MORETRENCH

51 Smart Avenue
Yonkers, NY 10704-2821
Tel 914-423-1331
Fax 914-423-0913

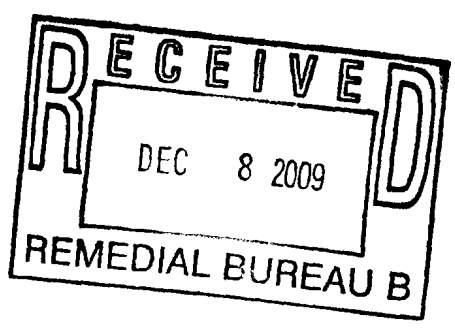
October 27, 2010

Steven Watts
New York State Department of Environmental Conservation
Division of Environmental Permits
NYSDEC Region 2 Headquarters
47-40 21ST Street
Long Island City, NY 11101-5407
(718)-482-4077 Phone
(718)-482-4975 Fax

Reference: PS281 – SPDES Permit Application
425 East 35th St. Manhattan, NY
Tax Block # 967, Lot # 1

Dear Mr. Watts,

On behalf of the NYC School Construction Authority, please find enclosed the NYSDEC SPDES Permit application for the above referenced project. Please find enclosed the site plans and necessary project data for these applications.



Submitted Items :

- SPDES Application
- Authorization Letter from Owner
- Environmental Reports (Phase II, DEC Database Record)
- Site Plan
- System Detail Sheet
- Cross Sectional Drawing
- Groundwater Sample

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Scope of Work:

Excavation will take place for the construction of a six story public school building over the entire lot located at 425 East 35th Street, New York, NY 10016. The excavation area is approximately 188' x 121'.

The street elevation is at approximately El +8'. The water table is at approximately El +0'. All the elevations are based off the Manhattan Datum, which is 2.75 feet above the mean sea level at Sandy Hook, NJ.

Areas that will require dewatering are as follows:

- The bottom of the footings bearing on rock which extends to approximately El -7'
- The bottom of the strap beams which range from approximately El – 4.25' to El -5.5'
- The bottom of the pile caps which range from approximately El -3' to El -5.5'
- The bottom of the elevator pit slab with approximate dimensions 18' x 8' extends to approximately El -1'
- The invert of 220 LF sanitary sewers varies from El -2' to El -5'.
- The invert of 200 LF storm sewers varies from El -2'

System Design

Upon the completion of each wellpoint, it will be developed and a flow rate established. The spacing of the wellpoints, and screen depths will be adjusted during installation based on soils conditions and flow rates from previously installed wellpoints. The slot and filter sand will be selected based on past experience in the area. Each wellpoint will be installed with filter sand specifically designed in combination with the wellpoint screen to prevent the pumping of fines, a Rossum Sand Tester will be installed along the discharge line in order to monitor should any fines be pumped.

Materials of Construction

Wellpoints

Wellpoints will consist of Self-jetting Schedule 40 1.5" PVC and/or stainless steel wellpoints with PVC or steel risers will be used. The well screen will be .02 or .03-inch slot, slotted PVC with a stainless steel Dutch weave screen exterior sleeve. Each wellpoint will be connected to the suction header with a clear

suction hose swing. Each swing connection will be equipped with a valve for isolating and tuning of the wells.

Filter Sand
The filter sand, either Morie #2 or Ricci #1 will be installed in the annulus between the wellpoint and the jetted hole.

Header and Discharge Pipe
The vacuum header piping will consist of 8"-12" inch PVC pipe. Joints may be glued with bell and spigot or fastened with rubber expansion couplings may be used. Moretrench custom fabricated O-ring swing connectors will be fitted into the header piping from the wellpoint.

Treatment System

Temporary Treatment System

1. One (1) 10,000 gallon, open top combination settling tank/OWS
2. Two (2) electric transfer pumps, each 500 gpm @ 90' TDH, 20 Hp, 460 V, 3 phase motor, 28 amps, with duplex control panels and floats
3. Two (2) 6-bag filter housings, parallel operation, 600 gpm nominal capacity each
4. Two (2) non-Code carbon adsorbers, each with 10,000 lbs reactivated carbon, 500 gpm nominal capacity, series operation
5. Two (2) 36-cartridge filter housings, parallel operation, 756 gpm nominal capacity each
6. One (1) 6" diameter flow meter with totalizer, 90 to 1200 gpm range
7. Piping and/or flexible hose from the settling tank/OWS to the flow meter

Point of Discharge :

- A maximum of one pump will operate at one time at a maximum discharge rate of 500 GPM = 720,000 GPD = 96,256 cfd over a period of 6 months.
- The groundwater shall pass through a treatment system before discharging to the existing 4'x2'4" storm sewer located on East 35th St in Manhattan, NY. The outfall number for this pipe is NYCDEP outfall NCN-855 which empties into the East River. The coordinates for the outfall are : latitude 40 *44'37", Longitude 73*58'16".

Description of Neighborhood :

The project site is directly adjacent to the East River, and is surrounded by residential high rise towers and commercial office buildings.

If you should have any questions please do not hesitate to contact us at 914-423-1331.
Thank you.
MORETRENCH AMERICAN CORPORATION

Joseph Mahon

SCA
School Construction Authority

October 6, 2010

NYC
Department of
Education

Moretrench American Corporation
51 Smart Avenue
Yonkers, N.Y. 10704

Re: PS/IS 281 New School
425 East 35th Street
New York, N.Y. 10016

Dear Moretrench American Corporation,

Please let this letter act as authorization to file and obtain the necessary DEP/DEC permits for the above mentioned project for the dewatering phase of this project.

Please contact the undersigned if you need further assistance

Sincerely yours

New York City School Construction Authority
30-30 Thomson Avenue
L.I.C., N.Y. 11101

Thomas Murphy
Project Officer

30-30 Thomson Avenue
Long Island City, NY 11101

718 472 8000 T
718 472 8840 F

State Pollutant Discharge Elimination System (SPDES)

INDUSTRIAL APPLICATION FORM NY-2C

For New Permits and Permit Modifications to Discharge Industrial Wastewater and Storm Water

Section I - Permittee and Facility Information

Please type or print the requested information.

1. Current Permit Information (leave blank if for new discharge)

SPDES Number:	DEC Number:
N/A	N/A

2. Permit Action Requested: (Check applicable box)

- [✓] A **NEW** proposed discharge
- [ ] An **EBPS INFORMATION REQUEST** response
- [ ] A **RENEWAL** of an existing SPDES permit
- [ ] A **MODIFICATION** of the existing permit
- [ ] An **EXISTING** discharge currently without permit

Does this request include an increase in the quantity of water discharged from your facility to the waters of the State?

- [ ] **YES** - Describe the increase:
- [✓] **NO** - Go to Item 3. below.

3. Permittee Name and Address

Name: NYC School Construction Authority		Attention: Eric Tiedemann
Street Address: 30-30 Thomson Avenue		
City or Village: Long Island City	State: NY	ZIP Code: 11101

4. Facility Name, Address and Location

Name: PS281			
Street Address: 425 East 35th St.		P.O. Box:	
City or Village: New York	State: NY	ZIP Code: 10016	
Town:	County: New York		
Telephone:	FAX:	NYTM - E Long.: 73.970833	NYTM - N Lat.: 40.743611
Tax Map Info (New York City, Nassau County and Suffolk County only)			
Section: —	Block: 967	Subblock: —	Lot: 1

5. Facility Contact Person

Name: Darren Mullahy	Title: Project Manager	
Street Address: 2 World Financial Center		P.O. Box:
City or Village: New York	State: NY	ZIP Code: 10281
Telephone: 917-576-9332	FAX:	E-Mail or Internet: dmullahy@hunterroberts cq.com

6. Discharge Monitoring Report (DMR) Mailing Address

Mailing Name: Hunter Roberts Construction Group		
Street Address: 2 World Financial Center		P.O. Box:
City or Village: New York	State: NY	ZIP Code: 10281
Telephone: 917-576-9332	FAX:	E-Mail or Internet: dmullahy@hunterroberts cq.com
Name and Title of person responsible for signing DMRs: Darren Mullahy	Signature:	

INDUSTRIAL APPLICATION FORM NY-2C
Section I - Permittee and Facility Information

Facility Name: PS281	SPDES Number: N/A

7. Summarize the outfalls present at the facility:

Outfall Number	Receiving Water	Type of discharge
NCM-855	East River	Temporary Groundwater

8. Map of Facility and Discharge Locations:

Provide a detailed map showing the location of the facility, all buildings or structures present, wastewater discharge systems, outfall locations into receiving waters, nearby surface water bodies, water supply wells, and groundwater monitoring wells, and attach it to this application. Also submit proof, either by indication on the map or other documentation, that a right of way for the discharges exists from the facility property to a public right of way.

9. Water Flow Diagram:

See Enclosed Schematic

INDUSTRIAL APPLICATION FORM NY-2C
Section I - Permittee and Facility Information

Facility Name: PS281	SPDES Number: N/A

10. Nature of business: (Describe the activities at the facility and the date(s) that operation(s) at the facility commenced)

Temporary dewatering for the construction of a new school.

11. List the 4-digit SIC codes which describe your facility in order of priority: N/A

Priority 1	Description:	Priority 3	Description:
Priority 2	Description:	Priority 4	Description:

12. Is your facility a primary industry as listed in Table 1 of the instructions?

☐ **YES** - Complete the following table.

☑ **NO** - Go to Item 13. below.

Industrial Category	40 CFR		Industrial Category	40 CFR	
	Part	Subpart		Part	Subpart

13. Does this facility manufacture, handle, or discharge recombinant-DNA, pathogens, or other potentially infectious or dangerous organisms?

☐ **YES** - Attach a detailed explanation to this application.

☑ **NO** - Go to Item 14 below.

14. Is storm runoff or leachate from a material storage area discharged by your facility?

☐ **YES** - Complete the following table, and show the location of the stockpile(s) and discharge point(s) on the diagram in Item 9.

☑ **NO** - Go to Item 15 on the following page.

Size of area	Type(s) of material stored	Quantity of material stored	Runoff control devices

INDUSTRIAL APPLICATION FORM NY-2C
Section I - Permittee and Facility Information

Facility Name: PS 281	SPDES Number: N/A

15. Facility Ownership: (Place an "X" in the appropriate box)

Corporate [ ] Sole Proprietorship [ ] Partnership [ ] Municipal [X] State [ ] Federal [ ] Other [ ]

Are any of the discharges applied for in this application on Indian lands? Yes [ ] No [ ]

16. List information on any other environmental permits for this facility:

Issuing Agency	Permit Type	Permit Number	Permit Status		
			Active	Applied for	Inactive
NYCDEP	BWSO	N/A		✓	

17. Laboratory Certification:

Were any of the analyses reported in Section III of this application performed by a contract laboratory or a consulting firm?

[X] **YES** - Complete the following table.

[ ] **NO** - Go to Item 18 below.

Name of laboratory or consulting firm	Address	Telephone (area code and number)	Pollutants analyzed
York Analytical Laboratories Inc.	120 Research Drive Stratford, CT 06615	203-325-1371	NYSDEC + NYC DEP

18. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title (type or print) ERIC TIEDEMANN, NYCSCA P.O.		Date signed 10/19/10
Signature	Telephone number 646-345-9444	FAX number 718-752-3120

INDUSTRIAL APPLICATION FORM NY-2C
Section I - Permittee and Facility Information

Facility Name: PS281	SPDES Number: N/A

19. Industrial Chemical Survey (ICS) N/A

Complete all information for those substances your facility has used, produced, stored, distributed, or otherwise disposed of in the past five (5) years at or above the threshold values listed in the instructions. Include substances manufactured at your facility, as well as any substances that you have reason to know or believe present in materials used or manufactured at your facility. Do not include chemicals used only in analytical laboratory work, or small quantities of routine household cleaning chemicals. Enter the name and CAS number for each of the chemicals listed in Tables 6-10 of the instructions, and the table number which lists the chemical. You may use ranges (e.g. 10-100 lbs., 100-1000 lbs., 1000-10000 lbs., etc.) to describe the quantities used on an annual basis as well as for the amount presently on hand. For those chemicals listed in Tables 6, 7, or 8 which are indicated as being potentially present in the discharge from one or more outfalls at the facility, indicate which outfalls may be affected in the appropriate column below, and include sampling results in Section III of this application for each of the potentially affected outfalls. Make additional copies of this sheet if necessary.

Name of Substance	Table	CAS Number	Average Annual Usage	Amount Now On Hand	Units (gallons, lbs, etc)	Purpose of Use (see codes in Table 2 of instructions)	Present in Discharge? (Outfall(s)?)

This completes Section I of the SPDES Industrial Application Form NY-2C. Section II, which requires specific information for each of the outfalls at your facility, and Section III, which requires sampling information for each of the outfalls at your facility, must also be completed and submitted with this application.

State Pollutant Discharge Elimination System (SPDES)

INDUSTRIAL APPLICATION FORM NY-2C

For New Permits and Permit Modifications to Discharge Industrial Wastewater and Storm Water

Section II - Outfall Information

Please type or print the requested information.

Facility Name: PS281	SPDES Number: N/A

1. Outfall Number and Location

Outfall No.: NCM-855		
Latitude: 40 °44 '37 "	Longitude: 73 °58 '15 "	Receiving Water: East River

2. Type of Discharge and Discharge Rate (List all information applicable to this outfall)

	Volume/Flow	Units: MGD	Units: GPM	Units: Other (specify)		Volume/Flow	Units: MGD	Units: GPM	Units: Other (specify)
a. Process Wastewater					f. Noncontact Cooling Water				
b. Process Wastewater					g. Remediation System Discharge				
c. Process Wastewater					h. Boiler Blowdown				
d. Process Wastewater					i. Storm Water				
e. Contact Cooling Water					j. Sanitary Wastewater				
k. Other discharge (specify): Temporary groundwater						500		✓	
l. Other discharge (specify):									

3. List process information for the Process Wastewater streams identified in 2.a-d above: N/A

a. Name of the process contributing to the discharge			Process SIC code:
Describe the contributing process	Category / Subcategory	Quantity per day	Units of measure
b. Name of the process contributing to the discharge			Process SIC code:
Describe the contributing process	Category / Subcategory	Quantity per day	Units of measure
c. Name of the process contributing to the discharge			Process SIC code:
Describe the contributing process	Category / Subcategory	Quantity per day	Units of measure
d. Name of the process contributing to the discharge			Process SIC code:
Describe the contributing process	Category / Subcategory	Quantity per day	Units of measure

4. Expected or Proposed Discharge Flow Rates for this outfall:

a. Total Annual Discharge	b. Daily Minimum Flow	c. Daily Average Flow	d. Daily Maximum Flow	e. Maximum Design flow rate
51 MG	0.288 MGD	0.432 MGD	0.720 MGD	0.720 MGD

INDUSTRIAL APPLICATION FORM NY-2C
Section II - Outfall Information

Facility Name: PS281	Outfall No.: NCM-855
	SPDES Number: N/A

5. Is this a seasonal discharge?

☐ **YES** - Complete the following table.

☑ **NO** - Go to Item 6 below.

Operations contributing flow (list)	Discharge frequency		Flow				
	Batches per year	Duration per batch	Flow rate per day LTA	Flow rate per day Daily Max	Total volume per discharge	Units	Duration (Days)

6. Water Supply Source (indicate all that apply)

	Name or owner of water supply source	Volume or flow rate	Units (check one)		
Municipal Supply			MGD	GPD	GPM
Private Surface Water Source			MGD	GPD	GPM
Private Supply Well			MGD	GPD	GPM
Other (specify)	Temporary Groundwater	500	MGD	GPD	(GPM)

7. Outfall configuration: (Surface water discharges only)

A. Where is the discharge point located with respect to the receiving water?

In the streambank:	☑	To Existing NYCDEP Storm Sewer
In the stream:	☐	
Within a lake or ponded water:	☐	
Within an estuary:	☐	Attach Supplement C, MIXING ZONE REQUIREMENTS FOR DISCHARGES TO ESTUARIES.
Discharge is equipped with diffuser:	☐	Attach description, including configuration and plan drawing of diffuser, if used.

B. If located in a stream, approximately what percentage of stream width from shore is the discharge point located? N/A

10% ☐ **25%** ☐ **50%** ☐ **Other:** ☐

C. If located in a stream, describe the stream geometry in the general vicinity of the discharge point, under low flow conditions: N/A

Stream width	Stream depth	Stream velocity
Feet	**Feet**	**Feet/Sec**

Are the results of a mixing/diffusion study attached? ☐ **YES** ☐ **NO**

Section II - Outfall Information

Facility Name: PS281	Outfall No.: NCM-855
	SPDES Number: N/A

8. Thermal Discharge Criteria

Is your facility one of the applicable types of facilities listed in the instructions, and does the temperature of this discharge exceed the receiving water temperature by greater than three (3) degrees Fahrenheit?

☐ **YES** - Complete the following table.

☑ **NO** - Go to Item 9. below.

☐ **Information on the intake and discharge configuration of this outfall is attached.**

Discharge Temperature, deg. F			Duration of maximum discharge temperature		Dates of maximum discharge temperature		Maximum flow rate	Discharge configuration (e.g. subsurface, surface, effluent diffuser, diffusion well, etc.)
Average change in temperature (delta T)	Maximum change in temperature (delta T)	Maximum temperature	hours per day	days per year	From	To	MGD	

9. Are any water treament chemicals or additives that are used by your facility subsequently discharged through this outfall?

☐ **YES** - Complete the following table and complete pages 1 of 3 and 2 of 3 of Form WTCFX for each water treatment chemical listed.

☑ **NO** - Go to Item 10. below.

Manufacturer	WTC trade name	Manufacturer	WTC trade name

10. Has any biological test for acute or chronic toxicity been performed on this outfall or on the receiving water in relation to this outfall in the past three (3) years?

☐ **YES** - Complete the following table.

☑ **NO** - Go to Item 11. on the following page.

Water tested	Purpose of test	Type of test	Chronic or Acute?	Subject species	Testing date(s)		Submitted? (Date)
					Start	Finish	

INDUSTRIAL APPLICATION FORM NY-2C
Section II - Outfall Information

Facility Name:	Outfall No.:
PS281	NCM-855
	SPDES Number: N/A

11. Is the discharge from this outfall treated to remove process wastes, water treatment additives, or other pollutants?

☑ **YES** - Complete the following table. Treatment codes are listed in Table 4.

☐ **NO** - Go to Item 12 below.

Treatment process	Treatment Code(s)	Treatment used for the removal of:	Design Flow Rate (include units)
Settling Tank / Oil Water Separator with coalescing media	1-U	Total Suspended Solids, Solids Oil + Grease	500 GPM
Bag Filters	1-Q	Total Suspended Solids, Solids Metals	600 GPM
Cartridge Units	1	Total Suspended Solids, Solids Metals	756 GPM
Carbon Adsorbers	1-X 2-A	VOCs SVOCs	500 GPM

12. Does this facility have either a compliance agreement with a regulating agency, or have planned changes in production, which will materially alter the quantity and/or quality of the discharge from this outfall?

☐ **YES** - Complete the following table.

☑ **NO** - Go to Section III on the following page

Description of project	Subject to Condition or Agreement in existing permit or consent order? (List)	Change due to production increase?	Completion Date(s)	
			Required	Projected

This completes Section II of the SPDES Industrial Application Form NY-2C. Section I, which requires general information regarding your facility, and Section III, which requires sampling information for each of the outfalls at your facility, must also be completed and submitted with this application.

INDUSTRIAL APPLICATION FORM NY-2C
Section III - Sampling Information

Facility Name: PS281 | SPDES No.: N/A | Outfall No.: NCM-855

1. Sampling Information - Conventional Parameters

Provide the analytical results of at least one analysis for every pollutant in this table. If this outfall is subject to a waiver as listed in Table 5 of the instructions for one or more of the parameters listed below, provide the results for those parameters which are required for this type of outfall.

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (using the same format) instead of completing this page.

Pollutant	Effluent data							Units		Intake data (optional)		
	a. Maximum daily value		b. Maximum 30 day value		c. Long term average		d. Number of analyses	a. Concentration	b. Mass	a. Long term average value		b. Number of analyses
	1. Concentration	2. Mass	1. Concentration	2. Mass	1. Concentration	2. Mass				1. Concentration	2. Mass	
a. Biochemical Oxygen Demand, 5 day (BOD)		See Attached Lab Report										
b. Chemical Oxygen Demand (COD)												
c. Total Suspended Solids (TSS)												
d. Total Dissolved Solids (TDS)												
e. Oil & Grease												
f. Chlorine, Total Residual (TRC)												
g. Total Organic Nitrogen (TON)												
h. Ammonia (as N)												
i. Flow	Value		Value		Value					Value		
j. Temperature, winter	Value		Value		Value					Value		
k. Temperature, summer	Value		Value		Value					Value		
l. pH	Minimum	Maximum	Minimum	Maximum						Minimum	Maximum	

2. Sampling Information - Priority Pollutants, Toxic Pollutants, and Hazardous Substances

a. Primary Industries:

i. Does the discharge from this outfall contain process wastewater?
- [ ] **Yes** - Go to Item **ii.** below.
- [x] **No** - Go to Item **b.** below.

ii. Indicate which GC/MS fractions have been tested for: Volatiles: [ ] Acid: [ ] Base/Neutral: [ ] Pesticide: [ ]

b. All applicants:

i. Do you know or have reason to believe that any of the pollutants listed in Tables 6, 7, or 8 of the instructions are present in the discharge from this outfall?
- [ ] **Yes** - Concentration and mass data attached. (See Attached Lab Report)
- [ ] **No** - Go to Item **ii.** below.

ii. Do you know or have reason to believe that any of the pollutants listed in Table 9 or Table 10 of the instructions, or any other toxic, harmful, or injurious chemical substances not listed in Tables 6-10, are present in the discharge from this outfall?
- [ ] **Yes** - Source or reason for presence in discharge attached
- [ ] **Yes** - Quantitative or qualitative data attached
- [ ] **No**

INDUSTRIAL APPLICATION FORM NY-2C
Section III - Sampling Information

Facility Name: PS281 | SPDES No.: N/A | Outfall No.: NCM-855

3. Projected Effluent Quality - Priority Pollutants, Toxic Pollutants, and Hazardous Substances

Provide analytical results of at least one analysis for each pollutant that you know or have reason to believe is present in this discharge, as well as for any GC/MS fractions and metals required to be sampled from Section III Forms, Item 2.a on the preceding page.

List the name and CAS number for each pollutant that you know or have reason to believe is present in the discharge from this outfall. For each pollutant listed from Tables 6, 7, or 8, provide the results of at least one analysis for that pollutant, and determine the mass discharge based on the flow rate reported in Item 1.i. For each pollutant listed from Table 9, or any other toxic pollutant not listed in Tables 6-10, you must provide concentration and mass data (if available) and/or an explanation for their presence in the discharge. Make as many copies of this table as necessary for each outfall.

Page of

Pollutant and CAS Number	Effluent data							Units		Intake data (optional)			Believed present, no sampling results available
	a. Maximum daily value		b. Maximum 30 day value (if available)		c. Long term average value (if available)		d. Number of analyses	a. Concentration	b. Mass	a. Long term average value		d. Number of analyses	
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass		
CAS Number:		See Attached Lab Results											
CAS Number:													
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INDUSTRIAL APPLICATION FORM NY-2C
Section III - Sampling Information

Facility Name: PS 281 | SPDES No.: N/A | Outfall No.: NCM-855

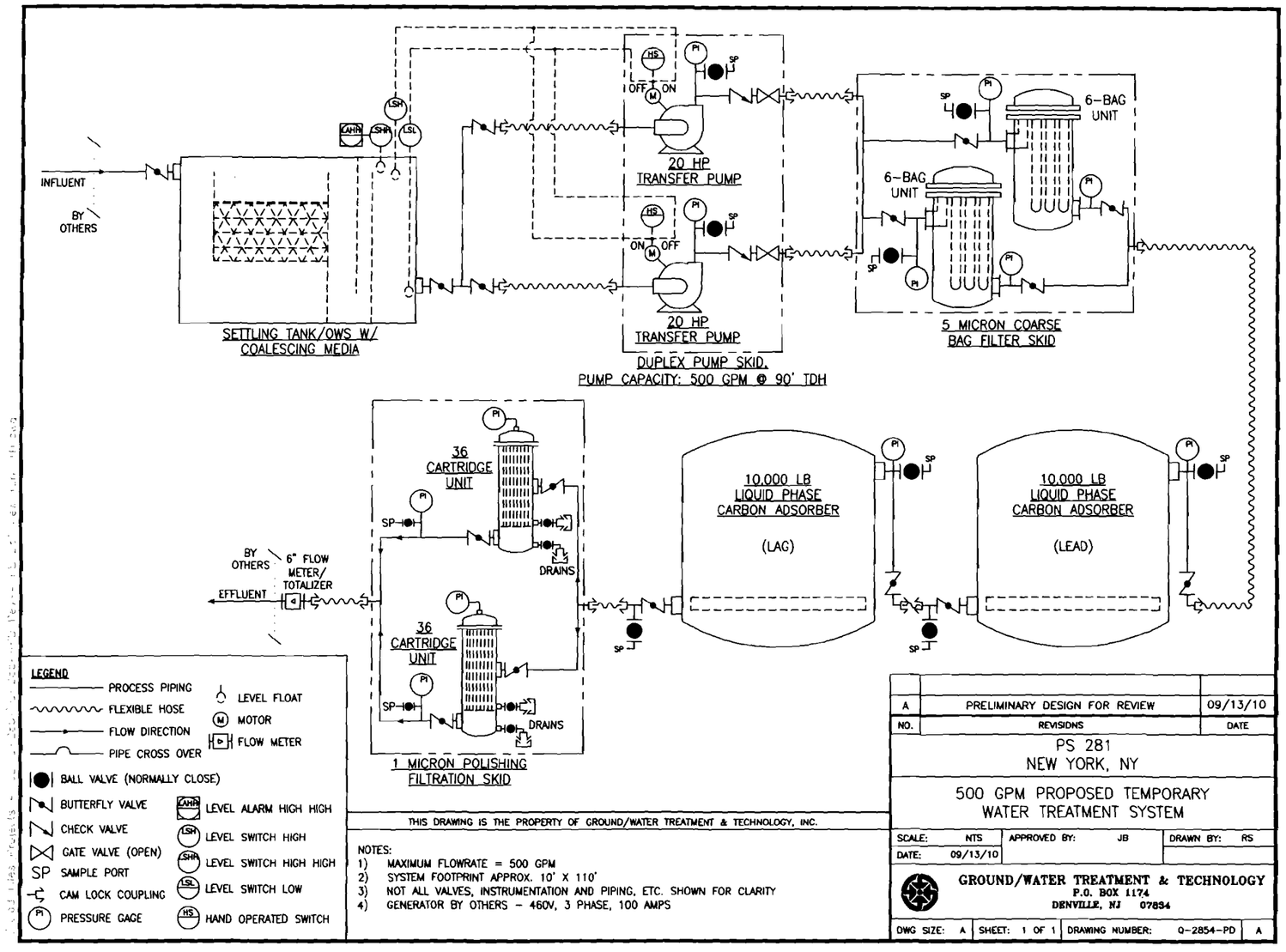
4. Existing Effluent Quality - Priority Pollutants, Toxic Pollutants, and Hazardous Substances N/A

Provide analytical results for the last three (3) years for each pollutant that you know or have reason to believe present in this discharge from this outfall, as well as for any GC/MS fractions and metals required to be sampled from Section III Forms, Item 2.a for this discharge.

Make as many copies of this table as necessary for each outfall. You can list the results from 24 sampling dates on each copy of this page.

Page Of

Date	Flow rate	Parameter name	Parameter name	Parameter name:	Parameter name	Parameter name:	Parameter name:	Parameter name:
		CAS Number:	CAS Number:	CAS Number	CAS Number:	CAS Number	CAS Number	CAS Number
	Units:	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration
		Units:	Units:	Units:	Units:	Units:	Units:	Units:



THIS DRAWING IS THE PROPERTY OF GROUND/WATER TREATMENT & TECHNOLOGY, INC.

NOTES:
1) MAXIMUM FLOWRATE = 500 GPM
2) SYSTEM FOOTPRINT APPROX. 10' X 110'
3) NOT ALL VALVES, INSTRUMENTATION AND PIPING, ETC. SHOWN FOR CLARITY
4) GENERATOR BY OTHERS - 460V, 3 PHASE, 100 AMPS

NO.	REVISIONS	DATE
A	PRELIMINARY DESIGN FOR REVIEW	09/13/10

PS 281
NEW YORK, NY

500 GPM PROPOSED TEMPORARY WATER TREATMENT SYSTEM

SCALE: NTS	APPROVED BY: JB	DRAWN BY: RS	
DATE: 09/13/10			

GROUND/WATER TREATMENT & TECHNOLOGY
P.O. BOX 1174
DENVILLE, NJ 07834

DWG SIZE: A	SHEET: 1 OF 1	DRAWING NUMBER: Q-2854-PD	A

Region 2 Long Island Well Dewatering System Detail Sheet

1. **PROJECT DESCRIPTION** -
Temporary dewatering for construction of a new School in Manhattan.

2. **PROPOSED DEWATERING SYSTEM** (Complete all items)

a.	Number of wellpoints	82
b.	Diameter of wellpoints	1 ½"
c.	Spacing of wellpoints	7.5 O.C.
d.	Length of screen	5'
e.	Depth to bottom of screen	19'
f.	Number of pumps	1
g.	Capacity of pumps	15HP
h.	Static water level	EL +0
i.	Drawdown required	9'
j.	Duration of dewatering	6 Months
k.	Radius of Influence	2100'
l.	Maximum daily pumpage	500 GPM
m.	Estimated daily pumpage	150 GPM

3. **PROPOSED POINT OF DISCHARGE** (Show on site plan and check one of the following)

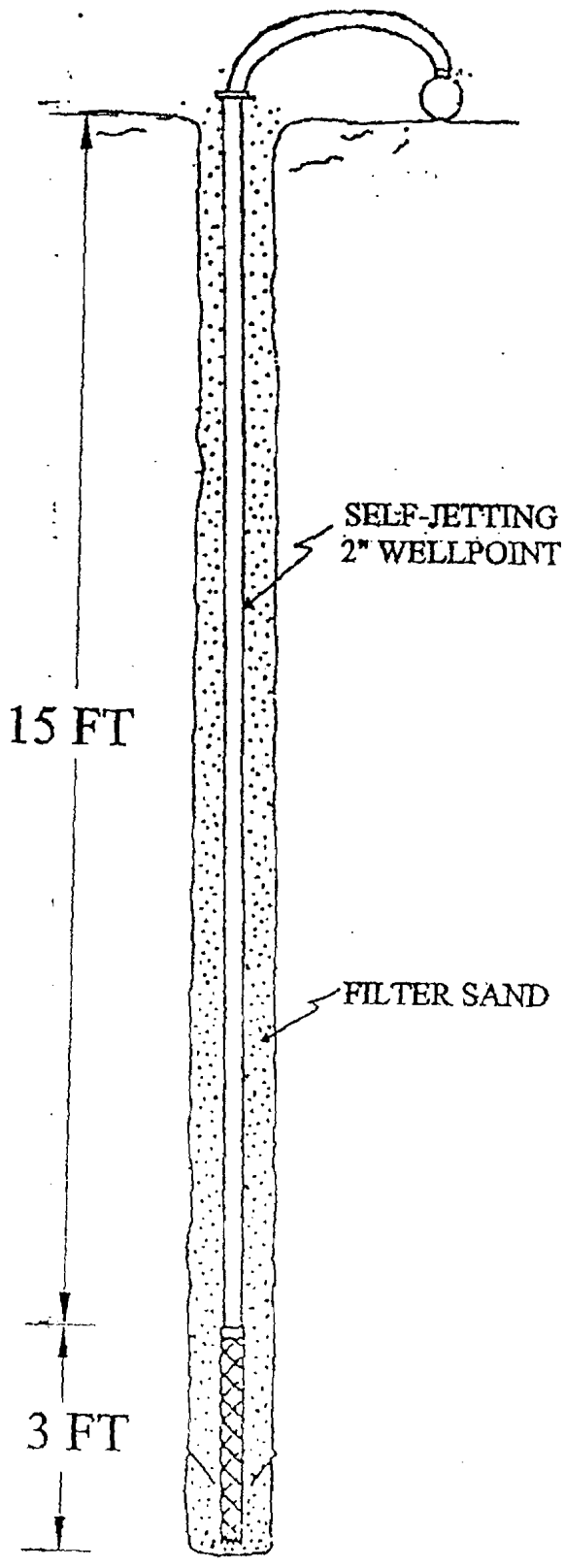
Surface Water [ ] if checked, provide name of body of water _____

Combined or Sanitary Sewer [ ] if checked, provide WPCP drainage area _____

Storm Sewer [✓] if checked, provide name of body of water East River and NYCDEP Outfall number NCM-855

Other [ ] explain _____

Prepared by: (Print) Joseph Maher **(Signature)** Joseph Maher **(Date)** 10/1/10



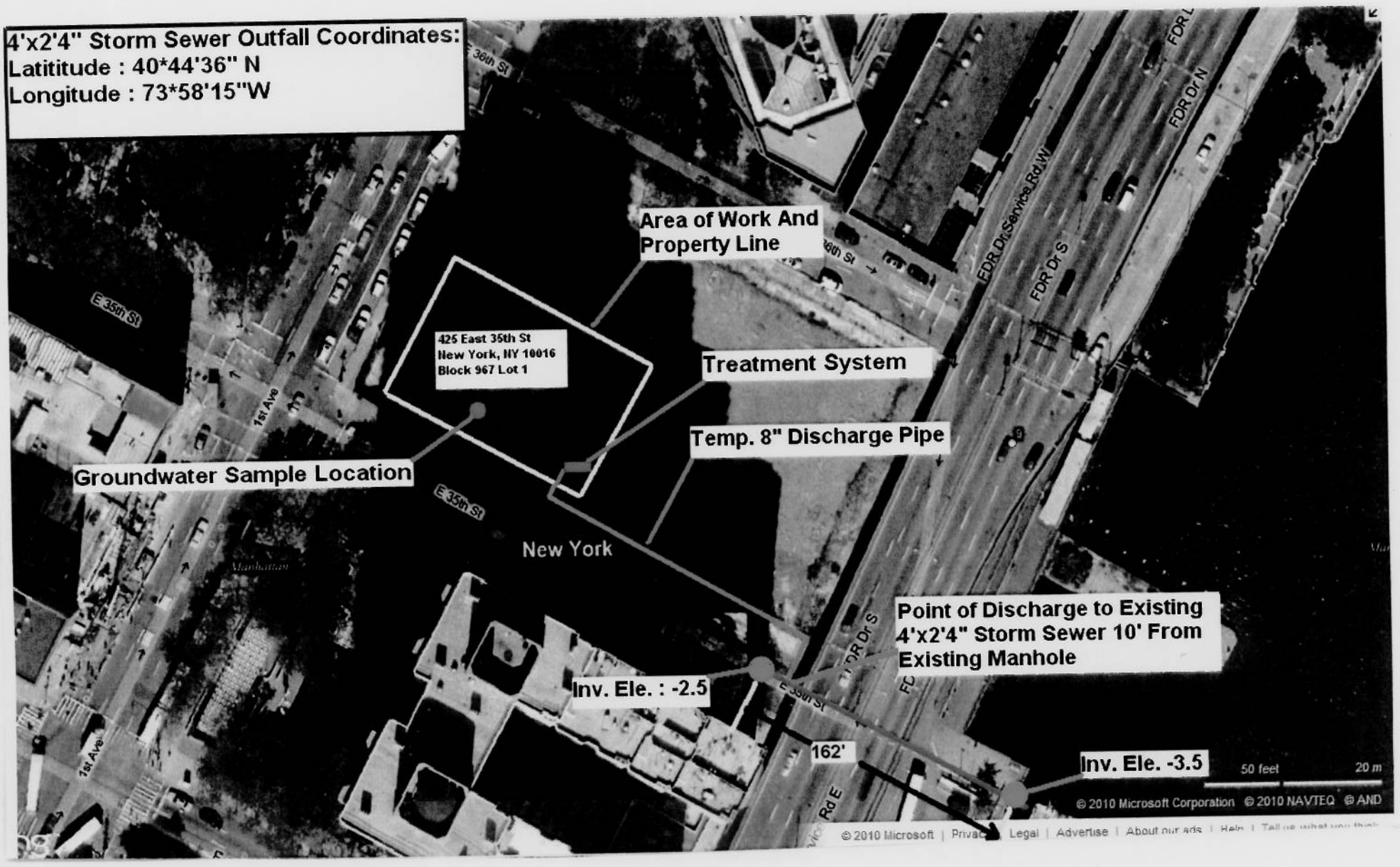
TYPICAL WELLPOINT DETAIL

MORETRENCH AMERICAN CORPORATION
100 STICKLE AVE. ROCKAWAY, NJ 07866

USGS
e for a changing world

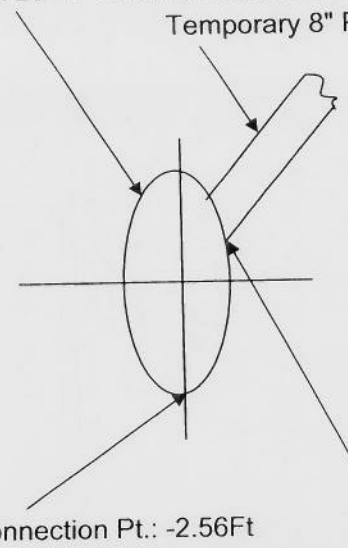
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

1849-1999



Existing 48"H X 28"W Sewer At 0.00625 Slope

Temporary 8" Pipe At 0.04 Slope



Inv. Ele. At Connection Pt.: -2.56Ft

Inv. Ele. Of 8" Pipe At Sewer Con.: 0.11Ft

SUMMARY OF DEWATERING SYSTEM	
Scope of Work	Dewatering discharge will be to an existing 48"x28" storm sewer located on East 35th St between First Avenue and the FDR Drive in New York, NY.
Project Name:	PS281
Pump Discharge Rate:	Each Pump Will Pump A Maximum 500 Gpm = 1.11 Cfs
Number of Pumps:	1 Pumps Running At One Time = 500 Gpm
Total Quantity of Discharge:	500 GPM = 720,000 GPD = 96,256 cfd = 1.11 cfs.
Duration of Discharge:	6 Months
Flow Meter:	MW500 manufactured by McCrometer
Pretreatment Equipment:	Treatment System
Discharge Pipe Location:	Temporary 8" Pipe Connected To Existing Storm Sewer located on East 35th St. between First Avenue and the FDR Drive in New York, NY.

Flow Rate Inside The Existing 48"H X 28"W Storm Sewer

Slope		
Invert Elevation At Mh At East End	-3.5	
Invert Elevation At Mh At West End	-2.5	
Distance between manholes (ft)	160	
S=Slope of sewer		0.00625

Flow Velocity		
V=Flow Velocity	(1.486/n)*(Rh)^2/3 *(s)^1/2	
Rh=Hydraulic Radius	$\pi(A*B)/[2\pi(0.5(A^2+B^2))^{0.5}]$	**0.71**
n=	0.014	
V=Flow Velocity	1.486/0.014*0.71^2/3*0.00625^1/2	**6.68 Ft/sec**

Max Flow Rate Through 48"H X 28"W Storm Sewer		
Area=A	πAB	**7.33 SF**
Flow Rate	Q=V*A	**48.95 CFS**
Max Flow Rate through Sewer		**21,971 GPM**

Flow Rate Ratio = (Dewatering Flow Rate)/(Max flow Rate in Sewer)

Total Pump capacity	1.11	CFS	
48"H X 28"W sewer capacity	48.95	CFS	1.11/48.95

% Capacity Of Dewatering System Into Existing Sewer Pipe **2.27%**

Flow Rate Inside The Temporary 8" Metal Discharge Pipe

Slope		
Invert Elevation at Connection to Combined Sewer	-2.5+10(0.00625)	**-2.56 ft**
Inv El at Connection to Combined Sewer @ Approx. 2:00	-2.56+2+(0.5774)(1.167)	**0.11 ft**
Invert Elevation at Flowmeter and Property Line	0.11+30(0.04)	**1.31 ft**
Approximate Length Of Discharge Pipe To 48"H X 28"W Sewer		**30 ft**
S=Slope Of 8" Temporary Discharge Pipe		**0.04**

Flow Velocity		
V=Flow Velocity	(1.486/n)*(Rh)^2/3 *(s)^1/2	
Rh=Hydraulic Radius	r/2	**0.17**
n=	0.014	
V=Flow Velocity	1.486/0.014*0.167^2/3*0.04^1/2	**6.44 Ft/sec**

Max Flow Rate Through 8" Discharge Pipe		
Area=A	(Pi*D^2)/4	**0.35 SF**
Flow Rate	Q=V*A	**2.25 CFS**
Max Flow Rate Through 8" Metal Pipe		**1,009 GPM**

Flow Rate Ratio = (Dewatering Flow Rate)/(Max Rate in Discharge Pipe)

Total Pump capacity	1.11	CFS	
Discharge Pipe capacity	2.25	CFS	1.11/2.25

% Capacity Of Dewatering System Into Temporary Metal Discharge Pipe **49.40%**

Leonard R. Guglielmo
51 Smart Avenue
Yonkers, NY 10704

The purpose of this drawing is to show dewatering capacity and tie-in to existing sewer. Responsibility for field installation and compliance is by others. Existing sewer information, orientation and inverts are provided by others. Based on the information provided, this drawing represents a reasonable sewer connection design. The dewatering system and treatment system is designed by others.

MORETRENCH
PS281
New York, NY

DRAWING NO: 1

Scale: NTS
Date: 9/15/2010

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Kips Bay Fuel Terminal (First Ave.prop)
Site Code: C231014
Program: Brownfield Cleanup Program
Classification: A
EPA ID Number:

Location

DEC Region: 2
Address: 616 First Ave.
City: New York Zip: 10016-
County: New York
Latitude: 40.744600240
Longitude: -73.972473720
Site Type:
Estimated Size: 1.600 Acres

Site Owner(s) and Operator(s)

Current Owner Name: CONSOLIDATED EDISON CO OF NY, INC.
Current Owner(s) Address: 4 IRVING PLACE
NEW YORK,NY, 10003
Owner(s) during disposal: Information not available
Operator during disposal: Information not available

Site Description

Kips Bay Fuel Terminal Site (C231014). Additional site information can be found in the UIS under the VCP Site number V00430. This BCP Application consists of a property currently in the Voluntary Cleanup Program (VCP); Kips Bay Fuel Terminal (V00430). The application was determined to be complete in a letter dated June 30, 2004. The Kips Bay parcel consists of 1.6 acres located just west of the East River and FDR Drive and south of the UN Building in a highly developed commercial/ residential area between East 35th and East 36th Streets. This property has most recently been used by Con-Ed for parking and fuel storage and transformer

storage for the Waterside Generating Station. The property is currently vacant. The Kips Bay property was initially operated as a lumber and coal/wood yard until 1899 and primarily a lumber yard until approximately 1926 when the New York Steam Corporation built a coal-fired steam plant on the eastern side of the site. Con Edison became the owner of the steam plant and in 1970 added a Fuel Oil Pump House and 255,000-gallon underground fuel oil storage tank (UST), Switch Gear Room/Guard Station Building, three transformers, Foam Tank Building used for fire protection, three underground fuel pipelines and a fueling island and associated canopy. Con Edison initiated demolition of the steam plant in 1987 and completed the demolition in 1994. Since then, the site has been used to supply fuel oil, as necessary, to Con Edison? s Waterside Generating Station located at 700 First Avenue and as a parking facility for Con Edison vehicles. The BCA's were sent to the applicant for execution on July 6, 2005. The developer returned signed BCA's on April 24, 2007 for Greater Waterside and Kips Bay. The properties determined not to be a brownfield site since the redevelopment or reuse of the real property is not complicated by the presence of a contaminant, per letter dated October 9, 2007. An Article 78 Notice of Petition was filed on December 21, 2007 and served to the Region 2 office on December 24, 2007. Affidavits were completed by the project director, bureau manager, division director and AG representative. As of July 17, 2008, TRC returned possession of WGS (700 First Avenue) to the developer (ERRC) and has no further maintenance responsibilities for any of the four First Avenue Properties. Concerning the Article 78 Notice of Petition, the court decided on October 21, 2008 that the site should have been admitted to the BCP program as of April 2005. The DEC won the right to appeal this decision. Brief filed August 20, 2009. Another ruling against the State was issued on December 17, 2009. The property was determined to be eligible for the BCP as a result of above described litigation.

Site Environmental Assessment

The investigation under the VCP (V00430) found elevated levels of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and metals in soils. In groundwater, certain metals were detected at concentrations exceeding NYSDEC Class GA water quality standards. All soil on the site, above the development depth (16 feet below ground surface, or to the groundwater or the bedrock, whichever is shallower), was excavated and disposed offsite. Institutional controls, such as deed restrictions, will be required below the development depth.

For more Information: E-mail Us

Back to Search Results

Refine Current Search

CONFIDENTIAL AND PRIVILEGED

PHASE II ENVIRONMENTAL SITE INVESTIGATION REPORT
OF

PROPOSED SCHOOL CONSTRUCTION SITE

FORMER KIPS BAY FUEL TERMINAL

616 FIRST AVENUE

NEW YORK, NEW YORK 10016

SCA LLW NO.: 051114
SCA CONTRACT NO.: C000009700

SCA JOB NO.: M281-27709

CONSULTANT PROJECT NO.: 30-12788

MARCH 17, 2009

NEW YORK CITY SCHOOL CONSTRUCTION AUTHORITY

Prepared by:

STV Inc.
225 Park Avenue South
New York, NY 10003
Phone: (212) 777-4400
Fax: (646) 654-1861
Attn: Michael Tumulty, P.E.

Prepared for:

NYC SCA
30-30 Thomson Avenue
Long Island City, NY 11101-3045
Phone: (718) 472-8502
Fax: (718) 472-8297
Attn: Ms. Lee Guterman

NOTICE OF REMEDIATION REQUIRED

Environmental contamination at the project site must be remediated prior to, or during, site development.
Remedial design documents must be included within bid specifications for the construction contract.
Contact IEH Department for additional information or assistance.

Site Name	Proposed School Construction Site, Former Kips Bay Fuel Terminal	**LLW No.**	051114
Description	616 First Avenue, New York, NY	**IEH Job Number**	M281-27709
District	2	**Consultant Vendor**	STV Incorporated
Borough	Manhattan	**Phase I Delivery Date**	NA
Block/ Lot	Block 967 , Lot 1	**Phase II Delivery Date**	3/17/2009

Identified Contamination

MEDIA (list affected media)	*CONTAMINANT* (e.g., VOC, chlorinated solvents, SVOC, PAHs, metals, cyanide)	*CONCENTRATION RANGE* (min-max concentration)	*UNITS* (e.g., ug/l, mg/l)
Soil Vapor	**Petroleum-Related VOCs**	**ND - 72**	**ug/m3**

Required Remediation

MEASURE (list recommended remediation measures)	*METHOD* (e.g., Contractor HASP, soil excavation, removed soil characterization, sub-slab vapor membrane, etc.)	*COST ESTIMATE*
Soil Vapor Mitigation	**Soil Vapor Barrier and Sub-Slab Depressurization System (SSDS)**	[redacted]

Comments

STV Incorporated (STV) conducted a Phase II Environmental Site Investigation (ESI) of the southwestern portion of the former Kips Bay Fuel Terminal, located at 616 First Avenue, New York, New York (hereafter referred to as the "Site"). The Site encompasses a total of approximately 22,900 square feet (sf) and is currently vacant. NYCSCA proposes to construct an 8-story public school facility at the Site. The Site is part of the former Kips Bay Fuel Terminal, which is listed in the New York State Department of Environmental Conservation (NYSDEC) Voluntary Cleanup Program (Site No. V-00430-2).

The Phase II ESI was performed to address the potential for subsurface impacts to the Site from the historical use of adjacent properties. The Phase II ESI field activities consisted of a geophysical survey to clear locations of proposed soil vapor points from buried utilities and subsurface features, advancement of four soil vapor points and collection of four soil vapor samples and one ambient air sample for laboratory analysis in accordance with the New York State Department of Health (NYSDOH) guidelines.

The results of the analysis of soil vapor samples revealed the presence of several petroleum related volatile organic compounds (VOCs) at concentrations above the anticipated NYSDOH background levels. It is STV's opinion that the elevated concentrations of petroleum related VOCs are from residual petroleum impacts associated with the historic use of the Kips Bay Fuel Terminal and surrounding area. The results of the analysis of the ambient air sample revealed detectable concentrations of several VOCs. However, all compounds were detected within the anticipated NYSDOH Background Levels for Outdoor Air.

Based on review of the Phase II ESI findings STV recommends that a vapor barrier and sub-slab depressurization system be installed as part of the new construction, and a minimum of 2 feet of environmentally clean fill be placed over existing soils in all landscaped areas. Additionally, all future construction activities at the Site shall be conducted in compliance with the Site Management Plan.

Attachments

The following environmental reports are attached to this document:

REPORT	*PREPARE FIRM*	*DATE*
Phase II Environmental Site Investigation for Proposed School Construction Site, Former Kips Bay Fuel Terminal	STV Incorporated	3/17/2009

Michael Tumulty, P.E.,	STV Incorporated	3/17/2009
Preparer	**Firm**	**Date**

Copy:

Industrial and Environmental Hygiene

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APPENDICES

EXECUTIVE SUMMARY

The New York City School Construction Authority (NYCSCA) requested that STV Incorporated (STV) conduct a Phase II Environmental Site Investigation (ESI) of the southwestern portion of the former Kips Bay Fuel Terminal, located at 616 First Avenue, New York, New York (hereafter referred to as the "Site"). The Site encompasses a total of approximately 22,900 square feet (sf) and is currently vacant. NYCSCA proposes to construct an 8-story public school facility at the Site.

The Site is part of the former Kips Bay Fuel Terminal, which is listed in the New York State Department of Environmental Conservation (NYSDEC) Voluntary Cleanup Program (VCP) (Site No. V-00430-2). Historically, the terminal was occupied by a lumber and coal/wood yard, Liquid Carbonic Company, New York Steam Corporation, and a "Provision Factory." By 1950, New York Steam Company occupied almost the entire terminal. By 1980, the onsite steam plant occupied only the east side of the terminal, and the plant owner had become Con Edison Company, Inc. Demolition of the steam plant began in 1987 and was completed circa 1994.

STV reviewed the following reports related to Kips Bay Fuel Terminal Remediation prepared by TRC Engineers, Inc. (TRC):

- "Supplemental Soil Investigation Final Report and Remediation Work Plan," August 2003.
- "Final Report for Kips Bay Fuel Terminal Remediation Work Plan," March 2006.
- "Site Management Plan for Former Kips Bay Fuel Terminal," October 2007.

Early investigations of the former Kips Bay Fuel Terminal identified several areas of concern (AOCs) that were subsequently remediated. The objective of the remediation activities performed at the former Kips Bay Fuel Terminal was to ready it for unrestricted development (i.e., residential and commercial uses) to a depth which is the higher of the top of competent bedrock or the mean high water table ("the Development Depth"), without deed restrictions, institutional or engineering controls or further consents, approvals, or authorizations. To address the identified AOCs, the following remedial activities were completed:

- Asbestos abatement, decommissioning and demolition of all buildings and subsurface structures to Development Depth;
- Additional soil sampling at the Transformer Area to delineate the horizontal and vertical extent of polychlorinated biphenyl (PCB)-contaminated soil;
- Removal of the 255,000-gallon underground storage tank (UST) and the concrete-lined ash pit;
- Excavation and disposal of all soil down to the Development Depth;
- Evaluation of groundwater conditions within the bedrock and shallow aquifer by installation and sampling of three permanent bedrock monitoring wells and two permanent shallow aquifer monitoring wells; and
- Close-out of all open NYSDEC spill numbers for previously-reported onsite impacts.

TRC's remedial activities have addressed all Site AOCs. All soil above Development Depth (i.e., top of bedrock or the groundwater table) at the former terminal has been removed. Additionally, two significant AOCs (255,000-gallon UST and the concrete-lined ash pit) were removed from depths significantly below Development Depth. NYSDEC's closure of all open spill numbers is reassurance that the remediation was performed to their satisfaction.

Based on the review of the available data, STV concluded that with all materials above Development Depth removed, the only areas that could impact future development are those areas below Development Depth or adjacent to the Site, beneath the sidewalk and roadway. A soil vapor investigation that was initially proposed under VCP agreement was not performed because there was little or no unsaturated zone from which to obtain soil vapor samples. NYSDEC agreed to not require the soil vapor survey. It was STV's opinion however, that a soil vapor investigation performed through the sidewalks surrounding the Site would provide a valuable assessment of possible impacts from historic operations that may exist just beyond the property line and that may continue to be a source of soil vapor. Considering the above, STV recommended a soil vapor survey to address the potential for impacts to the Site from adjacent properties.

While an assessment of ambient air quality was clearly not required for the remedial action undertaken by TRC, it is an important consideration if the Site is considered for use as a school. This is particularly a concern since the Waterside Generating Station is located only two blocks north of the Site. Considering the potential for impacts from the nearby Waterside Generating Station, an ambient air sampling was also recommended by STV.

The Phase II ESI field activities for the Site were performed by STV on January 20 and 22, 2009 and included a geophysical survey, the advancement of four soil vapor points, the collection of one ambient air sample and four soil vapor samples for laboratory analysis.

The results of the analysis of soil vapor samples revealed the presence of several petroleum related VOCs at concentrations above the anticipated New York State Department of Health (NYSDOH) background levels. It is STV's opinion that the elevated concentrations of petroleum related VOCs are from residual petroleum impacts associated with the historic use of the Kips Bay Fuel Terminal and surrounding area. The results of the analysis of the ambient air sample revealed detectable concentrations of several VOCs. However, all compounds were detected within the anticipated NYSDOH Background Levels for Outdoor Air.

Based on the results of the Phase II ESI, implementing the remediation and environmental control measures listed below is required to make the Site environmental conditions suitable for use as a public school facility:

- As a safeguard, to prevent potential volatile organic compounds in soil vapor from entering the new school building, a soil vapor barrier and sub slab depressurization system should be integrated into the new school design, including integration with any proposed water vapor barrier or waterproofing components of the new school design.

- All future construction activities at the Site shall be conducted in compliance with the Site Management Plan.

- After the proposed new building and grounds are constructed, it is anticipated that there will be no exposed soil at the Site; however, if landscaped areas are incorporated into the development of the Site, a minimum 2-foot thick layer of environmentally clean fill should be placed over existing soil in those areas.

The cost estimate for soil vapor barrier and SSDS installation at the Site is $384,000, which includes design and contingency costs (see Appendix D).

1.0 INTRODUCTION

1.1 Background

The NYCSCA requested that STV conduct a Phase II ESI of the southwestern portion of the former Kips Bay Fuel Terminal, located at 616 First Avenue, New York, New York (hereafter referred to as the "Site"). The Site encompasses a total of approximately 22,900 sf and is currently vacant. NYCSCA proposes to construct an 8-story public school facility at the Site. Figure 1 presents a Site Location Map and Figure 2 presents a Sampling Location Plan.

The Site is part of the former Kips Bay Fuel Terminal, which is listed in the NYSDEC VCP (Site No. V-00430-2). Historically, the terminal was operated as a lumber and coal/wood yard until 1899. By 1910, a one-story building occupied by Liquid Carbonic Company had replaced the coal yard on the northern end of the terminal. The New York Steam Corporation built a steam plant on the eastern side of the terminal circa 1926. At that time, the western end of the terminal was vacant and a "Provision Factory" replaced the Liquid Carbonic Company as the occupant of the building at the northernmost end of the terminal. By 1950, the New York Steam Company occupied the entire terminal, except the southwest corner which was vacant. By 1980, the onsite steam plant occupied only the east side of the terminal, and the plant owner had become Con Edison Company, Inc. Demolition of the steam plant began in 1987 and was completed circa 1994.

STV reviewed the following reports related to Kips Bay Fuel Terminal Remediation prepared by TRC:

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- "Final Report for Kips Bay Fuel Terminal Remediation Work Plan," March 2006.
- "Site Management Plan for Former Kips Bay Fuel Terminal," October 2007.

Early investigations of the former Kips Bay Fuel Terminal identified the following AOCs:

- Petroleum-impacted soils at the Pipeline No. 5 and an offsite area immediately to the north of the northwest corner of the former terminal.
- The 255,000-gallon fuel oil UST at the southwest end of the terminal, including petroleum-impacted soil to the south of the UST.
- A "hot spot" area of PCB-contaminated soil at the Transformer Area of the terminal with PCBs in the soil above Technical Assistance Guidance Memorandum Residential Soil Cleanup Objectives (TAGM RSCOs) for subsurface soil.
- An underground concrete-lined ash pit at the southeastern end of the terminal filled with solids and water having elevated levels of some metals above TAGM RSCOs and visible staining.
- Other subsurface structures of concern including a storm-drain catch basin on the north side of terminal, underground storm drain lines, underground Pipeline Nos. 4, 5 and 6, and underground steam pipelines.
- Soils throughout the terminal, above the Development Depth (defined by TRC to be a depth which is higher of the top of competent bedrock or the mean high water table), not impacted by petroleum or PCB releases, exhibiting the presence of polycyclic aromatic hydrocarbons (PAHs) and some metals at concentrations exceeding TAGM, both of which were believed to be representative of urban fill.

1.2 Remedial Activities Completed at the Site

The objective of the remediation activities performed at the former Kips Bay Fuel Terminal was to ready it for unrestricted development (i.e., residential and commercial uses) to a depth which is the higher of the top of competent bedrock or the mean high water table, as referenced in the Manhattan Highway Datum ("the Development Depth"), without deed restrictions, institutional or engineering controls or further consents, approvals, or authorizations. It was the further objective that, following completion of the remediation activities, subject to any groundwater monitoring that may be required, the property will be in condition to be improved to the Development Depth, including installation of pilings to the top of bedrock or caissons and dewatering as necessary, without the need for special worker health and safety protection obligations above the Development Depth. To address the identified AOCs, the following remedial activities were completed:

- Asbestos abatement, decommissioning and demolition of all buildings and subsurface structures to Development Depth;
- Additional soil sampling at the Transformer Area to delineate the horizontal and vertical extent of PCB-contaminated soil;
- Removal of the 255,000-gallon UST and the concrete-lined ash pit;
- Excavation and disposal of all soil down to the Development Depth;
- Evaluation of groundwater conditions within the bedrock and shallow aquifer by installation and sampling of three permanent bedrock monitoring wells and two permanent shallow aquifer monitoring wells; and
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TRC's remedial activities have addressed all Site AOCs. All soil above Development Depth (i.e., top of bedrock or the groundwater table) at the former terminal has been removed. Additionally, two significant AOCs (255,000-gallon UST and the concrete-lined ash pit) were removed from depths significantly below Development Depth. NYSDEC's closure of all open spill numbers is reassurance that the remediation was performed to their satisfaction.

1.3 Purpose

Based on the review of the available data, STV concluded that with all materials above Development Depth removed, the only areas that could impact future development are those areas below Development Depth or adjacent to the Site, beneath the sidewalk and roadway. A soil vapor investigation that was initially proposed under VCP agreement was not performed because there was little or no unsaturated zone from which to obtain soil vapor samples. NYSDEC agreed to not require the soil vapor survey. It was STV's opinion however, that a soil vapor investigation performed through the sidewalks surrounding the Site would provide a valuable assessment of possible impacts from historic operations that may exist just beyond the property line and that may continue to be a source of soil vapor. Considering the above, STV recommended a soil vapor survey to address the potential for impacts to the Site from adjacent properties.

While an assessment of ambient air quality was clearly not required for the remedial action undertaken by TRC, it is an important consideration if the Site is considered for use as a school. This is particularly a concern since the Waterside Generating Station is located only two blocks north of the Site. Considering the potential for impacts from the nearby Waterside Generating Station, an ambient air sampling was also recommended by STV.

2.0 DESCRIPTION OF PHASE II ESI FIELD ACTIVITIES

STV performed the following Phase II ESI field activities on January 20 and 22, 2009:

- Geophysical survey to clear locations of proposed soil vapor points from buried utilities and subsurface features.
- Advancement of four soil vapor points to a maximum depth of approximately 5 feet below ground surface (bgs).
- Collection of four soil vapor samples for laboratory analysis.
- Collection of one ambient air sample for laboratory analysis.

The scope and methods used for the various field activities are documented below.

A Site Plan showing all the sampling locations and Site features is provided as Figure 2 Representative photographs of the field investigation activities are attached in Appendix C.

The Phase II ESI was conducted in general accordance with our Phase II ESI Scope of Work dated January 19, 2009. The scope of the field activities and methods are described below.

2.1 Geophysical Survey

A geophysical survey was performed on January 20, 2009 to determine whether the proposed soil vapor locations conflicted with subsurface structures or utilities. The geophysical survey consisted of one or more of ground penetrating radar (GPR), time domain electromagnetic induction (EM61) and precision utility location (PUL) methods. The boring locations were established at locations that did not conflict with the subsurface utilities.

2.2 Soil Vapor Survey

Four soil vapor samples (SV-1 through SV-4) were collected on January 22, 2009. The investigation was performed in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 (NYSDOH Final Guidance). Soil vapor sample locations are shown on Figure 2.

The following suite of 26 VOCs were selected for reporting from the United States Environmental Protection Agency (USEPA) Method TO-15 expanded list to evaluate the soil vapor conditions at the Site as listed in Table 1.

Table 1

Volatile Organic Compounds Selected for Analysis

	Compound	Rationale for Including in Parameter Suite
1	Benzene	Petroleum constituent
2	Carbon Tetrachloride	Historically used at dry cleaners
3	Chlorobenzene	Petroleum constituent
4	Chloroethane	Breakdown product of 1,1,1 TCA
5	Chloromethane	Breakdown product of carbon tetrachloride
6	1,2 Dichlorobenzene	Petroleum.constituent
7	1,3 Dichlorobenzene	Petroleum constituent
8	1,1-Dichloroethane	Breakdown product of 1,1,1 TCA
9	1,2-Dichloroethane	Breakdown product of PCE and TCE
10	1,1-Dichloroethene	Breakdown product of PCE and TCE
11	*Cis*-1,2-Dichloroethene	Breakdown product of PCE and TCE
12	*trans*-1,2-Dichloroethene	Breakdown product of PCE and TCE
13	1,2-Dichloropropane	Unleaded gasoline additive
14	Ethyl Benzene	Petroleum constituent
15	Methyl *tert*-butyl Ether	Gasoline additive
16	Methylene Chloride	Breakdown product of carbon tetrachloride, paint stripper and cleaning component
17	Naphthalene	Petroleum constituent
18	Tetrachloroethene (PCE)	Dry cleaning solvent
19	Toluene	Petroleum constituent
20	1,1,1 – Trichloroethane	Common degreasing solvent
21	Trichloroethene (TCE)	Dry cleaning solvent
22	1,2,4-Trimethylbenzene	Petroleum constituent
23	1,3,5- Trimethylbenzene	Petroleum constituent
24	Vinyl Chloride	Breakdown product of PCE & TCE, used in PVC
25	m.p-Xylenes	Petroleum constituent
26	o-Xylene	Petroleum constituent

Temporary probes were installed using a direct push rig, and were constructed with Teflon tubing of laboratory grade quality. The tubing extended across the sampling zone of one to two feet in length at a depth of approximately 4 to 5 feet bgs. The probe was sealed above the sampling zone with bentonite slurry to prevent outside air infiltration. After installation of the probes, one to three volumes (i.e., the volume of the sample probe and tube) were purged prior to collecting the samples to ensure that the samples collected are representative. A photoionization detector (PID) measurement was taken and it was confirmed that a free flow of soil vapor was taking place. To ensure an appropriate seal above the probe, a tracer gas (helium) was used to enrich the atmosphere, which was limited to the above ground vicinity of the soil vapor boring seal. A portable helium monitoring device was used to analyze a soil vapor sample collected from the probe for the presence of the tracer gas prior to sample collection. Each soil vapor monitoring point passed the borehole seal integrity test. The flow rate of 0.1 liters per minute was used to collect the samples over a 60-minute period to minimize outdoor air infiltration during sampling. Prior to sample collection, each soil vapor monitoring point was monitored with a PID. The readings were less than 1 part per million (ppm).

The samples were collected using *individually certified-clean* Summa Canisters. After collection, the SUMMA canisters were submitted to Con-test Analytical Laboratories (Con-test), a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory (ELAP # NY10899), of East Longmeadow, Massachusetts for analysis of the 26 VOCs listed in Table 1 using the USEPA Method TO-15. Standard chain-of-custody procedures were followed.

Table 2

Vapor Sampling Summary

Sample Identification	Sample Location	PID Level (ppm)
SV-1	Eastern most soil vapor point location in sidewalk	ND
SV-2	South-southwestern soil vapor point location in sidewalk	ND
SV-3	West-southwestern soil vapor point location in sidewalk	ND
SV-4	Northern most soil vapor point location in sidewalk	ND

2.3 Ambient Air Survey

One ambient air sample was collected and analyzed for the 26 VOCs listed above using the USEPA Method TO-15 with *individually certified-clean* SUMMA canister on January 22, 2009. The ambient air sample location is shown on Figure 2. Prior to sample collection, the area where the ambient air sample was collected was monitored with a PID. The PID readings were less than 1 ppm.

The sample was collected at a height of approximately 3-ft above grade to simulate breathing zone conditions for a 6-hour period. The investigation was performed in accordance with the NYSDOH Final Guidance.

After collection, the SUMMA Canister was submitted to Con-test for analysis of the 26 VOCs listed above using the USEPA Method TO-15. Standard chain-of-custody procedures were followed. Laboratory analyses will provided detection levels that are lower than those achieved for soil vapor so as to be evaluated against NYSDEC and NYSDOH guidance values. A detection level of approximately 0.25 microgram per cubic meter (ug/m^3) was achieved for trichloroethene (TCE), tetrachloroethene (PCE), carbon tetrachloride and vinyl chloride.

Table 3

Ambient Air Sampling Summary

Sample Identification	Sample Location	PID Levels (ppm)
Ambient	South central portion of sidewalk south of Site between soil vapor points SV-1 and SV-2	ND

3.0 SITE SETTING

This Phase II ESI was performed for the southwestern portion of the former Kips Bay Fuel Terminal, located at 616 First Avenue, New York, New York. The location of the Site is presented in Figures 1 and 2.

3.1 Current Facility Description

The Site is located at 616 First Avenue, New York, New York and is bordered by undeveloped land to the north and east, East 35th Street to the south, and First Avenue to the west. Figure 1 shows the general site location and surrounding areas. Photographs of the Site are included in Appendix C. The Site encompasses a total of approximately 22,900 sf and is currently vacant.

3.2 Site Physical Characteristics

3.2.1 Topography

According to the United States Geological Survey (USGS) 7.5-Minute Quadrangle Map, *Brooklyn, NY*, dated 1979, the elevation of the Site is less than 10 feet above mean sea level. Based on a review of the map and Site observations, topography of the immediate Site area was observed to be relatively flat with a slight slope to the east. The East River is located approximately 500 feet to the east of the Site. A copy of the topographic map is presented in Figure 1.

3.2.2 Geology

Manhattan is underlain by high-grade metamorphic bedrock consisting of a sequence of Cambrian and Ordovician age gneiss, schistose-gneiss, and marble. The bedrock is characterized by numerous faults and fractures, many of which are transmissive and contain groundwater. The remediation activities at the Site have removed the unconsolidated sediments that overlie the bedrock down to the bedrock level at some locations at the Site. Residual soil remains at most of the Site, with the depth of residual soil generally increasing in an easterly direction toward the East River. The depth of bedrock in the vicinity of the Site generally varies from 19 feet to 24 feet bgs from the elevation of the sidewalk.

3.2.3 Soils

All soil at the Site was removed vertically to the slightly below the Development Depth. As soil excavation proceeded along the property sidewalls, imported clean sand from Amboy Aggregates was placed along the property boundaries. Imported sand was backfilled and compacted, extending five feet inside the property line and graded down to the Development Depth. The remainder of the Site was backfilled with 6 to 12 inches of imported 1.5-inch crushed stone from Tilcon New York, Inc. West Nyack, New York. Residual soil exists below the Development Depth, with the depth of residual soil generally increasing in an easterly direction toward the East River.

3.2.4 Hydrology

Based on the surface topography at the Site, groundwater flow is assumed to be to the east towards the East River. Estimated groundwater levels and/or flow direction may vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures, or dewatering operations. There are no surface water bodies or streams located at the Site. The depth to groundwater is less than two feet below the current grade.

4.0 DISCUSSION OF FINDINGS

This section presents a discussion of the findings of the Phase II ESI. A summary of the laboratory results is presented in Table A-1. The complete laboratory analytical data package is included in Appendix B.

4.1 Applicable Regulatory Standards

This subsection identifies the USEPA, NYSDEC, NYSDOH and/or New York City Department of Environmental Protection (NYCDEP) regulatory standards and guidelines used to evaluate the results of the soil vapor. The standards and guidelines used to evaluate the specific data are described individually below.

4.1.1 Soil Vapor Guidelines

Analytical results for soil vapor samples were compared to the NYSDOH Air Guideline Values (AGVs) and to background levels of VOCs in indoor air presented in the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 ("NYSDOH Vapor Intrusion Guidance Document"), including Upper Fence Limit indoor air values from "Table C-1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes," 90th Percentile indoor air values from "Table C-2. EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA canister method", and the 95th Percentile Outdoor Air Values from Table C-5, Health Effects Institute (HEI) 2005: Relationship of Indoor, Outdoor and Personal Air published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006). The results of the analyses of the soil vapor samples were also compared to Matrices 1 and 2 in the NYSDOH Vapor Intrusion Guidance Document. The matrices rely in part on indoor air data and indoor air samples were not collected as part of the Phase II ESI as the Site does not contain any buildings.

4.1.2 Ambient Air Quality

Analytical results for the ambient air sample were compared to the NYSDOH AGVs and to background levels of VOCs in outdoor air included in the NYSDOH Soil Vapor Intrusion Guidance Document, Upper Fence Limit outdoor air values from "Table C-1 NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes," 90th Percentile outdoor air values from "Table C-2 USEPA 2001: BASE Database, SUMMA canister method" and 95th percentile Outdoor Air values from Table C-5, HEI 2005: Relationship of Indoor, Outdoor and Personal Air published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C. As there are no NYSDEC ambient air monitoring stations within two miles of the Site, data from these stations was not used to evaluate data collected at the Site.

4.2 Soil Vapor Findings

The results of the investigation revealed the presence of elevated concentrations of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, m,p-xylene, and o-xylene in soil vapor, which exceeded NYSDOH Background Levels for Indoor Air. Table 2 below denotes sample locations and elevated VOC concentrations.

Table 4

Detected VOCs in Soil Vapor Exceeding NYSDOH Final Guidance Background Levels for Indoor Air

Sample ID Unit	DOH AGV	NYSDOH (1)	USEPA(2)	HEI (3)	SV-1 µg/m³	SV-2 µg/m³	SV-3 µg/m³	SV-4 µg/m³
1,2,4-Trimethylbenzene	--	9.8	9.5	--	37	7.6	33	33
1,3,5-Trimethylbenzene	--	3.9	3.7	--	12	3.0	12	8.2
Benzene	--	13	9.4	10	16	1.6	13	2.3
Ethylbenzene	--	6.4	5.7	7.62	5.4	2.4	20	6.5
m,p-Xylene	--	11	22.2	22.2	16	8.8	72	31
o-Xylene	--	7.1	7.9	7.24	11	4.2	34	12

(1) NYSDOH Fuel Oil 2003 Upper Fence Limit (µg/m³)
(2) BASE Data 90th Percentile Value (µg/m³)
(3) RIOPA 2005 95th Percentile Value (µg/m³)
-- – Not Available
Bold – Exceed Maximum Applicable Background Ranges for Indoor Air
There are no NYSDOH AGV criteria for the detected compounds.

All of the detected VOCs are indicative of petroleum discharges. It is STV's opinion that the elevated concentrations of petroleum related VOCs are from residual petroleum impacts associated with the historic use of the Kips Bay Fuel Terminal and surrounding area. A summary of the analytical results for VOCs in soil vapor samples is presented in Table A-1 in Appendix A and the analytical data report is provided in Appendix B.

4.3 Ambient Air Sample Findings

The ambient air sample was collected between soil vapor locations SV-1 and SV-2 on the sidewalk immediately south of the Site as depicted in Figure 2.

The ambient air laboratory analytical results revealed that eleven compounds [1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, carbon tetrachloride, ethylbenzene, chloromethane, methylene chloride, m,p-xylene, o-xylene, PCE, and toluene] were detected above laboratory detection limits. None of the analytical results exceeded the NYSDOH Background Levels for Outdoor Air. A summary of the analytical results for VOCs in the ambient air sample is presented in Table A-1 in Appendix A and the analytical data report is provided in Appendix B.

4.4 Overall Findings

The results of the analysis of soil vapor samples revealed the presence of several petroleum related VOCs at concentrations above the anticipated NYSDOH background levels. It is STV's opinion that the elevated

concentrations of petroleum related VOCs are from residual petroleum impacts associated with the historic use of the Kips Bay Fuel Terminal and surrounding area. The results of the analysis of the ambient air sample revealed detectable concentrations of several VOCs. However, all compounds were detected within the anticipated NYSDOH Background Levels for Outdoor Air.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the Phase II ESI, STV concludes the following:

The results of the analysis of soil vapor samples revealed the presence of several petroleum related VOCs at concentrations above the anticipated NYSDOH background levels. It is STV's opinion that the elevated concentrations of petroleum related VOCs are from residual petroleum impacts associated with the historic use of the Kips Bay Fuel Terminal and surrounding area. The results of the analysis of the ambient air sample revealed detectable concentrations of several VOCs. However, all compounds were detected within the anticipated NYSDOH Background Levels for Outdoor Air.

Based on the results of the Phase II ESI, implementing the remediation and environmental control measures listed below is required to make the Site environmental conditions suitable for use as a public school facility:

- As a safeguard, to prevent potential volatile organic compounds in soil vapor from entering the new school building, a soil vapor barrier and sub slab depressurization system should be integrated into the new school design, including integration with any proposed water vapor barrier or waterproofing components of the new school design.

- All future construction activities at the Site shall be conducted in compliance with the Site Management Plan.

- After the proposed new building and grounds are constructed, it is anticipated that there will be no exposed soil at the Site; however, if landscaped areas are incorporated into the development of the Site, a minimum 2-foot thick layer of environmentally clean fill should be placed over existing soil in those areas.

The cost estimate for soil vapor barrier and SSDS installation at the Site is [redacted] which includes design and contingency costs (see Appendix D).

6.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

STV, Inc. (STV) has performed a Phase II Environmental Site Investigation of 616 First Avenue, New York, New York. The scope of the Phase II ESI was consistent with the scope of work dated January 19, 2009.

STV, INC.

Sarah Weaver

Prepared By:

Sarah Weaver

Project Scientist

Michael Tumulty

Reviewed By:

Michael Tumulty, P.E.

QA/QC Review/Senior Associate

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for:

Moretrench American Corporation
51 Smart Ave
Yorkers NY, 10704
Attention: Joe Mahon

Report Date: 09/02/2010
Client Project ID: PS281 NY, NY
York Project (SDG) No.: 10H0892

CT License No PH-0723 New Jersey License No. CT-005 ACCREDITED IN ACCORDANCE WITH nelac New York License No 10854 PA Reg. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 (203) 325-1371 FAX (203) 357-0166

Report Date: 09/02/2010
Client Project ID: PS281 NY, NY
York Project (SDG) No.: 10H0892

Moretrench American Corporation
51 Smart Ave
Yorkers NY, 10704
Attention: Joe Mahon

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on August 26, 2010 and listed below. The project was identified as your project: **PS281 NY, NY**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the attachment to this report, and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
10H0892-01	Excavation Pit	Water	08/25/2010	08/26/2010

General Notes for York Project (SDG) No.: 10H0892

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation, unless otherwise noted.
6. All analyses conducted met method or Laboratory SOP requirements. See the Qualifiers and/or Narrative sections for further information.
7. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
8. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.

Approved By: Robert Q. Bradley

Date: 09/02/2010

Robert Q. Bradley
Managing Director

YORK

Sample Information

Client Sample ID: **Excavation Pit** **York Sample ID:** **10H0892-01**

York Project (SDG) No	Client Project ID	Matrix	Collection Date/Time	Date Received
10H0892	PS281 NY, NY	Water	August 25, 2010 3 00 pm	08/26/2010

Volatile Organics, NYCDEP Sewer Discharge List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method EPA 5030B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0 95	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0 68	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
71-43-2	Benzene	ND		ug/L	0 48	1 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
56-23-5	Carbon tetrachloride	ND		ug/L	1 0	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
67-66-3	Chloroform	ND		ug/L	0 36	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
100-41-4	Ethyl Benzene	ND		ug/L	0 35	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0 38	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
95-47-6	o-Xylene	ND		ug/L	0 50	5 0	1	EPA Method 624	08/30/2010 15:45	08/30/2010 22 01	SS
1330-20-7P/M	p- & m- Xylenes	ND		ug/L	0 55	10	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
127-18-4	Tetrachloroethylene	ND		ug/L	0 52	5 0	1	EPA Method 624	08/30/2010 15:45	08/30/2010 22 01	SS
108-88-3	Toluene	ND		ug/L	0 23	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS

Volatile Organics, NYSDEC Sewer Disch. List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method EPA 5030B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/l	0.48	1 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
100-41-4	Ethyl Benzene	ND		ug/L	0 35	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.38	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
95-47-6	o-Xylene	ND		ug/L	0.50	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
1330-20-7P/M	p- & m- Xylenes	ND		ug/L	0 55	10	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
127-18-4	Tetrachloroethylene	ND		ug/L	0 52	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS
108-88-3	Toluene	ND		ug/L	0 23	5 0	1	EPA Method 624	08/30/2010 15 45	08/30/2010 22 01	SS

Sample Information

Client Sample ID: **Excavation Pit** **York Sample ID:** **10H0892-01**

York Project (SDG) No	Client Project ID	Matrix	Collection Date/Time	Date Received
10H0892	PS281 NY, NY	Water	August 25, 2010 3:00 pm	08/26/2010

Semi-Volatiles, NYCDEP Sewer Discharge List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	1.46	5.56	1	EPA Method 625	08/30/2010 10:53	08/31/2010 05:36	TD
91-20-3	Naphthalene	ND		ug/L	4.29	5.56	1	EPA Method 625	08/30/2010 10:53	08/31/2010 05:36	TD

PCB (Polychlorinated Biphenyls)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW846-3510C Low Level

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		ug/L	0.0382	0.0526	1	EPA Method 608	08/30/2010 11:27	08/31/2010 16:21	JW
11104-28-2	Aroclor 1221	ND		ug/L	0.0382	0.0526	1	EPA Method 608	08/30/2010 11:27	08/31/2010 16:21	JW
11141-16-5	Aroclor 1232	ND		ug/L	0.0382	0.0526	1	EPA Method 608	08/30/2010 11:27	08/31/2010 16:21	JW
53469-21-9	Aroclor 1242	ND		ug/L	0.0382	0.0526	1	EPA Method 608	08/30/2010 11:27	08/31/2010 16:21	JW
12672-29-6	Aroclor 1248	ND		ug/L	0.0382	0.0526	1	EPA Method 608	08/30/2010 11:27	08/31/2010 16:21	JW
11097-69-1	Aroclor 1254	ND		ug/L	0.0444	0.0526	1	EPA Method 608	08/30/2010 11:27	08/31/2010 16:21	JW
11096-82-5	**Aroclor 1260**	**2.85**		ug/L	0.0444	0.0526	1	EPA Method 608	08/30/2010 11:27	08/31/2010 16:21	JW

Cadmium by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-43-9	Cadmium	ND		mg/L	0.00100	0.00300	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW

Copper by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-50-8	**Copper**	**0.0203**		mg/L	0.00160	0.00500	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW

Lead by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	**Lead**	**0.109**		mg/L	0.00120	0.00300	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW

Nickel by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-02-0	**Nickel**	**0.0132**		mg/L	0.000800	0.00500	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW

Zinc by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-66-6	**Zinc**	**0.0687**		mg/L	0.000900	0.0200	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW

Sample Information

Client Sample ID: **Excavation Pit** **York Sample ID:** **10H0892-01**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
10H0892	PS281 NY, NY	Water	August 25, 2010 3:00 pm	08/26/2010

Metals, NYSDEC Sewer Disch.

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-36-0	**Antimony**	**0.006**		mg/L	0.002	0.005	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW
7440-41-7	Beryllium	ND		mg/L	0.0009	0.001	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW
7440-43-9	Cadmium	ND		mg/L	0.001	0.003	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW
7440-50-8	**Copper**	**0.020**		mg/L	0.002	0.005	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW
7439-92-1	**Lead**	**0.109**		mg/L	0.001	0.003	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW
7440-02-0	**Nickel**	**0.013**		mg/L	0.0008	0.005	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW
7782-49-2	Selenium	ND		mg/L	0.002	0.010	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW
7440-22-4	Silver	ND		mg/L	0.001	0.005	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW
7440-28-0	Thallium	ND		mg/L	0.002	0.010	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW
7440-66-6	**Zinc**	**0.069**		mg/L	0.0009	0.020	1	EPA 200.7	08/30/2010 15:09	08/30/2010 20:17	MW

Mercury by EPA 245.1

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 245.1 Mercury

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/L	0.0000390	0.000200	1	EPA 245.1	08/31/2010 11:08	08/31/2010 11:08	AA

Total Solids (Aq)

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Solids	**4970**		mg/L	0.500	0.500	1	SM 2540B	09/01/2010 12:22	09/01/2010 12:22	AA

Nitrate as N

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-55-8	**Nitrate as N**	**2.27**		mg/L	0.0120	0.0500	1	EPA Method 300.0	08/27/2010 01:56	08/27/2010 01:56	AD

Nitrite as N

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
14797-65-0	Nitrite as N	ND		mg/L	0.00700	0.0500	1	EPA Method 300.0	08/27/2010 01:56	08/27/2010 01:56	AD

Non-Polar Material

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Non-Polar Material	**2.67**		mg/L	0.500	0.500	1	EPA 1664A	08/31/2010 14:44	08/31/2010 14:44	AS

Oil & Grease

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Oil & Grease	**4.00**		mg/L	0.500	0.500	1	EPA 1664A	08/31/2010 14:44	08/31/2010 14:44	AS

Sample Information

Client Sample ID: Excavation Pit **York Sample ID:** 10H0892-01

York Project (SDG) No	Client Project ID	Matrix	Collection Date/Time	Date Received
10H0892	PS281 NY, NY	Water	August 25, 2010 3:00 pm	08/26/2010

Phenols, total

Log-in Notes: Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
64743-03-9	Phenols, total	ND		mg/L		0.0500	1	EPA 420.1/2	09/02/2010 12:20	09/02/2010 12:20	AA

Total Kjeldahl Nitrogen

Log-in Notes: Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Kjeldahl Nitrogen	**12.2**		mg/L	0.100	0.100	1	SM 4500-N Org	09/01/2010 16:30	09/01/2010 16:30	CG

Total Nitrogen

Log-in Notes: Sample Notes:

Sample Prepared by Method: [CALC]

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Nitrogen Calculated Analyte	**14.5**		mg/L	0.00700	0.0500	1	Nitrogen Calc	09/01/2010 16:30	09/01/2010 16:30	CG

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Notes and Definitions

ND	Analyte NOT DETECTED at the stated Reporting Limit (RL) or above
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
MDL	METHOD DETECTION LIMIT - the minimum concentration that can be measured and reported with a 99% confidence that the concentration is greater than zero. If requested or required, a value reported below the RL and above the MDL is considered estimated and is noted with a "J" flag
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir	Non-dir flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons

Corrective Action.

120 RESEARCH DRIVE STRATFORD, CT 06615 (203) 325-1371 FAX (203) 357-0166

Page____ of ____

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(203) 325-1371 FAX (203) 357-0166

Field Chain-of-Custody Record

NOTE: York's Std. Terms & Conditions are listed on the back side of this document. This document serves as your written authorization to York to proceed with the analyses requested and your signature binds you to York's Std. Terms & Conditions unless superseded by written contract.

York Project No. 10H0892

YOUR Information	Report To:	Invoice To:	YOUR Project ID	Turn-Around Time	Report Type/Deliverbles
Company: Moretrench	Company: Same	Company: Same	PS281 NY, NY	RUSH - Same Day ☐	Summary Report ____
Address: 51 Smart Ave Yonkers, NY 10704	Address:	Address:		RUSH - Next Day ☐	Summary w/ QA Summary ____
Phone No. 9144231331	Phone No.	Phone No.	**Purchase Order No.**	RUSH - Two Day ☐	CT RCP Package ____
Contact Person: Joe Mahon	Attention:	Attention:		RUSH - Three Day ☐	NY ASP A Package ____
E-Mail Address: JMahon@m...	E-Mail Address:	E-Mail Address:	Samples from: CT ___ (NY) ___ NJ ___	RUSH - Four Day ☐	NY ASP B Package ____
				(Standard(5-7 Days)) ☐	*Electronic Deliverables:* EDD (Specify Type) ____ Excel ____

[redacted]

Samples Collected/Authorized By (Signature): [signature]

Name (printed): Ron Smalley

Matrix Codes
S - soil
Other - specify(oil, etc.)
WW - wastewater
(GW - groundwater)
DW - drinking water
Air-A - ambient air
Air-SV - soil vapor

Volatiles		Semi-Vols.	Pest/PCB/Herb	Metals	Misc. Org.	Full Lists	Common Miscellaneous Parameters		
8260 full	TICs	8270 or 625	8082PCB	RCRA8	TPH GRO	Pri.Poll.	Corrosivity	Nitrate	Color
624	Site Spec.	STARS list	8081Pest	PP13 list	TPH DRO	TCL Organics	Reactivity	Nitrite	Phenols
STARS list	Nassau Co.	BN Only	8151Herb	TAL	CT ETPH	TAL Met/CN	Ignitability	TKN	Cyanide-T
BTEX	Suffolk Co.	Acids Only	CT RCP	CT15 list	NY 310-13	Full TCLP	Flash Point	Tot. Nitrogen	Cyanide-A
MTBE	Ketones	PAH list	App. IX	TAGM list	TPH 1664	Full App. IX	Sieve Anal.	Ammonia-N	BOD5
TCL list	Oxygenates	TAGM list	Site Spec.	NJDEP list	Air TO14A	Part 360-Routine	Heterotrophs	Chloride	CBOD5
TAGM list	TCLP list	CT RCP list	SPLP or TCLP	Total	Air TO15	Part 360-Baseline	TOX	Phosphate	BOD28
CT RCP list	524.2	TCL list	TCLP Pest	Dissolved	Air STARS	Part 360-Expanded	BTU/lb.	Tot. Phos.	COD
Arom. only	502.2	NJDEP list	TCLP Herb	SPLP or TCLP	Air VPH	Part 360-Leachate	Aquatic Tox.	Oil&Grease	TSS
Halog. only	NJDEP list	App. IX	Chlordane	Indiv. Metals	Air TICs	(NYCDEP Sewer)	TOC	F.O.G.	Total Solids
App. IX list	SPLP or TCLP	TCLP BNA	608 Pest	LIST Below	Methane	(NYSDEC Sewer)	Asbestos	pH	TDS
8021B list		SPLP or TCLP	608 PCB		Helium	TAGM	Silica	MBAS	TPH-1664

Special Instructions
Field Filtered ☐
Lab to Filter ☐

Sample Identification	Date Sampled	Sample Matrix	Choose Analyses Needed from the Menu Above and Enter Below	Container Description(s)
Excavation Pit	8/25/10	GW	DEP + DEC	(2) 40ml HCL
				(1) HNO_3 250ml
				(2) Liter Unpreserved Amber
				(1) H_2SO_4 250ml
				(1) H_2SO_4 500ml Plastic
				(1) H_2SO_4 Amber Liter
				(1) Plastic Unp Liter

Comments

Preservation Check those Applicable: 4°C ___ Frozen ___ HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___ Ascorbic Acid ___ Other ___

Samples Relinquished By	Date/Time	Samples Received By	Date/Time
[signature]	8/26/10	H B Horton	8/26/10 8:20 AM
Samples Relinquished By	Date/Time	Samples Received in LAB by: [signature]	Date/Time 8/26/10 1600

Temperature on Receipt 4.9 °C

1

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120 RESEARCH DRIVE STRATFORD, CT 06615
(203) 325-1371 FAX (203) 357-0166

DATE: 8/27/10

Telephone Contact Summary

Client Moretrench Project No. 10H0892

Contact Joe Mahon Phone No. _____

FAX No. _____

Conversation Notes PS 281 NY
1-l plastic (non-pres.) sample jar was not submitted. Client would like us to run the parameters we can. He will supply a 1 liter w/ no preserv @ a later date.

Action Required Please log in

cc: Log in signed