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Dimethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Fluorene	2.4	1.0	2.8	2.4	ND	1.3	10.0	ND	3.4	0.35
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
N-Nitrosodi-n-propylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	1,200.0	4,100.0	1.7	10
Naphthalene	ND	ND	ND	3.9	ND	3.6	ND	ND	ND	5
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Phenanthrene	4.0	ND	ND	1.5	ND	1.1	12.0	ND	ND	50
Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	50

Notes:

- SVOCs = Semi-Volatile Organic Compounds
- Concentration Units = ug/L (micrograms per liter).
- SVOC sample from MW-6 collected on August 25, 2005.
- Laboratory analysis via EPA Method 8270 (Full List).
- ND = Not Detected above the method detection limit of the laboratory.
- NT = Not Tested for respective compound.
- = NYSDEC Ground-water Standard not established.
- Shaded values indicate concentrations at or above the NYSDEC Ground-water Standards.

Table 2

Summary of Groundwater Sampling Analytical Results for SVOCs in Monitoring Wells on March 19, 2007

Retaco Building
438 West 18th Street
New York, NY

Analytical Parameter	MW-11	MW-12	MW-13						NYSDEC Ground-water Standards
1,2-Dichlorobenzene	ND	ND	NS						-
1,3-Dichlorobenzene	ND	ND	NS						-
1,4-Dichlorobenzene	ND	ND	NS						-
1,2,4-Trichlorobenzene	ND	ND	NS						-
2,4-Dinitrotoluene	ND	ND	NS						5
2,6-Dinitrotoluene	ND	ND	NS						-
2-Chloronaphthalene	ND	ND	NS						50
2-Methylnaphthalene	30	16	NS						5
2-Nitroaniline	ND	ND	NS						-
3,3'-Dichlorobenzidine	ND	ND	NS						5
3-Nitroaniline	ND	ND	NS						-
4-Bromophenyl phenyl ether	ND	ND	NS						5
4-Chloroaniline	ND	ND	NS						-
4-Chlorophenyl phenyl ether	ND	ND	NS						-
4-Nitroaniline	ND	ND	NS						20
Acenaphthene	ND	1.9	NS						20
Acenaphthylene	ND	ND	NS						50
Anthracene	ND	ND	NS						0.002
Benzo(a)anthracene	ND	ND	NS						0.002
Benzo(a)pyrene	ND	ND	NS						0.002
Benzo(b)fluoranthene	ND	ND	NS						5
Benzo(ghi)perylene	ND	ND	NS						0.002
Benzo(k)fluoranthene	ND	ND	NS						-
BenzylButylPhthalate	ND	ND	NS						-
Bis(2-chloroethoxy)methane	ND	ND	NS						-
Bis(2-chloroethyl)ether	ND	ND	NS						-
Bis(2-chloroisopropyl)ether	ND	ND	NS						50
Bis(2-ethylhexyl)phthalate	9.1	ND	NS						-
Carbazole	1.2	ND	NS						0.002
Chrysene	ND	ND	NS						50
Di-n-Butyl Phthalate	ND	ND	NS						50
Di-n-octyl Phthalate	ND	ND	NS						50
Dibenzo(a,h)anthracene	ND	ND	NS						5
Dibenzofuran	ND	1.1	NS						50
Diethyl Phthalate	ND	ND	NS						50
Dimethyl Phthalate	ND	ND	NS						50
Fluoranthene	ND	ND	NS						50
Fluorene	ND	2	NS						0.35
Hexachlorobenzene	ND	ND	NS						-
Hexachlorobutadiene	ND	ND	NS						-
Hexachlorocyclopentadiene	ND	ND	NS						-
Hexachloroethane	ND	ND	NS						0.002
Indeno(1,2,3-cd)pyrene	ND	ND	NS						50
Isophorone	ND	ND	NS						-
N-Nitrosodi-n-propylamine	ND	ND	NS						-
N-Nitrosodiphenylamine	ND	ND	NS						10
Naphthalene	150	56	NS						5
Nitrobenzene	ND	ND	NS						50
Phenanthrene	ND	3.8	NS						50
Pyrene	ND	1.1	NS						50

Notes:

- SVOCs = Semi-Volatile Organic Compounds
- Concentration Units = ug/L (micrograms per liter).
- SVOC sample from MW-6 collected on August 25, 2005.
- Laboratory analysis via EPA Method 8270 (Full List).
- ND = Not Detected above the method detection limit of the laboratory.
- NT = Not Tested for respective compound.
- = NYSDEC Ground-water Standard not established.
- Shaded values indicate concentrations at or above the NYSDEC Ground-water Standards.

Appendix A

482899 V1

Site Characterization Study Report
for the
Former West 18th Street Gas Works
Manhattan, New York
VCA Site # V00530-2

Prepared For:
Consolidated Edison Company of New York, Inc.
31-01 20th Avenue
Long Island City, NY 11105-2048



Prepared By:
TRC Environmental Corporation
1200 Wall Street West
Lyndhurst, New Jersey 07071



January 2006

**Site Characterization Study Report
for the
Former West 18th Street Gas Works**

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EXECUTIVE SUMMARY

The former West 18th Street Gas Works Site (Site), which is located in the Chelsea section of Manhattan, New York, was investigated by the Consolidated Edison Company of New York, Inc. (Con Edison) to determine if structures of the former gas plant or residual byproducts from the gas production process are present at the Site. The former Site, which operated from approximately 1833 to approximately 1914 when the last of the gas holders were demolished, occupied a four-block area bounded by West 16th and West 20th Streets between 10th Avenue and the bulkhead along the Hudson River. In addition, a small parcel located along the south side of West 18th Street, west of 10th Avenue, contained two gas holders. The plant included the gas works, which was located on the block between West 17th and West 18th Streets, a total of eleven above-ground gas holders previously located on various parcels, and coal storage areas. The former plant site currently contains commercial and industrial businesses that include storage warehouses, office buildings, art galleries, commercial studios and public parking lots.

Site characterization study (SCS) activities were performed in accordance with a Voluntary Cleanup Agreement (VCA) (Index #D2-0003-02-08), between Con Edison and the New York State Department of Environmental Conservation (NYSDEC), and in accordance with the NYSDEC-approved SCS Work Plan. Due to the number of property owners involved and access conditions, the SCS was conducted in a discontinuous manner from April 2004 to November 2005.

For ease of discussion, the Site has been segmented in to six areas, as designated below.

FORMER WEST 18 th STREET GAS WORKS	
HISTORICAL MGP STRUCTURES	
DESIGNATED AREAS	HISTORICAL STRUCTURES
Area 1	Two former gas holders (Designated Gas Holder No. 1 and Gas Holder No. 2), located on the south side of West 18 th Street between 9 th and 10 th Avenues.
Area 2	Two former gas holders (Designated Gas Holder No. 3 and Gas Holder No. 4), and the former Gas Light Company pipe and store yards. Located between West 19 th and 18 th Streets and between 10 th Avenue and the bulkhead along the Hudson River.

FORMER WEST 18 th STREET GAS WORKS	
HISTORICAL MGP STRUCTURES	
DESIGNATED AREAS	HISTORICAL STRUCTURES
Area 3	Former structures include a retort house, purifying house, workshops, and laboratory. Located between West 17 th and 18 th Streets and between 10 th Avenue and the bulkhead of the Hudson River.
Area 4	The former Gas Light Company coal yards. Located between West 16 th and 17 th Streets and between Route 9A and 10 th Avenue.
Area 5	Three former gas holders (Designated Gas Holder No. 5, Gas Holder No. 6, and Gas Holder No. 7), located between West 19 th and 20 th Streets and between the bulkhead along the Hudson River and 10 th Avenue.
Area 6	Four former gas holders (Designated Gas Holders No. 8 through No. 11), centrally located along current Route 9A, between Area #4 and the bulkhead along the Hudson River.

The following table summarizes the types and numbers of investigation activities that were conducted in each of the six Areas of the Site.

Although the SCS entailed a significant number of sampling locations within the Site, additional investigation is required to characterize and fully delineate the subsurface soil and groundwater contamination present there. A proposed remedial investigation strategy is presented as an appendix to this SCS Report.

SCS Activity Description	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Exploratory Test Pits	2	1	2	0	1	0
Soil Boring Locations	7	13	15	2	12	3
Soil Samples (Including Duplicates)	33	58	61	11	39	10
Monitoring Wells	2	3	2	1	3	0
Groundwater Samples (Including Duplicates)	2	4	1	1	3	0
Collection of NAPL Samples	2	1	0	0	0	0

The key findings from the Site Characterization Study are summarized below.

- Soils encountered beneath the Site consist of four primary stratigraphies, overlying bedrock and consisted of urban fill, an upper sand unit, a low-permeability silty-clay unit, and a lower sand unit. Auger refusal, believed to be due to bedrock, occurred at depths ranging from approximately 45 feet below ground surface (ft bgs) in SB-07 to 86 ft bgs in SB-30 and SB-24. Based upon depths to auger refusal, bedrock appears to dip from the northeast to the west/southwest. Bedrock core samples were not collected as part of this SCS. The silty-clay unit is absent or discontinuous to the east (upgradient) of the majority of the former MGP site (i.e., east of 10th Avenue). Depth to top of the silty-clay ranged from approximately 20 ft bgs in the east to approximately 41 ft bgs in the western portions of the Site.
- Groundwater occurs in the shallow water table aquifer and deeper aquifer. The water table generally resides in the fill unit and the deeper aquifer occurs in the lower sand unit. The deep aquifer is effectively isolated from the water table aquifer beneath the former MGP by the low permeability silt/clay unit.
- The shallow water table occurs at depths between approximately 5 and 11 ft bgs and groundwater in this aquifer generally flows from east to west towards the Hudson River.
- Impacted subsurface soil, where detected, was almost exclusively present in the urban fill and upper sand units above the silty-clay unit. With one exception, no impacts were detected in the deeper aquifer.
- The presence of former MGP related structures were identified in the subsurface in Areas 1, 2, 3 and 5. Gas holder foundations were encountered in Areas 1, 2 and 5. Retort House, Laboratory and Scrubber foundations were encountered in Area 3.
- Physical evidence of both petroleum and MGP-related contamination was detected in subsurface soil in Areas 1, 2, 3, 4 and 5. Evidence of contamination included odors, staining, sheen, oil-like material (OLM), tar-like material (TLM), light non-aqueous phase liquid (LNAPL) and or dense non-aqueous phase liquid (DNAPL). Where detected, MGP impacts were typically encountered in discrete bands within the 10-foot interval above the top of the silty-clay unit.
- All petroleum impacts detected are not attributed to operations of the former MGP, but rather are due to operations of on-site underground storage tanks (USTs) used to store petroleum or to documented petroleum spills in adjacent and upgradient off-site areas.
- Approximately five feet of coal tar DNAPL was measured in groundwater monitoring well MW-24B (screened in the deep aquifer) prior to groundwater sampling. During drilling and

soil sampling at this well location, no evidence of contamination was detected. The source and mechanism for the occurrence of the DNAPL in this well is not known.

- The concentrations of volatile organic compounds (VOCs), Total VOCs, semi-volatile organic compounds (SVOCs), Total SVOCs and several metals detected in subsurface soil exceeded their NYSDEC recommended soil cleanup objectives (RSCOs) in all Areas of the Site. It is noted that some of the elevated VOCs and SVOCs and the majority, if not all, of the elevated metals concentrations are attributed to the ambient quality of soil that constitutes the urban fill, and are not related to the former MGP.
- The concentrations of VOCs, SVOCs, several metals, and total cyanide detected in shallow groundwater exceeded their NYSDEC ambient water quality standards and guidance values (AWQSGVs) in Area 1. In Areas 3 and 5 only VOCs and SVOCs were detected at elevated concentrations. Only one metal and one VOC were detected at elevated concentrations in Area 2. In area 4 only one metal was detected in groundwater at an elevated concentration. In Area 1 the elevated VOCs and SVOCs concentrations are attributed almost exclusively to documented petroleum releases from existing and former USTs that were operated in this Area and are generally not due to operations of the former gas holders here.
- With the exception of coal tar in monitoring well MW-24B (discussed above), no MGP-related impacts were detected in the deep groundwater.
- The results of the qualitative exposure assessment showed that there are no potential risks of exposure to subsurface soil and groundwater under the current site conditions. Under the current site configuration, all surfaces at the former MGP Site are covered by concrete or asphalt pavement or concrete building foundations. However maintenance, construction and or utility workers may be exposed through direct contact and or inhalation of vapors and or airborne dust containing contaminants of interest.

Recommendations and Conclusions

Residuals from the operations of the former MGP have been identified at the former West 18th Street Gas Works Site. Elevated concentrations of VOCs, SVOCs and metals were detected in subsurface soil and groundwater. Based on these subsurface conditions a Remedial Investigation (RI) will be conducted at the Site to delineate impacts identified during the SCS. A RI Work Plan is provided in Appendix E of this SCS Report.

1 INTRODUCTION

This report (Report) presents the results of the Site Characterization Study (SCS) that was conducted by TRC Environmental Corporation (TRC) on behalf of the Consolidated Edison Company of New York, Inc. (Con Edison) for the former West 18th Street Gas Works Site, located on the lower west side of Manhattan (Chelsea section). The site is a former manufactured gas plant (MGP) that was operated by one of Con Edison's predecessor companies through the early 1900's. Figure 1 shows the Site location. The SCS for the properties that once comprised the grounds of the former West 18th Street Gas Works (the "Site") was conducted pursuant to the terms of Voluntary Cleanup Agreement (VCA) Index # D2-0003-02-08 (the VCA) between Con Edison and the New York State Department of Environmental Conservation (NYSDEC). The SCS field investigation activities for the Site were carried out and completed in accordance with a NYSDEC-approved Site Characterization Work Plan (SCSWP) that was prepared for Con Edison by TRC.

1.1 Project Background

In 2002, Con Edison entered a VCA with the NYSDEC. Under the agreement, Con Edison agreed to investigate and, if necessary, remediate former MGP sites that were operated by its predecessor companies. The West 18th Street former MGP was identified as one of these former sites. Therefore, in compliance with the VCA, Con Edison implemented a SCS at this Site. The details of the SCS are presented herein.

1.2 Project Objectives

The objectives of the SCS were to:

- Determine the presence or absence of residues related to operations of the former MGP;
- Determine if remnant structures of the former MGP are present in the subsurface at the Site; and
- Determine the need for additional site investigation, if any.

As a initial step in satisfying these objectives TRC, on behalf of Con Edison prepared the *Site Characterization Study Work Plan for the Former West 18th Street MGP Site, Manhattan, New York* [SCSWP] (TRC, 2003). The workplan was developed based on the *West 18th Street Manufactured Gas Plant Site History Report* [SHR] (Parsons, 2002), the draft NYSDEC Guidelines for Site Characterization and Remedial Investigation (Draft NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, 2002) and observations made during

a site reconnaissance conducted by Con Edison and TRC in August, 2003. The SCS Work Plan was approved by NYSDEC in February 2004.

1.3 SCS Report Outline

The remainder of this Report is organized as follows:

Section 2.0 outlines the Site Background, including a description of the Site and adjoining properties, current land use and zoning, Site history and ownership, regional geologic and hydrogeologic conditions, findings of previous Site investigations, and the findings of the environmental records search performed by Parsons on behalf of Con Edison.

Section 3.0 provides descriptions of the key aspects of the Site Characterization Study. For the purposes of this Report, the Site has been divided into six Areas as defined below. Note that, with the exception with the adjunct parcel (designated Area 1), all areas are bound on the east and by 10th Avenue and on the west by 11th Avenue (as it existed when the plant was operating – See Figure 2).

Area Number	Current Boundaries	Tax Block and Lot	Key MGP Features
1	Along West 18 th Street between 9 th and 10 th Avenues	Block 715, Lot 59	Gas Holders No. 1 and No. 2
2	Between West 18 th and West 19 th Streets, from 10 th Avenue westward to the bulkhead of the Hudson River	Block 690, Lots 12, 20, 29, 40, 42 and 54; a portion of Block 622	Gas Holders No. 3 and No. 4, Pipe and Storage Yards
3	Between West 17 th and West 18 th Streets, from 10 th Avenue westward to the bulkhead of the Hudson River	Block 689, Lot 17; a portion of Block 622	Retort House, Purifying House, Scrubbers, Laboratory, Workshops, New and Foul Lime Storage
4	Between West 16 th and West 17 th Streets, from 10 th Avenue westward to Route 9A	Block 688, Lots 1001 and 1002	Coal Yard

Area Number	Current Boundaries	Tax Block and Lot	Key MGP Features
5	The western portion of the block between West 19 th and West 20 th Streets, westward to the bulkhead along the Hudson River	Block 691, Lots 1 and 11; a portion of Block 622	Gas Holders No. 5, No. 6, and No. 7
6	A portion of Route 9A westward to the bulkhead along the Hudson River, from West 16 th Street to West 17 th Street	A portion of Block 662	Gas Holders No. 8, No. 9, No. 10, and No. 11

Section 4.0 presents site-specific geologic and hydrogeologic information, and discusses the field observations and analytical data in comparison to the applicable NYSDEC regulatory standards.

Section 5.0 presents the qualitative exposure assessment, which consists of characterizing the exposure setting (including the physical environment and potentially exposed human populations), identifying exposure pathways, and evaluating contaminant fate and transport.

Sections 6.0 presents the conclusions and recommendations developed in consideration of the findings and observations discussed in Section 4.0.

Section 7.0 presents the references used in preparation of this SCS Report.

2 SITE BACKGROUND

A detailed summary of the Site Background was developed by Parsons for Con Edison, and is presented in the August 2002 MGP Site History Report (SHR). That report was prepared based on Parson's review of available data and records for the Site with respect to both historical operations and current Site conditions. A summary description of the information presented in the SHR, and supplemented by additional information, is provided below. The Site background presented in the SHR was supplemented present-day conditions observed by Con Edison and TRC during a site walk on August 5, 2003.

2.1 Site Description

The former West 18th Street Gas Works is located in the Borough of Manhattan, New York City and New York County, New York (Figure 1). As is recorded in the SHR and the VCA, thirteen present-day Blocks/Lots comprise the former MGP Site, which covers portions of five modern city blocks, parts of Route 9A, and parts of the Chelsea Piers (Figure 3) along the Hudson River bulkhead. Specifically, the former MGP includes:

- Block 688, tax Lots 1001 and 1002 (entire block bounded by West 16th Street, West 17th Street, 10th Avenue and Route 9A);
- Block 689, tax Lot 17 (entire block bounded by West 17th Street, West 18th Street, 10th Avenue and Route 9A);
- Block 690, tax Lots 12, 20, 29, 40, 42, and 54 (entire block [except tax Lot 46] bounded by West 18th Street, West 19th Street, 10th Avenue and Route 9A);
- Block 691, tax Lots 1 and 11 (western end of block bounded by West 19th Street, West 20th Street, 10th Avenue and Route 9A);
- Block 715, tax Lot 59 (northwestern area of block bounded by West 17th Street, West 18th Street, 9th Avenue and 10th Avenue);
- The line of Route 9A between West 16th Street and West 20th Street (formerly parts of Blocks 688, 689, 690 and 691); and
- Portions of the Chelsea Piers (Piers 59, 60, 61 and 62) designated Block 662, (formerly part of Blocks 666, 688, and 689) along the Hudson River bulkhead.

The western ends of Blocks 688, 689, 690, and 691 were truncated for the inland extension of the Hudson River piers (now designated Block 662, City 3, 7, 11, 16, 19, and 62) and the reconfiguration of 11th Avenue and Marginal Street in the early twentieth century, and the later construction of the Route 9A during the 1920s and 1930s. A major reconstruction project for segments of Route 9A took place in the vicinity of the Site from 1996 to 2001. Block 666, a wedge-shaped area of the gas plant formerly located west of present-day Blocks 688, 689, and 690 along the then bank of the Hudson River, was condemned when the piers were extended inland. It should be noted that the existing tax Lots are an amalgam of smaller real estate lots, which were historically sold to the Manhattan Gas Light Company (one of Con Edison's

predecessor companies) by individual owners. Figure 3 shows the current street configuration with an overlay of the former MGP structures (based on historical maps and drawings (e.g., Sanborn Fire Insurance maps, Viele maps, Beers maps, etc.) and aerial photographs.

2.2 Current Land Use and Zoning

Within the general geographic area of the Site, property usage is light commercial, light industrial, local service district, and residential. All of the tax Lots contained on the Blocks (688, 689, 690, 691, and 715) that comprise the former MGP Site are zoned as M1-5 and are defined as Light Manufacturing District - High Performance. The Site usage includes storefront retail facilities to the east and west and a sports/entertainment complex located to the west and adjacent to the Site. A mixture of commercial office/warehouse facilities, art galleries and residential properties are located to the north and adjacent to the Site. An office facility and high-rise apartment building are located to the south. Details of current land use are described in the following paragraphs.

No aboveground remnants of MGP-related structures or by-products were observed during the site walk.

2.3 Site History, Process Operations and Uses

A summary of the Site history, ownership and use based on the SHR, is presented below chronologically as pre-, active, and post-MGP periods. In addition to the title search results, Sanborn Insurance Maps from 1895 to 1996 and other historical maps and atlases were used to develop the chain of ownership and evolution of site operations. A complete and tabular description of the real estate property transfers for each block/lot, as of Summer 2002, is included in the SHR (Parsons, August 2002).

2.3.1 Pre-MGP Ownership and Site Operations

The West 18th Street Gas Works property housed various structures prior to its use as a MGP, as described below by location and or present-day Tax Block number. Note that 11th Avenue was later replaced by Route 9A, and 13th Avenue was destroyed when the Hudson River shoreline/bulkhead was re-aligned.

Block 688 (bounded by West 16th and West 17th Streets, 10th and 11th Avenues)

As described above, Block 688 was completely under water until the 1830s, when landfilling began west of 10th Avenue. By the late 1830s and early 1840s the eastern half of the block, now reclaimed from the river, supported two houses along 10th Avenue (Assessed Valuation of Real Estate 1836 through 1842). By 1857, there were fifteen houses along 10th Avenue; six houses, a

stone yard, and two sheds on the south side of West 17th Street; and two houses east of 11th Avenue (Assessed Valuation of Real Estate 1857). These structures are depicted on the 1852 Dripps map. On the eastern end of the block, various residences, shops, a “Whiting Factory,” a wagon factory, and a wood yard appeared on the 1859 Perris and Company map and the 1869 Perris and Browne map.

Block 689 (bounded by West 17th and West 18th Streets, 10th and 11th Avenues)

Housed little or no development prior to its use as an MGP. Once the eastern end of the block had been filled, the Manhattan Gas Light Company purchased the lots along West 18th Street and part of 10th Avenue in 1833 from various owners. Concurrently, individuals bought lots and constructed five houses at the southeast end of the block, adjacent to the MGP Works. These houses endured until the late 1850s, when the gas company bought these lots and razed the houses to make room for additional MGP structures.

Block 690 (bounded by West 18th and West 19th Streets, 10th and 11th Avenues)

The earliest development on Block 690 was a steam mill, constructed by William Hockman on the south side of the block along the newly filled shoreline by the late 1830s or early 1840s. Block 690 also contained a lumberyard, a coal yard, several houses, various sheds and shanties, a “Distillery and Manufactory of Compressed Yeast” complex, a paint factory, a cooperage (repair and making of barrels and tubs), and the “Manhattan Pottery” complex.

Block 691 (bounded by West 19th and West 20th Streets, 10th and 11th Avenues)

Housed primarily residences from the 1830s, when its eastern end was reclaimed from the Hudson River, through 1866, when the gas company purchased its first lots on the block. In the late 1830s and early 1840s, the block supported a stable and 8 houses. By 1857, the block had 19 houses, 8 lots with sheds, and a lumberyard.

Block 715 (bounded by West 17th and West 18th Streets, 9th and 10th Avenues)

Supported a number of houses and shops, although tax Lot 59, the property later owned by the gas company, was vacant during these years. In 1845 and 1846, individuals sold what would become tax Lot 59 to the Manhattan Gas Light Company for construction of a building to house two gasholders.

Block 662 - Former Block 666 (bounded by West 16th and West 19th Streets, former 11th and 13th Avenues)

Was under water through the 1830s and early 1840s, but had been filled by the early 1850s. The gas company purchased the central part of Block 666 in 1846 and 1849 and the southern part in 1858.

2.3.2 Active MGP History

MGP operations began at the West 18th Street Gas Works in 1834. During 1834, the Manhattan Gas Light Company purchased its initial property on the eastern end of Area 3 (Block 689) and began construction of the gas plant. The Manhattan Gas Light Company had formed in 1830, and by 1834, was providing gas to all of Manhattan north of Grand and Canal streets. The West 18th Street Gas Works was to be the second gas plant in the city, and the first erected by the Manhattan Gas Light Company. Construction of the West 18th Street Gas Works began in the fall of 1833, and continued for the next year. By November 1834, the plant was manufacturing and distributing coal gas to customers (Collins, 1934). During the nineteenth century, the West 18th Street Gas Works grew in size as the Manhattan Gas Light Company continued to purchase land and construct additional facility structures.

The first property bought by the Gas Works was on the south side of West 18th Street, at the eastern end of Area 3 (Block 689). A Retort House, Condensers, Scrubbers, and Purifying House, likely contained in one or two structures were constructed on this parcel.

In 1845 and 1846, the company purchased lots on Block 715 (Area 1) and built its first gas holders, enclosed in a brick warehouse-type structure along the south side of West 18th Street. Also purchased at this time was the center section of former Block 662, which allowed direct access to the river and a company pier. It used this area as a coal yard as well.

The purchase of more property at the eastern end of Area 3 in 1848 and 1849 allowed the MGP to expand its operations by constructing a new, detached Purifying House at the northeastern corner of the block. The company also bought land at the eastern end of Area 2 (Block 690), directly to the north, and constructed the initial pair of large, open gasholders.

In 1858, the Manhattan Gas Light Company purchased the western two-thirds of Block 688 (western portion of Area 4), and the southern section of former Block 666 (Area 6). The company erected four additional gas holders (250,000 cubic feet) in the middle of Area 6 and used the western end of Block 688 as a coal yard (now the Hudson River). The western-most portion of the then newly purchased part of former Block 666 was used for a lime yard. Also during this period, the Retort House (Area 3) had been expanded to include six groups of 160 retorts each, for a total of 960 retorts. To the west of the Retort House was a large coal house,

where coal was stored after being unloaded from the adjacent waterfront pier. To the east of the Retort House was a Laboratory along West 18th Street, and south of that, a building containing Condensers, Scrubbers and Washers.

In the late 1860s, the company purchased additional properties on Area 2 and Area 4, as well as lots on Area 5 (Block 691). The MGP works were expanded to include several large coal yards in Areas 2, 4 and 5, a pipe yard in Area 2, and another pair of large gas holders in Area 5. The West 18th Street Gas Works continued to operate through the final decades of the nineteenth century, although it did not acquire any additional property or change its configuration markedly during that period. The West 18th Street Gas Works appears to have operated only one or two years into the twentieth century.

In 1909, the two smaller gas holders in Area 5 were demolished, and in 1914, the remaining gas holders in Areas 1 and 2 were razed. During the 1910s, the gas company began to sell its property on the West 18th Street Gas Works blocks to other owners, marking the end of the MGP history.

2.3.3 Post-MGP Ownership and Use

The Site covered approximately four contiguous city blocks bound by West 20th Street to the north, West 16th Street to the south, 10th Avenue to the east, and the present Hudson River bulkhead to the west; as well one property located along 18th Street between 9th and 10th Avenues. Con Edison no longer owns any of the parcels that comprise the site of the former MGP. Figure 3 presents the current tax block/lot numbers referenced below.

Area 1 (Block 715, bounded by West 17th and West 18th Streets, 9th and 10th Avenues) housing tax Lot 59 contains the former gas holder house, now used as a garage. Although the gas holders have been removed and the building has been retrofitted, the exterior shell of the building has changed little.

Area 2 (Block 690, bounded by West 18th and West 19th Streets, 10th Avenue and the Hudson River bulkhead) had its western end condemned for pier and roadway reconfigurations, nearly all of the remaining property on the block belonged to the Consolidated Gas Company through the early 1900s. Specifically, the former MGP occupied modern tax Lots 12, part of 20, 29, part of 40, 42, and 54, as well as a portion of Block 662 (Chelsea Piers). After that time, tax Lot 12 was used as a wagon yard until 1922, when a large garage (with buried gasoline tanks), was built over nearly the entire lot. This structure, with some modifications, still stands in its original location.

- On tax Lot 12, the owners (West 19th Street Development, LLC) entered into an independent VCA with the NYSDEC, which required it to conduct a site investigation

and remediate impacts identified in the subsurface. Subsequently, West 19th Street Development, LLC, conducted two extensive site investigations to assess soil and groundwater quality beneath the site, as part of its property redevelopment. The results of the investigations showed that soil and groundwater beneath this parcel were impacted by MGP residuals as well as various petroleum products. Due to the thorough site investigations and NYSDEC-approved remediation that has taken place, residual contamination is being let in place;

- On tax Lot 20, a large garage was erected over the portion fronting West 18th Street in 1919, and is still standing in its original location. The smaller portion of tax Lot 20 along West 19th Street contained two row houses, built in the 1890s. They were razed for construction of a private garage, erected in 1947, which remains;
- Tax Lot 29 was used as a wagon yard after the gas holders were razed; it later became an truck parking lot, and last, a public automobile parking lot. Two structures located on the southeast corner of the lot were built in the mid-1920s. The lot contains underground gasoline tanks;
- Tax Lot 40 originally contained two halves: the Consolidated Gas Company owned one part, and used it as a pipe yard, while the second part was owned by other individuals, and contained a shop, which later became an automobile repair facility. In 1923, the Huntoon Ice Company purchased both halves of the lot, and in 1929, constructed a warehouse for ice storage over the entire lot. In 1969, Eli Studios purchased the building and lot; the former warehouse has been used as a movie studio since that time;
- Tax Lot 42 was sold to the Huntoon Ice Company in 1922, which erected a two-story warehouse the following year. A spring water company occupied the building later, which is still standing in its original location;
- Tax Lot 54 located at the corner of West 19th Street and Route 9A contained a two-story hotel, which later burned. The lot has been vacant since the 1960s; and
- The portion of Block 662, along the Hudson River bulkhead, where the Chelsea Piers Sports and Entertainment Complex, constructed in 1995, is now present.

Area 3 (Block 689, bounded by West 17th and West 18th Streets, 10th Avenue and the Hudson River bulkhead) also was owned entirely by the gas company, and is now designated principally as tax Lot 17. A portion of this area also extends to the Hudson River bulkhead, abutting Chelsea Piers (Block 662). In 1917, the Consolidated Gas Company sold the whole block (West 17th to West 18th Streets) to the New York State Realty and Terminal Company. From 1932-

1960, the property was owned by the New York Central Railroad Company. Since 1960, the block has been owned by a series of realty companies and corporations. After the gas company sold the property, some of the former MGP buildings on the block were used for other purposes. The remainders of the old MGP buildings were razed after the railroad acquired the property (1932), and a railroad yard (with tracks) was built in their place. Later, the tracks were covered and the block was used as surface parking for cars. In the mid-1950s, an automobile service station and garage were also built along West 17th Street, near present-day Route 9A. The buildings were demolished in the 1980s.

Currently, the block is used exclusively as a parking lot. The remainder of this area encompasses the portion of Route 9A along the west side of the block and a portion of the Chelsea Piers Sports and Entertainment Complex (Block 662).

Area 4 (Block 688, bounded by West 16th and West 17th Streets, 10th Avenue and Route 9A) was owned entirely by the gas company, and was designated as tax Lots 1001 and 1002 (now 7501). In 1916, the Consolidated Gas Company sold the whole block to the Merchants Refrigerating Company, and the following year the new owner constructed a ten-story warehouse with basement, covering the entire block. The property purchased by the Able Empire Group in 1982, and by the Tenth Avenue Mini Storage Associates in 1984. This building, although somewhat modified since its initial construction, still stands on the lot in its original location. Today it is occupied by condominiums and a mini storage facility.

Area 5 (Block 691, bounded by West 19th and West 20th Streets, 10th Avenue and the Hudson River Bulkhead) is comprised of modern tax Lots 1 and 11. After the gas holders were demolished, tax Lot 1 contained a small office building at its northwest corner while the rest of the property was vacant and used as a "house wrecker's yard." The eastern portion of tax Lot 11 was used for the Department of Street Cleaning's wagon yard. The American Red Cross had a structure along the 11th Avenue side of the block during the 1920s, covering parts of tax Lots 1 and 11. In 1929, the YMCA of New York purchased tax Lot 1, and the following year constructed an eight-story building (with basement) for use of its members (after the American Red Cross building was razed). This building, with minor alterations, remains on the lot in its original location today. Tax Lot 11 has been vacant since the American Red Cross building was demolished, and currently is used as a parking lot.

Area 6 (portion of Block 662, opposite of West 16th Street and west of Route 9A) is part of a paved pedestrian and bike path along the Hudson River bulkhead and Chelsea Piers Sports and Entertainment Complex. The original western ends of Blocks 662, 688, 689, 690, and 691 are now under the current alignment of Route 9A or were removed during waterfront modifications, which were laid out in the first decades of the twentieth century. By the 1930s, this roadway also supported the elevated Miller Highway, which was demolished in the early 1970s.

2.4 Site Operations

The processes and practices described in the following section are drawn from Harper's New Monthly Magazine (1862), historic maps, Con Edison records, Collins (1934), Hartgen (n.d.), Public Service Commission (PSC) Records, Brown's Directories, Eng (1985), Hornby (1911), Alrich (1934), Downing (1934), Stewart (1958), and EEI (1984), as described in the Parsons SHR.

The West 18th Street Gas Works manufactured coal gas from 1834 to the early 1900s (Collins, 1934 and Department of Docks and Ferries 1903 through 1905). Anthracite coal was delivered by barge or lighter to the Hudson River waterfront piers, and then by cart to the plant itself, located in Area 3. The coal was stored in a "coal house" at the western end of the block. Condensers and Scrubbers were located at the eastern end of the Retort House. Raw gas was piped to and went through the Purifying House, located at the far eastern end of the block. From the Purifying House the gas went to the holders at various locations in Areas 1, 2, and 5, for storage before being distributed to customers. At its peak, the West 18th Street Gas Works had 11 gas holders, with a combined capacity of approximately 3,500,000 cubic feet (PSC, 1908).

The Retort House was constructed of brick, and consisted of a furnace supporting a series of clay retorts on brick benches. Each bench contained 15 retorts, and there were 64 benches, for a total of 960 retorts (Perris and Company, 1859 and Harper's, 1862). The retorts were heated by lighting fires below them, which in turn heated the coal inside the retorts in the absence of ambient air. The retort gas was passed through a series of processes to recover byproducts and impurities. Once the raw gas was driven from the coal, it was drawn from the retort and through a hydraulic main located on the roof of the Retort House. The hydraulic main was sealed and contained water, which permitted steam, tar vapors, and some ammonia compounds to settle out before continuing to the condensers. From the hydraulic main, the gas traveled to the air condenser, located immediately east of the Retort House. The air condenser cooled the gas by indirect contact cooling water to remove heavy tars and water vapor. Tar byproducts were siphoned off at this stage, for reuse or sale. The gas was then fed through a second, water-cooled condenser, located just east of the air condenser, to remove additional impurities. Next, the gas flowed through an exhauster, situated south of the Condensers, which blew the gas through the Scrubber or Washer (located east of the Condensers) to remove ammonia and some sulfur. The Scrubber was a cylindrical structure filled with coke; materials in the Scrubber were sprayed with water, and these water soluble impurities settled to the bottom of the chamber, where they were collected (Harper's, 1862 and Hartgen, n.d.).

The final stage in the removal of impurities was the removal of sulfur. Sulfur was removed from the gas stream by the formation of calcium sulfate as the coal gas was passed through lime purifiers. The purifiers consisted of square tanks (eastern side of Area 3, see Figure 2) in which

stacked trays containing damp, powdered lime, were situated. The gas was forced up from beneath the trays, in the process removing sulfurous compounds like hydrogen sulfide through reaction with the calcium in the lime. At the West 18th Street Gas Works, a fresh lime house was attached to one side of the purifying house, while a foul lime house was located at the other end. The spent lime could then be sold for fertilizer (Harper's 1862, and Hartgen, n.d.).

From the Purifiers, the gas was metered and then passed into a storage holder, ready for distribution to the customers. The West 18th Street Gas Works began with only two gas holders (in Area 1), but by the turn of the twentieth century, there were eleven holders on four contiguous blocks.

A complete record of by-product quantities, reuse, sale, and disposal is not available. PSC reports began publication in 1908, after the West 18th Street Gas Works had essentially stopped producing gas. During the period that the West 18th Street Gas Works operated, there were no known published reports detailing byproduct output and sales. Typical residuals and byproducts produced at an MGP may include coal tar, ammonia, purifier wastes (calcium sulfate and/or spent ferric oxide impregnated wood chips), sulfur, coal ash and cinders. The disposal history of purifier residuals is unknown. The coal tar was sold as a byproduct, as was the sulfur. The coal tars could be distilled to produce ammonia liquors, light oils, creosote oils, anthracene oils, and pitch. The light oils could be further rectified yielding benzol, solvent naphtha, carbolic acid, and anthracene (Collins, 1934).

2.5 Previous/Other Investigations

Prior to and independent of the SCS, site investigations were performed at several of the present-day properties within the former MGP. The results of these investigations are summarized below by property location and or owner.

2.5.1 Site Investigation of Block 689, Lot 17

MTA performed a Phase I and Limited Phase II environmental site investigation in 1998 on Block 689, Lot 17 (MTA, 1998b and MTA, 1998c), AKRF prepared a summary document, *Soil Sample Summary and Result for Soil Safe Criteria* in April 1999 (AKRF, 1999), and Blasland, Bouck and Lee, Inc (BB&L) prepared a *Remediation Work Plan* in November, 1999 (BB&L, 1999). This investigation was conducted to characterize the subsurface soil quality and determine acceptance of the soil by a facility in New Jersey (Soil Safe) where soil excavated during planned future site development would be disposed. Towards this goal, paired soil borings were excavated at each of 18 locations to depths of approximately 20 feet below ground surface (ft bgs). During the investigation, subsurface soil samples were collected from two depth intervals (0 to 8 ft bgs and 8 to 20 ft bgs) from each boring. As ground water generally occurred

at 8 to 11 ft bgs, this sampling scheme was developed to evaluate soil quality above the water table and that below the water table. The soil recovered from each interval for each soil boring pair was composited and analyzed for metals using the Toxicity Characteristics Leaching Procedure (TCLP), polychlorinated biphenyls (PCBs), pesticides, VOCs, and total petroleum hydrocarbon (TPH). The sample interval was specific for the analysis being performed. The soil analytical results were compared to the appropriate New Jersey waste acceptance thresholds, Resource Recovery and Conservation Act (RCRA) toxicity criteria for waste acceptance purposes. The analytical results were also compared to NYSDEC RSCOs.

The findings of the investigation are summarized below:

- Total VOCs were detected at concentrations above the disposal facility acceptance criteria of 500 milligrams per kilogram (mg/kg) total in 8 of 66 composite samples;
- TPH concentrations exceeded New Jersey 30,000 parts per million (ppm) threshold for TPH in only 1 of 139 composite samples;
- No hazardous waste for TCLP Metals;
- PCBs and pesticides were not detected at above the disposal facility acceptance criteria;
- A UST was identified at one soil boring location in the central portion of Block 689;
- VOCs and polycyclic aromatic hydrocarbons (PAHs) were detected in soils across the property;
- VOCs from 0 to 8 ft bgs did not exceed NYSDEC RSCOs for individual compounds detected;
- One PAH sample from 0 to 8 ft bgs exceeded the NYSDEC RSCO for Total SVOCs of 500 mg/kg. This sample was collected from a soil boring pair located on the western end of Block 689;
- Total VOC concentrations exceeded the NYSDEC RSCO for Total VOCs of 10 mg/kg in samples collected from 8 to 20 ft bgs in seven soil boring pairs. The borings were primarily located in the central and western portions of Block 689;
- Total PAHs were detected at concentrations exceeding the NYSDEC RSCO for Total SVOCs of 500 mg/kg in three composite samples collected from between 8 and 20 ft bgs in three soil boring pairs located in the central and western portions of Block 689;
- Worldwide Geosciences, Inc. performed an interpretive characterization of TPH results from 71 samples collected on the eastern portion of Block 689 to fingerprint the source materials contained in the soil samples. The conclusion was that 56 of the 58 interpretable chromatograms were indicative of coal tar or MGP residues; and

-
- BTEX and PAHs were detected in all three groundwater samples collected on Block 689. The highest BTEX and PAH concentrations exceeded NYSDEC AWQSGVs for Class GA water in one groundwater monitoring well located near the northwest corner of Block 689. Benzene and naphthalene exceeded the standards in one monitoring well located at the eastern end of the site, and only benzene exceeded the standards in one well located near the southwest corner of the Block.

2.5.2 Geotechnical Investigation Block 689, Lot 17

In July 1998, Melick-Tully and Associates, P.C. (MTA) conducted a geotechnical investigation and limited Phase II environmental investigation at the property. The geotechnical engineering investigation was performed in support of design of a distribution center, which was planned for construction at the property at Block 689, Lot 17 (i.e., that portion of Area 3, the entire block bounded by West 17th and West 18th Streets and 10th and Route 9A).

The Phase II investigation was performed to assess soil quality to evaluate disposal options for soil that would ultimately be excavated as part of the site redevelopment. Two soil samples were collected from each of the intervals 0 to 5 ft bgs, 8 to 12 ft bgs, and 15 to 20 ft bgs. The samples were analyzed for the full suite RCRA constituents using the TCLP. The results of these investigations are summarized below.

Geotechnical Investigation Findings:

As presented in the report, the subsurface conditions encountered at the site consisted of the strata described listed below, presented in order of increasing depth:

Surface Materials: Surface materials at the site generally consisted of a thin (less than six inches) asphalt/stone base course layer. The asphalt thickness is generally on the order of two to three inches in thickness. The "stone" base course is variable, consisting of varying mixtures of clean stone, cinders, and silty sand.

Fill: Underlying the surface materials is a layer of a heterogeneous mixture of native and non-indigenous anthropogenic material ranging in thickness from roughly 20 feet in the eastern portions of the site to roughly 40 feet in the western portions. The fill consists of a heterogeneous mixture of silt, sand, gravel, and cinders, with frequent obstructions, particularly in the upper five to ten feet. Based on fragments collected in the split spoons or captured on the auger flights, the obstructions appeared to consist primarily of concrete and brick rubble. Frequent intermixing of organic silt was also encountered in the lower portions of the fill.

The fill is highly variable in consistency, ranging from very loose to very dense, although the higher Standard Penetrations Test results (i.e., N-values) appeared to be mostly due to the presence of obstructions.

Corrosivity testing results of two fill samples indicated moderately corrosive resistivity levels and moderately corrosive levels of sulfates. Sulfides, redox potential, and pH indicate low corrosivity potential.

Organic Silt: A layer of very soft to stiff clayey organic silt is present below the fill across most of the site, although several of the borings in the eastern portion of the site did not encounter any organic silt. One Atterberg Limits test was conducted on a sample of the organic silt indicated that this lithology was of low to moderate plasticity with a plastic limit of 19 percent and a liquid limit of 37 percent.

The organic silt is generally five to ten feet thick, ranging occasionally as thick as 15 to 20 feet. The bottom of the organic silt generally ranges in depth from approximately 20 to 25 feet below the ground surface in the eastern portion of the site to approximately 50 feet below the ground surface in the western portion.

Silty Sand: Silty sand typically underlies the organic silt (or the fill where organic silt is not present) and extends to the top of bedrock. The sand is generally loose to medium dense in consistency and is stratified with varying amounts of silt and generally low percentages of gravel. Occasional zones were encountered where the percentage of gravel in this stratum exceed the percentage of sand.

Based on the behavior of the drill rig while conducting the explorations, cobbles and/or boulders were believed to be present throughout this stratum, particularly below a depth of approximately 70 to 80 feet. High N-values reported at these depths are believed to be a result of cobbles/and or boulders.

Interbedded Clayey Silt: Discontinuous layers of medium to stiff clayey silt with varying amounts of fine sand were encountered at varying depths in many of the test borings within and above the silty sand stratum. The encountered thickness of these interbedded layers generally ranged from 5 to 15 feet.

Schist Bedrock: - Schist bedrock underlies the silty sand stratum at depths ranging from approximately 60 to 100 feet below the ground surface. The top of rock is generally shallowest in the eastern portion of the site (at depths ranging from 60 to 70 feet below the ground surface) and deepest in the central portion of the site (at depths ranging from 90 to 100 feet below the ground surface).

The upper one to five feet of the schist bedrock is generally highly to completely weathered and was occasionally penetrated several feet with hollow stem auger drilling equipment. Generally, below this depth, the schist is slightly to moderately weathered with a relatively high Rock Quality Designation, RQD (generally above 70 to 80 percent). At one location, however, in the center of the site (Boring B-13), the boring was advanced approximately 20 feet into the rock using hollow stem augers without obtaining refusal.

Phase II Findings:

- Groundwater was typically encountered at depths ranging from approximately 8 to 11 ft bgs. Due to the close proximity of the Site to the Hudson River, MTA concluded that tidal fluctuations in groundwater depths should be anticipated, particularly in the western portion of the Site;
- Groundwater table is relatively flat and flows to the west-southwest;
- The permeability of the soil that comprise the water table aquifer were estimated to range from 0.1 to 1.3 ft per day;
- No analytes were detected at concentrations that exceeded their respective RCRA Toxicity Criteria (TC);
- VOC and or SVOCs were detected in groundwater at concentrations that exceeded their respective NYSDEC AWQSGVs in monitoring wells MW-2, located in the central western-most portion of Block 689; and
- Naphthalene was detected in groundwater at a concentration that exceeded its NYSDEC AWQSGVs in monitoring wells MW-3, located in the central eastern-most portion of Block 689.

2.5.3 Site Investigation Tax Block 690, Lot 12

On October 16 and 17, 2002, Blasland, Bouck, and Lee, Inc. (BB&L, 2002) conducted a preliminary site investigation at Block 690, Lot 12. The subject of the investigation was the property that comprises the western-most portion of the block, which is located between West 18th and 19th Streets and between 10th Avenue and Route 9A.

The investigation entailed advancing eight soil borings and four temporary well points. Material indicative of urban fill was encountered to a depth of 4 ft bgs. Native materials included gravelly sands, sandy silts, and clayey sands and were described intermittently between 4 feet and 16 ft bgs. Groundwater was encountered at 7 feet to 8 ft bgs. Slight to strong odors were detected at all locations between 2 and 12 ft bgs. NAPLs were not observed in any borings.

BB&L concluded that the types of VOCs detected during the investigation (soil and groundwater) were indicative of gasoline/kerosene products, and MGP by-product tars. The highest benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations were detected adjacent to and down gradient of a series of former underground storage tanks (USTs) used to store petroleum products, including gasoline and fuel oils and north of the MGP Retort House located on Block 689, due south of the property investigated.

BB&L also concluded that the semi-volatile organic compounds detected in both soil and groundwater (including phenolic compounds and PAHs) was indicative of MGP-related tars. The highest PAH concentrations were detected in the same soil and groundwater samples, as were the BTEX compounds.

BB&L recommended supplemental investigation activities, including the installation of borings to delineate the horizontal and vertical extent of BTEX and PAH impacted soil, to determine the presence of the clay layer, and to confirm that NAPLs are not present at the property. BB&L also recommended the installation of additional monitoring wells to delineate the horizontal and vertical extent of BTEX, phenolic and PAH compounds, to evaluate groundwater flow direction, and to evaluate hydrogeologic properties.

2.5.4 Site Investigation Tax Block 715, Lot 59

The building that occupies this property has been utilized as a parking garage since its construction in 1915. Prior to that, the property contained two 85-foot diameter gas holders, which were used to store gas produced by the West 18th Street Gas Works that operated along the west side of 10th Avenue. In 1993, six USTs that were used as part of the garage operations were removed from this property. The USTs included five 550-gallon tanks used to store gasoline located under the northeast corner of the garage building and one 4,000-gallon tank used to store diesel fuel was located along the west side of the building. No evidence of soil contamination was reportedly observed during the tank removals.

In early 2000, Langan Engineering (Langan) conducted a Phase I Environmental Site Assessment (ESA). Based on the findings from this assessment, Langan identified several areas of concern, which included the locations of the former USTs and a hydraulic lift system.

In June 2001, during building renovation activities being performed by Verizon, the then and current building tenant, petroleum contaminated subsurface soil was encountered below the concrete building foundation slab. The soil was screened for total VOCs using an organic vapor meter equipped with a photoionization detector (PID). Total VOCs measured with the PID ranged in concentration from 16 ppm to 634 ppm. In addition, samples were submitted to

Worldwide Geosciences, Inc of Houston, Texas for product fingerprint analysis. The result of the fingerprint determined the source of the contamination to be gasoline.

In response to this finding, Verizon notified the NYSDEC, which assigned Spill No. 01-03363 to the property. The petroleum-contaminated soil was excavated at that time.

Based on the PID screening results, EnviroTrac sampled the contaminated soil, on behalf of the property owner. The analytical results for these samples showed that the concentrations of several VOCs and SVOCs exceeded their respective NYSDEC RSCOs.

In August 2001, EnviroTrac performed a Subsurface Investigation at the property. During the investigation 12 soil borings were advanced using GeoProbe drilling methods. One soil and one groundwater sample was collected from each boring. The samples were analyzed for VOCs and SVOCs.

The result of this investigation showed that VOCs and SVOCs were detected at concentrations above their respective NYSDEC RSCOs in 9 of the 12 borings. The VOCs detected at elevated concentrations included benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX), isopropylbenzene, naphthalene, n-propylbenzene, methyl tert-butyl ether (MTBE) and 1,2,4- and 1,3,5-trimethylbenzenes. Two samples contained total VOCs at concentrations above the NYSDEC RSCO for total VOCs of 10 ppm. One or more of six SVOCs, all PAHs, were detected at elevated concentrations in eight of the 12 soil samples. Total SVOCs concentrations exceeded the NYSDEC RSCO for total SVOCs of 500 ppm in soil from two soil borings.

All groundwater samples contained VOCs at concentrations that exceeded their respective NYSDEC AWQSGVs. The VOCs detected at elevated concentrations at least once, were BTEX; isopropylbenzene; 1,2,4- and 1,3,5-trimethylbenzenes; n-propylbenzene and naphthalene. Benzene was detected at elevated concentrations in all groundwater samples.

Based on the findings of the investigation discussed above, an additional 60 cubic yards of contaminated soil were excavated from the property and disposed off-site.

Subsequently, eight permanent groundwater monitoring wells were installed at the property. Sampling of the wells was performed by EnviroTrac periodically between 2002 and May 2005. Analytical results of these sampling events, were similar to those previously detected.

2.5.5 Route 9A Reconstruction Project

The western end of the West 18th Street Gas Works was sampled by AKRF, Inc. as part of the Route 9A reconstruction project (AKRF et al, 1994). Six test borings were drilled between the

former MGP and the Hudson River and piers, three during Phase 1A and three during Phase 1B of the reconstruction. One monitoring well was installed two blocks south of the former MGP and one well was installed approximately two blocks north of the former MGP during Phase 1A. Analytical results for samples collected from these locations, which were all in the vicinity of the former MGP, indicated the following:

Soil

Heavy metals and PAHs were detected in most soil samples at concentrations below Extraction Procedure (EP) toxicity criteria. Total lead was detected in Site soils below the EP toxicity criteria and below NYSDEC RSCOs. VOCs, Cyanide, and TPH were detected sporadically at low concentrations in limited areas of the Site.

Groundwater

A groundwater sample from a monitoring well located mid-block along West 16th Street contained BTEX and PAHs concentrations of 1.0 mg/L and 0.063 mg/L, respectively. An additional groundwater sample collected from a monitoring well located two blocks south of the Site contained BTEX and PAHs concentrations of 132 mg/L and 63 mg/L respectively. This sample also exhibited the presence of many heavy metals.

2.6 Environmental Records Search

Files at Con Edison and the Department of City Planning were searched for records of additional site history and information on documented contaminant release sites. A freedom-of-information request was filed with the NYSDEC for information on potential waste sites (e.g., petroleum spill sites, hazardous waste sites, etc.) within and in the vicinity of the investigation area.

Summary Documented Spills in the Vicinity of the Site

Twenty-three petroleum spills were within approximately one-quarter mile of the Site, and an additional thirty petroleum spills were within approximately one-quarter to one-half mile of the Site, as reported in the Leaking Storage Tank Incident Reports (LTANKS) section of the environmental database search. The location of and distance/direction from the Site the LTANKS are as follows:

Equal/Higher Elevation	Address	Distance (mile)/Direction from the Site
528 West 19 th Street/Manhattan	528 West 19 th Street	0-1/8 ESE
555 West 17 th Street/Manhattan	555 West 17 th Street	0-1/8 SSE
501-513 West 19 th Street	513 West 19 th Street	0-1/8 ESE
Mendon Leasing Corporation	515 West 18 th Street	0-1/8 SE
GETTY 58542	152 Tenth Avenue	0-1/8 E
152-156 Tenth Avenue/Manhattan	152-156 Tenth Avenue	0-1/8 E
535 East 21 st Street	535 East 21 st Street	1/8-1/4 NE
507 West 21 st Street	507 West 21 st Street	1/8-1/4 ENE
Pier 57- 11 th Avenue	Pier 57/11 th Avenue	1/8-1/4 S
NYC Transit Authority/Manhattan	West 15 th Street/ 11 th Avenue	1/8-1/4 S
193 10 th Avenue	193 10 th Avenue	1/8-1/4 ENE
Pier 57- Westside Highway	Pier 57/17 th Street	1/8-1/4 S
Auto Care West	458-460 West 18 th Street	1/8-1/4 SE
19 11 th Avenue/NYCTA-Hudson	19 11 th Ave	1/8-1/4 S
11 Eleventh Avenue	11 Eleventh Avenue	1/8-1/4 S
Freedman Cutouts	444 West 17 th Street	1/8-1/4 SE
562 West 23 rd Street/Manhattan	562 West 23 rd Street	1/8-1/4 NNE
Edison Parking Garage	527 West 23 rd Street	1/8-1/4 NE
Mendon Leasing Corporation	527 West 23 rd Street	1/8-1/4 NE
Tank failed Mendon Leasing	527 West 23 rd Street	1/8-1/4 NE
Menden Leasing	523 West 23 rd Street	1/8-1/4 NE
505 West 14 th Street	505 West 14 th Street/ 10 th Ave	1/8-1/4 S
501 West 14 th Street/ SUNOCO	501 West 14 th Street	1/8-1/4 S

Additional information on spills and releases is presented in the Site History Report. It is noted that all LTANKS sites are located to the north, south, or east of the former MGP site. As the predominant groundwater flow direction in the fill unit was determined to be towards the west/southwest, many of these spills are upgradient of the Site.

2.7 Regional Geology/Hydrogeology

A U.S.G.S Quadrangle Map indicating the location of the Site is included as Figure 1. The geology beneath the site is based on data collected from two borings drilled as part of the Route 9A Reconstruction Project (AKRF, 1994).

According to the subsurface conditions encountered in the above-referenced borings, fill material is ubiquitous and consists of dredged river sediment, coal plant refuse, and construction debris in thickness of approximately 3 to 25 feet. Pockets of silt, sand and clay are found between the fill and bedrock (AKRF, 1994). Typical subsurface soils (fill) consisted of brown fine to coarse sand, with traces of silt and fine to medium gravel, brick, and ash fill to a depth of 13 ft bgs. Water was encountered at approximately 5 to 6 ft bgs. Fill materials encountered consisted of black slag-like material with brick-like material and glass from near the surface to approximately 3 ft bgs. Below the fill was light brown sand with silt and some gravel. Black-brown coarse to fine sand with abundant rock fragments and slight odor was encountered at approximately 9 ft bgs. Water was encountered at approximately 6 ft bgs. AKRF reports that in general, the overburden materials in the area consist of up to 35 feet of construction debris that may include brick, weathered schist, sand, silt, clay, stone, and wood above a 10 to 40 foot thick layer of organic silt above a layer of up to 50 feet of glacial till (AKRF, 1994).

The Hudson River forms the western boundary of the Site as it exists today. The Hudson River is a Class I surface water body adjacent to the West 18th Street Site (NYSDEC, 2001). Manhattan's drinking water is obtained from reservoirs located greater than 25 miles north of the city. No drinking water supply wells were identified in the vicinity of the Site (EDR, 2002 and NYSDOH, 1982). Old stream channels and buried utilities may act as preferential pathways and exert some influence on the occurrence and movement of shallow groundwater in the region. Depths to groundwater at the western end of the former West 18th Street Gas Works are approximately 5 to 6 ft bgs (AKRF, 1994), and depths to groundwater on Block 689 are approximately 8 to 11 ft bgs (MTA, 1998a). It is noted that differences in groundwater depths between those measured by AKRF and MTA likely reflect seasonal and daily changes in ground water elevations in response to seasonal and daily tidal fluctuations in water elevations in the Hudson River.

3 SITE CHARACTERIZATION SCOPE OF WORK

This section provides a description of the methodologies used during the field investigation of the West 18th Street former MGP Site. The location and number of samples taken, along with the corresponding analytical parameters, are presented in the following sections. Descriptions of all field activities conducted during the SCS are presented by field task and/or environmental media. The locations of the SCS samples are shown on Figure 4. Specific tasks performed during the SCS consisted of the following:

- Underground utility clearance and geophysical survey;
- Community air monitoring;
- Subsurface soil sampling;
- Test pit excavation;
- Soil boring installation;
- Monitoring well installation and development;
- Groundwater sampling;
- Soil and groundwater analysis;
- Quality assurance/quality control sampling (QA/QC);
- Investigation residuals management; and
- Site survey.

Due to delays posed by the owners of various properties, associated access restrictions, subcontractor availability and permit constraints, the field work was executed in a non-contiguous manner, beginning in April 2004 and extending until December 2005.

Ambient air, indoor air, and subsurface gas sampling was conducted at two properties during the SCS. The first was within Area 2, at Block 690, Lot 46. The second was conducted within Area 5, at Block 691, Lot 1. Separate reports were prepared and submitted independently for each investigation, and these activities are not discussed further in this SCS Report.

3.1 Underground Utility Clearance

Prior to initiation of intrusive investigation activities, sample locations were cleared in accordance with Con Edison's utility clearance procedures. Due to the highly developed nature of the Site and a review of available utility plates, subsurface utilities including natural gas, electric, and steam lines, telephone lines as well as fiber optic cables, water lines, and sewers, were located. The New York City "One Call" organization was contacted to request utility mark outs in accordance with Code 753, a minimum of three working days prior to start of the fieldwork. All mark outs by Code 753 participating companies were complete in the specified timeframes in advance of all field intrusive activities. Renewal calls were made in accordance with the timeframes allowed in the regulations.

A geophysical survey was also conducted using ground penetrating radar, electromagnetic conductivity, a magnetometer, and a pipe locator within an approximate 10-foot radius of each of the proposed sample locations (whenever possible). Manholes and other utility boxes (e.g., gas valve box) were opened and inspected in order to confirm or ascertain the depth to and orientation of the subsurface utilities. This non-intrusive investigation provided an added level of assurance with respect to confirming utilities marked out by the New York City One Call group, to trace utilities onto the private properties, and/or to identify anomalous areas where private utilities or other unknowns may be present.

As an additional precaution to ensure worker safety and to prevent damage to potential subsurface utilities, proposed boring locations were cleared by non-mechanical means (e.g., hand digging, and vacuum extraction). Soil was excavated, typically to a maximum of five feet below grade, by non-mechanical means to physically confirm the presence/absence of subsurface utilities at each of the proposed boring locations. If proposed sample locations were determined to be too close to subsurface utilities to safely conduct the field investigations, the location was moved to another area to achieve the same investigative objective. Alternatively, special precautions were taken (e.g., coordinating with Con Edison's Gas Operations Group and exposing the utility) when working in close proximity to a high pressure gas main. Concrete and asphalt materials were saw cut prior to excavation. Soil excavated from the pilot holes was stored on plastic poly sheeting adjacent to the area and then used as backfill. Temporary repairs using asphalt cold patch, concrete, and/or steel road plates were made as a means to secure the openings until in-kind, final repairs to the surface could be made.

3.2 Community Air Monitoring

The site-specific Health and Safety Plan for the SCS field investigation includes a Community Air Monitoring Program (CAMP) that was implemented during all ground intrusive activities. Community air monitoring was conducted using real-time, hand-held monitoring instruments (Mini-RAE organic vapor meter equipped with PID for volatile organic compounds and a MIE DataRam for airborne particulates). Two sets of air monitoring equipment were calibrated daily and set up at upwind and downwind stations near each invasive activity. If concurrent invasive activities were in close proximity, the two stations were sufficient to monitor the ambient air. If the invasive activities were distant, two sets of equipment were utilized for each activity.

3.3 Subsurface Soil Sampling

3.3.1 Exploratory Test Pits

In general, exploratory test pits were used to locate and investigate remnant MGP structures. The primary objectives of the exploratory test pits were to visually inspect and determine the

presence or absence of historic MGP features, such as ring wall structures of former gas holders or the foundations of supporting operational buildings, to identify the presence of MGP-related impacts (such as the presence of non-aqueous phase liquids), and to evaluate subsurface conditions in the vicinity of these structures.

The exploratory test pits were excavated using a backhoe with a qualified OSHA-certified operator. Asphalt surfaces were saw-cut prior to the excavations. Using a bucket attachment on the backhoe, soils were removed in lifts of one to two feet at a time to accurately correlate the soils brought to the surface with the depth from which they were obtained. The exploratory test pit was left open only for the amount of time needed to log and photo-document conditions within the test pit (i.e., sidewalls, presence of ring wall, foundation construction etc.), to physically inspect the excavated materials, screen with a PID, and to collect samples for laboratory analysis. All excavated materials were returned to the test pit and compacted with the backhoe bucket. Temporary patching was installed where necessary to minimize contact with the soil until such time that the final restoration to the surface could be made. In certain instances, the use of steel road plates was required.

3.3.2 Soil Borings

Prior to excavating soil borings, utility clearance was performed at each location in accordance with Con Edison's subsurface utility clearance procedure. Typically, locations were saw cut and shallow soil samples were obtained using a decontaminated steel spoon or a hand auger.

After confirming the absence of subsurface utilities, drilling at each soil boring location was performed using either hollow stem auger (HSA) or direct-push "DP" (e.g., GeoProbeTM) drilling methods. Using these methods soil was continuously sampled from approximately 5 ft bgs (i.e., below the interval excavated by hand during utility clearance) to the final depth. Using HSA methods, soil samples were obtained with a standard 2-inch diameter split-spoon sampler in accordance with the Standard Penetration Test (SPT) Method (ASTM D-1586). The SPT method entails recording the number of blows required to advance the split-spoon sampler the last 12 inches of the split-spoon using a 140 pound weight falling freely for 30 inches. A four-foot long by 2-inch diameter stainless steel macro core sampler containing a clean polyethylene liner was used to collect soil with the DP drilling method.

The retrieved soil was characterized by the field geologist for physical properties including lithology, grain size, and moisture content, and for physical evidence of contamination, including staining, sheen, light non-aqueous phase liquid (LNAPL), dense non-aqueous phase liquid (DNAPL), and/or odors, etc. Each sample was field screened with a PID for Total VOCs immediately upon opening the sampler. Soil was classified in accordance with the Unified Soil

Classification System (USCS). All field observations and measurement were recorded in a bound field notebook.

Based on field screening of the soil cores, soil samples were collected for chemical analysis from each boring, in general accordance with the following sampling strategy:

- (1) From the six-inch interval within the vadose zone that exhibited the strongest evidence of contamination (if any), such as staining, sheen, odors, elevated VOCs based on PID readings, etc.;
- (2) At the soil/water table interface;
- (3) From the 6-inch interval within the saturated zone that exhibited the strongest evidence of contamination (if any), such as staining, sheen, odors, elevated VOCs based on PID readings, etc.;
- (4) From the 6-inch interval above the top of the first low permeability unit encountered (if any) in the soil boring; and/or
- (5) In borings where contamination was apparent based upon field observations, from a 6-inch interval of apparently clean material below contaminated soil (to provide data for vertical delineation).

If there was insufficient sample volume to fill the sample jars for chemical analyses from the 6-inch interval, additional soil was collected from the split-spoon sampler within the same 2-foot interval. Samples for VOCs were collected first.

Samples were transferred from either the split-spoon sampler or macro-core samplers directly to laboratory-supplied sample jars. The jars were sealed, labeled and placed in a cooler containing ice for shipment to Chemtech Laboratories, located in Mountainside, New Jersey for analysis. The coolers were shipped under chain of custody protocols. The samples were analyzed as described in Section 3.6 of this report.

Retrieved drill cuttings were returned to the borehole if not grossly contaminated. Soil cuttings containing free product or staining were containerized in 55-gallon steel drums and managed as described in Section 3.8 of this report. Drums were labeled on a daily basis.

During setup of the drill rig at each location, a polyethylene plastic liner was placed under the working platform of the drill rig to contain any potential spills and drips resulting from equipment failure or leaks of motor oil, hydraulic fluid, and/or diesel fuel. Soil cuttings generated during drilling and soil samples that are not submitted for analysis were placed in DOT-approved 55-gallon drums and handled as described in Section 3.8 of this Report. Once sampling was complete, the borehole was then backfilled and sealed with cement-bentonite grout.

3.4 Monitoring Well Installation and Development

To accommodate each overburden aquifer monitoring well (designated with "A") installation, a soil boring was first completed using a HSA drill rig with 4.25-inch inside diameter (ID) augers. After advancing a soil boring to the desired depth, a well was installed in the boring. All wells were constructed using 2-inch diameter polyvinyl chloride (PVC) casing and 10-foot long 20-slot screen. The screen was installed such that it straddled the water table. In addition, a two-foot long sump for the collection of DNAPL, if any was encountered during drilling of the boring, was installed at the bottom of the well screen.

Semi-confined or confined monitoring wells (designated with a "B") were installed below the low permeability silty/clay unit. In order to prevent vertical migration of contamination from the vadose zone to deeper intervals via the soil boring/monitoring well, a 6-inch diameter steel casing was installed in the borehole to a depth of at least over two feet into the clay. The annulus between the steel casing and borehole was filled with grout from the base to grade using a tremie pipe. The grout was allowed to cure for a minimum of 24 hours prior to resuming drilling to final well depth inside the steel casing. The monitoring well construction was similar to that used for the overburden monitoring wells, with the exception that the top of the screen was set within one foot of the bottom of the low permeability unit.

Following well installation and prior to sampling, new wells were developed using surging and pumping. The wells were pumped at low flow rates to minimize the volume of development water generated, while also ensuring that they are sufficiently developed to achieve the target water quality. Development was not initiated sooner than 24 hours after well installation. Prior to development, the wells were checked for presence of LNAPL and/or DNAPL using an electronic oil/water interface probe. Wells that contained LNAPL and/or DNAPL greater than 1/16 inch were not developed.

Groundwater generated during well development was performed until a minimum of three well volumes was evacuated from each well and the discharge water was reasonably free of visible sediment, the field parameters have stabilized. Development was continued up to a maximum of two hours in efforts to achieve turbidity measurements below the NYSDEC goal of 50 Nephelometric Turbidity Units (NTUs). The well development observations and field measurements were recorded in a bound field logbook and well development log form.

All monitoring wells were developed in September 2005. The wells were pumped with a submersible pump and dedicated polyethylene tubing at low flows to minimize the volume of development water generated, while also ensuring sufficient development to achieve the target water quality. Properly decontaminated and/or dedicated equipment was used during development. Prior to development, the wells were checked for LNAPL and/or DNAPL.

Field parameters monitored during well development included temperature, pH, conductivity, and turbidity. Parameters were considered stabilized upon successive readings for temperature within 0.1°C, pH levels within 0.1 standard unit (S.U.), conductivity levels within 5 percent, and turbidity levels within 10 percent (for values greater than 1 NTU).

3.5 Groundwater Sampling

Prior to groundwater sampling an electronic oil/water interface probe was used at each well to measure static water levels, depth to water, and depth to the well bottom (to check for possible siltation). The oil/water interface probe was also used to confirm the absence of measurable separate-phase product. In accordance with the SCS Work Plan, groundwater samples were not collected from any wells containing of LNAPL and/or DNAPL of greater than 1/16 inch.

The well diameter and the length of water column in each well were used to calculate the volume of water in the well. A peristaltic pump and dedicated polyethylene tubing were used during sampling to minimize turbidity and purge water volumes. Using this method, water was drawn through the well screen from the formation at a flow rate that was equal to or less than the natural well recharge rate. A minimum of one well volume was required to be removed with the low flow method, assuming stabilization of field parameters was achieved, as the standing water column in the well above the screen zone was not drawn into the screen and removed, therefore, need not be purged from the well. Field parameters consisted of pH, temperature, conductivity, and turbidity. Additional parameters that were recorded in the field at selected wells included oxidation-reduction potential (ORP) and dissolved oxygen (DO). Parameter stabilization is described in the USEPA Standard Operating Procedure (SOP) #GW 0001.

Purge water and other IDW were containerized in DOT-approved 55-gallon drums and disposed off-site at a permitted waste disposal facility, as described Section 3.8 of this report.

After purging was complete, groundwater samples were collected directly from the polyethylene tubing discharge into laboratory-supplied sampled bottles containing appropriate preserving agents. Collected samples were stored in iced coolers and shipped under chain-of-custody procedures to the laboratory for analysis.

3.6 Soil and Groundwater Analyses

The soil and groundwater samples collected during the SCS were analyzed for:

- VOCs by USEPA SW-846 Method 8260B;
- SVOCs by USEPA SW-846 Method 8260C;
- Metals (Priority Pollutant List – PPL) by USEPA SW-846 Method 6010B and 7471A;
- Total and Amenable Cyanide by USEPA SW-846 Method 9012A;

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- Herbicides by USEPA SW-846 Method 8151;
 - Pesticides by USEPA SW-846 Method 8081A; and
 - PCBs by USEPA Method 8082.

All soil, groundwater, and waste classification samples were analyzed by Chemtech Laboratories of Mountainside, New Jersey in accordance with the NYSDOH's Analytical Services Protocol (ASP). Selected soil samples were also subject to pesticides, polychlorinated biphenyls (PCBs) and forensics analysis. Pesticides and PCBs were analyzed using USEPA Methods 9010 and 9012A, respectively. Forensics analysis was performed by Meta Environmental, located in Watertown, MA. The forensics analysis entailed solvent extraction of the samples, followed by analysis of the extractant fluid by gas chromatography with a flame ionization detector (GC/FID). The resulting chromatogram was then interpreted by comparisons to a library of chromatograms of known source materials.

3.7 Quality Assurance / Quality Control

Data quality objectives are qualitative and quantitative criteria, which specify the quality of data required to the objectives outlined in Section 1.2 of this report. All analytical data were validated independently by TRC. The review criteria used for the SC investigation data are from following United States Environmental Protection Agency, Region 2 documents:

- Standard Operating Procedure (SOP) Number HW-24, Revision 1, June 1999, Validating Volatile Organic Compounds by SW-846 Method 8260B;
- SOP Number HW-22, Revision 2, June 2001, Validating Semi-Volatile Organic Compounds by SW-846 Method 8270;
- SOP Number 23B, Revision 1.0, May 2002, Validating PCB Compounds by SW-846 Method 8082; and
- SOP Number HW-2, Revision 11, January 1992, Evaluation of Metals Data for the CLP Program.

Data usability summary reports were prepared and are included in Appendix B of this Report.

3.8 IDW Management

The IDW generated during this SCS was managed and properly classified, transported, and disposed of at a pre-approved, licensed off-site facility. IDW was contained in DOT-approved 55-gallon drums. Drums containing IDW were labeled at the end of each day with the date, contents, contact information, job name/number, location origin, and drum count number.

Four types of IDW were generated as listed below.

-
- Concrete and asphalt;
 - Soil cuttings;
 - Aqueous wastes (decontamination fluids, well development and purge groundwater); and
 - Plastic/personal protective equipment/bottleware/miscellaneous waste.

Concrete and asphalt was placed in 55-gallon drums and disposed of as a non-DOT regulated non-hazardous waste. PPE, used bottle-ware, and miscellaneous waste (such as plastic used for the staging of soil from test pits) were disposed of in 55-gallon steel drums as non-DOT regulated non-hazardous waste. Soil cuttings and aqueous wastes were managed separately in 55-gallon drums, sampled, and chemically analyzed for Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds, TCLP semi-volatile organic compounds, TCLP metals, RCRA Characteristics, and PCBs.

The drums were transported by Clean Earth of New Jersey, Inc., a licensed, Con Edison-approved waste hauler. The drums were disposed at properly licensed, permitted and Con Edison-approved disposal facility.

3.9 Surveying

The locations of all soil borings, test pits and groundwater monitoring wells were surveyed by a NYS-licensed surveyor. Other Site and proximal features, such as building corners, streets, etc., were also surveyed for purposes of establishing a base map for the SCS field investigation project. Horizontal locations were measured to an accuracy of 0.1-foot. Elevations were measured to an accuracy of 0.01-foot, and included the top of well casing and ground surface elevations. All horizontal coordinates were surveyed using the New York State Coordinate System (East), North American Datum (NAD) 83, as derived from the global positioning system (GPS). All vertical datum are based upon the North American Vertical Datum (NAVD) 88, as derived from GPS.

3.10 Site Restoration

All Areas of the Site properties that were disturbed by the SCS field investigation activities were restored to the satisfaction of the property owners.

3.11 Summary of Changes from the Approved SCS Work Plan

One test pit (TP-1) was planned in Area 1 across the ring walls of the two former gas holders in this portion of the Site. Due to the volume of vehicular traffic and parking in this area, a less intrusive approach was taken. Two smaller test pits (TP-1 and TP-1B) were completed manually based upon scaled drawings and field observations made during the utility clearance procedure

implementation. Brick structures consistent with remnants of ring walls were encountered in both test pits.

For all of the borings installed to a depth below a low permeability unit in order to achieve a target depth of 100 ft bgs or top of bedrock, whichever came first, the sampling strategy in the original work plan was modified to collect an additional sample directly below the bottom of the low permeability unit and at the bottom of each boring. Additional samples were collected at Con Edison's discretion to provide additional data in determining the horizontal and vertical extent of impacts.

Due to the presence of a multiple utility vaults and subsurface utilities, exploratory test pit TP-5 was deleted from the program.

The confined aquifer monitoring well MW-40B was deleted from the program based on the field observations that the confining unit was continuous/semi-continuous down to bedrock, and that there was no observed confined aquifer at the soil boring location.

Additional soil borings (SB-53, SB-54 and SB-55) were added to the field activities when Con Edison gained access to the building on West 19th Street (Block 690, Lot 42). The boring locations were advanced using direct push drilling techniques due to limited overhead clearance. As such, blow counts and SPT could not be recorded for the soil boring locations in this Area.

Due to overhead clearance constraints, all soil borings in Area 1 were completed using direct push techniques. As such, blow counts and SPT could not be recorded.

The boring locations SB-35 and SB-37 were deleted from the program due to restricted access at the original location and subsurface utilities and obstructions surrounding the location.

The boring locations SB-41 and SB-42 (western sidewalk along Route 9A) were deleted from the program due to subsurface utilities and electrical vaults on this block. One monitoring well (MW-41A) was planned for installation in Area 6 of the Site. However, this location could not be completed due to the presence of electrical vaults beneath the sidewalk.

At several soil boring locations where visible oil-like and/or tar-like material was encountered, a representative sample from the 6-inch interval of apparently clean material below the contaminated soil interval could not be collected. In these borings, there was too much potential carry down of the oil-like and/or tar-like material product into the clean interval for a representative clean sample to be collected.

At select boring locations, a temporary steel casing was installed into the low permeability unit to allow drilling to continue while minimizing the potential for carry down of contamination and/or NAPL.

4 RESULTS

This section discusses the field observations and analytical results for the samples collected during the SCS at the Site. The analytical results of the subsurface soil samples that were collected as part of the SCS are summarized and compared to the NYSDEC RSCOs specified in TAGM 4042. The analytical results of the groundwater samples are compared to NYSDEC AWQSGVs specified in the Technical and Operational Guidance Series 1.1.1 (TOGS), Class GA criteria.

Tables 4-7 through 4-35 organize the field observations and laboratory results into the six geographic areas of the Site (i.e., Areas 1 through 6), as defined in Section 1.3 of this report. In general, all references to intervals in the tables and narrative are relative to feet below grade.

4.1 Data Usability Summary Reports and QA/QC Samples

In accordance with the Quality Assurance Project Plan (QAPP), QA/QC samples were collected periodically throughout the SCS investigation. The analytical results for the blind duplicate samples and the corresponding sample are presented in the data summary tables. Data usability summary reports (DUSRs) for all laboratory sample delivery groups are presented in Appendix B. The complete laboratory reports (NYSDEC ASP Category B deliverable format) are provided in Adobe Acrobat format on compact discs in Appendix C.

In brief, based on the data validation as discussed in the DUSRs, it is concluded that the data quality is usable for the purposes of satisfying the project objectives as summarized in Section 1.2 of this report.

4.2 Site-Specific Geology

Geology and hydrogeology was determined based on observations in the soil borings and test pits excavated across the Site. The stratigraphy and groundwater encountered at the Site is summarized below.

Stratigraphy:

Geology beneath the Site is consistent with that described by others (see Section 2.5.2) and consists of four primary stratigraphies, which are underlain by bedrock. The stratigraphic units, in order from shallowest to deepest, are: fill, upper sand, silty/clay and lower sand.

Fill Unit: The fill material consists of construction debris (brick, concrete, glass, wood timbers, ash, slag, rebar, etc.) co-mingled with brown to black, fine to coarse sand, gravel, cobbles and silt. The thickness of the fill is variable and was encountered from the near surface to depths

ranging from of 7 ft bgs to greater than 35 ft bgs. The apparent thickness is consistent with those reported during previous investigations.

Upper Sand Unit: In some areas of the Site, the fill is underlain by a layer of poorly sorted to well sorted sands. Where present, this unit ranges up to 29-feet thick. The sand is characterized by brown to gray, fine to coarse sand, trace silt, and trace gravel. This unit is generally absent from the eastern portion of the Site where the silty/clay unit was closer to or at the surface, prior to backfilling out from the shoreline.

Silty Clay Unit: The low-permeable silty clay is gray to black in color with intermittent peat lenses. The silty clay is likely a Holocene salt march deposit. Salt marshes were once prevalent along the Manhattan shoreline and, since the 1800s, have been filled and built over. This unit contains small marine shells, such as those from clams, mussels, and snails, etc, and organic material, such as decayed fibrous and non-fibrous plant materials. The upper surface of the clay-silt layer is irregular, but generally slopes down towards the Hudson River. Poorly sorted to well sorted sand, silty sand and gravel lenses were found within the silty clay unit, which are likely remnants of ancient stream channels or estuarine environments. In general, this unit pinches out to the east and is absent or discontinuous in the eastern portions of the Site and thickens to the west towards the Hudson River.

Lower Sand Unit: Underlying the silty clay is poorly sorted coarse to medium sand. In some areas of the Site, the lower sand unit is interbedded by silty sand, up to 13 feet thick.

A geologic cross section of the stratigraphic units extending across Areas 1 and 3 of the Site is presented as Figure 4A.

Groundwater

Groundwater occurs in the fill unit and occurs at depths ranging from 1.80 ft mean sea level (MSL) (MW-34A) to approximately -1.19 ft MSL (MW-12A). On October 11, 2005 a synoptic round of groundwater depth measurements was performed in all wells. Using the surveyed elevation of the measuring point on each well, the measured depths to groundwater were converted to elevations. The groundwater depth measurements and corresponding elevations are summarized in Table 4-36. The groundwater elevations were plotted on Figure 14 and contoured. Based on the plotted groundwater elevations shown on Figure 14, groundwater predominantly flows to the west/southwest in the fill unit towards the Hudson River. Based on variations in the depth to groundwater observed and or measured in various borings and monitoring wells during the course of the SCS, and in consideration of previous investigations conducted by others, it appears that groundwater levels are influenced by seasonal and daily tidal

fluctuations. In addition, there may be some localized groundwater mounding in the vicinity of MW-34A/Areas 2 and 5.

4.3 Area 1 – Summary of Findings

Area 1 has been designated as that portion of the Site where former Gas Holders No. 1 and No. 2 were located, along 18th Street between 9th and 10th Avenues (see Figures 2 and 4). At the time of the SCS activities, Verizon was using the property for vehicle parking and offices. This portion of the Site has been the subject of ongoing investigations of multiple leaking underground storage tanks, which are being conducted by the property owner. The results of these investigations to date are summarized in Section 2.5.4 of this report. The USTs were used to store gasoline, fuel oil and hydraulic oil.

A total of two test pits (TP-1 and TP-1B), seven soil boring locations (SB-1, SB-2, SB-3, SB-4, SB-5A, SB-5B, and SB-6) and two groundwater-monitoring wells (MW-5A and MW-5B) were completed in Area 1. These sample locations are shown on Figure 4. Table 4-7 presents a summary of the field work and observations. The following sections present a discussion of the field observations and analytical results for subsurface soil samples.

4.3.1 Summary of Field Observations

During excavation of the exploratory test pits, brick walls, which appeared to correlate with the approximate locations of the ring wall foundations for the two former gas holders were encountered at TP-01 (Gas Holder No. 2) and TP-01B (Gas Holder No. 1). While hand excavating for utility clearance at soil boring SB-6, a brick wall, which corresponded to the location of northwest portion of the ring wall for the former Gas Holder No. 2, was encountered. The apparent ring wall of former Gas Holder No. 1 was encountered in test pit TP-01B.

Note that all depths referenced on boring logs, tables, and subsequent text is relative to surface elevations (top of concrete slab) at each location. It is noted however, that the top of the concrete slab in the parking area of the building that occupies Area 1 is approximately 2.5 feet higher than street level at this location. It is believed that this elevated parking area is due to the placement of fill around the gas holder foundations during initial construction of the building. The source of this non-indigenous fill material (above street level elevation) does not represent soil conditions during operations of the former gas holders on this property.

No odors or staining were detected in subsurface soil encountered in exploratory test pit TP-01. In exploratory test pit TP-01B, gasoline-like odors were detected from 0 to 3 ft bgs. Wood timbers containing black staining were also observed in this test pit from 2 to 3 ft bgs.

Petroleum, fuel oil, gasoline, and/or MGP-related odors were observed in six of the seven soil borings (SB-2, SB-3, SB-4, SB-5A, SB-5B, and SB-6) completed in Area 1. It is noted that soil boring SB-1 in the southeastern portion of the property could not be advanced to the water table and, therefore, it is not known if the evidence of petroleum impacts also occur at this boring location. The most predominant odor detected was petroleum in five locations (SB-2, SB-4, SB-5A, SB-5B, and SB-6). The petroleum odors were detected consistently through the following depth intervals: 13 to 15 ft bgs in SB-2, 11 to 15 ft in SB-4, 10 to 22 ft bgs in SB-5A, 10 to 19 ft bgs in SB-5B, and 10 to 19 ft bgs in SB-6. These intervals all start at the approximate depth of the water table encountered at this parcel. This is indicative of a plume of petroleum contamination in groundwater across most of this parcel. A petroleum sheen was observed on the groundwater associated with soil samples from borings SB-4, SB-5A, SB-5B, and SB-6, and trace LNAPL was observed in SB-6. Gasoline odors were detected in subsurface soil at a depth interval of 0.8 to 2 ft bgs in soil boring SB-2, at a depth interval of 13 to 15 ft bgs in soil boring SB-3, and at a depth interval of 6.5 to 11 ft bgs in soil boring SB-4, which suggests a smear zone. Observations of gasoline odors are not consistent throughout the borings and do not indicate a consistent source. As noted previously, there is an ongoing groundwater investigation study at the Verizon building involving a gasoline release(s) from several former USTs.

BUT NOT
SAMPLED

MGP-related odors were only detected in SB-2 and SB-4 ranging from 15 to 20.5 ft bgs and 15 to 21 ft bgs, respectively. Both of these borings were excavated inside the footprints of former Gas Holders No. 1 and No. 2, respectively. It is noted that refusal at both of these locations was at approximately 21 ft bgs, which suggests that the holder bottoms are present at this depth. Soil borings MW-5B and SB-6 were excavated outside the former holders (e.g., in) were advanced to depths 42 ft bgs and 72 ft bgs, well below the 21 foot depth achieved at borings inside the holders. In addition, subsurface soil encountered in the upper 20 feet in these borings (i.e., outside the holder) was different than that inside the holder.

There were no observations of TLM in any of the seven soil borings completed in Area 1. OLM was only observed in soil boring SB-4 between 19 and 21 ft bgs, directly above the point of drilling refusal (i.e., the apparent holder bottom of Gas Holder No. 2). The affected soil in this interval also exhibited a very strong MGP-like odor, heavy black staining and an elevated PID reading of 3,124 ppm.

Depths to groundwater ranged from approximately 8 ft bgs in soil borings SB-4, 5 and 6 to approximately 13 ft bgs in soil borings SB-2 and SB-3. Groundwater elevations were 0.63 ft MSL and 0.84 ft MSL for MW-5A and MW-5B, respectively.

4.3.2 Analytical Results for Subsurface Soil

A total of thirty-three soil samples (from 30 discrete intervals plus 3 duplicates) and two groundwater samples were collected. The monitoring wells MW-5A and MW-5B were installed in soil boring locations SB-5B and SB-5A, respectively. Analytical results for VOCs, SVOCs and inorganics (metals and cyanide) for subsurface soil samples collected in Area 1 are summarized in Tables 4-8 through 4-10, respectively. Figure 5 presents a summary of constituents detected and a comparison with the NYSDEC RSCOs. Concentrations that exceeded their respective individual NYSDEC RSCOs have been bolded, italicized, and or colored in the summary tables and figures to for easy identification.

4.3.2.1 Volatile Organic Compounds

A total of 17 VOCs were detected in subsurface soil samples collected from Area 1. Six of these VOCs, namely benzene, toluene, ethylbenzene, m/p-xylenes, o-xylene, and isopropylbenzene were detected at concentrations that exceeded their respective individual NYSDEC RSCOs. M/p-xylenes, ethylbenzene, and isopropylbenzene had the highest frequency of exceedances (approximately 12% of the number of samples analyzed), and m/p-xylenes and o-xylene were detected at the highest concentrations (320,000 ug/kg and 120,000 ug/kg, respectively) reported at location SB-6 in the 13 to 15 ft bgs interval. Strong petroleum-like odor, black staining, and trace LNAPL were also detected in this interval. The maximum PID reading in soil boring SB-6 was 3,520 ppm. None of the concentrations of the VOCs detected in the shallow subsurface soil samples collected from either of the test pits exceeded their respective NYSDEC RSCOs.

The concentrations of Total VOCs in soil samples SB-2 (19 to 20.5 ft bgs), SB-4 (19 to 21 ft bgs), SB-5B (11 to 12 ft bgs), and SB-6 (13 to 15 ft bgs) exceeded the NYSDEC RSCO of 10,000 ug/kg. As discussed above, soil borings SB-2 and SB-4 were excavated inside the former gas holder foundations. There was no evidence of Total VOC impacts to deeper soils in soil borings SB-5B or SB-6.

4.3.2.2 Semi-Volatile Organic Compounds

Twenty-three SVOCs were detected in subsurface soil samples. Eleven of the 23 SVOCs detected exceeded their respective NYSDEC RSCOs. Benzo(a)pyrene exhibited the highest frequency of exceedances (approximately 18%), followed by benzo(a) anthracene and chrysene (approximately 6%). Naphthalene had the highest detected concentration (220,000 ug/kg) in the soil sample SB-4 (19 to 21 ft bgs). This is consistent with the observation of OLM between 19 to 21 ft bgs in soil boring SB-4, which is located inside Gas Holder No. 2. None of the concentrations of the SVOCs detected in subsurface soil samples collected from the test pit exceeded their respective NYSDEC RSCOs.

The concentration of Total SVOCs in soil sample SB-4 (19 to 21 ft bgs) exceeded the NYSDEC RSCO of 500,000 ug/kg.

4.3.2.3 Inorganics

Twelve metals were detected in the subsurface soil samples. The concentrations of five metals, namely copper, lead, mercury, nickel, and zinc exceeded their respective NYSDEC RSCOs in one or more samples. The maximum concentration of lead of 2,240 mg/kg was detected in soil sample SB-2 (19 to 20.5 ft bgs). Mercury was detected at the highest frequency of exceedances (approximately 36%), although the maximum detected concentration was within one order of magnitude of its NYSDEC RSCO. Cyanide was sporadically detected and ranged in concentration from 0.66 mg/kg in soil sample SB-5B (21 to 22 ft bgs) to 190 mg/kg in SB-2 (19 to 20.5 ft bgs). There are no NYSDEC RSCOs established for total or amenable cyanide.

4.3.2.4 Fingerprint Results

Two soil samples (SB-4 [19 to 21 feet] and SB-6 [13 to 15 feet]) were submitted for fingerprint analysis from this Area. The soil sample from SB-4 contained monocyclic aromatic hydrocarbons (MAHs) and polycyclic aromatic hydrocarbons (PAHs) in a pyrogenic pattern. Pyrogenic substances are complex mixtures of primarily hydrocarbons produced from organic matter subjected to high temperatures, but with insufficient oxygen for complete combustion. Pyrogenic materials are produced by fires, internal combustion engines, and furnaces. They are also formed when coke or gas are produced from coal or oil. Coal-tar based products, such as roofing, pavement sealers, waterproofing, pesticides, and some shampoos contain pyrogenic materials. The fluoranthene/pyrene ratio (1.10) and the dibenzofuran/fluorene ratio (0.55) suggested that the pyrogenic material was coal tar. The predominance of naphthalene and the high relative concentrations of MAHs indicated that the coal tar had been subjected to little or no weathering.

The soil sample from SB-6 contained a petrogenic substance. Petrogenic substances include crude oil and crude oil derivatives such as gasoline, heating oil, and asphalt. The petrogenic material in this sample was characterized by aromatic and aliphatic hydrocarbons eluting about from about hexane (3 minutes on the GC/FID fingerprint) to about tetradecane (22 minutes). The sample contained primarily alkylated benzenes. Some common petroleum products with these characteristics include gasoline and some jet fuels. The reduced relative concentrations of benzene and toluene suggested that the material had been subjected to mild to moderate weathering.

4.3.3 Analytical Results for Groundwater

A total of 2 groundwater samples (2 locations) were collected from the 2 monitoring wells (MW-5A and MW-5B) that were completed in Area 1. Table 4-7 presents a summary of the field work and observations. Analytical results of the groundwater samples are presented in Tables 4-33 to 4-35. Well construction details and groundwater elevations are presented in Table 4-36. The concentrations of VOCs, SVOCs, and inorganics that exceeded the NYSDEC AWQSGVs concentrations are posted on Figure 11. Concentrations that exceeded their respective individual NYSDEC RSCOs are bolded and or italicized in the tables and figure to ease in their identification.

4.3.1.1 Volatile Organic Compounds

A total of eight VOCs were detected in shallow groundwater collected from monitoring well MW-5A, which is the only water table well installed in this area during the SCS. Six of these VOCs, acetone, benzene, m/p-xylenes, and o-xylene were detected at concentrations above their respective NYSDEC AWQSGVs. Acetone was detected at the highest concentration of 1,100 ug/l.

Only methyl tert-butyl ether (MTBE) was detected in the one deep well installed on this property during the SCS, MW-5B. MTBE is a gasoline additive and is not related to operations of the former gas holders.

4.3.1.2 Semi-Volatile Organic Compounds

Five SVOCs were detected in MW-5A. The concentrations of two of these (2,4-dimethylphenol and naphthalene) exceeding their NYSDEC AWQSGVs. The highest concentration was reported for 2,4-dimethylphenol (500 ug/l). No SVOCs were detected in groundwater sample MW-5B.

4.3.1.3 Inorganics

Six metals were detected in MW-5A, with concentrations of arsenic and lead exceeding their NYSDEC AWQSGVs. In MW-5B, antimony was the only metal out of the three detected that exceeded its' NYSDEC AWQSGVs. Both total and amenable cyanide were detected in MW-5A. The concentration of total cyanide of 1.4 mg/l exceeded the NYSDEC AWQSGV of 0.2 mg/l). There is no NYSDEC AWQSGV for amenable cyanide.

4.4 Area 2 – Summary of Findings

Area 2 has been designated as that portion of the Site bounded by West 18th and West 19th Streets, from 10th Avenue westward to the bulkhead along the Hudson River. Features of the

former gas works that were present in this area included (west to east) the former MGP storage and pipe yards, and Gas Holders Nos. 3 and 4 (see Figure 2). At the time of the SCS activities, demolition and remediation activities were being conducted on the western-most quarter of the block (abutting Route 9A) by the West 19th Street Development, LLC. The parcels that comprise the remainder of Area 2 are occupied by art galleries, a night club, a vacant building, a public parking lot, the adjacent portions of Route 9A, and Chelsea Piers Sports and Entertainment Complex.

One exploratory test pit (TP-2), 13 soil borings (SB-7, SB-8, SB-9, SB-10, SB-11, SB-12, SB-13, SB-14/SB-14A, SB-15, SB-18, SB-53, SB-54 and SB-55) and a total of three groundwater monitoring wells [two overburden (MW-7A and MW-12A) and one deep confined (MW-12B)] were completed in Area 2. The locations of all sampling points are shown on Figure 4.

One subsurface soil sample was collected from the test pit, a total of 58 subsurface soil samples (56 discrete intervals plus 2 duplicates) were collected from the 14 soil borings. A total of 4 groundwater samples were collected from the wells in Area 2; one groundwater sample was collected from each well, along with the collection of one blind duplicate sample. Table 4-2 presents a summary of the sample locations, the rationale for sample location selection, sample interval(s), list of the chemical analyses, and a summary of comparisons of the each analytical group to NYSDEC RSCOs. Table 4-11 presents a summary of the field work and observations. The following sections present a discussion of the field observations and analytical results.

4.4.1 Summary of Field Observations

Table 4-11 summarizes the field observations and other information (e.g., rationale for end of boring depth). The test pit was a series of excavations that targeted the ring walls of the two former gas holders located on the east end of Area 2.

Based on the soil encountered in the borings, stratigraphy encountered in Area 2 was consistent with that described in Sections 2.5.2 and 4.2.

Depths to groundwater ranged from approximately 7 ft bgs in soil borings SB-7, SB-13, SB-15 and SB-18 to approximately 11 ft bgs in soil boring SB-14A. Groundwater elevations measured in monitoring wells MW-7A and MW-12A were 0.97 ft MSL and -1.19 ft MSL, respectively, suggesting that the water table slopes down towards the west. The groundwater elevation in MW-12B was measured at -0.03 ft MSL, suggesting an upward hydraulic pressure (when compared to MW-12A) in this area of the Site.

Note that all depths referenced on boring logs, tables, and subsequent text is relative to surface elevations (e.g., sidewalk, top of concrete slab) at each location. Soil borings SB-53, SB-54 and SB-55 were drilled in the foundation slab inside the building at Block 660, Lot 42, which is level

with the top of the loading docks. The top of the loading docks, as well as the top of the foundation slab inside the building, are approximately 4 feet above the grade of the sidewalk in front of the building. Accordingly, the upper four feet of soil beneath the raised building foundation slab inside the building was imported from an unknown source during construction and does not represent ambient soil conditions/quality at this lot prior to construction of the building.

During the exploratory test pit activities, apparent remnants of former MGP structures were encountered. Photographs of these structures are presented in Appendix D. An intact brick wall, which correlates with the approximate location of the ring wall foundation for the former Gas Holder No. 3, was encountered at test pit TP-2. A slight petroleum odor was detected throughout the test pit to the final depth of 11 ft bgs. There was no evidence of staining or residual MGP products within the test pit.

Evidence of contamination, which included odors, NAPL, staining and or sheen, was detected in 11 of the 13 soil borings completed at Area 2. No evidence of contamination (odors, staining, sheen, visible product, etc.) was detected at soil borings SB-12, MW-12A, and MW-12B.

Petroleum, fuel oil, gasoline, and/or MGP-related odors were observed in eleven of the thirteen soil borings (soil borings SB-7, SB-8, SB-9, SB-10, SB-11, SB-13, SB-14A, SB-15, SB-53, SB-54, and SB-55) completed in Area 2. The most predominant odor detected in this Area was petroleum. These odors were detected in seven soil borings (SB-8, SB-9, SB-10, SB-11, SB-13, SB-14A, and SB15). The petroleum odors were consistently detected in subsurface soil from one foot bgs to several feet into the water table (i.e., to approximately 15 feet bgs). Specific intervals where petroleum odors were detected are: 1 to 15 ft bgs in SB-8; 1 to 10 ft bgs in SB-9; 1 to 14 ft bgs in SB-10; 1 to 9 ft bgs in SB-11; 11 to 13 ft bgs in SB-13; 7 to 19 ft bgs in SB-14A; and 5 to 13 ft bgs in SB-15. LNAPL, along with petroleum odors, black staining, sheen and or elevated PID readings, was observed from 5 to 13 ft bgs in soil boring SB-15. Elevated total VOCs concentrations based on field screening using a PID ranged from 1,000 ppm [SB-10 (6 to 10 ft bgs)] to over 2,800 ppm in [SB-10 (4 to 6 ft bgs)].

MGP-related odors were observed in seven locations (SB-7 from 19 to 35 ft bgs; SB-9 from 22 to 26 ft bgs; SB-11 from 21 to 33 ft bgs; SB-15 from 13 to 21 ft bgs; SB-53 from 1 to 4.5 ft bgs and 9 to 11 ft bgs; SB-54 from 0.8 to 1 ft bgs and 2 to 4 ft bgs; and SB-55 from 0.8 to 2 ft bgs. Several of these soil borings (SB-7, SB-9, and SB-11) were located within or near the footprints of former gas holders, while some are located within the former storage yard (SB-15, SB-53, SB-54, and SB-55). Some of these intervals correlate with physical evidence of MGP-related residue.

OLM was observed in two locations (SB-11 from 23 to 29 ft bgs, and SB-15 from 13 to 21 ft bgs). TLM was observed in three locations (SB-11 from 25 to 29 ft bgs, SB-15 from 13 to 21 ft bgs, and SB-54 from 2 to 4 ft bgs).

Based on the field observations contamination was identified in three potential portions of Area 2. The contamination in both of these areas is characterized by visible OLM, TLM, sheen, black staining, and MGP-related odors. One of these areas includes soil borings SB-7, SB-9, SB-11, which are located in the area immediately surrounding the former gas holders on the eastern-most end of Area 2. The observed contamination occurs at depths ranging from approximately 19 to 35 ft bgs. The second area includes SB-15 and the surrounding area and occurs at depths of approximately 13 to 21 ft bgs. Soil boring SB-15 is located approximately 15 feet due east of a parcel known to contain MGP-contamination and which has recently been remediated (see Section 2.5.3). The third area includes soil borings SB-53, SB-54, SB-55, and the surrounding area and is located approximately 0.8 to 5 ft bgs. However, based upon the physical difference in elevation between the street and the top of the concrete slab (upon which the soil sample intervals are referenced) for the borings in the third area, the contamination is limited to the fill materials brought in to construct the present building. The source of the fill material is unknown, and is not known to be related to former MGP operations.

The SHR indicated that there were 53 reported leaking storage tank incidents within 0.5-mile of the Site. There were at least 3 reported spills that involved leaded or unleaded gasoline that abut Area 2. In addition, numerous underground tanks were used throughout Area 2 to store various petroleum products. These underground storage tanks (USTs) are either still active, have been abandoned or their status is not known. Since petroleum was not known to have been used during operations of the former MGP, the relatively shallow petroleum contamination is due to spills or leaks of petroleum from on-site USTs and or off-site USTs. There does not appear to be any direct correlation between the other odors observed in this area and former Site operations.

4.4.2 Analytical Results for Subsurface Soil

Fifty-eight subsurface soil samples were collected from 13 soil borings and one test pit in Area 2 and analyzed for VOCs, SVOCs, and inorganics (metals and cyanide). Soil samples from several sample locations along 10th Avenue were also analyzed for pesticides, herbicides, and PCBs.

Analytical results for VOCs, SVOCs, and inorganics (metals and cyanide) and pesticide/PCBs in the subsurface soil samples are presented in Tables 4-12 to 4-15, respectively. Figure 6 presents a summary of constituents detected and a comparison with the NYSDEC RSCOs. Concentrations of analytes that exceeded NYSDEC RSCOs have been bolded, italicized, and or colored in that figure and respective tables to facilitate ease of identification.

4.4.2.1 Volatile Organic Compounds

As shown in Table 4-12, a total of 15 VOCs were detected in subsurface soil samples collected from Area 2. Eight of these VOCs, namely acetone, methyl-tert butyl ether (MTBE), benzene, toluene, ethylbenzene, m/p-xylenes, o-xylene, and isopropylbenzene and were detected at concentrations that exceeded their respective individual NYSDEC RSCOs. Benzene had the highest frequency of exceedances (approximately 16% of the number of samples analyzed), and m/p-xylenes and o-xylene, which both had at the highest concentrations (250,000 ug/kg and 100,000 ug/kg, respectively) at sample SB-10 (6 to 8 ft bgs). A strong gasoline/fuel oil odor was detected in this interval, with the maximum concentration of total VOCs reading of 1,200 ppm measured in the headspace using a PID. Visible brown product was observed from 8.4 to 8.8 ft bgs, with a maximum concentration for total VOCs of 1,100 ppm measured in the sample headspace using a PID. Significant reductions in the PID measurements of total VOCs (maximum 3 ppm) were recorded in the 10 to 12 ft bgs interval, and only a slight petroleum odor was present. Significant reductions in soil VOC concentrations were observed at this location in the 20 to 22 ft bgs interval, where the only benzene was detected at an elevated concentration (64 ug/kg). In soil boring SB-10 the water table was encountered at a depth of approximately 9 ft bgs. None of the concentrations of the VOCs detected in subsurface soil samples collected from the test pit exceeded their respective NYSDEC RSCOs.

The concentrations of Total VOCs in seven soil samples (SB-9 [20 to 22 ft bgs], SB-10 [5 to 6 ft bgs, 6 to 8 ft bgs, 8 to 10 ft bgs], SB-11 [27 to 29 ft bgs], and SB-15 [5 to 6 ft bgs, 17 to 19 ft bgs] exceeded the NYSDEC RSCO for Total VOCs of 10,000 ug/kg. None of the concentrations for Total VOCs exceeded the NYSDEC RSCOs for Total VOCs in deeper soil samples from these borings.

4.4.2.2 Semi-Volatile Organic Compounds

Twenty-seven SVOCs were detected in subsurface soil samples. None of the concentrations of the SVOCs detected in subsurface soil samples collected from the test pit exceeded their respective NYSDEC RSCOs. Twenty-one of the 27 SVOCs detected exceeded their respective NYSDEC RSCOs. Benzo(a)pyrene exhibited the highest frequency of exceedances (approximately 36%), followed by benzo(a) anthracene and chrysene (approximately 29% and 26%, respectively). Of the SVOCs detected, naphthalene had the highest concentration (4,700,000 ug/kg) in soil sample SB-15 (17 to 19 ft bgs). This is consistent with the observation of OLM and TLM observed in this boring immediately above the low permeability silty/clay unit, with the unit commencing at 19 ft bgs.

Based upon a review of historical maps, there were no former MGP structures or features at or in the vicinity of soil boring SB-15. It is noted however, that soil boring SB-15 was located adjacent to a parcel where petroleum and MGP-impacted soil was recently remediated.

The concentrations of total SVOCs in three of the soil samples from Area 2 (SB-11 [27 to 29 ft bgs], SB-15 [17 to 19 ft bgs], and the duplicate sample for SB-55 [2 to 3 ft bgs]) exceeded the NYSDEC RSCO for total SVOCs of 500,000 ug/kg. The total SVOC concentrations in sample SB-55 2 to 3 ft bgs and its duplicate were 184,780 ug/kg and 542,100 ug/kg, respectively. This variability is consistent with the heterogeneity typical of urban fill such as that which comprises the shallow soils across the Site.

4.4.2.3 Inorganics

Thirteen metals were detected in the subsurface soil samples. The concentrations of eight metals, namely arsenic, cadmium, copper, lead, mercury, nickel, selenium, and zinc exceeded their respective NYSDEC RSCOs in one or more samples. Lead was reported at a maximum concentration of 1,740 mg/kg in the subsurface soil sample SB-11 (27 to 29 ft bgs). The concentration of lead in the next interval sampled (35 to 37 ft bgs) at this location was below the NYSDEC RSCO for lead. Of the metals detected, zinc was detected at elevated concentrations most frequently (approximately 31%). The maximum concentration of zinc was within one order of magnitude of its NYSDEC RSCO. Cyanide was detected in 15 samples and ranged in concentration from 0.57 mg/kg in soil sample SB-14 (17 to 19 ft bgs) to 160 mg/kg in SB-53 (6 to 7 ft bgs). There are no NYSDEC RSCOs established for total or amenable cyanide.

4.4.2.4 Pesticides, Herbicides, and PCBs

Twenty-two subsurface soil samples were collected from 7 soil borings in Area 2. No pesticides were detected in any sample. Three herbicides were detected, at low concentrations. One PCB (Aroclor 1260) was detected in samples SB-9 and SB-10 at concentrations of 16 ug/kg and 21 ug/kg, respectively, which are below the NYSDEC RSCO for subsurface PCBs of 10,000 ug/kg.

4.4.2.5 Fingerprint Results

The fingerprint analytical results for soil sample SB-14A (3 to 4 ft bgs) indicated the presence of a petrogenic substance. Petrogenic substances include crude oil and crude oil derivatives such as gasoline, heating oil, and asphalt. The petrogenic material in this sample is characterized by an unresolved complex mixture (UCM), which is typically reflected as a "hump" on the gas chromatograms during the analysis, from approximately octane (C8 - 8 minutes) to tetradecane (C14 - 22 minutes) with a maximum at undecane (C11 - 16 minutes). Common petroleum products with these characteristics include kerosene and some jet fuels. The lack of a dominant normal alkane pattern in the chromatogram indicates that this material has been subject to mild to moderate weathering. The sample also contains a low level, late eluting UCM in the lube oil range. In addition to the petrogenic materials, the sample contains a series of low concentration heavy PAHs in a pyrogenic pattern. Pyrogenic substances are complex mixtures of primarily hydrocarbons produced from organic matter subjected to high temperatures but with insufficient

oxygen for complete combustion. Pyrogenic materials are produced by fires, internal combustion engines, and furnaces. They also are formed when coke or gas are produced from coal or oil. Coal-tar based products, such as roofing, pavement sealers, waterproofing, pesticides, and some shampoos contain pyrogenic materials. The specific source of these compounds could not be determined.

4.4.3 Groundwater Analytical Results and Field Measurements

A total of four groundwater samples (three locations plus one duplicate) were collected from the three monitoring wells (MW-7A, MW-12A, and MW-12B) that were completed in Area 2. Table 4-11 presents a summary of the field work and observations. Analytical results of the groundwater samples are presented in Tables 4-33 to 4-35. The concentrations of VOCs, SVOCs, and inorganics that exceeded the NYSDEC AWQSGVs concentrations are posted on Figure 11. Concentrations that exceeded their respective individual NYSDEC RSCOs are bolded and or italicized in the tables and figure to ease in their identification. Well construction details and groundwater elevations are presented in Table 4-36.

4.4.3.1 Volatile Organic Compounds

Six VOCs were detected in the three monitoring wells from this area of the Site, with only benzene exceeding the NYSDEC AWQSGVs. The highest concentration was for benzene which was detected at 65 ug/l in monitoring well MW-12B. Exceedances of the benzene NYSDEC AWQSGV were detected in groundwater sample MW-7A (20 ug/l) and MW-12A (1.2 ug/l, estimated). No VOCs detected in the blind duplicate sample of MW-12A (i.e., MW-22A) exceeded their NYSDEC AWQSGVs.

4.4.3.2 Semi-Volatile Organic Compounds

SVOCs were detected in groundwater samples from Area 2. No SVOCs concentrations exceeded their NYSDEC AWQSGVs for SVOCs. Di-n-butylphthalate was detected in all four samples as estimated and in the laboratory blank. Accordingly, the presence of this compound is attributed to a laboratory source and not associated with the Site.

4.4.3.3 Inorganics

Nine metals were detected in the four groundwater samples collected from this area of the Site. Only thallium (5.2 ug/l) exceeded its NYSDEC AWQSGVs in the blind duplicate sample of MW-12A. All other metals were in compliance with the NYSDEC criteria. This metal is not related to MGP residues.

Total cyanide was detected in three of the four samples, ranging from 0.01 mg/l to 0.013 mg/l. These concentrations are well below the NYSDEC AWQSGV of 0.2 mg/l for total cyanide. No amenable cyanide was detected in the groundwater samples collected from this area.

4.5 Area 3

Area 3 is bounded by West 17th and West 18th Streets, from 10th Avenue westward to the bulkhead along the Hudson River. At the time of the SCS activities, the property was being used as a private parking lot. Area 3 of the Site housed many of the former gas plant operational structures, including the Retort House, Scrubbers, the Purifying House, the Laboratory, and the Workshop. In its' original configuration, a Coal House was located on the western most portion of the block, however, the footprint of that former structure would now be in the Hudson River.

A total of two exploratory test pits (TP-3 and TP-6), 15 soil borings (SB-19, SB-20, SB-21, SB-22, SB-23, SB-24, SB-25, SB-26, SB-27, SB-47, SB-48, SB-49, SB-50, SB-51 and SB-52) and two monitoring wells MW-24A and MW-24B were completed in Area 3. The location of each of these is depicted on Figure 3. A total 61 soil samples (59 discrete intervals plus 2 duplicates) were collected for chemical analysis. Sample locations are shown on Figure 4. Table 4-3 presents a summary of the sample locations, the rationale behind the selection of the sample location, the sample interval(s), a listing of the chemical analyses conducted, and a comparison to the NYSDEC RSCOs for soil. Table 4-16 presents a summary of the field work and observations. The following sections provide summaries of the field observations and analytical results for subsurface soil samples.

4.5.1 Summary of Field Observations

Test pit excavations TP-3 and TP-6 were completed in Area 3 in efforts to determine the presence or absence of remnant foundation structures of the former Scrubbers and Laboratory Building, respectively. In test pit TP-3, a brick wall was encountered from 2.3 to 3.8 ft bgs. A tar-like residue was observed on the east wall of the test pit from 1.9 to 3.75 ft bgs. No other evidence of contamination was observed in test pit TP-3. In test pit TP-6, two ashlar (block-type) walls and two brick walls were encountered between 2 and 5 ft bgs. These walls are consistent with the approximate location of a former Laboratory building (See Figures 2 and 4). No physical evidence of contamination was detected in test pit TP-6.

Depths to groundwater ranged from approximately 5 ft bgs in soil boring SB-24 to approximately 12 ft bgs in soil boring SB-49. Groundwater elevations measured in monitoring wells MW-24A and MW-12A (in Areas 2) in the water table aquifer were 0.97 ft MSL and -1.19 ft MSL. The difference between these water elevations suggests that the water table is relatively flat and may have a slight slope toward the west.

Field observations of contamination in Area 3 included odors (MGP-related, unidentified, non-MGP-related, petroleum, solvent, and ammonia), black staining, sheen, OLM, and TLM/coal tar. Only one boring, SB-21, showed no evidence of contamination.

Petroleum odors were detected in soil boring SB-23 from 9 to 17 ft bgs.

MGP-related odors were detected in five of the 14 soil borings, which were SB-19 [9 to 15 ft bgs], in SB-24 [23 to 33.8 ft bgs], in SB-26 [15 to 33 ft bgs], in SB-48 [9 to 16 ft bgs], and in SB-52 [7 to 9 ft bgs, 15 to 17 ft bgs, and 25 to 31 ft bgs]. In three of these borings (SB-26, SB-48, and SB-52) MGP-related residue was also observed.

In SB-26, OLM occurred from 29 to 33 feet. The top of the silty clay layer was encountered at 32 ft bgs. Black staining was observed in this soil boring from 15 to 17 ft bgs and 19 to 33 ft bgs and sheen was present between 21 and 33 ft bgs. In soil boring SB-48, OLM and TLM occurred from 13 to 16 ft bgs. No staining was observed, but a sheen was present at the same depth as the OLM and TLM. At SB-52, visible OLM/coal tar was observed from 27 to 31 ft bgs. Black staining was present from 13 to 15 ft bgs and 23 to 31 ft bgs and sheen was observed from 25 to 27 ft bgs. These three borings are located within the footprint of either the former retort house (SB-26 and SB-52) or the former workshops (SB-48). In all other borings (except SB-21) in Area 3, either black staining and/or sheen were observed at various depths, both above and below the water table.

A strong ammonia-like odor was detected in SB-19 (17 to 21 ft bgs), which may be attributable to residues from the Scrubbers, which functioned to remove hydrogen sulfide and ammonia. A solvent-like odor was detected in soil boring SB-52 from 23 to 25 ft bgs. Sewage-like odors were detected in soil boring SB-26 from 11 to 13 ft bgs. Non-distinguishable odors were also detected in SB-49 (8 to 20 ft bgs), SB-50 (13 to 17 ft bgs, and 21 to 27 ft bgs), SB-51 (13 to 15 ft bgs and 17 to 27 ft bgs)

4.5.2 Analytical Results for Subsurface Soil

Analytical data for subsurface soil from soil borings and test pits are summarized in Tables 4-17 to 4-20. Figure 7 presents a summary of the constituents detected and a comparison of the sample results with NYSDEC RSCOs. Concentrations that exceed of the NYSDEC RSCOs are bolded, italicized, and or colored in the figure to facilitate identification.

4.5.2.1 Volatile Organic Compounds

A total of 18 VOCs were detected in subsurface soil samples collected from Area 3. Seven of these VOCs, namely acetone, benzene, toluene, ethylbenzene, m/p-xylenes, o-xylene, and isopropylbenzene and were detected at concentrations that exceeded their respective individual

NYSDEC RSCOs. Benzene had the highest frequency of exceedances (approximately 48% of the number of samples analyzed). Of the VOCs detected, m/p-xylenes and toluene had the highest concentrations in soil sample SB-51 (21 to 22 ft bgs) at respective concentrations of 950,000 ug/kg and 640,000 ug/kg, respectively. This soil boring was located within the footprint of the former Retort House. A strong odor, elevated total VOCs of (140 ppm, based on PID measurement) and black staining were detected in this sample interval, which was immediately above the top of clay. Significant reductions in VOC concentrations were observed at this location in the 32 to 33 ft bgs interval where only benzene, with a concentration of 270 ug/kg, exceeded its NYSDEC RSCO. None of the concentrations of the VOCs detected in subsurface soil samples collected from the test pits exceeded their respective NYSDEC RSCOs.

Twelve samples exceeded the Total VOC NYSDEC RSCO of 10,000 ug/kg, with the maximum reported concentration of 2,851,248 ug/kg at the in soil sample SB-51 (21 to 22 ft bgs).

4.5.2.2 Semi-Volatile Organic Compounds

Thirty-three SVOCs were detected in subsurface soil samples. The concentrations of 20 of these 33 SVOCs exceeded their respective NYSDEC RSCOs. Benzo(a)pyrene exhibited the highest frequency of exceedances (approximately 72%), followed by benzo(a) anthracene and chrysene (approximately 61% and 54%, respectively). Of the SVOCs, naphthalene had the highest concentration (820,000 ug/kg) in soil sample SB-51 (21 to 22 ft bgs). This is consistent with the detection of the highest VOC concentrations reported in Area 3. The concentration of benzo(a)pyrene in soil sample TP-3 (7.5 ft bgs) of 150 ug/kg exceeded its NYSDEC RSCO (of 61 ug/kg).

Total SVOCs concentrations in soil samples SB-49 (17 to 18 ft bgs) SB-51 (14 to 15 ft bgs and 21 to 22 ft bgs), and SB-52 (27 to 29 ft bgs and 33 to 35 ft bgs) exceeded the NYSDEC RSCO for Total SVOCs of 500,000 ug/kg.

4.5.2.3 Inorganics

Thirteen metals were detected in the subsurface soil samples. The concentrations of seven metals, namely arsenic, cadmium, copper, lead, mercury, nickel, and zinc exceeded their respective NYSDEC RSCOs in one or more samples. Lead was detected at a maximum concentration of 677 mg/kg in subsurface soil sample TP-6 (9.5 ft bgs). Zinc was detected at elevated concentrations most frequently (approximately 41%). Total cyanide was detected in nine samples and ranged in concentration from 0.985 mg/kg in soil sample SB-20 (19 to 20 ft bgs) to 13.62 mg/kg in SB-19 (17 to 19 ft bgs). Amenable cyanide was detected in three soil samples, with the maximum concentration of 5.8 mg/kg in sample SB-21 (11 to 13 ft bgs). There are no NYSDEC RSCOs established for total or amenable cyanide.

4.5.2.4 Pesticides, Herbicides, and PCBs

Seven subsurface soil samples were collected from 2 soil borings in this Area. No pesticides, herbicides, or PCBs were detected in any sample.

4.5.3 Groundwater Analytical Results and Field Measurements

One groundwater sample was collected from the monitoring well MW-24A, which was installed in Area 3. Table 4-16 presents a summary of the field work and observations. Analytical results of the groundwater samples are presented in Tables 4-33 to 4-35. Well construction logs are provided in Appendix A. The concentrations of VOCs, SVOCs, and inorganics that exceeded the NYSDEC AWQSGVs concentrations are posted on Figure 11. Concentrations that exceeded their respective individual NYSDEC RSCOs are bolded and or italicized in the tables and figure to ease in their identification. Well construction details and groundwater elevations are summarized in Table 4-36.

DNAPL was observed in monitoring well MW-24B during well development. Accordingly, no ground water sample was collected. Initial measurements of the DNAPL thickness with two different types of oil/water interface probes (Solinst and GeoTech) did not detect any product. However, upon retrieval, the probes and cables were sporadically coated with DNAPL. TRC conducted an inspection of the monitoring well with a downhole camera, and observed oil-like globules suspended in the water column. At approximately 49 ft bgs, heavy black staining/DNAPL was observed entering the well screen. All threaded joints in the monitoring well were in good condition. The DNAPL entrance point approximately 4 feet below the bottom of the silty/clay layer, which occurs at approximately 45 ft bgs.

4.5.3.1 Volatile Organic Compounds

Six VOCs were detected in the groundwater sample collected from MW-24A, with two of them (benzene and ethyl benzene) exceeding the NYSDEC AWQSGVs. The benzene concentration was the higher of the two, reported at 19 ug/l.

4.5.3.2 Semi-Volatile Organic Compounds

Eleven SVOCs were detected in the groundwater sample collected from MW-24A, with three exceedances of the NYSDEC AWQSGVs (naphthalene, acenaphthene, and fluorene. Of these SVOCs exceedances, fluorene had the highest concentration of 54 ug/l. TLM observed in soil above the clay in this area of the Site, may be locally influencing groundwater quality.

4.5.3.3 Inorganics

Two metals were detected in the groundwater sample collected from MW-24A, with no exceedances of the NYSDEC AWQSGVs. Total cyanide was reported at 0.048 mg/l, below the NYSDEC AWQSGV.

4.6 Area 4

Area 4 has been designated as that portion of the Site where one of the former coal yards was located, from 16th Street to 17th Street, between 10th Avenue and the bulkhead along the Hudson River (see Figure 2). At the time of the SCS fieldwork, the property was used for below-ground vehicle parking and offices at this multi-story building. Sample locations were limited to sidewalk and roadways along the perimeter of the building. In addition, the basement of the building is vaulted and extends beneath the sidewalk on the south, east and west sides of this block. Presence of the structures further restricted the available spaces available for drilling of soil borings and installation of monitoring wells.

No exploratory test pits were planned or conducted in Area 4. Two soil borings (SB-29 and SB-30) and one groundwater monitoring well (MW-29A) were completed in Area 4 at the locations shown in Figure 4. Soil borings were proposed in additional locations, but could not be completed due to subsurface obstructions and utilities, safety considerations and restricted access. A total 11 soil samples (inclusive of two duplicate samples) were collected for chemical analysis.

Table 4-21 presents a summary of the field work and observations. The following sections present a discussion of the field observations and analytical results for subsurface soil samples. Figure 8 presents a summary of the detected constituents at each location, and comparison to the NYSDEC RSCOs.

4.6.1 Summary of Field Observations

Soil boring SB-29 was completed in the southeast corner of the Area 4 near the intersection of West 16th Street and 10th Avenue, and SB-30 was completed along the south side of West 17th Street. No evidence of contamination was observed in soil boring SB-29.

Depth to groundwater was approximately 11 ft bgs in soil borings SB-29 and SB-30. The groundwater elevation was measured in monitoring well MW-29A at -0.62 ft MSL.

Petroleum odors were detected from 12 to 16 ft bgs in SB-30.

MGP-like odors, and visible OLM and TLM blebs were detected in the 20 to 24 ft bgs interval in soil boring SB-30. Based on measurement with a PID, the maximum concentration of total

VOCS in this boring was 1,585 ppm, in the 22 to 24 ft bgs interval. MGP-related odors and a slight sheen on the water in the split spoon samplers were detected in soil boring SB-30 from 16 to 24 ft bgs. Within this interval, black staining was observed from 22 to 24 ft bgs and OLM and TLM blebs were observed from 20 to 24 ft bgs. The occurrence of the TLM and OLM may be related to operations of the gas works on the block directly north of soil boring SB-30.

The top of the silty clay layer was encountered at 24 ft bgs in soil boring SB-30. During drilling into and through this layer, a temporary steel casing was installed several feet into the clay to minimizing the potential for carry-down of the OLM and TLM observed from 20 to 24 ft bgs, above the top of the clay.

4.6.2 Analytical Results for Subsurface Soil

A total of 11 subsurface soil samples (9 discrete intervals plus 2 duplicates) were collected from the two borings that were completed in Area 4. Table 4-4 presents a summary of the sample locations, the rationale behind the selection of the sample location, the sample interval(s), a listing of the chemical analyses conducted, and a comparison to the NYSDEC RSCOs.

Analytical results for VOCs, SVOCs and inorganics (metals and cyanide) for subsurface soil samples collected in Area 4 are summarized in Tables 4-22 through 4-24, respectively. Figure 8 presents a summary of constituents detected and a comparison with NYSDEC RSCOs. Concentrations that exceeded their respective individual NYSDEC RSCOs have been bolded, italicized, and or colored in the summary tables and figures to for easy identification.

4.6.2.1 Volatile Organic Compounds

A total of 13 VOCs were detected in subsurface soil samples collected from Area 4. Eight of these VOCs, namely acetone, methylene chloride, benzene, toluene, ethylbenzene, m/p-xylenes, o-xylene, and isopropylbenzene were detected at concentrations that exceeded their respective individual NYSDEC RSCOs. Of the VOCs detected, benzene concentrations exceeded its NYSDEC RSCO most frequently (approximately 27% of the number of samples analyzed), and m/p-xylenes and toluene were detected at the highest concentrations (150,000 ug/kg and 81,000 ug/kg, respectively) reported at location SB-30 in the 22 to 24 ft bgs interval. With the exception of benzene, which was detected at a concentration of 86 ug/kg, none of the other VOCs detected in soil sample SB-30 (28 to 30 ft bgs) exceeded their NYSDEC RSCOs. No VOCs were detected in soil sample SB-30 (84 to 86 ft bgs). Soil boring SB-30 was located approximately 100-300 feet to the east/northeast of the gas holders to the west end of Area 4. The main MGP operational facility was located approximately 100 to 250 feet north of the SB-30 location (i.e., in Area 3). Therefore, the source of the apparent impacts in soil boring SB-30 may be the OLM and TLM detected at former gas works in Area 3 or MGP residues that may be related to operations of the former gas holders in this Area 6.

Two samples exceeded the NYSDEC RSCO for Total VOCs of 10,000 ug/kg, with the maximum reported concentration of 390,900 ug/kg in soil sample SB-30 (22 to 24 ft bgs).

4.6.2.2 Semi-Volatile Organic Compounds

Twenty-three SVOC constituents were detected in subsurface soil samples. Six of the 23 SVOCs detected (benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene) exceeded their respective NYSDEC RSCOs. Benzo(a) anthracene and benzo(a)pyrene exhibited the highest frequency of exceedances (approximately 18% each.) The highest concentrations of naphthalene and phenanthrene (6,600 ug/kg and 5,800 ug/kg, respectively) were detected in the soil samples SB-30 (22 to 24 ft bgs) for naphthalene, and SB-30 (10 to 12 ft bgs) for phenanthrene. The elevated concentrations for these SVOCs are consistent with the presence of OLM and TLM blebs between 20 to 24 ft bgs.

None of the samples exceeded the NYSDEC RSCO for Total SVOCs of 500,000 ug/kg.

4.6.2.3 Inorganics

Thirteen metals were detected in the subsurface soil samples. Of the metals detected, mercury and zinc concentrations exceeded their respective NYSDEC RSCOs in sample SB-30 (10 to 12 ft bgs). The concentrations for these two metals were only slightly elevated. Mercury was detected at 0.113 mg/kg as compared to its NYSDEC RSCO of 0.1 mg/kg. Zinc was detected at a concentration of 57.4 mg/kg as compared to its NYSDEC RSCO of 50 mg/kg. The concentrations of these and other metals detected are typical for urban fill. Based upon the data validation performed by TRC, the mercury result was rejected. Further details are presented in the DUSR in Appendix B.

Cyanide (total and amenable) was not detected in any of the soil samples from this Area.

4.6.3 Groundwater Analytical Results and Field Measurements

One groundwater sample was collected from Area 4 monitoring well MW-29A. Table 4-21 presents a summary of the field work and observations. Analytical results of the groundwater sample are presented in Tables 4-33 to 4-35. Well construction details and groundwater elevations are presented in Table 4-36. The concentrations of VOCs, SVOCs, and inorganics that exceeded the NYSDEC AWQSGVs concentrations are posted on Figure 11. Concentrations that exceeded their respective individual NYSDEC RSCOs are bolded and or italicized in the tables and figure to ease in their identification.

4.6.3.1 Volatile Organic Compounds

There were no exceedances of the NYSDEC AWQSGVs for VOCs in this area of the Site. Only one compound, cis-1,2-dichloroethene, was detected.

4.6.3.2 Semi-Volatile Organic Compounds

Two compounds were detected in the groundwater sample collected from MW-29A (di-n-butylphthalate and bis(2-ethylhexyl phthalate)), both of which were in compliance with the NYSDEC AWQSGVs. Di-n-butylphthalate was also detected in the laboratory blank.

4.6.3.3 Inorganics

Four metals were detected in the groundwater sample collected from MW-29A, with thallium exceeding its NYSDEC AWQSGV. There were no detections for total or amenable cyanide in this sample.

4.7 Area 5

Area 5 covers the northern-most block of the former MGP. The western portion of this area formerly contained three former Gas Holders (Nos. 5, 6, and 7). Spatially, this Area covers a portion of Route 9A, an area along the Hudson River bulkhead adjacent to Chelsea Piers, and the western portion of the block between West 19th and West 20th Streets. The Correctional Facility and a public parking lot occupy the Area (see Figure 3). During the SCS, the property was used as a New York State-run medium security women's penitentiary, vehicle parking, and a public roadway.

One exploratory test pit (TP-4), 12 soil borings (SB-31, SB-32, SB-33, SB-34, SB-36, SB-38, SB-39, SB-40A, SB-40B, SB-90, SB-91 and SB-92) and three overburden aquifer monitoring wells (MW-31A, MW-34A and MW-40A) were completed in Area 5. Test pit TP-4 was relocated from the southeast to the northwest corner of the parking lot in part due to the presence of a 1.5 foot thick reinforced concrete slab at the original location. The test pit location is depicted in Figure 4. All of these locations are depicted in Figure 4.

A total of 39 subsurface soil samples (38 discrete samples plus 1 duplicate) were collected for chemical analysis from the twelve borings and one test pit that were completed in Area 5. Table 4-5 presents a summary of the sample locations, the rationale behind the selection of the sample location, the sample interval(s), a listing of the chemical analyses conducted, and a comparison to the NYSDEC RSCOs. Table 4-25 presents a summary of the field work and observations. The following sections present a discussion of the field observations and analytical results for subsurface soil samples.

4.7.1 Summary of Field Observations

During the excavation of test pit TP-4 a concrete structure and a 2-inch diameter metal pipe were encountered at 2 ft bgs. In addition, a brick wall trending from northeast to southwest was encountered in this test pit at a depth of 3 ft bgs, along the western edge of the excavation. This structure correlates with the approximate location of the ring wall foundation of former Gas Holder No. 6. No evidence of contamination was detected in the soil in this test pit.

Depths to groundwater ranged from approximately 4.5 ft bgs in soil borings SB-32, SB-36, and SB-38 to approximately 8 ft bgs in soil borings SB-39. Groundwater elevations measured in MW-31A, MW-34A, and MW-40A in the water table aquifer were -3.01 ft MSL, 1.80 ft MSL, and 1.73 ft MSL, respectively. Based on these elevations, it appears that groundwater is flowing towards the west.

Evidence of contamination, which were detected in soil borings in Area 5 included odors (petroleum, MGP-related, sewage, burned wood, sulfur, natural gas-like, sweet wood, or unspecified), black staining, sheen, and visible OLM.

Petroleum odors were detected in four of the five soil borings typically in the vicinity of the soil water interface. Specifically, the petroleum odors were detected in soil borings SB-32 (5 to 7 ft bgs), SB-32 (9 to 13 ft bgs), SB-33 (5 to 7 ft bgs), SB-34 (2 to 3 ft bgs), and SB-36 (5 to 9 ft bgs). There are several USTs present at the parcel where the borings were excavated. Additionally, these borings are all located in the area due north of (i.e., across the street from) a site where significant releases from operations of former underground storage tanks has been documented. MGP-related odors were only detected in SB-33 (23 to 25 ft bgs) and SB-33 (27 to 37 ft bgs). Visible OLM was only detected in soil boring SB-34 in fill material from 19 to 21 ft bgs. Sheen was observed in five borings (SB-32, SB-33, SB-34, SB-36, and SB-38) at various depths at or below the soil/water table interface between 5 and 27 ft bgs. In soil borings SB-32 and SB-33 sheen was detected in both shallow intervals between 5 and 13 ft bgs and deep intervals from 19 to 25 ft bgs. The shallow intervals show evidence of impacts by petroleum residues and the deeper intervals are associated with MGP residues. In soil borings SB-36 and SB-38 sheen was only observed in the shallow intervals and in SB-34 was only detected in the deep interval.

A strong natural gas-like or decaying odor was detected in soil boring SB-36 in the interval 23 to 27 ft bgs, with a maximum PID reading of 219 ppm recorded in the 25 to 27 ft bgs interval. A continuous clay layer of at least a 6-foot thickness was observed at this location from 28 to 34.7 ft bgs.

Soil boring SB-36, located in the parking lot along West 19th Street, is approximately 14 feet to the west/southwest of former Gas Holder No. 6; and 68 feet south/southeast of former Gas Holder No. 7. At nearby sample location SB-33 (inside of former Gas Holder No. 6), drilling proceeded through wood from approximately 27 to 35 ft bgs (no recovery in 3 split-spoons).

There were no PID readings greater than 75 ppm, and no observances of OLM or TLM. At soil boring location SB-38, located approximately 57 feet to the north of SB-36, the clay was encountered at a shallower depth (17.5 feet to 23.3 ft bgs), and there were no indications of organic contamination being present.

4.7.2 Analytical Results for Subsurface Soil

Analytical results of the subsurface soil samples are presented in Tables 4-26 to 4-28. Figure 9 presents a summary of the detected constituents at each location, and comparison to NYSDEC RSCOs. Samples that exceeded their respective individual NYSDEC RSCOs are highlighted (bolded and italicized) in the tables. The analytical results for soil samples from Area 5 are discussed below.

4.7.2.1 Volatile Organic Compounds

A total of 18 VOCs were detected in subsurface soil samples collected from Area 5. Six of these VOCs, namely acetone, benzene, toluene, ethylbenzene, m/p-xylenes, and o-xylene were detected at concentrations that exceeded their respective individual NYSDEC RSCOs. Acetone exceedances may be associated with laboratory activities. Benzene was detected at elevated concentrations most frequently (approximately 13% of the number of samples analyzed). Of the VOCs detected, m/p-xylenes and benzene had the highest concentrations of 45,000 ug/kg and 43,000 ug/kg, respectively). These elevated concentrations were both detected in soil sample SB-36 (25 to 27 ft bgs). With the exception of benzene (2,000 ug/kg), the concentrations of all VOCs detected in soil sample SB-36 (33 to 35 ft bgs), which is the deepest sample collected from this boring, were below their respective NYSDEC RSCOs. However, because no field evidence of contamination was detected in the clay layer in this sample interval, it is possible that the elevated benzene concentrations may be due to smearing of benzene-impacted soil from the upper interval near the top of the silt/clay layer. VOCs concentrations in the upper sampling intervals of SB-36 (3 to 4 ft bgs), (5 to 7 ft bgs), and (17 to 19 ft bgs [and its' duplicate]) were all in below their NYSDEC RSCOs for VOCs.

The concentration of Total VOCs in soil sample SB-36 (25 to 27 ft bgs) of 157,000 ug/kg exceeded the NYSDEC RSCO for Total VOCs of 10,000 ug/kg. The Total VOCs in this sample are primarily comprised of the BTEX compounds.

4.7.2.2 Semi-Volatile Organic Compounds

Twenty-seven SVOC constituents were detected in subsurface soil samples. Twelve of the 27 SVOCs detected (naphthalene, dibenzofuran, phenanthrene, di-n-butylphthalate, fluoranthene, butylbenzylphthalate, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene) exceeded their respective NYSDEC RSCOs. Benzo(a)pyrene and benzo(a)anthracene exhibited the highest frequency of exceedances (approximately 77% and 51%, respectively.) Butylbenzylphthalate and phenanthrene had the highest detected concentrations (170,000 ug/kg and 77,000 ug/kg, respectively) in the soil samples SB-36 (5 to 7 ft bgs for butylbenzylphthalate, and 25 to 27 ft bgs for phenanthrene).

None of total SVOCS concentrations exceeded the NYSDEC RSCO for Total SVOCs.

4.7.2.3 Inorganics

Thirteen metals were detected in the subsurface soil samples. The concentrations of seven metals, including arsenic, cadmium, copper, lead, mercury, nickel, and zinc, exceeded their respective NYSDEC RSCOs. The highest metal concentration detected in Area 5 was for lead (2,000 mg/kg) in the soil sample TP-4 (5 to 6 ft bgs). Zinc and mercury were detected at the highest frequency of exceedances (approximately 92% and 79%, respectively). The maximum concentrations of zinc and mercury were 311 mg/kg and 2.3 mg/kg, respectively.

Total cyanide was detected in five samples, with a maximum concentration of 3.26 mg/kg. Amenable cyanide was not detected in any soil samples from this Area. There are no NYSDEC RSCOs established for total or amenable cyanide.

4.7.3 Groundwater Analytical Results and Field Measurements

A total of three groundwater samples were collected; one from each of the monitoring wells MW-31A, MW-34A, and MW-40A, which were installed in Area 5. Table 4-25 presents a summary of the field work and observations. Analytical results of the groundwater samples are presented in Tables 4-33 to 4-35. Well construction details and groundwater elevations are presented in Table 4-36. The concentrations of VOCs, SVOCs, and inorganics that exceeded the NYSDEC AWQSGVs concentrations are posted on Figure 11. Concentrations that exceeded their respective individual NYSDEC AWQSGVs are bolded and or italicized in the tables and figure to ease in their identification.

4.7.3.1 Volatile Organic Compounds

Only one compound (acetone) was detected in any of the groundwater samples. The concentration of acetone was 76 ug/l, which exceeded its NYSDEC AWQSGV. Acetone is not related to MGP residues.

4.7.3.2 Semi-Volatile Organic Compounds

A total of five compounds were detected in the groundwater samples, with only one of them (naphthalene) exceeding the NYSDEC AWQSGV. The reported concentration was 11 ug/l, slightly above the NYSDEC AWQSGV of 10 ug/l for this compound. No SVOC compounds were detected in groundwater sample MW-40A.

4.7.3.3 Inorganics

Eight metals and total cyanide were detected in the groundwater samples collected from this area, however none of them exceeded their NYSDEC AWQSGVs. Amenable cyanide was not detected.

4.8 Area 6

Area 6 is situated in the southwestern portion of the Site, due west and adjacent to Area 4 and includes the southernmost end of the Chelsea Piers Sports and Entertainment Complex. Four of the former Gas Holders (Nos. 8, 9, 10, and 11) were located in this Area, partially under what is now Route 9A. Spatially, this Area covers a portion of Route 9A, from West 16th Street to West 17th Street and is bounded by the Hudson River to the west (see Figures 2 and 4). At the time of the SCS activities, the property was used by the public (e.g., for jogging, skating, biking, etc.), and as a public roadway.

A total of 10 subsurface soil samples were collected from the three boring locations that were completed in Area 6. Table 4-6 presents a summary of the sample locations, the rationale behind the selection of the sample location, the sample interval(s), a listing of the chemical analyses conducted, and a comparison to the NYSDEC RSCOs. The following sections present a discussion of the field observations and analytical results for subsurface soil samples.

The following sections present a discussion of the analytical results for each type of sample group.

4.8.1 Summary of Field Observations

Three soil borings, SB-43, SB-44B, and SB-45, were completed in Area 6. Observations during the field activities are summarized in Table 4-29 and discussed below.

One exploratory test pit (TP-5), two soil borings (SB-41 and SB-42) and one monitoring well (MW-41A) were planned for this area. However, these activities could not be performed at these locations due to restricted access, the presence of subsurface obstructions, structures related to the adjacent building, and or utilities and related safety considerations.

Similarly, despite several attempts to complete soil borings SB-43 and SB-44, refusal due to buried wood prevented their advancement to the target depth (i.e., 50 feet or top of clay). The maximum depth achieved for these borings (i.e., refusal depth) was 24 ft bgs in soil boring SB-43, and 9 ft bgs in soil boring SB-44. It is suspected that the refusal encountered in these borings was due to a wooden platform and/or wooden pilings, which are part of the bulkhead infrastructure in this area. Based on available information the relieving platform for the bulkhead in this Area extends westward approximately 25 to 30 feet from the bulkhead along the Chelsea Piers area. The wooden platform is set at approximately 8 ft bgs, with numerous wooden pilings, rip rap, and fill material beneath it. The original soil boring designated SB-46 was subsequently renumbered to SB-44, as noted in Table 4-31.

MGP-related odors were detected in soil boring SB-44B, from 6 to 9 ft bgs. An elevated concentration for Total VOCs of over 1,500 ppm was measured in soil sample SB-44 (8 to 9 ft bgs) using a PID. No physical evidence of contamination was detected in soil borings SB-43 and SB-45.

Groundwater was encountered from approximately 5.8 ft bgs in soil boring SB-44 to approximately 7.5 ft bgs in soil boring SB-45. Due to site conditions, the monitoring well planned for this area could not be installed, and no direct measurements of groundwater elevation were conducted.

4.8.2 Analytical Results for Subsurface Soil

Ten subsurface soil samples were collected from soil borings in Area 6 and were analyzed for VOCs, SVOCs and inorganics (metals and cyanide [total and amenable]). Analytical results of the subsurface soil samples are presented in Tables 4-30 to 4-32. Figure 10 presents a summary of the detected constituents at each location, and comparison to NYSDEC RSCOs. Samples that exceeded their respective individual NYSDEC RSCOs are highlighted (bolded and italicized) in the tables.

4.8.2.1 Volatile Organic Compounds

A total of 14 VOCs were detected in subsurface soil samples collected from Area 6. Four of these VOCs, namely acetone, benzene, m/p-xylenes, and o-xylene were detected at concentrations that exceeded their respective individual NYSDEC RSCOs. Acetone exceedances may be associated with laboratory activities. O-xylene and acetone had the highest

frequency of exceedances (approximately 20% of the number of samples analyzed), and m/p-xylenes and o-xylene were detected at the highest concentrations (5,900 ug/kg and 5,100 ug/kg, respectively). These elevated concentrations were both detected in soil sample SB-44 (8 to 10 ft bgs).

Concentrations of one or more VOCs were detected in excess of their NYSDEC RSCOs in two of the 10 subsurface soil samples [SB-44 (8 to 10 ft bgs) and SB-45 (31.5 to 32 ft bgs)]. The concentrations of VOCs detected in the shallow samples collected from both of these borings were below their NYSDEC RSCOs. Benzene, o-xylene and acetone were detected at concentrations that exceeded their respective NYSDEC RSCOs in soil sample SB-45 (31.5 to 32 ft bgs).

The concentration of Total VOCs in soil sample SB-44 (8 to 10 ft bgs) of 20,080 ug/kg exceeded the NYSDEC RSCO for Total VOCs of 10,000 ug/kg. The VOCs that contribute to the total concentrations were primarily comprised of o- and m/p-xylenes, acetone and methylcyclohexane.

4.8.2.2 Semi-Volatile Organic Compounds

Twenty-three SVOCs were detected in subsurface soil samples. Concentrations of six of the 23 SVOCs detected (4-nitrophenol, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene) exceeded their respective NYSDEC RSCOs. Benzo(a)pyrene and benzo(a)anthracene exhibited the highest frequency of exceedances (approximately 70% and 60%, respectively). Pyrene and fluoranthene are PAHs that exhibited the highest detected concentrations (13,000 ug/kg and 7,000 ug/kg, respectively) in the soil samples SB-43 (8 to 10 ft bgs). The SVOCs concentrations detected in the deeper sample in soil boring SB-43 (23 to 23.5 ft bgs) were below their respective NYSDEC RSCOs except benzo(a)anthracene (270 ug/kg versus 224 ug/kg) and benzo(a)pyrene (230 ug/kg versus 61 ug/kg).

No Total SVOC concentrations exceeded the NYSDEC RSCO for Total SVOCs.

4.8.2.3 Inorganics

Thirteen metals were detected in the subsurface soil samples. Of these, the concentrations of arsenic, cadmium, copper, lead, mercury, nickel and zinc exceeded their respective NYSDEC RSCOs. The maximum reported metal concentration in Area 6 was that for lead of 956 mg/kg, which was detected in subsurface soil sample SB-43 (8 to 10 ft bgs). Of the metals detected, the concentrations of zinc and mercury exceeded their respective NYSDEC RSCOs most frequently (approximately 90% and 80%, respectively). The maximum concentrations of zinc and mercury were 485 mg/kg and 9.3 mg/kg, respectively.

Total cyanide was detected in two samples, with a maximum concentration of 0.72 mg/kg. Similarly, amenable cyanide was detected in two soil samples from this Area, with a maximum concentration of 0.72 mg/kg. There are no NYSDEC RSCOs established for total or amenable cyanide.

4.8.3 Groundwater Analytical Results and Field Measurements

There were no monitoring wells installed in this area of the Site, nor were any groundwater samples collected from this area as part of the SCS.

4.9 Site-Wide Summary of Organic Compounds Detected in Subsurface Soil

Figures 12 and 13 present a graphical interpretation of the ranges of concentrations reported in soil samples for Total VOCs and Total SVOCs, respectively. Concentrations below the NYSDEC RSCO for Total VOCs (10 mg/kg) and Total SVOCs (500 mg/kg) are presented in green. Other colors, as presented in the figures, represent different ranges of concentrations for each chemical class.

4.9.1 Total VOCs

The concentrations of Total VOCs exceeded the NYSDEC RSCO for Total VOCs in soil from 18 boring locations and 27 sample intervals across the six designated Areas of the Site. The majority of the exceedances were located in Area 3 (which was the location of the Retort House, Scrubbers, Purifying House, Laboratory and Workshops), with the central portion of this area in the vicinity of soil boring SB-51, which had the highest concentration of Total SVOCs of approximately 2,850 mg/kg. The occurrence and concentrations for Total VOCs above the NYSDEC RSCO are summarized by area in the table below.

Area	Sample Location	Sample Interval (ft bgs)	Concentration (mg/kg)
1	SB-2	19 to 20.5	103.10
	SB-4	19 to 21	182.23
	SB-5B	11 to 12	110.80
	SB-6	13 to 15	596.70

Area	Sample Location	Sample Interval (ft bgs)	Concentration (mg/kg)
2	SB-9	20 to 22	13.81
	SB-10	5 to 6	68.96
		6 to 8	535.60
		8 to 10	234.80
	SB-11	27 to 29	72.37
	SB-15	5 to 6	28.00
		17 to 19	360.48
3	SB-19	17 to 19	12.75
	SB-24	25 to 27	863.02
	SB-25	20 to 22	26.84
		33 to 34	40.49
	SB-48	15 to 16	35.38
		19 to 21	12.44
	SB-49	10 to 12	243.86
		14 to 15	34.61
		17 to 18	300.02
	SB-51	14 to 15	447.52
		21 to 22	2,851.25
	SB-52	27 to 29	196.90
4	SB-30	22 to 24	390.90
		24 to 26	30.44
5	SB-36	25 to 27	157.50
6	SB-44	8 to 10	20.08

4.9.2 Total SVOCs

The concentrations of Total SVOCs exceeded the NYSDEC RSCO for Total SVOCs in soil from seven boring locations and nine sample intervals. Spatially, the highest density of exceedances was again in Area 3 of the Site (similar to the Total VOCs trend), with the maximum Total SVOC concentration reported in SB-15 (Area 2, 13,749 mg/kg). SB-15 was located on the

sidewalk, outside of the building at Block 690, Lot 46. The occurrence and concentrations for Total SVOCs above the NYSDEC RSCO are summarized by area in the table below.

Area	Sample Location	Sample Interval (ft bgs)	Concentration (mg/kg)
1	SB-4	19 to 21	728.28
2	SB-11	27 to 29	1,645.70
	SB-15	17 to 19	13,749.00
	SB-56 (Dup.)	2 to 3	542.10
3	SB-49	17 to 18	1,003.05
	SB-51	14 to 15	561.09
		21 to 22	2,112.75
	SB-52	27 to 29	797.11
		33 to 35	1,391.60

4.10 Groundwater Flow

Based upon the synoptic water level measurements recorded on October 11, 2005, and field survey information, groundwater elevations were calculated in each of the eleven monitoring wells installed within the areas of the Site. Information related to monitoring well construction details, groundwater elevations, and other information is summarized in Table 4-36. The groundwater elevations were then plotted and a groundwater contour map developed, as presented in Figure 14.

Based upon the topography and regional hydrogeologic information, the expected groundwater flow is to the west, towards the Hudson River. It is anticipated that groundwater levels are likely influence by seasonal and tidal fluctuations of water levels in the river. Based upon the water table elevations, the groundwater flow direction within the fill unit on the majority of the Site is towards the west/southwest. There appears to be a hydraulic anomaly located near Area 2, where the water table appears to be mounded. There may be influences from the steel sheet pile that was installed on the Block 690, Lots 12 and 54 properties.

4.11 Community Air Monitoring Results

During the Site characterization study implementation, there was no work stoppage due to elevated PID or particulate readings in excess of the CAMP criteria. There were no complaints from tenants, owners, or operators of commercial establishments of nuisance odors or dust during the Con Edison/TRC investigative efforts. Periodically, an instantaneous reading above the action level on the PID and/or dust monitor was recorded. However, these anomalies were attributed to weather-related conditions (e.g., humidity) by the field personnel.

4.12 Summary of Findings

The key field observations and analytical results for each of the six designated areas are summarized below.

Summary of Findings – Area 1

- The silty/clay unit that forms an intermediate low permeability boundary elsewhere on the Site between the water table and the lower aquifer units is discontinuous or absent in Area 1.
- Evidence of petroleum-related impacts, which included odors and LNAPL, was prevalent in the water table aquifer. The petroleum is related releases from one or more of the 6 USTs that were operated at this property. The spill is actively being managed by the regional NYSDEC office and related actions are ongoing.
- The foundations of the two former gas holders are present in the subsurface of this Area. The bottoms of the holders appear to be intact. The soil fill inside the holders appears to be different than the soil encountered in soil borings outside the holders.
- Evidence of MGP-residues (e.g., OLM, odors, black staining, etc.) was only detected in two soil borings (SB-2 and SB-4) at a depth immediately above of the bottom of both of the former gas holders. These soil borings were advanced inside the holders.
- VOCs, Total VOCs, SVOCs, Total SVOCs and metals were detected at elevated concentrations in subsurface soil.
- Concentrations of VOCs, SVOCs, two metals, and total cyanide were detected at concentrations exceeding the NYSDEC AWQSGVs in shallow groundwater (MW-5A). The majority of the VOCs and SVOCs detected are related to the petroleum contamination at the property from garage operations conducted by others.

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- No VOCs or SVOCs were detected at elevated concentrations in deep groundwater (MW-5B). One metal, arsenic, exceeded the NYSDEC AWQSGVs in this well.

Summary of Findings – Area 2

- The silty/clay unit that forms an intermediate low permeability boundary between the water table and the lower aquifer appears to be continuous across Area 2. The depth to the top of the silty/clay unit varies.
- Evidence of petroleum-related impacts, which included odors and LNAPL, was prevalent in the water table aquifer and was typically detected from 1 ft bgs to depths ranging to 15 ft bgs. The petroleum is likely related operations of one or more USTs that were operated in this Area or the numerous petroleum spills that have been identified and documented in the vicinity of the Site.
- Structures associated with the two former gas holders are present in the subsurface in the eastern-most portion of Area 2. The southern portion of the ring wall of former Gas Holder No. 3 was visually confirmed in test pit TP-2, although the ring wall of former Gas Holder No. 4 could not be located. At SB-10, located inside former Gas Holder No. 4, the gas holder bottom was encountered.
- Where detected, evidence of MGP-residues (e.g., OLM, TLM, naphthalene odors, black staining, etc.) was detected as discrete narrow bands in 6 soil borings within the interval of 19 to 35 ft bgs in the eastern-most portion of this Area and adjacent to the area being remediated (Georgetown property) on the western end of Area 2 along Route 9A.
- VOCs, Total VOCs, SVOCs, Total SVOCs and metals were detected in subsurface soil at concentrations exceeding NYSDEC RSCOs. No pesticides, herbicides or PCBs were detected at concentrations in subsurface soil in excess of the NYSDEC RSCOs.
- Concentrations of one VOC, benzene, in shallow groundwater exceeded the NYSDEC AWQSGV. SVOCs were not detected in excess of the NYSDEC AWQSGVs. One metal, thallium, was detected in excess of the NYSDEC AWQSGV in the duplicate sample of MW-12B.

Summary of Findings – Area 3

- The silty/clay unit that forms an intermediate low permeability boundary between the water table and the lower aquifer appears to be continuous across Area 3. The top of this unit ranged in depth from 15 ft bgs on the eastern portion of this Area to 33 ft bgs on the western portion.

-
- The remnant of the foundation for several former structures were are present in subsurface in the subsurface of this Area. Based upon historical maps, the structures encountered included portions of the retort house, laboratory and scrubbers.
 - With the exception of soil boring SB-21, soil encountered in all borings in Area 3 exhibited some evidence of MGP-related impacts, which included OLM, TLM, naphthalene and ammonia odors, black staining, etc. The strongest evidence of MGP impacts (e.g., OLM, TLM and heavy black staining) was detected in four borings (SB-24/MW-24 cluster, SB-26, SB-48 and SB-52). Where present, OLM, TLM, and black staining were encountered in the interval 13 to 33 ft bgs. Ammonia odors were detected in the vicinity of the Scrubbers in the eastern side of this Area.
 - VOCs, Total VOCs and SVOCs, Total SVOCs and metals were detected at elevated concentrations in subsurface soil in Area 3.
 - Concentrations of 2 VOCs and 3 SVOCs in the groundwater sample collected from MW-24A exceeded the NYSDEC AWQSGVs. There were no other exceedances of the NYSDEC AWQSGVs in this Area.
 - During monitoring well development and groundwater sampling, several feet of coal tar DNAPL was measured in the deep monitoring well MW-24 B located in the western portion of Area 3. It is noted that no evidence of contamination was detected during installation of this well. The source and mechanism for its migration in to the well has not been determined.

Summary of Findings – Area 4

- The silty/clay unit that forms an intermediate low permeability boundary between the water table and the lower aquifer may be continuous across Area 4, but becomes notably thin on the east side of the block.
- Of the two borings completed in Area 4, only subsurface soil in soil boring SB-30 exhibited evidence of contamination, which included petroleum odors, MGP-related odors, sheen, black staining, OLM and TLM. The OLM and TLM were detected in soil from 20 to 24 ft bgs.
- VOCs, Total VOCs, SVOCs, Total SVOCs and metals were detected at elevated concentrations in subsurface soil in Area 4.

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- One VOC (1,2-dichloroethene) and one metal (thallium) were detected in groundwater at concentrations above their NYSDEC AWQSGVs. Neither parameter is associated with MGP residues.

Summary of Findings – Area 5

- The silty/clay unit that forms an intermediate low permeability boundary between the water table and the lower aquifer appears to be continuous across the western portion of Area 5. The depth to the top of the silty/clay unit varies.
- A brick-wall foundation, which appeared to correlate with Gas Holder No. 6 is present in the subsurface in the southwestern portion of this Area. No evidence of MGP-related impacts associated with this structure was observed.
- Evidence of petroleum-related impacts, which included odors and sheen, was detected in several borings completed in this area. The impacts were typically in the shallow overburden or in the immediate vicinity of the water table, which occurred between 4 to 7 ft bgs. The petroleum may have several sources, which likely include the in-place USTs on-site and documented releases from historic or current USTs on adjacent properties.
- Evidence of MGP-residues (e.g., OLM, odors, black staining, sheen etc.) was detected in five borings. MGP-related odors were detected intermittently in soil boring SB-33 in the interval from 21 to 37 ft bgs. OLM was only detected in soil boring SB-34 in the interval of 19 to 21 ft bgs. Sheen was observed in soil borings SB-32, SB-33, SB-34, SB-36 and SB-38 at various depths in the interval 5 to 27 ft bgs.
- VOCs, Total VOCs, SVOCs, Total SVOCs and metals were detected at elevated concentrations in subsurface soil.
- Only acetone (VOC) and naphthalene (SVOC) were detected at elevated concentrations in groundwater in Area 5. Acetone is not associated with MGP residues.

Summary of Findings – Area 6

- The extent of the silty-clay unit that forms an intermediate low permeability boundary between the water table and the lower aquifer could not be determined in this Area due to the inability to advance soil borings to the target depth. Boring refusal is believed to have been due to the presence of subsurface structures related to the nearby bulkhead and relieving platform.

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- Of the four soil borings completed in Area 6, only one boring contained MGP-related odors and an elevated PID reading. These observations are consistent with MGP-related waste that would occur near former gas holders, such as the four that were present in Area 6.
 - VOCs, Total VOCs, SVOCs, and metals were detected at elevated concentrations in subsurface soil in Area 6.
 - There were no monitoring wells installed in this area of the Site, nor were any groundwater samples collected from this area as part of the SCS.

5 QUALITATIVE EXPOSURE ASSESSMENT

A qualitative exposure assessment was conducted in accordance with NYSDEC, Division of Environmental Remediation, Draft DER-10, Technical Guidance for Site Investigation and Remediation (NYSDEC, 2002). The purpose of this qualitative exposure assessment is to determine whether Site conditions pose an unacceptable hazard to potentially exposed receptor populations. In order to pose an unacceptable hazard to receptor populations, the receptor must be exposed to contaminants at the Site. This assessment evaluates whether complete exposure pathways exist at the Site and identifies chemicals of concern (COCs) for those receptors and media of concern where a complete exposure pathway exists (NYSDEC, 2002).

The former West 18th Street Gas Works was located between West 16th Street and West 20th Street, and 10th Avenue and the Hudson River bulkhead (with one additional parcel on the block bounded by West 17th Street, West 18th Street, 9th Avenue and 10th Avenue) in western downtown Manhattan, New York. As discussed in Section 2.2, the Site is located in a mixed usage area with commercial properties including storefront retail facilities to the east and west and a sports/entertainment complex located to the west and adjacent to the Site. A mixture of commercial office/warehouse facilities, art galleries and residential properties are located to the north and adjacent to the Site. An office facility and high-rise apartment building are located to the south. The areas at and around the Site are anticipated to remain the same as the current use for the foreseeable future. Buildings and structures within the former Site boundaries are presently being demolished, with new construction planned. It is anticipated that additional properties within this area will also undergo future redevelopment in a similar manner.

This Qualitative Exposure Assessment addresses all six of the designated areas as one Site. These areas are in a heavily developed urban setting, and are characterized by numerous tightly spaced buildings, concrete, and asphalt covered areas. The analysis is broad in nature, capable of being applied to current and future activities. If a specific pathway exists in one of the designated areas, it was given further attention and analyzed in the context of the elements below.

5.1 Exposure Pathway Assessment

A complete exposure pathway consists of five elements (NYSDEC, 2002):

- A contaminant source;
- Contaminant release and transport mechanisms;
- A point of exposure;
- A receptor population; and
- A route of exposure.

The evaluation of these exposure pathway elements as they apply to the Site is presented below.

5.2 Contaminant Source

The Site is the location of the former West 18th Street Gas Works. MGP operations began at in 1834, with numerous production and storage-related expansions occurring throughout the history of the facility. The West 18th Street Gas Works appears to have operated only one or two years into the twentieth century. By 1914, all of the gas holders were razed. The available historical information on the West 18th Street Gas Works indicates that this Site was both a gas manufacturing and a gas storage facility. There were no known waste storage areas. Typical MGP residues, such as tars, purifier wastes (wood or other solids), clinkers (consolidated ash-like material), condensates (liquids), and oils, were generally observed at various locations within the Site. No historical records are available that describe waste management practices during the operation of the former gas works. However, based upon visual and olfactory field observations, tars (DNAPL), clinkers, and oils (petroleum-based LNAPL) were determined to be present intermittently across the Site.

5.3 Contaminant Release and Transport Mechanisms

Contaminant release and transport mechanisms carry contaminants from the source to points where people may be exposed. Potential contaminant release mechanisms include historic direct release of MGP-associated contaminants to soils, and the potential release from existing or historic utilities. Transport mechanisms include the leaching, percolation or infiltration of contaminants from contaminated soils to groundwater; volatilization of contaminants from soils or groundwater to air and the potential transport of contaminants in groundwater to surface water.

5.4 Points of Exposure

An exposure point is a location where actual or potential human contact with a contaminated medium may occur. With respect to the former West 18th Street Gas Works, possible exposure points include contaminants in soil, groundwater and soil gas/indoor air intrusion. Off-site potential exposures include particulates in ambient air generated during construction activities, as well as potential exposure to contaminated soil, groundwater and vapors.

5.5 Receptor Populations

Based on current and potential future land uses at the Site, potential receptor populations that may come in contact with Site-related contaminants are commercial tenants, building residents, off-site residents, indoor maintenance workers, outdoor workers (i.e., landscapers/groundskeepers) and construction/utility workers.

5.6 Routes of Exposure

A route of exposure is the way in which a receptor may be exposed to Site-related contaminants. Potential routes of exposure considered for this assessment include ingestion and dermal contact with soils, ingestion and dermal contact with groundwater, inhalation of indoor and ambient air that contains volatilized constituents present in Site soil and/or groundwater, and inhalation of soil particulates that enter the air column as fugitive dust emissions. The potential exposure routes for which a complete exposure pathway exists for a specific receptor are discussed below.

Commercial Tenants and Residential Receptors: A tenant in one or more of the buildings, or an adult or child residential receptor could, in general, be exposed to surface soil through incidental ingestion, inhalation, and/or dermal contact. For this Site, however, the prevalence of buildings, paving and concrete that cover almost the entire Site reduce the potential exposure routes, rendering these pathways as not being of potential significance. An adult or child resident or tenant may be exposed to surface and subsurface soil through the inhalation of particulates in ambient air associated with fugitive dust emissions during construction activities. Residential and commercial tenant receptors will not be exposed to groundwater at the Site through ingestion or dermal contact. Groundwater is not used as a drinking water supply in Manhattan. New York City residents receive their water supply from upstate reservoirs. Due to the Site's proximity to the Hudson River, groundwater beneath the Site is likely to be brackish or saline, and unsuitable for human consumption and therefore is not a media of concern for direct ingestion. Due to the presence of VOCs in groundwater which may volatilize into the residential buildings on-site, inhalation of volatiles in indoor air is a potential route of exposure for residents and commercial tenants at this Site.

Off-Site Residents: An adult or child off-site resident may be exposed to surface and subsurface soil through the inhalation of particulates in ambient air associated with fugitive dust emissions during construction activities.

Indoor Maintenance Worker: An indoor maintenance worker is assumed to work only indoors. Therefore, no routes of exposure to soils and groundwater exist for this Site. Due to the presence of VOCs in groundwater which may volatilize into the residential and commercial buildings on-site, inhalation of volatiles in indoor air is a potential route of exposure for indoor maintenance workers at this Site.

Construction Worker: A construction worker may be exposed to surface and subsurface soil and groundwater during construction activities that may occur in the future. The routes of exposure are incidental ingestion and dermal contact with soils and groundwater, inhalation of particulates in ambient air, and inhalation of volatiles in ambient air that have volatilized from soil and groundwater.

5.7 Identification of Chemicals of Concern

The evaluation of whether there are chemicals of concern at this Site considers the concentrations of Site-related chemicals and whether the concentrations pose a health hazard to the identified receptors through the complete routes of exposure identified in Section 5.6 above. Chemicals of concern that require further evaluation are those that exceed protective cleanup objectives in soil and groundwater cleanup standards (i.e., NYSDEC RSCOs and NYSDEC AWQSGVs) or applicable screening criteria. This evaluation was conducted for each medium of concern.

5.8 Surface Soil

There were no surface soil samples collected in association with this project, as paving, concrete or buildings dominate the urban landscape at the Site.

5.9 Subsurface Soils

A total of 9 VOCs, 25 SVOCs and 8 metals were detected across the six Areas of the Site in test pits and soil borings at concentrations exceeding their respective NYSDEC RSCOs. Therefore, subsurface soil is a medium of concern and could contribute to a potentially complete exposure pathway. The only receptors who may be exposed to subsurface soils is the construction worker, and possibly on-Site tenants/residents and off-site tenants (particulate inhalation during construction activities). For the construction worker, exposure may occur through incidental ingestion of surface/subsurface soil, dermal contact with surface/subsurface soil and/or groundwater, and inhalation of particulates in ambient air. Therefore, these VOCs, SVOCs and metals are COCs in subsurface soil for the construction worker.

5.10 Groundwater

A total of 5 VOCs, 5 SVOCs, 4 metals, and total cyanide were detected in groundwater at the Site in excess of the NYSDEC AWQSGVs. Therefore, groundwater is a medium of concern and could contribute to a potentially complete exposure pathway. The only receptors who may be exposed to groundwater is the construction worker, as there are no known pumping wells in vicinity of the Site. For the construction worker, exposure may occur through incidental dermal contact with groundwater. Therefore, these VOCs, SVOCs, metals, and total cyanide are COCs in groundwater for the construction worker.

5.11 Sub-Slab Vapors

A Site-wide investigation of sub-slab vapor conditions has not been conducted by Con Edison. Within Areas 2 and 5, however, Con Edison conducted limited studies (baseline sub-slab and

indoor air quality sampling program at Block 690, Lot 46 (Area 2) and at Block 691, Lot 1 (Area 5).

For the Area 2 study, a total of 12 compounds exceeded the 75th percentile NYSDOH criteria, indicating that there is a potential for vapor intrusion into indoor spaces at this location. The majority of the detected compounds can be attributed to tenant operations/storage and/or previous UST releases. As was demonstrated, certain types of construction activities by others on the adjacent parcel exacerbated the conditions, resulting in cracks in the buildings' concrete slab and walls. Tenants and residents complained of odors collecting inside the building during construction-related activities. Intrusion of sub-slab vapors was considered to be an exposure pathway for tenants and residents that would warrant further evaluation due to the limited amount of data available.

Subsequent to the Con Edison investigation, the cracks in the floor slab and walls were sealed, and construction techniques were changed. Additional soil vapor studies conducted by others indicated that there was no vapor intrusion. Since the performance of both of these studies, subsurface construction activities have been completed, the adjacent property is sealed below grade with a liner, and a new structure is being built atop it. In addition, the tenant on the first floor is reportedly moving out of this location.

The air and sub-slab soil gas sampling program conducted in Area 5 confirmed the presence of a total of 12 compounds above the 75th percentile NYSDOH criteria, five of which were in excess of the NYSDOH 90th percentile NYSDOH criteria. Two of these may be related to MGP sources and three of these compounds are not associated with former MGP operations. The data suggests that the presence of these compounds in sub-slab soil gas have the potential to impact indoor air quality. However, the analytical data, in conjunction with the observed presence of numerous VOC-containing products stored and used at the facility during routine operations and maintenance and the air flow in the basement, suggest that these potential sources are likely having a greater influence on the overall indoor air quality than intrusion of VOCs in the soil gas into the basement. Finally, comparison of the various VOCs detected in indoor air to the NYSDOH published background concentrations, it is concluded that their concentrations are generally typical for in indoor air. Although several VOCs were detected above background for residential indoor air, regardless of the source(s), the concentrations are well below published levels considered to pose an exposure risk.

In summary, subsurface soil and groundwater are mediums of concern that could contribute to potentially complete exposure pathways. The only receptors who may be directly exposed to subsurface soils is the construction worker. It is noted that on-Site tenants/residents and off-site tenants may be indirectly exposed to subsurface soil containing COCs if this media becomes

airborne as dust (e.g., particulate inhalation during construction activities). The only receptor who may be exposed to groundwater is the construction worker. The potential for a complete exposure pathway in association with sub-slab vapors exists across the Site due to the presence of elevated VOCs in subsurface soil and groundwater. However, the majority of the VOCs detected in the shallow subsurface soil and groundwater are not attributed to MGP residues but rather are most directly to the numerous documented and suspected petroleum spills throughout and in the vicinity of the Site.

6 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the SCS, soil and or groundwater quality in each of the six designated Areas of the West 18th Street Gas Works Site have been influenced by historical operations of the former MGP. In response to these findings and in accordance with the VCA, Con Edison will conduct a Remedial Investigation (RI) at the Site to delineate impacts in the affected areas. Towards this goal, a RI Work Plan was prepared and is presented in Appendix E of this report.

7 REFERENCES

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Summary of Site Characterization Study Field Program for Area 1
Former West 18th Street Gas Works
Consolidated Edison Company of New York, Inc.
Table 4-1

Soil Borings

Sample Location	Sample Location Rationale	Sample Interval (Feet below ground)	Individual TAGM RSCO Exceedance?									
			VOCs	SVOCs	PP Metals	Total Cyanide	Amenable Cyanide	PCBs	Pesticides	Herbicides	Total VOCs	Total SVOCs
SB-1	Located southeast of the former gas holder designated as Gas Holder No. 1 on the south side of West 18th Street between 9th and 10th Avenues (within the Verizon building).	5 to 5.5	No	No	No	No	No	NR	NR	NR	No	No
		1 to 1.5	No	No	☒	No	No	NR	NR	NR	No	No
		2 to 2.5	No	No	☒	No	No	NR	NR	NR	No	No
		5 to 7	No	No	☒	No	No	NR	NR	NR	No	No
		13 to 15	No	No	☒	No	No	NR	NR	NR	No	No
SB-2	Located within Gas Holder No. 1 (within Verizon building).	19 to 20.5	☒	☒	☒	No	No	NR	NR	NR	☒	No
		3 to 3.5	No	No	No	No	No	NR	NR	NR	No	No
		5 to 7	No	No	No	No	No	NR	NR	NR	No	No
		13 to 15	No	No	No	No	No	NR	NR	NR	No	No
		17 to 19	No	No	No	No	No	NR	NR	NR	No	No
SB-3	Located between Gas Holder No. 1 and the former gas holder designated as Gas Holder No. 2 on the south side of West 18th Street between 9th and 10th Avenues (at TP-1 location, within the Verizon building).	5 to 5.5	No	No	☒	No	No	NR	NR	NR	No	No
		7 to 9	No	No	☒	No	No	NR	NR	NR	No	No
		9 to 13	No	No	☒	No	No	NR	NR	NR	No	No
		17 to 19	No	No	☒	No	No	NR	NR	NR	No	No
		19 to 21	☒	☒	☒	No	No	NR	NR	NR	☒	☒
SB-4	Located within Gas Holder No. 2 on the south side of West 18th Street between 9th and 10th Avenues (within Verizon building).	17 to 19	☒	No	No	No	No	NR	NR	NR	No	No
		19 to 20	No	No	No	No	No	NR	NR	NR	No	No
		26 to 28	No	No	No	No	No	NR	NR	NR	No	No
		31 to 33	No	No	No	No	No	NR	NR	NR	No	No
		34 to 36	No	No	No	No	No	NR	NR	NR	No	No
SB-5A (MW-5B)	Located southwest of Gas Holder No. 2 (within the Verizon building).	5 to 5.5	No	No	☒	No	No	NR	NR	NR	No	No
		7 to 9	No	No	☒	No	No	NR	NR	NR	No	No
		9 to 13	No	No	☒	No	No	NR	NR	NR	No	No
		17 to 19	No	No	☒	No	No	NR	NR	NR	No	No
		19 to 21	☒	☒	☒	No	No	NR	NR	NR	☒	☒

Summary of Site Characterization Study Field Program for Area 1
Former West 18th Street Gas Works
Consolidated Edison Company of New York, Inc.
Table 4-1

Sample Location	Sample Location Rationale	Sample Interval (Feet below ground)	Individual TAGM RSCO Exceedance?									
			VOCs	SVOCs	PP Metals	Total Cyanide	Amenable Cyanide	PCBs	Pesticides	Herbicides	Total VOCs	Total SVOCs
SB-5B (MW-5A)	Located southwest of Gas Holder No. 2 (within the Verizon building).	10 to 11	No	No	No	No	No	NR	NR	NR	No	No
		11 to 12	☑	No	No	No	No	NR	NR	NR	☑	No
		21 to 22	No	No	No	No	No	NR	NR	NR	No	No
SB-6	Located northwest of Gas Holder No. 2 (within the Verizon building).	10 to 12	No	No	No	No	No	NR	NR	NR	No	No
		13 to 15	☑	No	No	No	No	NR	NR	NR	☑	No
		19 to 21	☑	No	No	No	No	NR	NR	NR	No	No
		24 to 26	No	No	No	No	No	NR	NR	NR	No	No
		28.5 to 30.5	No	No	No	No	No	NR	NR	NR	No	No
MW-55B	Duplicate of MW-5B	34 to 36	No	No	No	No	No	NR	NR	NR	No	No
SB-85A	Duplicate of SB-5A	19 to 20	No	No	☑	No	No	NR	NR	NR	No	No
SB-66	Duplicate of SB-6	24 to 26	No	No	No	No	No	NR	NR	NR	No	No

Exploratory Test Pit Trenches

TP-1B	Located in the central area of the Verizon parking garage, in search of the former ring walls.	1 to 1.5	No	No	☑	No	No	NR	NR	NR	No	No
TP-21B	Duplicate of TP-1B	1 to 1.5	No	No	☑	No	No	NR	NR	NR	No	No

Groundwater Samples

MW-5A	Located southwest of the former gas holder designated as Gas Holder No. 2 (within the Verizon building) - water table aquifer.	14	☑	☑	☑	☑	No	NR	NR	NR	Not Applicable	Not Applicable
MW-5B	Located southwest of the former gas holder designated as Gas Holder No. 2 (within the Verizon building) - deeper aquifer.	37	No	No	☑	No	No	NR	NR	NR	Not Applicable	Not Applicable

Notes:

NA = Not Analyzed

NR = Not Required per the NYSDEC-approved SCS Work Plan

Summary of Site Characterization Study Field Program for Area 2
Former West 18th Street Gas Works
Consolidated Edison Company of New York, Inc.
Table 4-2

Soil Borings

Sample Location	Sample Location Rationale	Sample Interval (Feet below ground surface)	Individual TAGM RSCO Exceedance?										Total SVOCs
			VOCs	SVOCs	PP Metals	Total Cyanide	Amenable Cyanide	PCBs	Pesticides	Herbicides	Total VOCs	Total SVOCs	
SB-7	Located on the southwest corner of West 19th Street and 10th Avenue (sidewalk area).	6 to 7	No	No	No	No	No	No	No	No	No	No	No
		17 to 19	No	No	No	No	No	No	No	No	No	No	No
		27 to 29	No	No	No	No	No	No	No	No	No	No	No
		43 to 45	No	No	No	No	No	No	No	No	No	No	No
MW-7A	Same as above.	6 to 7	No	No	No	No	No	No	No	No	No	No	No
SB-8	Located east of and between the former gas holders designated as Gas Holder Nos. 3 and 4 near 10th Avenue between 18th and 19th Streets (sidewalk area).	4 to 5	No	No	No	No	No	No	No	No	No	No	No
		11 to 11.5	No	No	No	No	No	NR	NR	NR	No	No	No
		14.5 to 15	☑	No	No	No	No	NR	NR	NR	No	No	No
SB-9	Located within Gas Holder No. 3 in the vicinity of the southwest corner of West 19th Street and 10th Avenue (within the parking lot).	4 to 5	No	☑	No	No	No	No	No	No	No	No	No
		8 to 10	No	☑	☑	No	No	No	No	No	No	No	No
		20 to 22	☑	☑	☑	No	No	No	No	No	☑	No	No
		26 to 28	No	No	No	No	No	No	No	No	No	No	No
		32 to 34	No	No	No	No	No	No	No	No	No	No	No
		5 to 6	☑	☑	No	No	No	No	No	No	☑	No	No
SB-10	Located within Gas Holder No. 4 in the vicinity of the northwest corner of West 18th Street and 10th Avenue (within the parking lot).	6 to 8	☑	☑	☑	No	No	No	No	No	☑	No	No
		8 to 10	☑	No	No	No	No	No	No	No	☑	No	No
		20 to 22	☑	No	No	No	No	No	No	No	No	No	No
		48 to 50	No	No	☑	No	No	No	No	No	No	No	No
		5 to 6	☑	☑	☑	No	No	No	No	No	No	No	No
		13 to 15	No	No	No	No	No	No	No	No	No	No	No
SB-11	Located southwest of Gas Holder No. 4 (within the parking lot).	27 to 29	☑	☑	☑	No	No	No	No	No	☑	☑	☑
		35 to 37	No	No	No	No	No	No	No	No	No	No	No
		37 to 39	No	No	No	No	No	No	No	No	No	No	No
		5 to 7	No	No	No	No	No	NR	NR	NR	No	No	No
SB-12	Located within the former Gas Light Company Pipe Yard (in the parking lot between West 18th and West 19th Streets).	7 to 9	No	☑	No	No	No	NR	NR	NR	No	No	No
		15 to 17	No	No	No	No	No	NR	NR	NR	No	No	No
		25 to 27	☑	No	☑	No	No	NR	NR	NR	No	No	No
		49 to 51	No	No	No	No	No	NR	NR	NR	No	No	No
		6 to 6.5	No	No	☑	No	No	NR	NR	NR	No	No	No
SB-13	Located within the former Gas Light Company Store Yard (on the sidewalk), south side of West 19th Street.	25 to 27	No	No	No	No	No	NR	NR	NR	No	No	No
		27 to 29	No	No	☑	No	No	NR	NR	NR	No	No	No
		25 to 27	No	No	No	No	No	NR	NR	NR	No	No	No
SB-13A	Duplicate of SB-13	25 to 27	No	No	No	No	No	NR	NR	NR	No	No	No

Summary of Site Characterization Study Field Program for Area 2
Former West 18th Street Gas Works
Consolidated Edison Company of New York, Inc.
Table 4-2

Sample Location	Sample Location Rationale	Sample Interval (Feet below ground surface)	Individual TAGM RSCO Exceedance?										Total SVOCs
			VOCs	SVOCs	PP Metals	Total Cyanide	Amenable Cyanide	PCBs	Pesticides	Herbicides	Total VOCs		
SB-14	Located within the former Gas Light Company Store Yard (within Block 690, Lot 20), close to West 18th Street.	4 to 5	No	☑	☑	No	No	No	No	No	No	No	
SB-14A	Located within the former Gas Light Company Store Yard (within Block 690, Lot 20), close to West 18th Street.	11 to 13	No	No	No	No	No	NR	NR	NR	No	No	
		17 to 19	No	No	No	No	No	NR	NR	NR	No	No	
		23 to 25	No	No	☑	No	No	NR	NR	NR	No	No	
		4 to 5	No	No	No	No	No	NR	NR	NR	No	No	
		5 to 6	No	No	No	No	No	NR	NR	NR	☑	No	
SB-15	Located on the sidewalk, north of Block 690, Lot 46.	7 to 9	No	☑	☑	No	No	NR	NR	NR	No	No	
		11 to 13	No	No	No	No	No	NR	NR	NR	No	No	
		17 to 19	☑	☑	No	No	No	NR	NR	NR	☑	☑	
		23 to 25	☑	☑	☑	No	No	NR	NR	NR	No	No	
		7.3 to 7.9	No	☑	☑	No	No	NR	NR	NR	No	No	
SB-18	Located on the sidewalk area immediately east of Chelsea Piers between West 18th and West 19th Streets.	28.5 to 29	☑	☑	☑	No	No	NR	NR	NR	No	No	
		42.5 to 43	No	No	☑	No	No	NR	NR	NR	No	No	
		6 to 7	No	☑	☑	No	No	NR	NR	NR	No	No	
SB-53	Located in the southwest area inside the building at Block 690, Lot 42.	8.3 to 9.3	No	No	☑	No	No	NR	NR	NR	No	No	
		14 to 15	No	No	☑	No	No	NR	NR	NR	No	No	
		3 to 4	No	☑	☑	No	No	NR	NR	NR	No	No	
SB-54	Located in the southeast area inside the building at Block 690, Lot 42.	5 to 6	No	☑	☑	No	No	NR	NR	NR	No	No	
		9 to 10	No	No	No	No	No	NR	NR	NR	No	No	
		19 to 21	No	☑	No	No	No	NR	NR	NR	No	No	
		2 to 3	No	☑	☑	No	No	NR	NR	NR	No	No	
SB-55	Located in the northeast area inside the building at Block 690, Lot 42.	5 to 6	No	☑	☑	No	No	NR	NR	NR	No	No	
		8 to 9	No	No	No	No	No	NR	NR	NR	No	No	
		19 to 20	No	No	No	No	No	NR	NR	NR	No	No	
		2 to 3	No	☑	☑	No	No	NR	NR	NR	No	☑	
SB-56	Duplicate of SB-55		No	☑	☑	No	No	NR	NR	NR	No	No	

Summary of Site Characterization Study Field Program for Area 2
Former West 18th Street Gas Works
Consolidated Edison Company of New York, Inc.
Table 4-2

Sample Location	Sample Location Rationale	Sample Interval (Feet below ground surface)	Individual TAGM RSCO Exceedance?								Total SVOCs
			VOCs	SVOCs	PP Metals	Total Cyanide	Amenable Cyanide	PCBs	Pesticides	Herbicides	
Exploratory Test Pit Trenches											
TP-2	Located within the parking lot between 18th and 19th Street, parallel to 10th Avenue (Block 690, Lot 20).	10 to 11	No	No	No	No	No	NR	NR	No	No

Groundwater Samples

MW-7A	Adjacent to former gas holder designated as Gas Holder No. 3 on the sidewalk east of Block 690, Lot 29.	11	☒	No	No	No	No	NR	NR	NR	Not Applicable
MW-12A	Located west of former gas holders designated as Gas Holder Nos. 3 and 4 in Block 690, Lot 20.	12	☒	No	No	No	No	NR	NR	NR	Not Applicable
MW-12B	Located west of former gas holders designated as Gas Holder Nos. 3 and 4 in Block 690, Lot 20.	42	☒	No	No	No	No	NR	NR	NR	Not Applicable
MW-22A	Duplicate of MW-12A	12	No	No	☒	No	No	NR	NR	NR	Not Applicable

Notes:

NA = Not Analyzed

NR = Not Required per the NYSDEC-approved SCS Work Plan

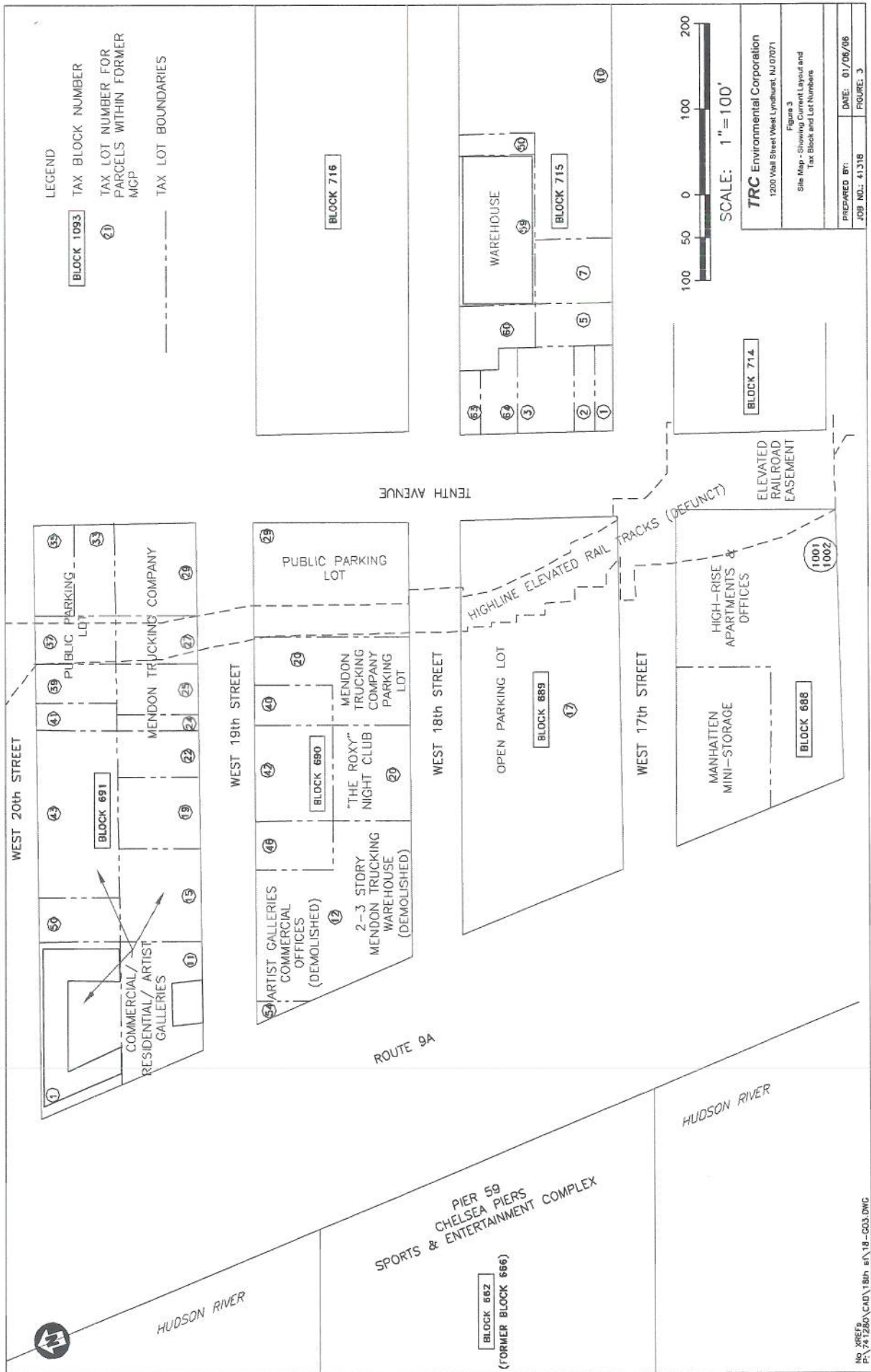
Summary of Field Work and Observations for Area1
Former West 18th Street Gas Works
Consolidated Edison Company of New York, Inc.
Table 4-7

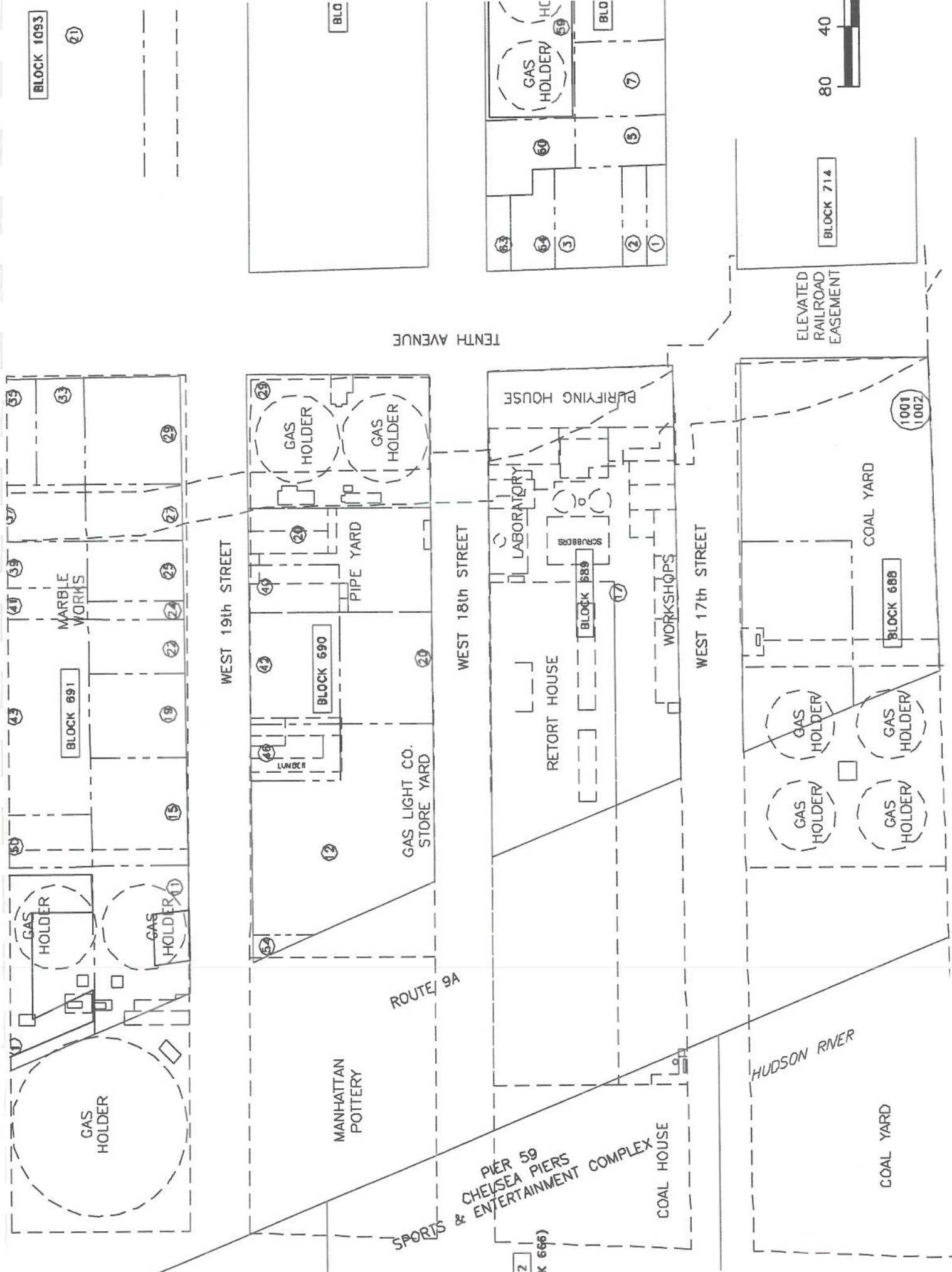
Boring / Well ID	Date Completed	Boring Depth (ft bgs)	Well Screen Interval	Depth to GW (ft bgs)	Depth to top of Clay (ft bgs)	Field Observations
SB-1	14-May-05	6	N/A	N/A	N/A	6": Refusal due to rock, N/O, N/S, no sheen
SB-2	6-May-05	20.5	N/A	13	N/A	0.8'-2': Strong gasoline-like odor, N/S, PID = 22.1 ppm; 13'-15': Petroleum odor, N/S, PID = 0.8 ppm; 15'-17': MGP-related odor, N/S, PID = 0.5 ppm; 17'-19': Strong MGP-related odor, N/S, PID = 124 ppm; 19'-21': Strong MGP-related odor, N/S, PID = 19.2 ppm; Refusal due to rocks at 20.5' - possible bottom of Former Gas Holder #1
SB-3	6-May-05	20	N/A	13	N/A	13'-15': Strong gasoline-like odor, N/S, PID = 63 ppm
SB-4	5-May-05	21	N/A	8	N/A	6.5'-9': Strong gasoline-like odor, black staining, sheen, PID = 5.7 ppm; 9'-11': Slight gasoline-like odor, N/S, trace sheen, PID = 0.9 ppm; 11'-13': Slight petroleum odor, trace black staining, trace sheen, PID = 4.4 ppm; 13'-15': Petroleum odor, N/S, sheen, PID = 30.5 ppm; 15'-17': Slight MGP-related odor, N/S, sheen, PID = 9.8 ppm; 17'-19': MGP-related odor, N/S, sheen, PID = 12.9 ppm; 19'-21': Very strong MGP-related odor, heavy black staining, visible OLM, PID = 3,124 ppm; Refusal due to rocks and brick at 21' - possible bottom of Former Gas Holder #2
SB-5	3-Jun-05	31	N/A	8	20	10'-11': Strong petroleum-like odor, sheen, N/S, PID = 387 ppm; 11'-15': Very strong petroleum-like odor, black staining, sheen, PID = 4085 ppm; 15'-19': Strong petroleum-like odor, sheen, black staining on wood, tr NAPL, PID = 198 ppm; 19'-20': Tr petroleum-like odor, N/S, PID = 6.8 ppm; 20'-25': Very sl petroleum-like odor, N/S, PID = 8.4 ppm
SB-5A/MW-5B	8-Jun-05	42	32-42	11.5	18.5'-19 and 31-31.3'	10'-11': Strong petroleum-like odor, N/S, sheen, PID = 387 ppm; 11'-15': Very strong petroleum-like odor, black staining, sheen, PID = 4,085 ppm; 15'-19': Very strong petroleum-like odor, N/S, sheen, PID = 1,222 ppm; 19'-21': Sheen; 32'-36': Very slight non-MGP-related odor, N/S, PID = 0.0 ppm

Summary of Field Work and Observations for Area 1
Former West 18th Street Gas Works
Consolidated Edison Company of New York, Inc.
Table 4-7

Boring / Well ID	Date Completed	Boring Depth (ft bgs)	Well Screen Interval	Depth to GW (ft bgs)	Depth to top of Clay (ft bgs)	Field Observations
SB-5B/MW-5A	2-May-05	22	9'-19'	11.5	N/A	10'-11': Strong petroleum-like odor, N/S, sheen, PID = 387 ppm; 11'-15': Very strong petroleum-like odor, black staining, sheen, PID = 4,085 ppm; 15'-20': Very strong petroleum-like odor, N/S, sheen, PID = 1,222 ppm; 20'-21': Slight petroleum-like odor, N/S, sheen, PID = 55 ppm; 21'-22': Slight petroleum-like odor, N/S, trace sheen, PID = 12.4 ppm; Refusal at 22' due to brick/concrete
SB-6	13-May-05	72	N/A	8	26.1'-28.2' and 38-40	10'-13': Slight petroleum-like odor (stronger at tip), trace black staining, PID = 265 ppm (sleeve) and PID = 2,060 ppm (tip); 13'-16': Strong petroleum-like odor, some black staining, sheen, trace NAPL, PID = 3,520 ppm; 16'-19': Slight petroleum-like odor, N/S PID = 134 ppm; Refusal at 72' due to rock (schist fragments in spoon)
TP-1B	4-May-05	3	N/A	N/A	N/A	0'-1': Gasoline-like odor, N/S, PID = 667 ppm; 2'-3' Gasoline-like odor, black staining on wood timbers, PID = 78.2 ppm; at 3' Gasoline-like odor, N/S, PID = 46.0 ppm

Note: Elevations are reported in feet below ground surface (ft bgs).
The sample locations were inside a building that was elevated approximately 2.5 feet above street level.





BLOCK 1093

21

BLO

BLO

BLOCK 714

80 40

ELEVATED
RAILROAD
EASEMENT

1001
1002

BLOCK 688

COAL YARD

COAL YARD

HUDSON RIVER

ROUTE 9A

PIER 59
CHELSEA PIERS
& ENTERTAINMENT COMPLEX

2
K 666

MANHATTAN
POTTERY

GAS LIGHT CO.
STORE YARD

BLOCK 590

PIPE YARD

GAS
HOLDER

GAS
HOLDER

PURIFYING HOUSE

LABORATORY

RETORT HOUSE

WORKSHOPS

BLOCK 691

MARBLE
WORKS

GAS
HOLDER

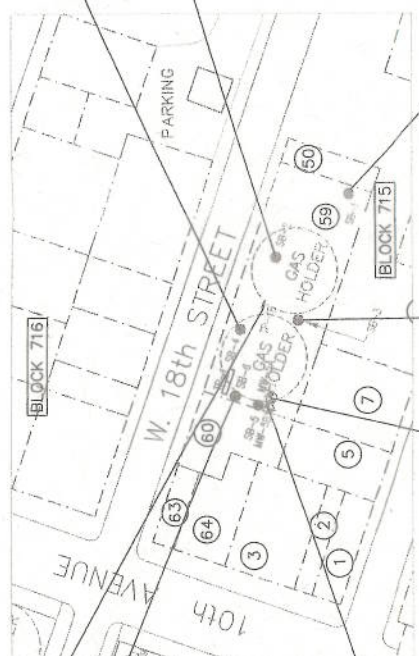
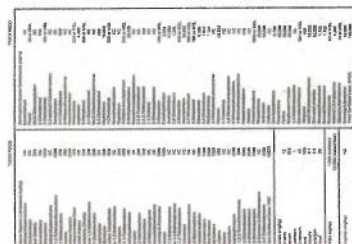
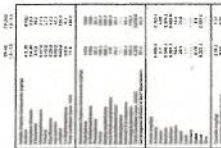
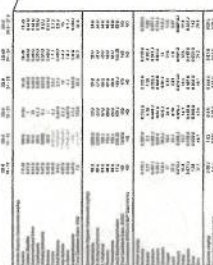
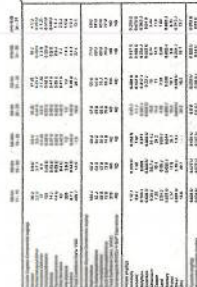
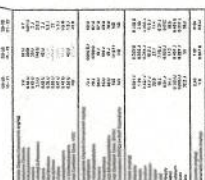
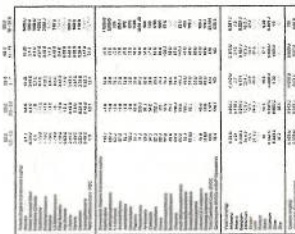
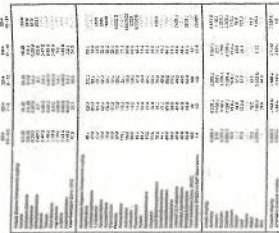
GAS
HOLDER

GAS
HOLDER

GAS
HOLDER

GAS
HOLDER

GAS
HOLDER



SOIL BORING LOCATION
 (SP-5)
 MONITORING WELL LOCATION (e.g., MW-24)
 HISTORIC FEATURES
 NOTE: ANALYTICAL DATA IS PRESENTED FOR THE SOIL BORINGS IN THE DESIGNATED AREA ONLY.



UNIVERSITY OF ALABAMA

		CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.	
FIGURE 5 Summary of VOCs, SVOCs, and Inorganics Detected in Subsurface Soil - Area 1		SCALE: 1" = 50' SHEET 1 OF 1	

WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-1	10/1/88	10	0.05	mg/L
W-2	10/1/88	10	0.05	mg/L
W-3	10/1/88	10	0.05	mg/L
W-4	10/1/88	10	0.05	mg/L
W-5	10/1/88	10	0.05	mg/L
W-6	10/1/88	10	0.05	mg/L
W-7	10/1/88	10	0.05	mg/L
W-8	10/1/88	10	0.05	mg/L
W-9	10/1/88	10	0.05	mg/L
W-10	10/1/88	10	0.05	mg/L

WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-11	10/1/88	10	0.05	mg/L
W-12	10/1/88	10	0.05	mg/L
W-13	10/1/88	10	0.05	mg/L
W-14	10/1/88	10	0.05	mg/L
W-15	10/1/88	10	0.05	mg/L
W-16	10/1/88	10	0.05	mg/L
W-17	10/1/88	10	0.05	mg/L
W-18	10/1/88	10	0.05	mg/L
W-19	10/1/88	10	0.05	mg/L
W-20	10/1/88	10	0.05	mg/L

WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-21	10/1/88	10	0.05	mg/L
W-22	10/1/88	10	0.05	mg/L
W-23	10/1/88	10	0.05	mg/L
W-24	10/1/88	10	0.05	mg/L
W-25	10/1/88	10	0.05	mg/L
W-26	10/1/88	10	0.05	mg/L
W-27	10/1/88	10	0.05	mg/L
W-28	10/1/88	10	0.05	mg/L
W-29	10/1/88	10	0.05	mg/L
W-30	10/1/88	10	0.05	mg/L

WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-31	10/1/88	10	0.05	mg/L
W-32	10/1/88	10	0.05	mg/L
W-33	10/1/88	10	0.05	mg/L
W-34	10/1/88	10	0.05	mg/L
W-35	10/1/88	10	0.05	mg/L
W-36	10/1/88	10	0.05	mg/L
W-37	10/1/88	10	0.05	mg/L
W-38	10/1/88	10	0.05	mg/L
W-39	10/1/88	10	0.05	mg/L
W-40	10/1/88	10	0.05	mg/L

WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-41	10/1/88	10	0.05	mg/L
W-42	10/1/88	10	0.05	mg/L
W-43	10/1/88	10	0.05	mg/L
W-44	10/1/88	10	0.05	mg/L
W-45	10/1/88	10	0.05	mg/L
W-46	10/1/88	10	0.05	mg/L
W-47	10/1/88	10	0.05	mg/L
W-48	10/1/88	10	0.05	mg/L
W-49	10/1/88	10	0.05	mg/L
W-50	10/1/88	10	0.05	mg/L

WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-51	10/1/88	10	0.05	mg/L
W-52	10/1/88	10	0.05	mg/L
W-53	10/1/88	10	0.05	mg/L
W-54	10/1/88	10	0.05	mg/L
W-55	10/1/88	10	0.05	mg/L
W-56	10/1/88	10	0.05	mg/L
W-57	10/1/88	10	0.05	mg/L
W-58	10/1/88	10	0.05	mg/L
W-59	10/1/88	10	0.05	mg/L
W-60	10/1/88	10	0.05	mg/L

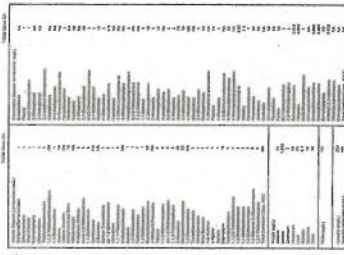
WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-61	10/1/88	10	0.05	mg/L
W-62	10/1/88	10	0.05	mg/L
W-63	10/1/88	10	0.05	mg/L
W-64	10/1/88	10	0.05	mg/L
W-65	10/1/88	10	0.05	mg/L
W-66	10/1/88	10	0.05	mg/L
W-67	10/1/88	10	0.05	mg/L
W-68	10/1/88	10	0.05	mg/L
W-69	10/1/88	10	0.05	mg/L
W-70	10/1/88	10	0.05	mg/L

WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-71	10/1/88	10	0.05	mg/L
W-72	10/1/88	10	0.05	mg/L
W-73	10/1/88	10	0.05	mg/L
W-74	10/1/88	10	0.05	mg/L
W-75	10/1/88	10	0.05	mg/L
W-76	10/1/88	10	0.05	mg/L
W-77	10/1/88	10	0.05	mg/L
W-78	10/1/88	10	0.05	mg/L
W-79	10/1/88	10	0.05	mg/L
W-80	10/1/88	10	0.05	mg/L



WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-81	10/1/88	10	0.05	mg/L
W-82	10/1/88	10	0.05	mg/L
W-83	10/1/88	10	0.05	mg/L
W-84	10/1/88	10	0.05	mg/L
W-85	10/1/88	10	0.05	mg/L
W-86	10/1/88	10	0.05	mg/L
W-87	10/1/88	10	0.05	mg/L
W-88	10/1/88	10	0.05	mg/L
W-89	10/1/88	10	0.05	mg/L
W-90	10/1/88	10	0.05	mg/L

WELL	DATE	DEPTH	CONCENTRATION	UNIT
W-91	10/1/88	10	0.05	mg/L
W-92	10/1/88	10	0.05	mg/L
W-93	10/1/88	10	0.05	mg/L
W-94	10/1/88	10	0.05	mg/L
W-95	10/1/88	10	0.05	mg/L
W-96	10/1/88	10	0.05	mg/L
W-97	10/1/88	10	0.05	mg/L
W-98	10/1/88	10	0.05	mg/L
W-99	10/1/88	10	0.05	mg/L
W-100	10/1/88	10	0.05	mg/L



- SOIL BORING LOCATION
- SP-44 = SOIL BORING NUMBER
- ⊕ MONITORING WELL LOCATION (e.g. MW-204)
- ▬ HISTORIC FEATURES



		CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.	
PROJECT: SHEET: DATE: DRAWN: CHECKED: APPROVED:	TITLE: SUMMARY OF VOCs, SVOCs, and Inorganics DETECTED IN GROUNDWATER	SHEET: OF: DATE: DRAWN: CHECKED: APPROVED:	FIGURE 1: Summary of VOCs, SVOCs, and Inorganics Detected in Groundwater

Appendix B

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO. 271179.01

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

APR 09 2007

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D: 03/19/07 RECEIVED: 03/21/07

TIME COL'D: 0900

MATRIX: Water

SAMPLE: MW-1

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter. ButylMethylEther	ug/L	40		03/21/07	1	EPA8021
Benzene	ug/L	170		03/22/07	10	EPA8021
Toluene	ug/L	< 1		03/21/07	1	EPA8021
Ethyl Benzene	ug/L	< 1		03/21/07	1	EPA8021
m + p Xylene	ug/L	6		03/21/07	2	EPA8021
o Xylene	ug/L	< 1		03/21/07	1	EPA8021
Xylene	ug/L	6		03/21/07	3	EPA8021
Isopropylbenzene	ug/L	7		03/21/07	1	EPA8021
n-Propylbenzene	ug/L	4		03/21/07	1	EPA8021
135-Trimethylbenzene	ug/L	1		03/21/07	1	EPA8021
124-Trimethylbenzene	ug/L	< 1		03/21/07	1	EPA8021
sec-Butylbenzene	ug/L	< 1		03/21/07	1	EPA8021
p-Isopropyltoluene	ug/L	< 1		03/21/07	1	EPA8021
n-Butylbenzene	ug/L	< 1		03/21/07	1	EPA8021
Naphthalene(v)	ug/L	3		03/21/07	1	EPA8021
tert-Butylbenzene	ug/L	< 1		03/21/07	1	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6710

NYSDOH ID # 10320

Page 1 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.01

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:0900

MATRIX:Water SAMPLE: MW-1

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 1		03/23/07	1	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Carbazole	ug/L	4.0		03/23/07	1	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 1		03/23/07	1	EPA8270
Hexachloroethane	ug/L	< 1		03/23/07	1	EPA8270
Nitrobenzene	ug/L	< 1		03/23/07	1	EPA8270
Isophorone	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 1		03/23/07	1	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 1		03/23/07	1	EPA8270
Naphthalene(sv)	ug/L	< 1		03/23/07	1	EPA8270
4-Chloroaniline	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobutadiene	ug/L	< 1		03/23/07	1	EPA8270
2-Methylnaphthalene	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorocyclopentadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Chloronaphthalene	ug/L	< 1		03/23/07	1	EPA8270
2-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Dimethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthylene	ug/L	< 1		03/23/07	1	EPA8270
2,6-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
3-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthene	ug/L	5.9		03/23/07	1	EPA8270
Dibenzofuran	ug/L	2.0		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6711

NYSDOH ID # 10320

Page 2 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.01

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0900

MATRIX:Water

SAMPLE: MW-1

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
Diethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Fluorene	ug/L	2.4		03/23/07	1	EPA8270
4-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodiphenylamine	ug/L	< 1		03/23/07	1	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobenzene	ug/L	< 1		03/23/07	1	EPA8270
Phenanthrene	ug/L	4.0		03/23/07	1	EPA8270
Anthracene	ug/L	< 1		03/23/07	1	EPA8270
Di-n-Butyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Pyrene	ug/L	< 1		03/23/07	1	EPA8270
BenzylButylPhthalate	ug/L	< 1		03/23/07	1	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6712

NYSDOH ID # 10320

Page 3 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.01

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:0900

MATRIX:Water SAMPLE: MW-1

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	1.1	*	03/23/07	1	EPA8270
Di-n-octyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: *Detected 1.21 ug/L in method blank.

DIRECTOR

rn = 6713

NYSDOH ID # 10320

Page 4 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.02

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980
ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0920

MATRIX:Water

SAMPLE: MW-2

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylEther	ug/L	26		03/22/07	1	EPA8021
Benzene	ug/L	69		03/22/07	1	EPA8021
Toluene	ug/L	< 1		03/22/07	1	EPA8021
Ethyl Benzene	ug/L	< 1		03/22/07	1	EPA8021
m + p Xylene	ug/L	< 2		03/22/07	2	EPA8021
o Xylene	ug/L	< 1		03/22/07	1	EPA8021
Xylene	ug/L	< 3		03/22/07	3	EPA8021
Isopropylbenzene	ug/L	4		03/22/07	1	EPA8021
n-Propylbenzene	ug/L	3		03/22/07	1	EPA8021
135-Trimethylbenzene	ug/L	< 1		03/22/07	1	EPA8021
124-Trimethylbenzene	ug/L	< 1		03/22/07	1	EPA8021
sec-Butylbenzene	ug/L	< 1		03/22/07	1	EPA8021
p-Isopropyltoluene	ug/L	< 1		03/22/07	1	EPA8021
n-Butylbenzene	ug/L	< 1		03/22/07	1	EPA8021
Naphthalene(v)	ug/L	< 1		03/22/07	1	EPA8021
tert-Butylbenzene	ug/L	< 1		03/22/07	1	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6714

NYSDOH ID # 10320

Page 1 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.02

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

P0#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:0920

MATRIX:Water

SAMPLE: MW-2

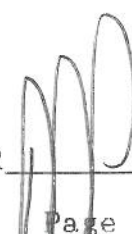
ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 1		03/23/07	1	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Carbazole	ug/L	< 1		03/23/07	1	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 1		03/23/07	1	EPA8270
Hexachloroethane	ug/L	< 1		03/23/07	1	EPA8270
Nitrobenzene	ug/L	< 1		03/23/07	1	EPA8270
Isophorone	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 1		03/23/07	1	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 1		03/23/07	1	EPA8270
Naphthalene(sv)	ug/L	< 1		03/23/07	1	EPA8270
4-Chloroaniline	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobutadiene	ug/L	< 1		03/23/07	1	EPA8270
2-Methylnaphthalene	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorocyclopentadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Chloronaphthalene	ug/L	< 1		03/23/07	1	EPA8270
2-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Dimethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthylene	ug/L	< 1		03/23/07	1	EPA8270
2,6-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
3-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthene	ug/L	2.3		03/23/07	1	EPA8270
Dibenzofuran	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



rn = 6715

NYSDOH ID # 10320

Page 2 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.02

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0920

MATRIX:Water

SAMPLE: MW-2

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
Diethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Fluorene	ug/L	1		03/23/07	1	EPA8270
4-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodiphenylamine	ug/L	< 1		03/23/07	1	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobenzene	ug/L	< 1		03/23/07	1	EPA8270
Phenanthrene	ug/L	< 1		03/23/07	1	EPA8270
Anthracene	ug/L	< 1		03/23/07	1	EPA8270
Di-n-Butyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Pyrene	ug/L	< 1		03/23/07	1	EPA8270
BenzylButylPhthalate	ug/L	< 1		03/23/07	1	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6716

NYSDOH ID # 10320

Page 3 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.02

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0920

MATRIX:Water

SAMPLE: MW-2

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	7.2	*	03/23/07	1	EPA8270
Di-n-octyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: *Detected 1.21 ug/L in method blank.

DIRECTOR

rn = 6717

NYSDOH ID # 10320

Page 4 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.03

04/05/07

Envirotac Limited
5 Old Dock Road
Yaphank, NY 11980
ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:0940

MATRIX:Water SAMPLE: MW-3

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylEther	ug/L	23		03/21/07	1	EPA8021
Benzene	ug/L	1200		03/22/07	20	EPA8021
Toluene	ug/L	4		03/21/07	1	EPA8021
Ethyl Benzene	ug/L	1		03/21/07	1	EPA8021
m + p Xylene	ug/L	6		03/21/07	2	EPA8021
o Xylene	ug/L	< 1		03/21/07	1	EPA8021
Xylene	ug/L	6		03/21/07	3	EPA8021
Isopropylbenzene	ug/L	9		03/21/07	1	EPA8021
n-Propylbenzene	ug/L	10		03/21/07	1	EPA8021
135-Trimethylbenzene	ug/L	< 1		03/21/07	1	EPA8021
124-Trimethylbenzene	ug/L	1		03/21/07	1	EPA8021
sec-Butylbenzene	ug/L	2		03/21/07	1	EPA8021
p-Isopropyltoluene	ug/L	< 1		03/21/07	1	EPA8021
n-Butylbenzene	ug/L	2		03/21/07	1	EPA8021
Naphthalene(v)	ug/L	2		03/21/07	1	EPA8021
tert-Butylbenzene	ug/L	< 1		03/21/07	1	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6718

NYSDOH ID # 10320

Page 1 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO. 271179.03

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980
ATTN: Dave Lorthioir

P0#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D: 03/19/07 RECEIVED: 03/21/07

TIME COL'D: 0940

MATRIX: Water

SAMPLE: MW-3

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 1		03/23/07	1	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Carbazole	ug/L	< 1		03/23/07	1	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 1		03/23/07	1	EPA8270
Hexachloroethane	ug/L	< 1		03/23/07	1	EPA8270
Nitrobenzene	ug/L	< 1		03/23/07	1	EPA8270
Isophorone	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 1		03/23/07	1	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 1		03/23/07	1	EPA8270
Naphthalene(sv)	ug/L	< 1		03/23/07	1	EPA8270
4-Chloroaniline	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobutadiene	ug/L	< 1		03/23/07	1	EPA8270
2-Methylnaphthalene	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorocyclopentadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Chloronaphthalene	ug/L	< 1		03/23/07	1	EPA8270
2-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Dimethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthylene	ug/L	< 1		03/23/07	1	EPA8270
2,6-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
3-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthene	ug/L	4.5		03/23/07	1	EPA8270
Dibenzofuran	ug/L	1.5		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6719

NYSDOH ID # 10320

Page 2 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.03

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:0940

MATRIX:Water SAMPLE: MW-3

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
Diethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Fluorene	ug/L	2.8		03/23/07	1	EPA8270
4-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodiphenylamine	ug/L	< 1		03/23/07	1	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobenzene	ug/L	< 1		03/23/07	1	EPA8270
Phenanthrene	ug/L	< 1		03/23/07	1	EPA8270
Anthracene	ug/L	< 1		03/23/07	1	EPA8270
Di-n-Butyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Pyrene	ug/L	< 1		03/23/07	1	EPA8270
BenzylButylPhthalate	ug/L	< 1		03/23/07	1	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6720

NYSDOH ID # 10320

Page 3 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.03

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:0940

MATRIX:Water

SAMPLE: MW-3

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	1.9	*	03/23/07	1	EPA8270
Di-n-octyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: *Detected 1.21 ug/L in method blank.

DIRECTOR

rn = 6721

NYSDOH ID # 10320

Page 4 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.04

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1000

MATRIX:Water SAMPLE: MW-4

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylEther	ug/L	18		03/21/07	1	EPA8021
Benzene	ug/L	950		03/22/07	20	EPA8021
Toluene	ug/L	3		03/21/07	1	EPA8021
Ethyl Benzene	ug/L	2		03/21/07	1	EPA8021
m + p Xylene	ug/L	12		03/21/07	2	EPA8021
o Xylene	ug/L	3		03/21/07	1	EPA8021
Xylene	ug/L	15		03/21/07	3	EPA8021
Isopropylbenzene	ug/L	15		03/21/07	1	EPA8021
n-Propylbenzene	ug/L	11		03/21/07	1	EPA8021
135-Trimethylbenzene	ug/L	2		03/21/07	1	EPA8021
124-Trimethylbenzene	ug/L	5		03/21/07	1	EPA8021
sec-Butylbenzene	ug/L	< 1		03/21/07	1	EPA8021
p-Isopropyltoluene	ug/L	< 1		03/21/07	1	EPA8021
n-Butylbenzene	ug/L	1		03/21/07	1	EPA8021
Naphthalene(v)	ug/L	5		03/21/07	1	EPA8021
tert-Butylbenzene	ug/L	< 1		03/21/07	1	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



ECOTEST LABORATORIES, INC.**ENVIRONMENTAL TESTING**

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.04

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1000

MATRIX:Water

SAMPLE: MW-4

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 1		03/23/07	1	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Carbazole	ug/L	1.4		03/23/07	1	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 1		03/23/07	1	EPA8270
Hexachloroethane	ug/L	< 1		03/23/07	1	EPA8270
Nitrobenzene	ug/L	< 1		03/23/07	1	EPA8270
Isophorone	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 1		03/23/07	1	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 1		03/23/07	1	EPA8270
Naphthalene(sv)	ug/L	3.9		03/23/07	1	EPA8270
4-Chloroaniline	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobutadiene	ug/L	< 1		03/23/07	1	EPA8270
2-Methylnaphthalene	ug/L	1.1		03/23/07	1	EPA8270
Hexachlorocyclopentadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Chloronaphthalene	ug/L	< 1		03/23/07	1	EPA8270
2-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Dimethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthylene	ug/L	< 1		03/23/07	1	EPA8270
2,6-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
3-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthene	ug/L	6.8		03/23/07	1	EPA8270
Dibenzofuran	ug/L	1.5		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6723

NYSDOH ID # 10320

Page 2 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.04

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1000

MATRIX:Water SAMPLE: MW-4

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
Diethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Fluorene	ug/L	2.4		03/23/07	1	EPA8270
4-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodiphenylamine	ug/L	< 1		03/23/07	1	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobenzene	ug/L	< 1		03/23/07	1	EPA8270
Phenanthrene	ug/L	1.5		03/23/07	1	EPA8270
Anthracene	ug/L	< 1		03/23/07	1	EPA8270
Di-n-Butyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Pyrene	ug/L	< 1		03/23/07	1	EPA8270
BenzylButylPhthalate	ug/L	< 1		03/23/07	1	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



rn = 6724

NYSDOH ID # 10320

Page 3 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.04

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:1000

MATRIX:Water SAMPLE: MW-4

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	1.3	*	03/23/07	1	EPA8270
Di-n-octyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: *Detected 1.21 ug/L in method blank.

DIRECTOR

rn = 6725

NYSDOH ID # 10320

Page 4 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.05

04/05/07

Envirotac Limited
5 Old Dock Road
Yaphank, NY 11980
ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:1020

MATRIX:Water SAMPLE: MW-5

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter. ButylMethylether	ug/L	34		03/21/07	1	EPA8021
Benzene	ug/L	1000		03/22/07	20	EPA8021
Toluene	ug/L	6		03/21/07	1	EPA8021
Ethyl Benzene	ug/L	89		03/22/07	20	EPA8021
m + p Xylene	ug/L	18		03/21/07	2	EPA8021
o Xylene	ug/L	3		03/21/07	1	EPA8021
Xylene	ug/L	21		03/21/07	3	EPA8021
Isopropylbenzene	ug/L	52		03/21/07	1	EPA8021
n-Propylbenzene	ug/L	77		03/22/07	20	EPA8021
135-Trimethylbenzene	ug/L	11		03/21/07	1	EPA8021
124-Trimethylbenzene	ug/L	54		03/21/07	1	EPA8021
sec-Butylbenzene	ug/L	7		03/21/07	1	EPA8021
p-Isopropyltoluene	ug/L	6		03/21/07	1	EPA8021
n-Butylbenzene	ug/L	14		03/21/07	1	EPA8021
Naphthalene(v)	ug/L	33		03/21/07	1	EPA8021
tert-Butylbenzene	ug/L	< 1		03/21/07	1	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



rn = 6726

NYSDOH ID # 10320

Page 1 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.05

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1020

MATRIX:Water SAMPLE: MW-5

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 1		03/23/07	1	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Carbazole	ug/L	< 1		03/23/07	1	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 1		03/23/07	1	EPA8270
Hexachloroethane	ug/L	< 1		03/23/07	1	EPA8270
Nitrobenzene	ug/L	< 1		03/23/07	1	EPA8270
Isophorone	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 1		03/23/07	1	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 1		03/23/07	1	EPA8270
Naphthalene(sv)	ug/L	< 1		03/23/07	1	EPA8270
4-Chloroaniline	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobutadiene	ug/L	< 1		03/23/07	1	EPA8270
2-Methylnaphthalene	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorocyclopentadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Chloronaphthalene	ug/L	< 1		03/23/07	1	EPA8270
2-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Dimethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthylene	ug/L	< 1		03/23/07	1	EPA8270
2,6-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
3-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthene	ug/L	1.6		03/23/07	1	EPA8270
Dibenzofuran	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6727

NYSDOH ID # 10320

Page 2 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.05

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1020

MATRIX:Water SAMPLE: MW-5

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
Diethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Fluorene	ug/L	< 1		03/23/07	1	EPA8270
4-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodiphenylamine	ug/L	< 1		03/23/07	1	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobenzene	ug/L	< 1		03/23/07	1	EPA8270
Phenanthrene	ug/L	< 1		03/23/07	1	EPA8270
Anthracene	ug/L	< 1		03/23/07	1	EPA8270
Di-n-Butyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Pyrene	ug/L	< 1		03/23/07	1	EPA8270
BenzylButylPhthalate	ug/L	< 1		03/23/07	1	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6728

NYSDOH ID # 10320

Page 3 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.05

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1020

MATRIX:Water SAMPLE: MW-5

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	1.1	*	03/23/07	1	EPA8270
Di-n-octyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: *Detected 1.21 ug/L in method blank.

DIRECTOR

rn = 6729

NYSDOH ID # 10320

Page 4 of 4

ECOTEST LABORATORIES, INC.**ENVIRONMENTAL TESTING**

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.06

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:1045

MATRIX:Water

SAMPLE: MW-7

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylEther	ug/L	27		03/22/07	1	EPA8021
Benzene	ug/L	480		03/21/07	20	EPA8021
Toluene	ug/L	3		03/22/07	1	EPA8021
Ethyl Benzene	ug/L	2		03/22/07	1	EPA8021
m + p Xylene	ug/L	8		03/22/07	2	EPA8021
o Xylene	ug/L	2		03/22/07	1	EPA8021
Xylene	ug/L	10		03/22/07	3	EPA8021
Isopropylbenzene	ug/L	14		03/22/07	1	EPA8021
n-Propylbenzene	ug/L	18		03/22/07	1	EPA8021
135-Trimethylbenzene	ug/L	< 1		03/22/07	1	EPA8021
124-Trimethylbenzene	ug/L	3		03/22/07	1	EPA8021
sec-Butylbenzene	ug/L	1		03/22/07	1	EPA8021
p-Isopropyltoluene	ug/L	< 1		03/22/07	1	EPA8021
n-Butylbenzene	ug/L	2		03/22/07	1	EPA8021
Naphthalene(v)	ug/L	5		03/22/07	1	EPA8021
tert-Butylbenzene	ug/L	< 1		03/22/07	1	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6730

NYSDOH ID # 10320

Page 1 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.06

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980
ATTN: Dave Lorthioir

P0#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1045

MATRIX:Water SAMPLE: MW-7

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 1		03/23/07	1	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Carbazole	ug/L	< 1		03/23/07	1	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 1		03/23/07	1	EPA8270
Hexachloroethane	ug/L	< 1		03/23/07	1	EPA8270
Nitrobenzene	ug/L	< 1		03/23/07	1	EPA8270
Isophorone	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 1		03/23/07	1	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 1		03/23/07	1	EPA8270
Naphthalene(sv)	ug/L	3.6		03/23/07	1	EPA8270
4-Chloroaniline	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobutadiene	ug/L	< 1		03/23/07	1	EPA8270
2-Methylnaphthalene	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorocyclopentadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Chloronaphthalene	ug/L	< 1		03/23/07	1	EPA8270
2-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Dimethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthylene	ug/L	< 1		03/23/07	1	EPA8270
2,6-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
3-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthene	ug/L	3.2		03/23/07	1	EPA8270
Dibenzofuran	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



rn = 6731

NYSDOH ID # 10320

Page 2 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.06

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1045

MATRIX:Water

SAMPLE: MW-7

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
Diethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Fluorene	ug/L	1.3		03/23/07	1	EPA8270
4-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodiphenylamine	ug/L	< 1		03/23/07	1	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobenzene	ug/L	< 1		03/23/07	1	EPA8270
Phenanthrene	ug/L	1.1		03/23/07	1	EPA8270
Anthracene	ug/L	< 1		03/23/07	1	EPA8270
Di-n-Butyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Pyrene	ug/L	< 1		03/23/07	1	EPA8270
BenzylButylPhthalate	ug/L	< 1		03/23/07	1	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6732

NYSDOH ID # 10320

Page 3 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.06

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1045

MATRIX:Water

SAMPLE: MW-7

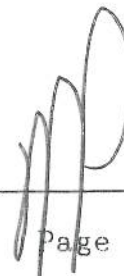
ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	8.9	*	03/23/07	1	EPA8270
Di-n-octyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: *Detected 1.21 ug/L in method blank.

DIRECTOR



rn = 6733

NYSDOH ID # 10320

Page 4 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.07

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1110

MATRIX:Water

SAMPLE: MW-8

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylEther	ug/L	< 500		03/21/07	500	EPA8021
Benzene	ug/L	2000		03/21/07	500	EPA8021
Toluene	ug/L	8400		03/21/07	500	EPA8021
Ethyl Benzene	ug/L	8100		03/21/07	500	EPA8021
m + p Xylene	ug/L	43000		03/21/07	1000	EPA8021
o Xylene	ug/L	16000		03/21/07	500	EPA8021
Xylene	ug/L	59000		03/21/07	1500	EPA8021
Isopropylbenzene	ug/L	1100		03/21/07	500	EPA8021
n-Propylbenzene	ug/L	3400		03/21/07	500	EPA8021
135-Trimethylbenzene	ug/L	9800		03/21/07	500	EPA8021
124-Trimethylbenzene	ug/L	36000		03/21/07	500	EPA8021
sec-Butylbenzene	ug/L	< 500		03/21/07	500	EPA8021
p-Isopropyltoluene	ug/L	< 500		03/21/07	500	EPA8021
n-Butylbenzene	ug/L	< 500		03/21/07	500	EPA8021
Naphthalene(v)	ug/L	6900		03/21/07	500	EPA8021
tert-Butylbenzene	ug/L	< 500		03/21/07	500	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6734

NYSDOH ID # 10320

Page 1 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.07

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

P0#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1110

MATRIX:Water SAMPLE: MW-8

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 10		03/23/07	10	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 10		03/23/07	10	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 10		03/23/07	10	EPA8270
Carbazole	ug/L	< 10		03/23/07	10	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 10		03/23/07	10	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 10		03/23/07	10	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 10		03/23/07	10	EPA8270
Hexachloroethane	ug/L	< 10		03/23/07	10	EPA8270
Nitrobenzene	ug/L	< 10		03/23/07	10	EPA8270
Isophorone	ug/L	< 10		03/23/07	10	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 10		03/23/07	10	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 10		03/23/07	10	EPA8270
Naphthalene(sv)	ug/L	1200		03/23/07	100	EPA8270
4-Chloroaniline	ug/L	< 10		03/23/07	10	EPA8270
Hexachlorobutadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Methylnaphthalene	ug/L	800		03/23/07	100	EPA8270
Hexachlorocyclopentadiene	ug/L	< 100		03/23/07	100	EPA8270
2-Chloronaphthalene	ug/L	< 10		03/23/07	10	EPA8270
2-Nitroaniline	ug/L	< 10		03/23/07	10	EPA8270
Dimethyl Phthalate	ug/L	< 10		03/23/07	10	EPA8270
Acenaphthylene	ug/L	< 10		03/23/07	10	EPA8270
2,6-Dinitrotoluene	ug/L	< 10		03/23/07	10	EPA8270
3-Nitroaniline	ug/L	< 10		03/23/07	10	EPA8270
Acenaphthene	ug/L	10		03/23/07	10	EPA8270
Dibenzofuran	ug/L	< 10		03/23/07	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6735

NYSDOH ID # 10320

Page 2 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.07

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

P0#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:1110

MATRIX:Water SAMPLE: MW-8

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 10		03/23/07	10	EPA8270
Diethyl Phthalate	ug/L	< 10		03/23/07	10	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 10		03/23/07	10	EPA8270
Fluorene	ug/L	10		03/23/07	10	EPA8270
4-Nitroaniline	ug/L	< 10		03/23/07	10	EPA8270
N-Nitrosodiphenylamine	ug/L	< 10		03/23/07	10	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 10		03/23/07	10	EPA8270
Hexachlorobenzene	ug/L	< 10		03/23/07	10	EPA8270
Phenanthrene	ug/L	12		03/23/07	10	EPA8270
Anthracene	ug/L	< 10		03/23/07	10	EPA8270
Di-n-Butyl Phthalate	ug/L	< 10		03/23/07	10	EPA8270
Fluoranthene	ug/L	< 10		03/23/07	10	EPA8270
Pyrene	ug/L	< 10		03/23/07	10	EPA8270
BenzylButylPhthalate	ug/L	< 10		03/23/07	10	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 100		03/23/07	100	EPA8270
Benzo(a)anthracene	ug/L	< 10		03/23/07	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



rn = 6736

NYSDOH ID # 10320

Page 3 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.07

04/05/07

Envirotac Limited
5 Old Dock Road
Yaphank, NY 11980
ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:1110

MATRIX:Water SAMPLE: MW-8

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 10		03/23/07	10	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	13	*	03/23/07	10	EPA8270
Di-n-octyl Phthalate	ug/L	< 10		03/23/07	10	EPA8270
Benzo(b)fluoranthene	ug/L	< 10		03/23/07	10	EPA8270
Benzo(k)fluoranthene	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)pyrene	ug/L	< 10		03/23/07	10	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 10		03/23/07	10	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 10		03/23/07	10	EPA8270
Benzo(ghi)perylene	ug/L	< 10		03/23/07	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: *Detected 1.21 ug/L in method blank.

DIRECTOR

rn = 6737

NYSDOH ID # 10320

Page 4 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.08

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1130

MATRIX:Water SAMPLE: MW-9

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylEther	ug/L	< 500		03/21/07	500	EPA8021
Benzene	ug/L	6400		03/21/07	500	EPA8021
Toluene	ug/L	20000		03/21/07	500	EPA8021
Ethyl Benzene	ug/L	18000		03/21/07	500	EPA8021
m + p Xylene	ug/L	76000		03/21/07	1000	EPA8021
o Xylene	ug/L	30000		03/21/07	500	EPA8021
Xylene	ug/L	106000		03/21/07	1500	EPA8021
Isopropylbenzene	ug/L	2900		03/21/07	500	EPA8021
n-Propylbenzene	ug/L	8900		03/21/07	500	EPA8021
135-Trimethylbenzene	ug/L	19000		03/21/07	500	EPA8021
124-Trimethylbenzene	ug/L	77000		03/21/07	500	EPA8021
sec-Butylbenzene	ug/L	850		03/21/07	500	EPA8021
p-Isopropyltoluene	ug/L	< 500		03/21/07	500	EPA8021
n-Butylbenzene	ug/L	< 500		03/21/07	500	EPA8021
Naphthalene(v)	ug/L	13000		03/21/07	500	EPA8021
tert-Butylbenzene	ug/L	< 500		03/21/07	500	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6738

NYSDOH ID # 10320

Page 1 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.08

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:1130

MATRIX:Water SAMPLE: MW-9

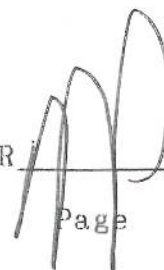
ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 100		03/23/07	100	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 100		03/23/07	100	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 100		03/23/07	100	EPA8270
Carbazole	ug/L	100		03/23/07	100	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 100		03/23/07	100	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 100		03/23/07	100	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 100		03/23/07	100	EPA8270
Hexachloroethane	ug/L	< 100		03/23/07	100	EPA8270
Nitrobenzene	ug/L	< 100		03/23/07	100	EPA8270
Isophorone	ug/L	< 100		03/23/07	100	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 100		03/23/07	100	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 100		03/23/07	100	EPA8270
Naphthalene(sv)	ug/L	4100		03/23/07	100	EPA8270
4-Chloroaniline	ug/L	< 100		03/23/07	100	EPA8270
Hexachlorobutadiene	ug/L	< 100		03/23/07	100	EPA8270
2-Methylnaphthalene	ug/L	3000		03/23/07	100	EPA8270
Hexachlorocyclopentadiene	ug/L	< 1000		03/23/07	1000	EPA8270
2-Chloronaphthalene	ug/L	< 100		03/23/07	100	EPA8270
2-Nitroaniline	ug/L	< 100		03/23/07	100	EPA8270
Dimethyl Phthalate	ug/L	< 100		03/23/07	100	EPA8270
Acenaphthylene	ug/L	< 100		03/23/07	100	EPA8270
2,6-Dinitrotoluene	ug/L	< 100		03/23/07	100	EPA8270
3-Nitroaniline	ug/L	< 100		03/23/07	100	EPA8270
Acenaphthene	ug/L	< 100		03/23/07	100	EPA8270
Dibenzofuran	ug/L	< 100		03/23/07	100	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



rn = 6739

NYSDOH ID # 10320

Page 2 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.08

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:1130

MATRIX:Water SAMPLE: MW-9

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 100		03/23/07	100	EPA8270
Diethyl Phthalate	ug/L	< 100		03/23/07	100	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 100		03/23/07	100	EPA8270
Fluorene	ug/L	< 100		03/23/07	100	EPA8270
4-Nitroaniline	ug/L	< 100		03/23/07	100	EPA8270
N-Nitrosodiphenylamine	ug/L	< 100		03/23/07	100	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 100		03/23/07	100	EPA8270
Hexachlorobenzene	ug/L	< 100		03/23/07	100	EPA8270
Phenanthrene	ug/L	< 100		03/23/07	100	EPA8270
Anthracene	ug/L	< 100		03/23/07	100	EPA8270
Di-n-Butyl Phthalate	ug/L	< 100		03/23/07	100	EPA8270
Fluoranthene	ug/L	< 100		03/23/07	100	EPA8270
Pyrene	ug/L	< 100		03/23/07	100	EPA8270
BenzylButylPhthalate	ug/L	< 100		03/23/07	100	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 1000		03/23/07	1000	EPA8270
Benzo(a)anthracene	ug/L	< 100		03/23/07	100	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6740

NYSDOH ID # 10320

Page 3 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO. 271179.08

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D: 03/19/07 RECEIVED: 03/21/07

TIME COL'D: 1130

MATRIX: Water SAMPLE: MW-9

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 100		03/23/07	100	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	< 100		03/23/07	100	EPA8270
Di-n-octyl Phthalate	ug/L	< 100		03/23/07	100	EPA8270
Benzo(b)fluoranthene	ug/L	< 100		03/23/07	100	EPA8270
Benzo(k)fluoranthene	ug/L	< 100		03/23/07	100	EPA8270
Benzo(a)pyrene	ug/L	< 100		03/23/07	100	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 100		03/23/07	100	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 100		03/23/07	100	EPA8270
Benzo(ghi)perylene	ug/L	< 100		03/23/07	100	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6741

NYSDOH ID # 10320

Page 4 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.09

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0700

MATRIX:Water

SAMPLE: MW-10

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylEther	ug/L	38		03/21/07	1	EPA8021
Benzene	ug/L	190		03/22/07	10	EPA8021
Toluene	ug/L	< 1		03/21/07	1	EPA8021
Ethyl Benzene	ug/L	< 1		03/21/07	1	EPA8021
m + p Xylene	ug/L	3		03/21/07	2	EPA8021
o Xylene	ug/L	< 1		03/21/07	1	EPA8021
Xylene	ug/L	3		03/21/07	3	EPA8021
Isopropylbenzene	ug/L	22		03/21/07	1	EPA8021
n-Propylbenzene	ug/L	22		03/21/07	1	EPA8021
135-Trimethylbenzene	ug/L	< 1		03/21/07	1	EPA8021
124-Trimethylbenzene	ug/L	< 1		03/21/07	1	EPA8021
sec-Butylbenzene	ug/L	2		03/21/07	1	EPA8021
p-Isopropyltoluene	ug/L	< 1		03/21/07	1	EPA8021
n-Butylbenzene	ug/L	< 1		03/21/07	1	EPA8021
Naphthalene(v)	ug/L	< 1		03/21/07	1	EPA8021
tert-Butylbenzene	ug/L	< 1		03/21/07	1	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6742

NYSDOH ID # 10320

Page 1 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.09

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0700

MATRIX:Water SAMPLE: MW-10

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 1		03/23/07	1	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Carbazole	ug/L	< 1		03/23/07	1	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 1		03/23/07	1	EPA8270
Hexachloroethane	ug/L	< 1		03/23/07	1	EPA8270
Nitrobenzene	ug/L	< 1		03/23/07	1	EPA8270
Isophorone	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 1		03/23/07	1	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 1		03/23/07	1	EPA8270
Naphthalene(sv)	ug/L	1.7		03/23/07	1	EPA8270
4-Chloroaniline	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobutadiene	ug/L	< 1		03/23/07	1	EPA8270
2-Methylnaphthalene	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorocyclopentadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Chloronaphthalene	ug/L	< 1		03/23/07	1	EPA8270
2-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Dimethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthylene	ug/L	< 1		03/23/07	1	EPA8270
2,6-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
3-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthene	ug/L	7.0		03/23/07	1	EPA8270
Dibenzofuran	ug/L	2.7		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6743

NYSDOH ID # 10320

Page 2 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.09

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

P0#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07
TIME COL'D:0700

MATRIX:Water SAMPLE: MW-10

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
Diethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Fluorene	ug/L	3.4		03/23/07	1	EPA8270
4-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodiphenylamine	ug/L	< 1		03/23/07	1	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobenzene	ug/L	< 1		03/23/07	1	EPA8270
Phenanthrene	ug/L	< 1		03/23/07	1	EPA8270
Anthracene	ug/L	< 1		03/23/07	1	EPA8270
Di-n-Butyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Pyrene	ug/L	< 1		03/23/07	1	EPA8270
BenzylButylPhthalate	ug/L	< 1		03/23/07	1	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6744

NYSDOH ID # 10320

Page 3 of 4

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.09

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0700

MATRIX:Water SAMPLE: MW-10

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	< 1		03/23/07	1	EPA8270
Di-n-octyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6745

NYSDOH ID # 10320

Page 4 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.10

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0730

MATRIX:Water SAMPLE: MW-11

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter-ButylMethylether	ug/L	390		03/21/07	20	EPA8021
Benzene	ug/L	6200		03/22/07	100	EPA8021
Toluene	ug/L	1000		03/21/07	20	EPA8021
Ethyl Benzene	ug/L	1700		03/21/07	20	EPA8021
m + p Xylene	ug/L	4100		03/21/07	40	EPA8021
o Xylene	ug/L	780		03/21/07	20	EPA8021
Xylene	ug/L	4900		03/21/07	60	EPA8021
Isopropylbenzene	ug/L	91		03/21/07	20	EPA8021
n-Propylbenzene	ug/L	200		03/21/07	20	EPA8021
135-Trimethylbenzene	ug/L	370		03/21/07	20	EPA8021
124-Trimethylbenzene	ug/L	1300		03/21/07	20	EPA8021
sec-Butylbenzene	ug/L	< 20		03/21/07	20	EPA8021
p-Isopropyltoluene	ug/L	< 20		03/21/07	20	EPA8021
n-Butylbenzene	ug/L	< 20		03/21/07	20	EPA8021
Naphthalene(v)	ug/L	270		03/21/07	20	EPA8021
tert-Butylbenzene	ug/L	< 20		03/21/07	20	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



rn = 6746

NYSDOH ID # 10320

Page 1 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.10

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0730

MATRIX:Water SAMPLE: MW-11

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 10		03/23/07	10	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 10		03/23/07	10	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 10		03/23/07	10	EPA8270
Carbazole	ug/L	1.2		03/23/07	1	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 10		03/23/07	10	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 10		03/23/07	10	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 10		03/23/07	10	EPA8270
Hexachloroethane	ug/L	< 10		03/23/07	10	EPA8270
Nitrobenzene	ug/L	< 1		03/23/07	1	EPA8270
Isophorone	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 1		03/23/07	1	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 1		03/23/07	1	EPA8270
Naphthalene(sv)	ug/L	150		03/23/07	10	EPA8270
4-Chloroaniline	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobutadiene	ug/L	< 1		03/23/07	1	EPA8270
2-Methylnaphthalene	ug/L	30		03/23/07	10	EPA8270
Hexachlorocyclopentadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Chloronaphthalene	ug/L	< 1		03/23/07	1	EPA8270
2-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Dimethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthylene	ug/L	< 1		03/23/07	1	EPA8270
2,6-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
3-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzofuran	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6747

NYSDOH ID # 10320

Page 2 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.10

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980
ATTN: Dave Lorthioir

P0#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0730

MATRIX:Water SAMPLE: MW-11

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
Diethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Fluorene	ug/L	< 1		03/23/07	1	EPA8270
4-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodiphenylamine	ug/L	< 1		03/23/07	1	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobenzene	ug/L	< 1		03/23/07	1	EPA8270
Phenanthrene	ug/L	< 1		03/23/07	1	EPA8270
Anthracene	ug/L	< 1		03/23/07	1	EPA8270
Di-n-Butyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Pyrene	ug/L	< 1		03/23/07	1	EPA8270
BenzylButylPhthalate	ug/L	< 1		03/23/07	1	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6748

NYSDOH ID # 10320

Page 3 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.10

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

P0#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0730

MATRIX:Water SAMPLE: MW-11

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	9.1	*	03/23/07	1	EPA8270
Di-n-octyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: *Detected 1.21 ug/L in method blank.

DIRECTOR

rn = 6749

NYSDOH ID # 10320

Page 4 of 4

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.11

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0800

MATRIX:Water

SAMPLE: MW-12

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
ter. ButylMethylEther	ug/L	130		03/22/07	10	EPA8021
Benzene	ug/L	3800		03/21/07	100	EPA8021
Toluene	ug/L	67		03/22/07	10	EPA8021
Ethyl Benzene	ug/L	400		03/22/07	10	EPA8021
m + p Xylene	ug/L	1000		03/22/07	20	EPA8021
o Xylene	ug/L	19		03/22/07	10	EPA8021
Xylene	ug/L	1000		03/22/07	30	EPA8021
Isopropylbenzene	ug/L	27		03/22/07	10	EPA8021
n-Propylbenzene	ug/L	41		03/22/07	10	EPA8021
135-Trimethylbenzene	ug/L	95		03/22/07	10	EPA8021
124-Trimethylbenzene	ug/L	290		03/22/07	10	EPA8021
sec-Butylbenzene	ug/L	< 10		03/22/07	10	EPA8021
p-Isopropyltoluene	ug/L	< 10		03/22/07	10	EPA8021
n-Butylbenzene	ug/L	< 10		03/22/07	10	EPA8021
Naphthalene(v)	ug/L	110		03/22/07	10	EPA8021
tert-Butylbenzene	ug/L	< 10		03/22/07	10	EPA8021

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR



rn = 6750

NYSDOH ID # 10320

Page 1 of 4

ECOTEST LABORATORIES, INC.**ENVIRONMENTAL TESTING**

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO. 271179.11

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980
ATTN: Dave Lorthioir

P0#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D: 03/19/07 RECEIVED: 03/21/07

TIME COL'D: 0800

MATRIX: Water

SAMPLE: MW-12

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Bis(2-chloroethyl)ether	ug/L	< 1		03/23/07	1	EPA8270
1,3 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
1,4 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Carbazole	ug/L	< 1		03/23/07	1	EPA8270
1,2 Dichlorobenzene(sv)	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroisopropyl)ether	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodi-n-propylamine	ug/L	< 1		03/23/07	1	EPA8270
Hexachloroethane	ug/L	< 1		03/23/07	1	EPA8270
Nitrobenzene	ug/L	< 1		03/23/07	1	EPA8270
Isophorone	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-chloroethoxy)methane	ug/L	< 1		03/23/07	1	EPA8270
124-Trichlorobenzene (sv)	ug/L	< 1		03/23/07	1	EPA8270
Naphthalene(sv)	ug/L	56		03/23/07	1	EPA8270
4-Chloroaniline	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobutadiene	ug/L	< 1		03/23/07	1	EPA8270
2-Methylnaphthalene	ug/L	16		03/23/07	1	EPA8270
Hexachlorocyclopentadiene	ug/L	< 10		03/23/07	10	EPA8270
2-Chloronaphthalene	ug/L	< 1		03/23/07	1	EPA8270
2-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Dimethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthylene	ug/L	< 1		03/23/07	1	EPA8270
2,6-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
3-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
Acenaphthene	ug/L	1.9		03/23/07	1	EPA8270
Dibenzofuran	ug/L	1.1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6751

NYSDOH ID # 10320

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ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.271179.11

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D:03/19/07 RECEIVED:03/21/07

TIME COL'D:0800

MATRIX:Water SAMPLE: MW-12

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
2,4-Dinitrotoluene	ug/L	< 1		03/23/07	1	EPA8270
Diethyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
4-Chlorophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Fluorene	ug/L	2		03/23/07	1	EPA8270
4-Nitroaniline	ug/L	< 1		03/23/07	1	EPA8270
N-Nitrosodiphenylamine	ug/L	< 1		03/23/07	1	EPA8270
4-Bromophenyl phenyl ether	ug/L	< 1		03/23/07	1	EPA8270
Hexachlorobenzene	ug/L	< 1		03/23/07	1	EPA8270
Phenanthrene	ug/L	3.8		03/23/07	1	EPA8270
Anthracene	ug/L	< 1		03/23/07	1	EPA8270
Di-n-Butyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Pyrene	ug/L	1.1		03/23/07	1	EPA8270
BenzylButylPhthalate	ug/L	< 1		03/23/07	1	EPA8270
3,3'-Dichlorobenzidine	ug/L	< 10		03/23/07	10	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6752

NYSDOH ID # 10320

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ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO. 271179.11

04/05/07

Envirotrac Limited
5 Old Dock Road
Yaphank, NY 11980

ATTN: Dave Lorthioir

PO#:

SOURCE OF SAMPLE: RETACO

SOURCE OF SAMPLE:

COLLECTED BY: Client

DATE COL'D: 03/19/07 RECEIVED: 03/21/07

TIME COL'D: 0800

MATRIX: Water SAMPLE: MW-12

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Chrysene	ug/L	< 1		03/23/07	1	EPA8270
Bis(2-ethylhexyl)phthalate	ug/L	4.0	*	03/23/07	1	EPA8270
Di-n-octyl Phthalate	ug/L	< 1		03/23/07	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/23/07	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/23/07	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/23/07	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: *Detected 1.21 ug/L in method blank.

DIRECTOR



rn = 6753

NYSDOH ID # 10320

Page 4 of 4

ECO TEST LABORATORIES, INC. • ENVIRONMENTAL TESTING
 377 Sheffield Avenue, North Babylon, New York 11703
 (631) 422-5777 • FAX (631) 422-5770 • Email: ecotestlab@aol.com

CHAIN OF CUSTODY RECORD

211179

Client: ENVIROTRAC
 Address: _____
 Phone: 924-3001 FAX: 924-5001
 Person receiving report: D. LORTHOIN
 Sampled by: P. WILLIAMS
 Source: RETACO
 Job No.: _____

MATRIX (Soil, Water, etc.)		COLLECTED DATE TIME		SAMPLE IDENTIFICATION		TOTAL NUMBER OF CONTAINERS		TYPE & NUMBER OF CONTAINERS		REMARKS-TESTS REQUIRED	
H ₂ O	3/19/99	9:00		MW-1	4	8021 STARS	8270 BN (TCL)				
"	"	9:20		MW-2	4						
"	"	9:40		MW-3	4						
"	"	10:00		MW-4	4						
"	"	10:20		MW-5	4						
"	"	10:40		MW-7	4						
"	"	11:10		MW-8	4						
"	"	11:30		MW-9	4						
"	"	7:00		MW-10	4						
"	"	7:30		MW-11	4						
"	"	8:00		MW-12	4						
Temp - 100°F											

Relinquished by: (Signature)		Received by: (Signature)		SEAL INTACT?		DATE/TIME		Relinquished by: (Signature)		Received by: (Signature)	
<u>D. L. Williams</u>	Representing:	<u>P. Williams</u>	Representing:	YES	NO	YES	NO				
<u>D. L. Williams</u>	Representing:	<u>P. Williams</u>	Representing:	YES	NO	YES	NO				