AUGUST 11, 2008

# PHASE II SUBSURFACE INVESTIGATION

27-09 40<sup>™</sup> AVENUE LONG ISLAND CITY, NEW YORK 11101

AEI PROJECT No. 279720

PREPARED FOR

#### **NEW YORK BUSINESS DEVELOPMENT CORPORATION**

ATTN: MR. DANIEL VACCARO
5 HANOVER SQUARE, SUITE 1003
NEW YORK, NEW YORK 10004

PREPARED BY



30 Montgomery Street, Suite 1450 Jersey City, New Jersey 07302 (201) 332-1844

AEI



**ENVIRONMENTAL & ENGINEERING SERVICES** 

while the consultants com

August 11, 2008

Mr. Daniel Vaccaro New York Business Development Corporation 5 Hanover Square, Suite 1003 New York, NY 10004

Subject:

**Phase II Subsurface Investigation** 

27-09 40<sup>th</sup> Avenue Long Island City, New York AEI Project No. 279720

Dear Mr. Vaccaro:

The following letter report describes the activities and results of the Phase II Subsurface Investigation (Phase II) performed by AEI Consultants (AEI) at the above referenced property (Figure 1: Site Location Map). The Phase II included the collection of a total of seven soil samples from five soil borings advanced around the areas of concern as identified in the AEI Phase I Environmental Site Assessment (Phase I) dated June 25, 2008. This Phase II was designed to determine if a release from the subject property has impacted the groundwater and/or soils below the subject property as recommended in the AEI Phase I.

### I Background

The subject property is located on the north side of 40<sup>th</sup> Avenue in a mixed commercial and residential area of Long Island City, New York. The property totals approximately 0.23 acres and is improved with one (1) single-story building totaling approximately 9,000 square feet. The building is currently occupied by World Class Garment Care; an on-site dry cleaning facility and Rheinland Motors; a small scale automobile repair and restoration facility.

The Phase I of the subject property dated June 25, 2008 detailed following recognized environmental conditions:

According to historical sources, the subject property (west side tenant space of the property) has been occupied as a dry cleaning facility since 2000. Alpian Fancy Cleaners occupied the subject property from 2000 to 2004 and World Class Garment Care has occupied the subject property from 2004 to the present. The subject property is currently equipped with a Turbo Dry 1131 closed loop dry cleaning system, with steel secondary containment located on the west side of the subject property within an enclosed and ventilated room. This system utilizes tetrachloroethylene (PCE) during the dry cleaning process. Solvents, such as PCE, even when properly stored and disposed of, can be released from dry cleaning facilities in small, frequent releases through floor drains, cracked concrete, and sewer systems. Chlorinated solvents are highly mobile chemicals that can easily accumulate in soil.

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According to Mr. Angelo Bolbasis, the subject property owner, PCE is not stored on site and is only present within the closed loop dry cleaning system. According to the most recent waste manifest provided onsite, Safety-Kleen, a licensed transporter of hazardous waste, collects the spent PCE solvent approximately once a month. In addition, new PCE is delivered approximately once per month by Safety-Kleen and is pumped directly into the dry cleaning system by Safety-Kleen staff. No stains, cracking or conduits to the subsurface were observed in the vicinity of the closed loop dry cleaning system. Although the current tenant appears to be utilizing good housekeeping practices in the their day to day operations that would help minimize the potential for a release to occur, based on the length of time that dry cleaning has been conducted on site (8 years) as well as the lack of documentation as to the former dry cleaning tenant's housekeeping practices, AEI considers the presence of a dry cleaning facility on site for a period of 8 years a recognized environmental condition.

 According to historical sources, the subject property (both the east and west side of the property) was occupied by a glass manufacturer; Scientific Glass and Modern Glass Works, from 1950 until 1992. No information as to specific on site operations was reasonably ascertainable during the course of this investigation. Glass manufacturing practices raise an environmental concern based on the potential for fuel oil to be utilized in connection with on site furnaces as well as the potential waste streams generated during the glass manufacturing process. Waste streams can potentially contain lead oxide, zinc oxides and other metal oxides in the manufacture of special and technical glass and refining agents can include arsenic trioxide, antimony oxide, nitrates and sulfates. Liquid effluents containing heavy metal concentrations can also result from forming, finishing, coating, and electroplating operations especially if silvering and copper plating processes are in use. In addition, the glass manufacturing operations were performed during a time of little or no regulatory oversight pertaining to the handling and generation of hazardous materials and/or Based on the lack of documentation as to the specific operations performed in connection with the former glass manufacturer as well as the extended duration of these former tenants and potential for fuel oil use and heavy metal waste generation, the former use of the subject property as a glass manufacturer for a period of 42 years represents a recognized environmental condition.

## **II Investigative Efforts**

AEI performed a Phase II at the subject property on July 16, 2008. A total of five (5) soil borings (AEI-B1 through AEI-B5) were advanced within the subject property building. Three of the borings (AEI-B1 through AEI B-3) were advanced within the World Class Garment Care tenant space and two of the borings (AEI-B4 and AEI-B5) were advanced in the Rheinland Motors tenant space. The locations of the borings were chosen to determine if a possible release from historic and current operations have impacted the subsurface. Please refer to Figure 2, Site Plan, for a visual representation of the locations of the soil borings.

One soil sample was to be collected from each of the five borings and submitted for laboratory analysis. Groundwater samples were also proposed; however, groundwater was not encountered.

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### Soil Sample Collection

The borings were advanced with a direct-push drill rig to depths of approximately 16 feet below ground surface (bgs). All five borings reached a terminal depth of 16 feet bgs with the exception of AEI-B1 which encountered refusal at a depth of 14.5 feet bgs. Soil samples were collected at four foot intervals and continuously logged for lithology and screened for obvious signs of impact. No odors and obvious staining were observed during the advancement of the soil borings and sample collection; however, there were detections on the field handheld photo-ionization detector (PID). Detections on the PID were at or below 15 parts per million (ppm) for all soil samples from each boring. Attachment A, Boring Logs, provides details on the soils observed in each boring as well as soil screening detail.

Soil cores were continuously collected in 2" diameter acrylic liners, from which a sample was chosen at selected depths for possible laboratory analysis. The soil samples were containerized in laboratory supplied containers, labeled with a unique identifier, and immediately placed on ice and cooled in an ice chest to 4°C for shipment under chain of custody to the laboratory. At the completion of each boring, the boring was backfilled and patched according to applicable regulations.

#### Laboratory Analysis

On July 18, 2008, the soil samples were transported to York Analytical Laboratories, Inc. under chain of custody for analysis. Analytical results and chain of custody documents are included as Attachment B, Sample Analytical Documentation.

A total of five soil samples collected from the terminal depth of each boring were analyzed for volatile organic compounds (VOCs) via EPA Method 8260 and two soil samples collected from approximately four feet bgs at soil boring locations AEI-B3 and AEI-B4 were additionally analyzed for the Priority Pollutant 13 Metals via EPA Method 6010 and are presented in detail in Laboratory Results on Table 1, Soil Sample Results Summary.

Based on the initial results reported by York on July 22, 2008, the two soil samples collected at terminal depth at boring locations AEI-B3 and AEI-B4 were analyzed for Priority Pollutant 13 Metals via EPA Method 6010.

#### **III Findings**

#### Lithology

Silts and clays were encountered in the shallow soils with fine and medium sands below approximately four feet bgs to terminal depth at 16 feet bgs. Boring Logs are presented in Attachment A.

#### Laboratory Results

All soil samples collected and analyzed from borings AEI-B1 through AEI-B5 had no detection of VOCs.

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Soil samples collected at the depth of 4 feet bgs and 16 feet bgs from soil borings AEI-B3 and AEI-B4 were analyzed for Priority Pollutant 13 (PP-13) Metals.

In soil sample AEI-B3 at 4 feet (AEI-B3-4'), several metals were detected including antimony at 4.68 ppm, arsenic at 10.1 ppm, cadmium at 1.21 ppm, chromium at 17.7 ppm, copper at 102 ppm, lead at 682 ppm, nickel at 12.5 ppm, zinc at 240 ppm, and mercury at 0.1 ppm. The following metals in this soil sample (AEI-B3-4') were in excess of the New York State Department of Environmental Protection (NYSDEC) Protection of Ecological Resources (PER) criteria: chromium (1 ppm), copper (50 ppm), lead (63 ppm), and zinc (109 ppm). In addition, lead was in exceedance of the NYSDEC Protection of Groundwater (PGW) criteria (450 ppm). None of the metals detected were in exceedance of the NYSDEC Protection of Public Health criteria for commercial properties.

In soil sample AEI-B4 at 4 feet (AEI-B4-4'), several metals were detected including arsenic at 10.5 ppm, cadmium at 1.02 ppm, chromium at 16.4 ppm, copper at 89.8 ppm, lead at 785 ppm, nickel at 11.5 ppm, zinc at 378 ppm, and mercury at 0.34 ppm. The following metals in this soil sample (AEI-B4-4') were in excess of the NYSDEC PER: chromium (1 ppm), copper (50 ppm), lead (63 ppm), zinc (109 ppm), and mercury (0.18 ppm). In addition, lead was in exceedance of the NYSDEC PGW criteria (450 ppm). None of the metals detected were in exceedance of the NYSDEC Protection of Public Health criteria for commercial properties.

Due to presence of metals above the NYSDEC PER and PGW criteria in the shallow (4 feet bgs) soil samples, the client requested that AEI have the deeper soil samples, AEI-B3 at 16 feet (AEI-B3-16') and AEI-B4 at 16 feet (AEI-B4-16') analyzed for PP-13 Metals. The purpose of this additional analysis was to see if metal concentrations detected had migrated deeper into the subsurface or if the concentrations were limited only to the shallow soils .

In soil sample AEI-B3-16', several metals were detected including arsenic at 1.91 ppm, cadmium at 0.37 ppm, chromium at 14.3 ppm, copper at 16.6 ppm, lead at 4.56 ppm, nickel a 14.0 ppm, and zinc at 32.7 ppm. However, the metals detected were well below the NYSDEC PER and PGW criteria and showed a significant decrease from the previously analyzed shallow soil sample from this boring (AEI-B3-4').

In soil sample AEI-B4-16', several metals were detected including arsenic at 1.87 ppm, cadmium at 0.3 ppm, chromium at 13.3 ppm, copper at 13.4 ppm, lead at 7.42 ppm, nickel a 11.6 ppm, and zinc at 27.1 ppm. However, the metals detected were well below the NYSDEC PER and PGW criteria and showed a significant decrease from the previously analyzed shallow soil sample from this boring (AEI-B4-4').

It should be noted that chromium was reported as total chromium and was not speciated to determine between hexavalent and trivalent chromium. In all four soil samples analyzed for PP-13 Metals, chromium was in excess of the NYSDEC PER criteria for hexavalent chromium. The concentrations did not exceed the NYSDEC PGW criteria or the Protection of Public Health criteria. It was noted that the concentrations seemed to be consistent in all four soil samples and could be indicative of natural background levels.

A summary of the laboratory results are presented in Table 1, Soil Quality Results Summary.

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#### IV Conclusions and Recommendations

This Phase II was designed to address the previously identified RECs in the AEI Phase I conducted for the subject property on June 25, 2008:

• As previously discussed, the west side tenant space of the subject property has been occupied as a dry cleaning facility since 2000. Although the current tenant appears to be utilizing good housekeeping practices in the their day to day operations that would help minimize the potential for a release to occur, based on the length of time that dry cleaning has been conducted on site (8 years) as well as the lack of documentation as to the former dry cleaning tenant's housekeeping practices, AEI considered the presence of a dry cleaning facility on site for a period of 8 years a recognized environmental condition.

As a result of the Phase II, AEI has found that all soil samples (AEI-B1 through AEI-B5) had no detection of VOCs. Three of these soil samples were collected from soil borings (AEI-B1 through AEI-B3) advanced in the area of the current dry cleaning tenant space and in the area of the current dry cleaning machine. Based on the results of the Phase II conducted by AEI, the use of chlorinated solvents at the subject property in connection with the current and former dry cleaning tenants does not appear to have adversely impacted the subsurface of the subject property. AEI recommends no further investigations in association with the current and former dry cleaner at this time.

 As previously discussed, the subject property was occupied by a glass manufacturer; Scientific Glass and Modern Glass Works, from 1950 until 1992. According to the prior AEI Phase I, the former use of the subject property as a glass manufacturer for a period of 42 years represented a recognized environmental condition.

As previously discussed, AEI has found that all soil samples (AEI-B1 through AEI-B5) had no detection of VOCs and therefore it does not appear that a historical release of solvents has occurred as a result of the historical present of the glass manufacturing tenant.

AEI did detect metals at concentrations above the NYSDEC PER criteria (chromium, copper, lead, zinc, and mercury) and PGW criteria (lead only) in the shallow soils (4 feet bgs) collected from borings AEI-B3 and AEI-B4; however, deeper soil samples from the same borings collected above the water table show that the metals concentrations significantly decrease by the depth of 16 feet bgs in soils. The concentrations of metals in the soil samples at 16 feet bgs were detected below NYSDEC PER criteria and PGW criteria. There were no exceedances of NYSDEC Protection of Public Health standards for a commercial property in any of the soil samples analyzed.

It is AEI's understanding that the subject property is not planned for redevelopment and that the site will maintain commercial use. Based on the findings of the Phase II, it appears that the metal concentration exceedances detected are limited to the shallow soil and therefore do not represent a significant environmental concern. The user of the report should be aware that if the property is to be redeveloped for residential use in the future of if earth work is to be performed, these soils will likely need to be removed from the site and additional soil sampling

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may be warranted. AEI recommends no further investigations in association with the former glass manufacturer at this time.

#### V Report Limitation

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the required information, but it cannot be assumed that they are representative of areas not sampled. All conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

These services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work.

### **VI** Closing

If you have any questions regarding our investigation, please do not hesitate to contact us at (201) 332-1844.

Sincerely,

**AEI Consultants** 

Victor DeTroy Project Manager Aaron Epstein Senior Project Manager

**Figures** 

Figure 1: Site Map Figure 2: Site Plan

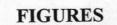
**Tables** 

Table 1: Soil Quality Results Summary

Attachments

Attachment A: Soil Boring Logs

Attachment B: Sample Analytical Documentation





NA

USGS TOPOGRAPHIC MAP Central Park QUADRANGLE Created 1988 Revised 1992

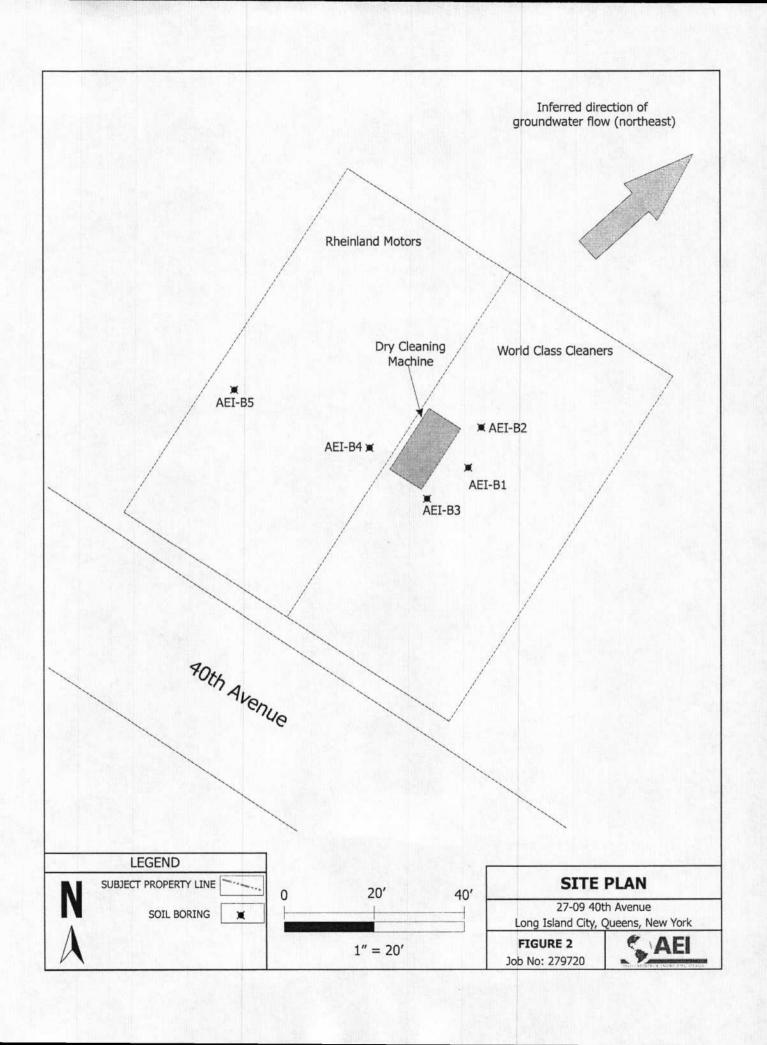
# SITE LOCATION MAP

27-09 40th Avenue Long Island City, New York

FIGURE 1

Job No: 279720





# **TABLES**

#### TABLE 1

#### SOIL SAMPLE RESULTS SUMMARY 27-09 40th Avenue Long Island City, New York AEI Project # 279720

Sample ID:	AEI-B1	AEI-B2	AEI-B3-4'	AEI-B3-16'	AEI-B4-4'	AEI-B4-16'	AEI-B5		NYSDEC	
							PGW	PER	Protection of Public Health (Commercial)	
Sample Date:		The state of								
Sample Interval										
VOCs	ND	ND	NA	ND	NA	ND	ND			
Metals	NA NA	NA					NA			
Antimony			4.68	ND	ND	ND		NA	NA	NA NA
Arsenic			10.1	1.91	10.5	1.87		16.00	13.00	16.00
Beryllium			ND	ND	ND	ND		47.00	10.00	590.00
Cadmium		, E. J. G. Carrier	1.21	0.37	1.02	0.3		7.50	4.00	9.30
Chromium			17.7	14.3	16.4	13.3		19.00	1.00	400,00
Copper		UK BUT IN	102	16.6	89.8	13.4		1,720.00	50.00	270.00
Lead			682	4.56	785	7.42		450.00	63.00	1,000.00
Nickel			12.5	14.0	11.5	11.6		130.00	30.00	310.00
Selenium			ND	ND	ND	ND		4.00	3.90	1,500.00
Silver		The section of	ND	ND	ND	ND		8.30	2.00	1,500.00
Thallium			ND	ND	ND	ND		NA	NA NA	NA NA
Zinc			240	32.7	378	27.1		2,480.00	109.00	10,000.00
Mercury		100	0,1	ND	0,34	ND		0.73	0.18	2.80

Notes:

Metals data presented in mg/kg

ND=Non Detect

NA= Not Applicable or Not Analyzed

Bold = values are in excess of NYSDEC Protection of Groundwater (Table 375-6.8(b))

Underline = values are in excess of NYSDEC Protection of Ecological Resources (Table 375-6.8(b))

Shaded = values are in excess of NYSDEC Protection of Public Health for a Commercial Property (Table 375-6.8(b))

Chromium was not speciated by the lab, therefore the more conservative values of chromium VI were applied

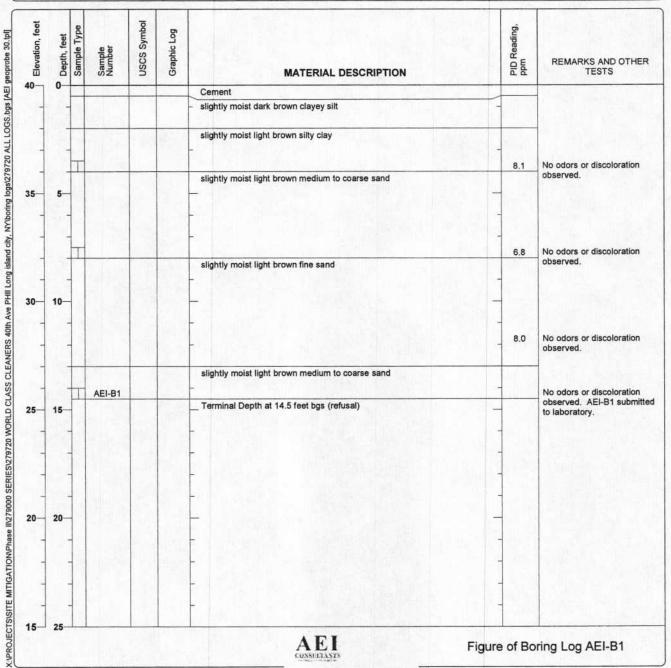
# ATTACHMENT A SOIL BORING LOGS

Project: World Class Cleaners
2709 40th Avenue, Long Island City, Queens,
New York

Project Number: 279720

# Log of Boring AEI-B1

Date(s) Drilled July 16, 2008	Logged By Victor DeTroy	Checked By Aaron Epstein
Drilling Method Direct Push	Drill Bit Size/Type 2 inch	Total Depth of Borehole 14.5 feet bgs
Drill Rig Type Geoprobe	Drilling Contractor Enviroprobe	Approximate Surface Elevation 40 feet AMSL
Groundwater Level and Date Measured Not Encountered ATD	Sampling Method(s) 2 Inch Macro-Core	Well Permit, Not Applicable
Borehole Backfill Cuttings and Cement Patch	Location 7 feet north and 10 feet eas	t of the southeast corner of the drycleaning



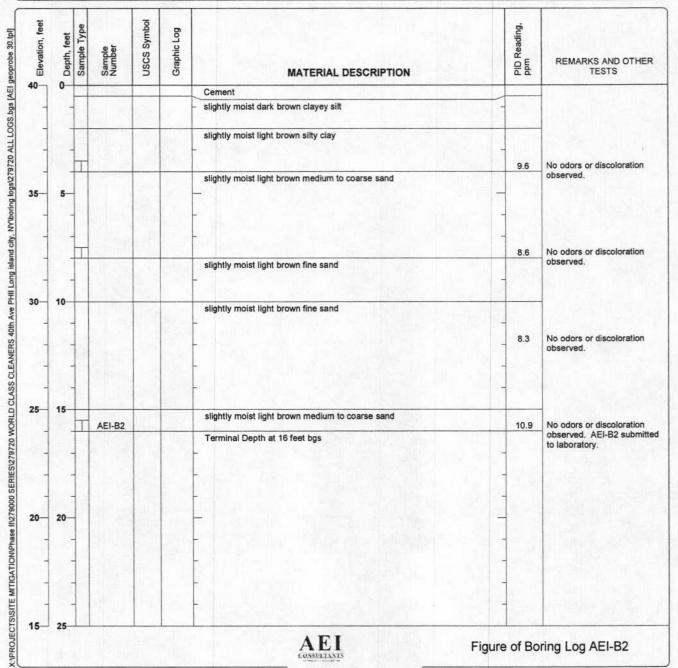
**Project: World Class Cleaners** 

Project Location: 2709 40th Avenue, Long Island City, Queens, New York

Project Number: 279720

# Log of Boring AEI-B2

Date(s) Drilled July 16, 2008	Logged By Victor DeTroy	Checked By Aaron Epstein
Drilling Method Direct Push	Drill Bit Size/Type 2 inch	Total Depth of Borehole 16 feet bgs
Drill Rig Type Geoprobe	Drilling Contractor Enviroprobe	Approximate Surface Elevation 40 feet AMSL
Groundwater Level and Date Measured Not Encountered ATD	Sampling Method(s) 2 Inch Macro-Core	Well Permit. Not Applicable
Backfill Cuttings and Cement Patch	Location 7 feet north and 10 feet eas	t of the northeast corner of the drycleaning



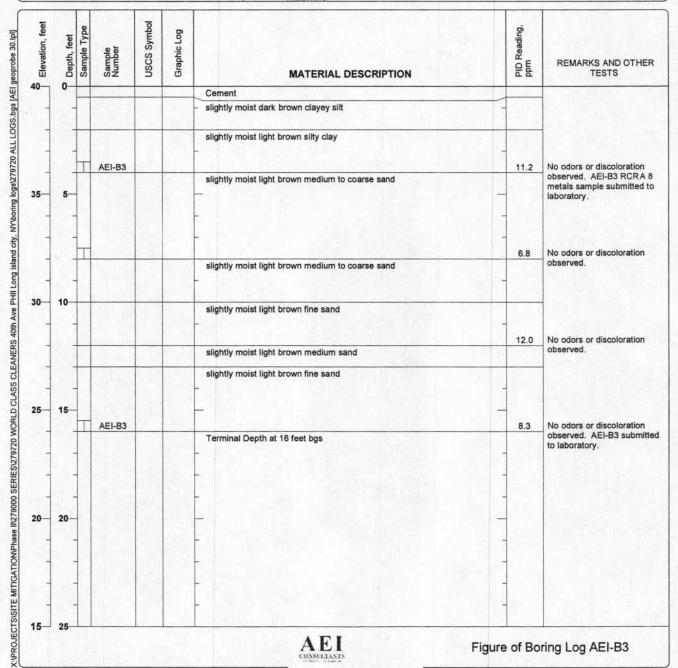
**Project: World Class Cleaners** 

Project Location: 2709 40th Avenue, Long Island City, Queens, New York

Project Number: 279720

# Log of Boring AEI-B3

Date(s) Drilled July 16, 2008	Logged By Victor DeTroy	Checked By Aaron Epstein
Drilling Method Direct Push	Drill Bit Size/Type 2 inch	Total Depth of Borehole 16 feet bgs
Drill Rig Type Geoprobe	Drilling Contractor Enviroprobe	Approximate Surface Elevation 40 feet AMSL
Groundwater Level and Date Measured Not Encountered ATD	Sampling Method(s) 2 Inch Macro-Core	Well Permit. Not Applicable
Backfill Cuttings and Cement Patch	Location 1 foot south and 3 feet east	of the southeast corner of the drycleaning



**Project: World Class Cleaners** 

Project Location: 2709 40th Avenue, Long Island City, Queens, New York

Project Number: 279720

# Log of Boring AEI-B4

Date(s) Drilled July 16, 2008	Logged By Victor DeTroy	Checked By Aaron Epstein
Drilling Method Direct Push	Drill Bit Size/Type 2 inch	Total Depth of Borehole 16 feet bgs
Drill Rig Type Geoprobe	Drilling Contractor Enviroprobe	Approximate Surface Elevation 40 feet AMSL
Groundwater Level and Date Measured Not Encountered ATD	Sampling Method(s) 2 Inch Macro-Core	Well Permit. Not Applicable
Borehole Backfill Cuttings and Cement Patch	Location 6 feet west of the southwest	at corner of the drycleaning machine



Project: World Class Cleaners Project Location: 2709 40th Avenue, Long Island City, Queens, New York

Project Number: 279720

# Log of Boring AEI-B5

Date(s) Drilled July 16, 2008	Logged By Victor DeTroy	Checked By Aaron Epstein
Drilling Method Direct Push	Drill Bit Size/Type 2 inch	Total Depth of Borehole 16 feet bgs
Drill Rig Type Geoprobe	Drilling Contractor Enviroprobe	Approximate Surface Elevation 40 feet AMSL
Groundwater Level and Date Measured Not Encountered ATD	Sampling Method(s) 2 Inch Macro-Core	Well Permit. Not Applicable
Borehole Backfill Cuttings and Cement Patch	Location 5 feet east and 40 feet north	h of the southwest corner of the property building



# ATTACHMENT B LABORATORY ANALYSIS REPORT



# **Technical Report**

prepared for:

AEI Consultants 30 Montgomery Street Suite 1450 Jersey City, NJ 07302 Attention: Victor DeTroy

Report Date: 7/22/2008

Re: Client Project ID: 279720

York Project No.: 08070580

CT License No. PH-0723

New Jersey License No. CT-005



New York License No. 10854





Report Date: 7/22/2008 Client Project ID: 279720 York Project No.: 08070580

AEI Consultants
30 Montgomery Street
Suite 1450
Jersey City, NJ 07302
Attention: Victor DeTroy

# **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 07/17/08. The project was identified as your project "279720".

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 NELAC acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All the analyses met the method and laboratory standard operating procedure requirements except as indicated under the Notes section of this report, or as indicated by any data flags, the meaning of which is explained in the attachment to this report, if applicable.

The results of the analyses, which are all reported on an as-received basis unless otherwise noted, are summarized in the following table(s).

# Analysis Results

Client Sample ID			AEI-B1		AEI-B2	
York Sample ID			08070580-01		08070580-02	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Volatiles, 8260 List	SW846-8260	ug/Kg				
1,1,1,2-Tetrachloroethane			Not detected	10	Not detected	10
1,1,1-Trichloroethane			Not detected	10	Not detected	10
1,1,2,2-Tetrachloroethane			Not detected	10	Not detected	10
1,1,2-Trichloroethane			Not detected	10	Not detected	10
1,1-Dichloroethane			Not detected	10	Not detected	10
1,1-Dichloroethylene			Not detected	10	Not detected	10
1,1-Dichloropropylene			Not detected	10	Not detected	10
1,2,3-Trichlorobenzene			Not detected	10	Not detected	10
1,2,3-Trichloropropane			Not detected	10	Not detected	10
1,2,4-Trichlorobenzene			Not detected	10	Not detected	10
1,2,4-Trimethylbenzene			Not detected	10	Not detected	10
1,2-Dibromo-3-chloropropane			Not detected	10	Not detected	10
1,2-Dibromoethane			Not detected	10	Not detected	10
1,2-Dichlorobenzene			Not detected	10	Not detected	10
1,2-Dichloroethane			Not detected	10	Not detected	10
1,2-Dichloroethylene (Total)			Not detected	10	Not detected	10



Client Sample ID			AEI-B1		AEI-B2	
York Sample ID			08070580-01		08070580-02	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDI
1,2-Dichloropropane			Not detected	10	Not detected	10
1,3,5-Trimethylbenzene			Not detected	10	Not detected	10
1,3-Dichlorobenzene			Not detected	10	Not detected	10
1,3-Dichloropropane			Not detected	10	Not detected	10
1,4-Dichlorobenzene			Not detected	10	Not detected	10
2,2-Dichloropropane			Not detected	10	Not detected	10
2-Chlorotoluene			Not detected	10	Not detected	10
4-Chlorotoluene			Not detected	10	Not detected	10
Benzene			Not detected	10	Not detected	10
Bromobenzene			Not detected	10	Not detected	10
Bromochloromethane			Not detected	10	Not detected	10
Bromodichloromethane			Not detected	10	Not detected	10
Bromoform			Not detected	10	Not detected	10
Bromomethane			Not detected	10	Not detected	10
Carbon tetrachloride			Not detected	10	Not detected	10
Chlorobenzene			Not detected	10	Not detected	10
Chloroethane			Not detected	10	Not detected	10
Chloroform			Not detected	10	Not detected	10
Chloromethane		F COURT	Not detected	10	Not detected	10
cis-1,3-Dichloropropylene	-		Not detected	10	Not detected	10
Dibromochloromethane		1 5 5 5 7	Not detected	10	Not detected	10
Dibromomethane			Not detected	10	Not detected	10
Dichlorodifluoromethane			Not detected	10	Not detected	10
Ethylbenzene			Not detected	10	Not detected	10
Hexachlorobutadiene			Not detected	10	Not detected	10
Isopropylbenzene			Not detected	10	Not detected	10
Methylene chloride	-	+	Not detected	10	Not detected	10
MTBE			Not detected	10	Not detected	10
Naphthalene		-	Not detected	10	Not detected	10
n-Butylbenzene		+	Not detected	10	Not detected	10
n-Propylbenzene			Not detected	10	Not detected	10
o-Xylene		+	Not detected	10	Not detected	10
p- & m-Xylenes			Not detected	10	Not detected	10
p-Isopropyltoluene			Not detected	10	Not detected	10
sec-Butylbenzene			Not detected	10	Not detected	10
Styrene Styrene		-	Not detected	10	Not detected	10
tert-Butylbenzene		-	Not detected	10	Not detected	10
Tetrachloroethylene			Not detected	10	Not detected	10
Toluene			Not detected	10	Not detected	10
				10	Not detected  Not detected	10
trans-1,3-Dichloropropylene	-		Not detected			
Trichloroethylene Trichlorofluoromethane			Not detected Not detected	10	Not detected Not detected	10
			I NOT detected	1 10	i ivoi defected	1 10

Client Sample ID			AEI-B3		AEI-B4	
York Sample ID			08070580-03		08070580-04	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Volatiles, 8260 List	SW846-8260	ug/Kg				
1,1,1,2-Tetrachloroethane			Not detected	10	Not detected	10
1,1,1-Trichloroethane		1000	Not detected	10	Not detected	10
1,1,2,2-Tetrachloroethane			Not detected	10	Not detected	10
1,1,2-Trichloroethane			Not detected	10	Not detected	10
1,1-Dichloroethane			Not detected	10	Not detected	10
1,1-Dichloroethylene			Not detected	10	Not detected	10
1,1-Dichloropropylene			Not detected	10	Not detected	10
1,2,3-Trichlorobenzene			Not detected	10	Not detected	10
1,2,3-Trichloropropane			Not detected	10	Not detected	10
1,2,4-Trichlorobenzene			Not detected	10	Not detected	10
1,2,4-Trimethylbenzene			Not detected	10	Not detected	10
,2-Dibromo-3-chloropropane			Not detected	10	Not detected	10
1,2-Dibromoethane			Not detected	10	Not detected	10
1,2-Dichlorobenzene			Not detected	10	Not detected	10
1,2-Dichloroethane			Not detected	10	Not detected	10
1,2-Dichloroethylene (Total)			Not detected	10	Not detected	10
1,2-Dichloropropane			Not detected	10	Not detected	10
1,3,5-Trimethylbenzene			Not detected	10	Not detected	10
1,3-Dichlorobenzene			Not detected	10	Not detected	10
1,3-Dichloropropane			Not detected	10	Not detected	10
1,4-Dichlorobenzene			Not detected	10	Not detected	10
2,2-Dichloropropane			Not detected	10	Not detected	10
2-Chlorotoluene			Not detected	10	Not detected	10
4-Chlorotoluene			Not detected	10	Not detected	10
Benzene			Not detected	10	Not detected	10
Bromobenzene			Not detected	10	Not detected	10
Bromochloromethane	HIBAT - THE		Not detected	10	Not detected	10
Bromodichloromethane			Not detected	10	Not detected	10
Bromoform		The letter	Not detected	10	Not detected	10
Bromomethane			Not detected	10	Not detected	10
Carbon tetrachloride			Not detected	10	Not detected	10
Chlorobenzene			Not detected	10	Not detected	10
Chloroethane			Not detected	10	Not detected	10
Chloroform	A PARTITION		Not detected	10	Not detected	10
Chloromethane			Not detected	10	Not detected	10
cis-1,3-Dichloropropylene			Not detected	10	Not detected	10
Dibromochloromethane			Not detected	10	Not detected	10
Dibromomethane			Not detected	10	Not detected	10
Dichlorodifluoromethane			Not detected	10	Not detected	10
Ethylbenzene			Not detected	10	Not detected	10
Hexachlorobutadiene			Not detected	10	Not detected	10
Isopropylbenzene			Not detected	10	Not detected	10
Methylene chloride			Not detected	10	Not detected	10
MTBE			Not detected	10	Not detected	10
Naphthalene		RC - TO TOO	Not detected	10	Not detected	10
n-Butylbenzene			Not detected	10	Not detected	10
n-Propylbenzene			Not detected	10	Not detected	10
o-Xylene		20 0	Not detected	10	Not detected	10
p- & m-Xylenes			Not detected	10	Not detected  Not detected	10



Client Sample ID			AEI-B3		AEI-B4	
York Sample ID			08070580-03		08070580-04	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
p-Isopropyltoluene			Not detected	10	Not detected	10
sec-Butylbenzene			Not detected	10	Not detected	10
Styrene			Not detected	10	Not detected	10
tert-Butylbenzene			Not detected	10	Not detected	10
Tetrachloroethylene			Not detected	10	Not detected	10
Toluene			Not detected	10	Not detected	10
trans-1,3-Dichloropropylene			Not detected	10	Not detected	10
Trichloroethylene			Not detected	10	Not detected	10
Trichlorofluoromethane		THE PERSON	Not detected	10	Not detected	10
Vinyl chloride			Not detected	10	Not detected	10

Client Sample ID			AEI-B5	
York Sample ID			08070580-05	300 N
Matrix			SOIL	
Parameter	Method	Units	Results	MDI
Volatiles, 8260 List	SW846-8260	ug/Kg		
1,1,1,2-Tetrachloroethane			Not detected	10
1,1,1-Trichloroethane	Control of the Control		Not detected	10
1,1,2,2-Tetrachloroethane			Not detected	10
1,1,2-Trichloroethane			Not detected	10
1,1-Dichloroethane			Not detected	10
1,1-Dichloroethylene			Not detected	10
1,1-Dichloropropylene			Not detected	10
1,2,3-Trichlorobenzene			Not detected	10
1,2,3-Trichloropropane			Not detected	10
1,2,4-Trichlorobenzene			Not detected	10
1,2,4-Trimethylbenzene			Not detected	10
1,2-Dibromo-3-chloropropane			Not detected	10
1,2-Dibromoethane			Not detected	10
1,2-Dichlorobenzene			Not detected	10
1,2-Dichloroethane			Not detected	10
1,2-Dichloroethylene (Total)			Not detected	10
1,2-Dichloropropane			Not detected	10
1,3,5-Trimethylbenzene			Not detected	10
1,3-Dichlorobenzene			Not detected	10
1,3-Dichloropropane			Not detected	10
1,4-Dichlorobenzene			Not detected	10
2,2-Dichloropropane			Not detected	10
2-Chlorotoluene			Not detected	10
4-Chlorotoluene			Not detected	10
Benzene			Not detected	10
Bromobenzene			Not detected	10
Bromochloromethane			Not detected	10
Bromodichloromethane			Not detected	10
Bromoform			Not detected	10
Bromomethane			Not detected	10
Carbon tetrachloride			Not detected	10
Chlorobenzene			Not detected	10
Chloroethane			Not detected	10

Client Sample ID			AEI-B5	
York Sample ID			08070580-05	
Matrix		W.	SOIL	
Parameter	Method	Units	Results	MDL
Chloroform	بينار الأوارا		Not detected	10
Chloromethane			Not detected	10
cis-1,3-Dichloropropylene			Not detected	10
Dibromochloromethane			Not detected	10
Dibromomethane			Not detected	10
Dichlorodifluoromethane			Not detected	10
Ethylbenzene			Not detected	10
Hexachlorobutadiene			Not detected	10
Isopropylbenzene			Not detected	10
Methylene chloride			Not detected	10
MTBE			Not detected	10
Naphthalene			Not detected	10
n-Butylbenzene			Not detected	10
n-Propylbenzene			Not detected	10
o-Xylene			Not detected	10
p- & m-Xylenes			Not detected	10
p-Isopropyltoluene			Not detected	10
sec-Butylbenzene			Not detected	10
Styrene			Not detected	10
tert-Butylbenzene			Not detected	10
Tetrachloroethylene			Not detected	10
Toluene			Not detected	10
trans-1,3-Dichloropropylene			Not detected	10
Trichloroethylene			Not detected	10
Trichlorofluoromethane			Not detected	10
Vinyl chloride			Not detected	10

Client Sample ID			AEI-B3		AEI-B4	
York Sample ID			08070580-06		08070580-07	
Matrix			SOIL		SOIL	MDL
Parameter	Method	Units	Results	MDL	Results	
Metals, Priority Pollutant List	EPA SW846-6010	mg/kG				
Antimony			4.68	0.80	Not detected	0.80
Arsenic			10.1	1.00	10.5	1.00
Beryllium			Not detected	0.10	Not detected	0.10
Cadmium			1.21	0.30	1.02	0.30
Chromium			17.7	0.50	16.4	0.50
Copper			102	0.60	89.8	0.60
Lead			682	0.30	785	0.30
Nickel			12.5	0.90	11.5	0.90
Selenium			Not detected	1.00	Not detected	1.00
Silver			Not detected	0.30	Not detected	0.30
Thallium			Not detected	1.00	Not detected	1.00
Zinc			240	0.60	378	0.60
Mercury	SW846-7471	mg/kG	0.10	0.10	0.34	0.10

Units Key:

For Waters/Liquids: mg/L = ppm; ug/L = ppb

For Soils/Solids: mg/kg = ppm; ug/kg = ppb



Report Date: 7/22/2008 Client Project ID: 279720 York Project No.: 08070580

# Notes for York Project No. 08070580

- The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. This MDL is the <u>REPORTING LIMIT</u> and is based upon the lowest standard utilized for 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.
- 6. All analyses conducted met method or Laboratory SOP requirements.
- 7. It is noted that no analyses reported herein were subcontracted to another laboratory.

Approved By

Hobert Q. Bradley

Managing Director

Date: 7/22/2008

ANALYTICAL L.		F	ielo	d Cł	nain-	of-Cu	ıstod	y Record	Page <u>+</u> of <u>1</u>		
Company Name AEI Consultants VICTOR Det					Proj 797	ect ID/No aD	<u>).</u>	Samples Collected By (Signature)  VICTOP ETTOY  Name (Printed)			
Sample No.	Loca	ntion/ID	Date Sa	ampled	S Water	ample Ma	atrix ir OTHER	ANA	LYSES RI	EQUESTED	Container Description(s)
ACDO	AEI		7/16/	108		X		VC	Cs 80	160	402 50
W62**	AEI- AEI AEI-	-B3 -B4				X					
	AEI AEI	-B5-183	<b>3</b> .		. •	X		PP	<u> </u>	Metals	
	AE:	I -84	V			X		PF	7-13	Metals	4
									,		
Chain-of-Custo			V.		2-		9:1:	7/08 5 am	AB.	Horlon.	7-17-08 9:15 AM
Bottles Relinquished from Lab by Date/Time  Bottles Received in Field by Date/Time				Sample Relinquished by  Sample Relinquished by			Date/Ti		1	Received by 7/7/	Date/Time
Comments/Spec								4	1- Tur	n Around Time	H(define) Specify



# **Technical Report**

prepared for:

AEI Consultants 30 Montgomery Street Suite 1450 Jersey City, NJ 07302 Attention: Victor DeTroy

Report Date: 8/6/2008

Re: Client Project ID: 279720

York Project No.: 08080120

CT License No. PH-0723

New Jersey License No. CT-005

New York License No. 10854





Report Date: 8/6/2008 Client Project ID: 279720 York Project No.: 08080120

# AEI Consultants 30 Montgomery Street Suite 1450 Jersey City, NJ 07302

Attention: Victor DeTroy

# **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 07/17/08. The project was identified as your project "279720".

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 NELAC acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All the analyses met the method and laboratory standard operating procedure requirements except as indicated under the Notes section of this report, or as indicated by any data flags, the meaning of which is explained in the attachment to this report, if applicable.

The results of the analyses, which are all reported on an as-received basis unless otherwise noted, are summarized in the following table(s).

# Analysis Results

Client Sample ID			AEI-B3		AEI-B4	
York Sample ID			08080120-01		08080120-02	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Metals, Priority Pollutant List	EPA SW846-6010	mg/kG				
Antimony			Not detected	0.80	Not detected	0.80
Arsenic			1.91	1.00	1.87	1.00
Beryllium			Not detected	0.10	Not detected	0.10
Cadmium			0.37	0.30	0.30	0.30
Chromium			14.3	0.50	13.3	0.50
Copper			16.6	0.60	13.4	0.60
Lead			4.56	0.30	7.42	0.30
Nickel			14.0	0.90	11.6	0.90
Selenium			Not detected	1.00	Not detected	1.00
Silver			Not detected	0.30	Not detected	0.30
Thallium			Not detected	1.00	Not detected	1.00
Zinc			32.7	0.60	27.1	0.60
Mercury	SW846-7471	mg/kG	Not detected	0.10	Not detected	0.10

Units Key:

For Waters/Liquids: mg/L = ppm; ug/L = ppb

For Soils/Solids: mg/kg = ppm; ug/kg = ppb



Report Date: 8/6/2008 Client Project ID: 279720 York Project No.: 08080120

#### Notes for York Project No. 08080120

- The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. This MDL is the <u>REPORTING LIMIT</u> and is based upon the lowest standard utilized for 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.
- 6. All analyses conducted met method or Laboratory SOP requirements.
- 7. It is noted that no analyses reported herein were subcontracted to another laboratory.

Approved By:

D

Date: 8/6/2008

YC ANALYTICAL L		Field Chain-of-Custody Record										
20 RESEARCH DRIVE	STRATFORD, FAX (203) 357						*			38071	3580	
Company Name AEI CONSUltures VICTOR		To:	Invoice To:  AEL  Consultants		Project ID/ , 379720			Samples Col VICTO		ected By (Signature)  Devroy ne (Printed)		
Sample No.	Loca	ition/ID	Date Sa	ate Sampled		Sample Mate Water   Soil   Air		TIX ANAL		LYSES REQUESTED		er on(s)
ACO	AEI-		7/16/	108		$\frac{\chi}{\chi}$		Vo	Cs 80	160 -	402	2 JG6
1112	AEI	-B3				X						
	AEI	-B5			. *	Ž		J.		Metals	·	
		-B3 [-B4	1			Λ Χ		PP		Metals	+	
Chain-of-Custo	dy Popord								10	1/1 0	epil Common Comm	
Snam-or-Custo	dy Necord		V		2		7/17	108 7 am	KB.	Horton	7-17-0	8 tm
Bottles Relinquished from Lab by Date/Time		e S	Sample Relinquished by			Date/Time			e Received by	OS Date Ti		
Bottles Receive	THE RESERVE TO THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW	Date/Tim	e S	ample Relind	uished by		Date/Tin	10		Received in LAB by	Date/Ti	me
Comments/Spec	ciai iristructi	Oris						9	Tur	Standard V RUSI	H(define)	11 25

FW: additional analysis

Subject: FW: additional analysis

From: Phil Murphy <Pmurphy@yorklab.com>

Date: Fri, 01 Aug 2008 14:26:46 -0400

To: Login <login@yorklab.com>
CC: Login <login2@yorklab.com>

8/1/08

From: Paul Hinkston [mailto:phinkston@aeiconsultants.com]

Sent: Friday, August 01, 2008 12:22 PM

To: pmurphy@yorklab.com Subject: additional analysis

Phil,

This is email is to request that you analyze samples 08070580-03 and 08070580-04 for priority pollutant metals. If you have any questions please let me know.

Thanks again,

Paul Hinkston Vice President, Client Services

#### **AEI Consultants**

30 Montgomery Street, Suite 1450 Jersey City, NJ 07302 Office: 201-332-1844

Fax: 201-332-1880 Cell: 201-780-0586

Email: <a href="mailto:phinkston@aeiconsultants.com">phinkston@aeiconsultants.com</a>
Internet: <a href="mailto:www.aeiconsultants.com">www.aeiconsultants.com</a>

# ATTACHMENT C QUALIFICATIONS

## Victor T. DeTroy - Project Manager

B.A. Earth and Environmental Science, Columbia University, Cum Laude OSHA 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training

Mr. DeTroy has spent the previous four years working and studying a broad range of environmental disciplines including: Sedimentation and seismic profiles, hydrology, energy resources and management, geologic mapping, and phytoremediation. His project experience includes: Phase I Environmental Site Assessments, Environmental Transaction Screens, Phase II subsurface investigations, and Phase III subsurface characterizations.

Project experience for Mr. DeTroy includes:

- Phase I Environmental Site Assessments, Environmental Transaction Screens and Limited Environmental Site Assessments.
- The design and implementation of Phase II soil and groundwater investigations and Phase III subsurface characterizations for a variety of suspected contaminants for due diligence and liability purposes

Subsurface investigations have included extensive soil and groundwater testing, identification of petroleum hydrocarbons and volatile organic compounds contamination in near surface soils, and contaminant plume delineation in soil and groundwater. Mr. DeTroy's management and technical experience has allowed AEI's projects to be performed in a cost effective and timely manner to the satisfaction of AEI's clients and regulatory agencies.



### Aaron Joseph Epstein, P.G. Senior Geologist, Eastern Region

Bachelor of Science: Geological Sciences, University of Oregon

Masters Candidate: Geological Sciences, California State University, Northridge

Professional Geologist Delaware
Professional Geologist Pennsylvania
Professional Geologist Virginia
OSHA 40-Hour HAZWOPER & Current 8-Hour Refresher
OSHA 10-Hour Construction
OSHA 8-Hour Hazardous Waste Site Supervisor
Confined Space Entry Trained
X-Ray Fluorescence (XRF) Certified

1st Aid & CPR Trained

Mr. Epstein has nine years of work experience in environmental geology, hydrogeology, engineering geology, paleoseismology, and mine geology. He has been involved in engineering geologic and hydrogeologic studies for both private and public clients. Most of his representative work includes site characterization and remediation, production well siting and design, slope stability, and seismic shake studies. His responsibilities include investigation of site and regional geology/hydrogeology, site investigation and characterization, and contribution to remedial design for various environmental projects, associated design calculations, field oversight, and the preparation of construction documents, work plans, bid documents, subcontract documents and specifications, and remediation system capture zone / performance analyses.

#### Mr. Epstein's Experience:

- Served as lead geologist and project manager of three large RCRA facility investigations and remediation projects located within USEPA Region III. Mr. Epstein was responsible for design, budgeting, completion of scopes of work, and all reporting for these projects and representing the client to the USEPA and other stakeholders.
- Served as the project manager and/ or lead geologist of five Superfund Sites in USEPA Region III. As lead geologist, he was responsible for management, design, implementation, and reporting of all hydrogeologic and engineering geologic investigations of the five Superfund Sites. In addition, he was responsible for review and oversight of geologic portions of responsible party cleanup activities in consultation to the USEPA.
- Managed over two hundred ESA's throughout the east coast as well as site characterization and remediation projects, many following state specific voluntary cleanup and release of liability programs.
- Managed, designed, and conducted over one hundred projects including Phase II and characterization investigations, remediation, and geotechnical investigations throughout California, Arizona, and Tennessee.
- Worked on and/or managed hydrogeologic studies including the siting, design, and installation of production wells as well as geotechnical investigations.

