West 61st Street Tennis Court Area Site

Block 1152, Part of Lot 13

NEW YORK, NEW YORK

Site Management Plan

AKRF Project Number: 10321

NYSDEC BCP Site No.: C231059

Prepared for:

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DECEMBER 2009

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LIST OF ACRONYMS

Acronym	Definition
AKRF	AKRF Engineering, P.C.
AOC	Area of Concern
ASP	Analytical Services Protocol
AST	Aboveground storage tank
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
C&D	Construction and Demolition
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulation
CHASP	Construction Health and Safety Plan
COC	Certificate of Completion
CPP	Citizen Participation Plan
DER	Division of Environmental Remediation (of NYSDEC)
DSHM	Division of Solid & Hazardous Materials
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Accreditation Procedure
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
FER	Final Engineering Report
GA	Class of Ambient Water Quality Standard and Guidance Values for Protection of Drinking Water under TOGS 1.1.1 dated June 1998, with January 1999 Errata, and April 2000 and June 2004 Addenda
IC	Institutional Control
IRMWP	Interim Remedial Measure Work Plan
LNAPL	Light non-aqueous phase liquid
mg/L	milligrams per Liter
mg/kg	milligrams per kilogram
MW	Monitoring well
NAPL	Non-aqueous phase liquid
NYCDEP	New York City Department of Environmental Protection

NYCDOB	New York City Department of Buildings
NYCRR	New York Codes, Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated biphenyls
Part 375	6 NYCRR Part 375 dated December 14, 2006
PID	Photoionization detector
ppb	Parts per billion
ppm	Parts per million
QA/QC	Quality assurance / quality control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RIR	Remedial Investigation Report
RWP	Remediation Work Plan
RMZ	Residuals Management Zone
RSCO	Recommended Soil Cleanup Objective
SCO	Soil Cleanup Objective
SoMP	Soil Management Plan
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SSSAL	Site-Specific Soil Action Level
STARS	Spill Technology and Remediation Series
SVOC	Semivolatile organic compound
SWPPP	Stormwater Pollution Prevention Plan
TAGM 4046	NYSDEC Technical and Administrative Guidance Memorandum 4046, January 24, 1994
TAL	Target Analyte List
TOGS	Technical and Operational Guidance Series
TCL	Target Compound List
TCLP	Toxicity characteristic leaching potential
USEPA	United States Environmental Protection Agency
UST	Underground storage tank

$\mu g/m^3$	Micrograms per cubic meter
$\mu g/L$	Micrograms per Liter
VCA	Voluntary Cleanup Agreement
VOC	Volatile organic compound
Volunteer	All Volunteers as of the May 23, 2007 Brownfield Cleanup Agreement include: West 60th Street Associates, LLC and West End Enterprises, LLC

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required for fulfillment of Remedial Action at the West 61st Street Tennis Court Area Site (hereafter referred to as the "Tennis Court Area" or "Site") under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by the New York State Department of Environmental Conservation (NYSDEC). The Tennis Court Area Site was remediated in accordance with the Brownfield Cleanup Agreement (BCA) Index# A2-0580-0107, Site # C231059, which was issued on April 19, 2005, and amended on May 23, 2007.

1.1.1 General

The Tennis Court Area of the West 61st Street Site is a 0.346-acre portion of an approximately 1.44-acre Property located on West 61st Street between 10th and 11th Avenues in Manhattan, New York, as shown on Figure 1. The address for the Tennis Court Area Site is 218 West 61st Street, New York, New York. The Property comprising the West 61st Street Site consists of the Track 1 Area (BCP Site No. C231043) and the Tennis Court Area (BCP Site No. C231059). This Site Management Plan (SMP) was prepared for the Tennis Court Area that underwent a Track 4 cleanup; however, some elements of the remediation and planned development of the Tennis Court Area Site was tied to the Property as a whole. As such, Property-wide information is provided where appropriate. The Final Engineering Report (FER) for the Track 1 Area was submitted on December 13, 2007 and approved on December 21, 2007.

West 60th Street Associates, LLC and West End Enterprises, LLC entered into a BCA with the NYSDEC on April 19, 2005 to develop a 1.44-acre Property located in New York,, New York into a mixed use residential and commercial development. Pursuant to an amendment to the BCA and the execution of a new BCA on May 23, 2007, the Site was bifurcated for the purposes of conducting a dual track cleanup; the Track 1 area (BCP Site No. C231043) and the Tennis Court Area (BCP Site No. C231059). These BCAs required West 60th Street Associates, LLC and West End Enterprises, LLC to investigate and remediate contaminated media at the Property prior to redevelopment of the Property for commercial and residential purposes. The boundary of this 0.346-acre BCP Site is more fully described in Appendix A – Metes and Bounds. A map of the Site location is shown in Figure 1. The Site boundary is shown in Figure 2.

After completion of the remedial work described in the Remediation Work Plan (RWP), some contamination was left in the subsurface at this Site, which is hereafter referred to as 'residual contamination.' This SMP was prepared to manage residual contamination at the Site in perpetuity or until extinguishment of the Environmental Easement in accordance with Title 6 of the New York Codes, Rules, and Regulations (6 NYCRR) Part 375. Remedial Action work on the Site began in July 2006, and was completed in October 2009. All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by AKRF Engineering, P.C. (AKRF), on behalf of West 60th Street Associates, LLC and West End Enterprises, LLC, in accordance with the requirements in NYSDEC Division of Environmental Remediation (DER) DER-10 Technical Guidance for Site Investigation and Remediation, draft dated December 2002, and the guidelines provided by NYSDEC. This SMP addresses the means for implementation of Institutional Controls (ICs) and Engineering Controls (ECs), which are required by the Environmental Easement for the Site.

1.1.2 Purpose

The Tennis Court Area Site underwent a Track 4 cleanup and contains residual contamination left after completion of the Remedial Action performed under the BCP. ECs have been incorporated into the Site remedy to provide proper management of known and potential residual contamination in the future to ensure protection of public health and the environment. An Environmental Easement specific to the Tennis Court Area has been recorded with the New York County Clerk that provides an enforceable means to ensure the continued and proper management of residual contamination and protection of public health and the environment. It requires strict adherence to all EC and all IC placed on this Site by NYSDEC by the grantor of the Environmental Easement and any and all successors and assigns of the grantor. ICs provide restrictions on Site usage and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP includes all methods necessary to ensure compliance with all ECs and ICs required by the Environmental Easement for residual contamination at the Site. This SMP has been approved by the NYSDEC, and compliance with this Plan is required by the grantor of the Environmental Easement and grantor's successors and assigns. This plan is subject to change by NYSDEC.

Site management is the last phase of the remedial process and is triggered by the approval of the Final Engineering Report and issuance of the Certificate of Completion (COC) by NYSDEC. The SMP continues in perpetuity or until extinguished in accordance with 6 NYCRR Part 375. It is the responsibility of the Environmental Easement grantor, and its successors and assigns to ensure that all Site Management responsibilities under this plan are performed.

The SMP provides a detailed description of all procedures required to manage residual contamination at the Site following the completion of the Remedial Action in accordance with the NYS BCA with the NYSDEC. This includes: (1) development, implementation, and management of all Engineering and Institutional Controls; (2) development and implementation of monitoring systems and a Monitoring Plan; (3) development of a plan to operate and maintain all treatment, collection, containment, or recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual); (4) submittal of Site Management Reports, performance of inspections and certification of results, and demonstration of proper communication of Site information to NYSDEC; and (5) defining criteria for termination of treatment system operation.

To address these needs, this SMP includes four plans: (1) Section 2 is an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) Section 3 is a Monitoring and Maintenance Plan for implementation of Site Monitoring and Maintenance of the primary EC; and (3) Section 4 is a Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC.

Site Management activities, reporting, and EC/IC certification will be scheduled on a certification period basis. The certification period will be annually.

Important notes regarding this SMP are as follows:

- This SMP defines Site-specific implementation procedures as required by the Environmental Easement. The penalty for failure to implement the SMP is revocation of the COC;
- The Brownfield Cleanup Agreement (Index #A2-0580-0107; Site #C231059) for the Tennis Court Area Site requires conformance with this SMP, and therefore, serves as a contractual binding authority under which this SMP is to be implemented. The BCP law itself also requires the preparation of a SMP (formerly known as an Operation, Maintenance and Monitoring Plan) in Environmental Conservation Law (ECL) 27-1415 and 27-1419. Therefore, the BCA is a binding contract and the BCP law is statutory authority under which this SMP is required and is to be implemented.
- At the time this report was prepared, the SMP and all Site documents related to Remedial Investigation and Remedial Action are maintained at the NYSDEC Region 2 offices in Long Island City. At the time of SMP submission in December 2009, the Site documents can also be found in the repository established for this project at:

  New York Public Library – Riverside Branch
  127 Amsterdam Avenue
  New York, NY 10023-6447
  (212) 870-1810
  Mon, Tue, and Fri: 10 a.m. – 6 p.m.
  Wed and Thur: 12 p.m. – 8 p.m.
  Sat: 10 a.m. – 5 p.m.

1.2 SITE BACKGROUND

A general discussion of background information regarding the Tennis Court Area specifically and the Property in general, is provided in the follow subsections.

1.2.1 Site Location and Description

The Site is located in the County of New York (New York City), New York and is identified as Block 1152 and part of Lot 13 (former Lot 43) on the New York City Tax Map. The Tennis Court Area Site is an approximately 0.346-acre area bounded by West 61st Street to the north, a residential building to the south, a public school to the east, and the Track 1 area of the Property to the west (see Figure 2). The boundary of the Site is more fully described in Appendix A – Metes and Bounds.

1.2.2 Site History

The Tennis Court Area history is incorporated with the history of the larger Property. The regulatory databases, Fire Department records, electronic New York City Department of Buildings (NYCDOB) records, historical land-use maps, and visual inspections indicated that the subject block was developed prior to 1907 as residential and transitioned from primarily residential to commercial and industrial uses by the 1950s.

A Phase I Environmental Site Assessment (ESA) for the entire Property was performed by AKRF in June 2003 to provide a preliminary Property evaluation and determine whether any existing environmental conditions or past Property uses could affect the intended use. The Phase I ESA Report included the findings of a property inspection, the evaluation of available historical information, and the interpretation of relevant Federal and State environmental databases. The Phase I ESA identified several recognized environmental conditions (e.g., on-site tanks and previous uses of the Site and the off-site Emsig facility), and recommended that additional information be gathered to further assess the Site.

Former uses that occurred on the entire Property included a gasoline station, an automobile repair shop, an iron works, and automobile parking areas. Several aboveground storage tanks (ASTs) and the likelihood of several underground storage tanks (USTs) were noted during the Phase I ESA. A commercial-industrial facility (Emsig Manufacturing) was formerly located south of the Tennis Court Area (east of former Lot 13), which produced buttons and fabric. Emsig Manufacturing, listed as a hazardous waste generator, used acetone and styrene in their manufacturing process, generating wastes such as ignitable, corrosive, solvents, plating wastes, and metals including barium and chromium. Records indicated that the facility generated metals and solvents in concentrations classified as hazardous, and utilized two petroleum storage tanks (3,000-gallon fuel oil) during its operation from 1926 to 2003.

Historically, the Tennis Court Area was occupied by nine, five-story store-fronted residential buildings (c. 1907 until c. 1926), a vacant parcel used for parking and a gasoline station with a small one-story office (c. 1951), a vacant lot (c. 1976), and a parking lot (c. 1986 through the start of remedial activities). NYCDOB records indicated that a gasoline tank installation permit was applied for in 1947. Tanks were suspected on the Tennis Court Area in association with the former gasoline station. No buildings were present on the Tennis Court Area; however, after demolition of buildings associated with the Track 1 area, the property was graded with on-site construction and demolition debris to match the surrounding elevation until remedial work began.

1.2.3 Geological Conditions

Information was gathered during the Remedial Investigation (RI) phase to determine geological conditions on the entire Property; this section describes the conditions for the Tennis Court Area. The complete results were presented in the *Remedial Investigation Report - West 61st Street Site, New York, NY*, dated January 2006.

The surface topography at the Site and the surrounding area slopes downward from east to west toward the Hudson River. Based on a survey by True North Surveyors, Inc. the Tennis Court Area lies at an elevation of approximately 61 feet at its highest point, sloping westerly to an elevation of approximately 53 feet at its lowest point, based on the Borough of Manhattan Datum.

Geotechnical engineering borings performed by RA Consultants indicated that the bedrock surface was variable and ranged from elevation 40.8 in the northeastern corner to elevation 30 near the southwestern corner. Depth to bedrock ranges from 19.2 to 23 feet below ground surface. The geotechnical investigation indicated that the bedrock appears to undulate as well as slope. The bedrock consists of highly-weathered schist that is part of the Manhattan Formation. Geologic cross section locations are shown on Figure 3 and the geologic sections are shown on Figures 3A through 3D.

The information gathered from the bedrock groundwater monitoring wells, installed in September 2005, identified groundwater at depths of approximately 9-11 feet below grade. Depth to groundwater for on-site monitoring wells and monitoring well placement and installation is included in Table 1. In the bedrock aquifer, the groundwater elevations ranged from elevation 51 in the northeastern corner of the Site to elevation 49 in the southeastern corner. The estimated flow direction in the bedrock aquifer appears to be slightly towards the southwest. A significant dip in the bedrock along West 61st Street, in which the elevation drops from elevation 40 to elevation 0, indicated that the bedrock aquifer discharges into the overburden aquifer. The exact flow direction of the groundwater in the bedrock aquifer in the center and western areas of the Site was not ascertainable from this data, although the groundwater will ultimately flow west toward the Hudson River. A groundwater flow map is shown on Figure 4. The groundwater flow at the Site is likely affected by one or more factors, which may include: current and past pumping of groundwater; past filling activities; underground utilities and other subsurface openings or obstructions such as basements or underground parking garages; bedrock geology; and other factors. Groundwater in New York County is not used as a source of potable water.

1.3 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

The SMP and all Site documents, including the Remedial Investigation Report (RIR) and RWP, are maintained by the NYSDEC (or successor agency). At the time of publication, these reports could be found at the Region 2 NYSDEC offices in Long Island City, New York and the Riverside Branch of the New York Public Library located in Manhattan, as mentioned in Section 1.1.2.

The discussions in the sections that follow address the analytical results of soil, groundwater, and soil vapor from the RI after modification by the Data Usability Summary Report (DUSR), which was included in Appendix N of the RIR. The qualitative data usability review was performed for aqueous and soil samples. Based on the DUSR, there are several laboratory quality control issues that affected the analytical data. The laboratory analytical results tables for soil and groundwater sampling performed during the RI include notations for each result that was modified by the DUSR. Below is a summary of Remedial Investigation findings as they pertain to the Tennis Court Area of the Property.

1.3.1 Soil

A total of nine soil samples were collected from four soil borings and submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Procedure-Certified (ELAP) laboratory for analysis of Target Compound List (TCL) semi volatile organic compounds (SVOCs), TCL volatile organic compounds (VOCs), pesticides, polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals. The results of the RI indicated the presence of soil contamination. Where feasible, the vertical and horizontal limits of any contamination exceeding soil cleanup criteria were determined prior to remediation by waste characterization borings. Tables 2A through 2E show the laboratory analytical results including exceedances of Technical and Administrative Guidance Memorandum #4046 (TAGM #4046) Recommended Soil Cleanup Objectives (RSCOs) for all soil/fill at the Site prior to the remedy. Figure 5 is a spider map that indicates the sampling locations and summarizes exceedances of TAGM #4046 RSCOs for all soil/fill prior to the remedy.

Soil samples during the RI were compared initially with TAGM #4046 RSCOs as a Track 4 cleanup; associated Site-Specific Soil Action Levels (SSSALs) had not been developed for the Site. Exceedances of the TAGM #4046 RSCOs (with the maximum concentration in parentheses) during the remedial investigation were identified as follows:

- SVOCs – Benzo(a)anthracene (12 milligrams per kilogram [mg/kg]), benzo(a)pyrene (11 mg/kg), benzo(b)fluoranthene (12 mg/kg), benzo(k)fluoranthene (3.5 mg/kg), chrysene (12 mg/kg), dibenzo(a,h)anthracene (1.4 mg/kg), and indeno(1,2,3-cd)pyrene (6.6 mg/kg).
- Metals – Arsenic (mg/kg), barium (4,100 mg/kg), cadmium (14.5 mg/kg), calcium (91,400 mg/kg), copper (297 mg/kg), lead (2,980 mg/kg), magnesium (7,270 mg/kg), mercury (2.5 mg/kg), and zinc (2,060 mg/kg).
- Toxicity characteristic leaching potential (TCLP) – Lead (6.82 milligrams per Liter [mg/L]).

VOCs, pesticides, and PCBs were below TAGM #4046 RSCOs from the surface to the bedrock throughout the Site. The top two to four feet contained individual metals and several SVOCs, referred to as polycyclic aromatic hydrocarbons (PAHs), that exceeded TAGM #4046 RSCOs. One sample, MW-3 (0-2'), contained a lead concentration that exceeded the characteristic hazardous waste limit for lead in 6 NYCRR Section 371-3(3). The soil around MW-3(0-2') was considered to be an Area of Concern (AOC), AOC-1, as part of a Track 4 cleanup and was removed during remedial activities (see Figure 8). Metals present at concentrations above TAGM #4046 RSCOs and Eastern US Background ranges included arsenic, barium, cadmium, calcium, copper, lead, magnesium, mercury, and zinc.

A majority of the exceedances appeared to be related to the historic fill and suspected USTs. Some contamination was suspected to be from the former Emsig Manaufacturing facility located directly south of the Tennis Court Area.

Based on the results of the RI performed at the Site, SSSALs for soil were established in the RWP for the protection of human health and the environment, considering the contemplated use and anticipated institutional and engineering controls. SSSALs are shown in a table in Section 1.4.1.1.

1.3.2 Groundwater

During the RI, two groundwater monitoring wells were installed into the bedrock at the Site (no groundwater was encountered in the overburden). The monitoring wells were sampled for analysis of VOCs, SVOCs, PCBs, pesticides, TAL metals (both total and dissolved), and non-redundant 6 NYCRR Part 360 Parameters. Laboratory analytical results from the two on-site groundwater monitoring wells contained low level exceedances of Class GA standards of total metals and dissolved metals.

Tables that indicates exceedances from GA groundwater standards in monitor wells prior to the remedy is shown in Tables 2F through 2J. A spider map that indicates the sampling locations and summarizes exceedances from GA groundwater standards prior to the remedy is shown in Figure 6.

No VOCs, SVOCs, pesticides, or PCBs were detected at concentrations above NYCRR Section 703.5, Groundwater Quality Standards and/or Technical and Operational Guidance Series (TOGS) 1.1.1. Exceedances of the Class GA standards of individual compounds (with the maximum concentration within parentheses) in groundwater during the remedial investigation were identified as follows:

- Total Metals – Iron (596 micrograms/L [µg/L]), selenium (23.3 µg/L), and sodium (53,400 (µg/L)
- Dissolved Metals – Selenium (25.9 µg/L) and sodium (55,900 µg/L)
- The use of this area for recreation will not be adversely affected by these above exceedances found in groundwater. Based on the type and distribution of the identified metals concentrations, these detections are attributable to naturally occurring elements in the soil and groundwater and are not indicative of environmental contamination from historic on-site or off-site operations. Furthermore, remedial activities at the Site included the removal of contaminated soil and storage tanks.

1.3.3 Soil Vapor

During the RI, one soil vapor probe was installed and sampled for VOCs. At the time of the RI, the NYSDOH did not have standards, criteria, or guidance values for concentrations of compounds in soil vapor. Additionally, there are currently no databases available of background levels of volatile chemicals in soil vapor.

Fifteen VOCs were detected; fourteen of those ranged in concentration from 4.5 micrograms per cubic meter (µg/m^3) to 80 µg/m^3. The fifteenth identified VOC, chloroform, was detected at a concentration of 390 µg/m^3. No Tentatively Identified Compounds (TICs) were detected. These concentrations did not require any immediate or future action at this outdoor location.

A table of soil vapor data collected prior to the remedy is shown in Table 2K. A spider map that indicates the sampling locations and summarizes soil vapor data prior to the remedy is shown in Figure 7.

1.3.1.4 Underground Storage Tanks

The RI identified two areas suspected to contain USTs that were further investigated during remedial activities as AOCs. In the northeastern corner of the Site six fill caps were observed protruding through the concrete slab, AOC-2. A geophysical survey conducted as part of the RI identified one potential UST in the southwest corner of the Site, AOC-3. During remedial excavation, it was found that both areas contained tanks. Details regarding the tank contents, size and locations are provided in Table 3, and the tank locations as AOCs are shown on Figure 8.

1.4 DESCRIPTION OF REMEDIAL ACTIONS

The Site was remediated in accordance with the scope of work presented in the NYSDEC-approved Remediation Work Plan dated March 2006, the RWP Addendum dated June 2006, the RWP Addendum Letter dated October 2006, and the Interim Remedial Measure Work Plan (IRMWP) dated February 2006. The RWP underwent a citizen participation period and was approved by the NYSDOH and NYSDEC.

The factors considered during the analysis of remedial alternatives included:

- Protection of human health and the environment;

- Compliance with standards, criteria, and guidelines SCGs;
- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community Acceptance; and
- Land use.

Remedial action SCGs that apply to this project are as follows:

- NYSDEC and NYSDOH approved SSSALs developed for the Tennis Court Area – applies to cleanup standards for on-Site soil;
- NYS Groundwater Quality Standards – 6 NYCRR Part 703 – applies to groundwater;
- NYSDEC Ambient Water Quality Standards and Guidance Values – TOGS 1.1.1 – applied to groundwater;
- NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation - December 2002 – applies to investigative and remedial activities at the Site;
- NYSDEC Draft Brownfield Cleanup Program Guide – May 2004 – applies to investigative and remedial activities at the Site;
- New York State Department of Health Generic Community Air Monitoring Plan – applies to investigative and remedial activities at the Site;
- NYS Waste Transporter Permits – 6 NYCRR Part 364 – applies to waste transportation activities associated with the Site;
- NYS Solid Waste Management Requirements – 6 NYCRR Part 360 and Part 364 – applies to waste disposal activities associated with the Site;
- NYCDEP Sewer Use Regulations (Chapter 19, Title 15, Rules of the City of New York) – applies to sewer discharges associated with the Site; and
- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York – draft issued February 2005 – applies to the evaluation of soil vapor intrusion associated with the Site.

Below is a summary of the Remedial Actions required and implemented at the Site:

1. Excavation of soil/fill exceeding SSSALs listed in Section 1.4.1.1;
2. Construction and maintenance of an engineered composite cover (to prevent human exposure to residual contaminated soil remaining under the Site) consisting two elements:
    1. Two feet of fill material that meets TAGM #4046 RSCOs covered by landscape elements (stone, gravel, and/or grass); or

   2. Four inches of asphalt pavement underlain with at least 8 inches of NYSDEC-approved fill/aggregate material.

3. Recording of an Environmental Easement, including Institutional Controls, to prevent future exposure to any residual contamination remaining at the Site (a copy of the Environmental Easement is provided in Appendix B);
4. Removal of the AOCs associated with the Tennis Court Area (AOC-1 through AOC-3) by excavating known or suspected underground storage tanks and other subsurface structures, petroleum-contaminated soil around the tanks, lead-contaminated soil and historic fill;
5. Prevent on-site reuse of historic fill or soil exceeding SSSALs;
6. Performance and maintenance of the Community Air Monitoring Plan (CAMP) including dust and odor control measures;
7. Publication of a Site Management Plan for long term management of residual contamination as required by the Environmental Easement, including plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance; and (4) reporting;
8. Screening for indications of contamination [by visual means, odor, and monitoring with photoionization detector (PID)] of all excavated soil during all intrusive Site work;
9. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attaining SSSALs;
10. Appropriate off-Site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
11. Import of materials to be used for backfill and cover in compliance with: (1) TAGM #4046 RSCOs or for which specific approval was given by the NYSDEC; and, (2) all Federal, State and local rules and regulations for handling and transport of material;
12. Performance with all required BCP citizen participation activities [including development of a Citizen Participation Plan (CPP), public contact list, document repositories, public notices, and fact sheets]; and
13. Preparation of a Final Engineering Report.

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved RWP for the West 61st Street Site (March 2006) and addenda. The approved RWP is included in Appendix C; this is the digital file of the RWP.

1.4.1 Removal of Contaminated Materials from the Site

1.4.1.1 Soil Removal

The selected remedy for the Tennis Court Area included excavating, removing, and disposing of soil containing contaminant concentrations exceeding SSSALs developed for the Site. A list of the SSSALs developed for the Tennis Court Area are shown below:

Site-Specific Soil Action Levels

Parameter	Criterion
Individual VOCs	TAGM #4046 RSCO
Total VOCs	10.0 mg/kg
Total SVOCs	200 mg/kg
Benzene	0.06 mg/kg (TAGM #4046 RSCO)
Toluene	1.5 mg/kg (TAGM #4046 RSCO)
Ethylbenzene	5.5 mg/kg (TAGM #4046 RSCO)
o-xylene	1.2 mg/kg (TAGM #4046 RSCO)
m/p-xylene	0.6 mg/kg (TAGM #4046 RSCO)
Naphthalene	13 mg/kg (TAGM #4046 RSCO)
Total PCBs	1 mg/kg
Individual Pesticides	TAGM #4046 RSCO
Arsenic	18 mg/kg
Chromium	40 mg/kg
Lead	1,000 mg/kg
Mercury	2 mg/kg
Notes: mg/kg – milligrams per kilogram or parts per million	

The horizontal and vertical extent of excavation on the Tennis Court Area was determined largely through pre-excavation waste characterization samples. Excavation of soil extended vertically until the technical limit of the excavation was achieved and bottom endpoint samples were less than the respective SSSALs. Final post-excavation endpoint sampling laboratory analytical results representative of soil left in place are detailed in Tables 4A to 4D and sampling locations are shown on Figure 9. The following table summarizes the total quantities of each class of material removed from the Site and the disposal locations:

Summary of Waste Disposal

Facility	Waste Type	Dates of Transport	No. of Trucks	Total Tons
Catellus	Low-level contamination	July 31, 2006 to April 27, 2007	27	1,077.33
Earle	Petroleum-contaminated	July 27, 2006 to July 6, 2007	129	4,514.76
Clean Earth	Hazardous-waste lead	July 21, 2006 to October 5, 2006	1	12.64
Total			**157**	**5,604.73**

The excavated soil was managed for disposal as non-hazardous or hazardous waste based on previous analytical results. Hazardous waste material from the Tennis Court Area consisted of soil with TCLP lead concentrations greater than 5 mg/L. Excavated material was either loaded directly into trucks for off-site disposal or temporarily stockpiled for later disposal. Remedial excavation was performed on the Property as a whole within the same time frame. Quantities of soil removed from the Tennis Court Area and disposed of off-site consisted of 5,592.09 tons of non-hazardous waste and 12.64 tons of lead hazardous waste. A map of the location of original sources and areas where excavation was performed is shown on Figure 10 with pre-remediation contours and the final elevation of remediation-related cuts prior to grading.

1.4.1.2 Underground Storage Tank Removal

As part of remediation, nine USTs were cleaned and removed from the Tennis Court Area in accordance with applicable regulations. After cleaning, the tanks were disposed of off-site as scrap metal. Characterization samples were collected from the UST excavations for analysis, and the details of which are included in the Tank Closure Report dated September 2007. Figure 11 shows the locations of the tanks, their excavation areas, and characterization sampling for off-site disposal of petroleum-contaminated soil. Tank elevations were higher than the excavation depth required for remedial and construction activities; therefore, no sidewall or bottom confirmatory samples were collected from the tank graves. Post-excavation remediation endpoint samples were used to confirm removal of petroleum-contaminated soil above SSSALs established for the Tennis Court Area. Details regarding the tank contents, size, and locations are provided in Table 3 and final post-excavation endpoint sampling laboratory analytical results are provided in Tables 4A to 4D. Figure 9 shows post-excavation endpoint sampling locations.

1.4.2 Residual Contamination

The remedial excavation of soil extended vertically until to the technical limit of the excavation and until endpoint samples were less than the respective SSSALs. After Site grading, a physical demarcation layer consisting of orange snow fencing was installed. Soil beneath the demarcation layer will be considered the Residual Management Zone (RMZ). The RMZ has been established with corresponding protocols for soil handling, oversight by a qualified environmental professional, and health and safety procedures, as defined elsewhere in this SMP. Any future excavations into the RMZ will require adherence to the established protocols.

The survey map of the top elevation of the Residual Contamination Zone is shown in Figure 10 along with pre-remediation contours and the excavation area as related to the Site boundary.

1.4.3 Engineering and Institutional Controls

Since residual contamination is present at this Site, Engineering Controls and Institutional Controls will be implemented to protect public health and the environment in the future. The Controlled Property has a composite cover system which comprises two elements:

1. Two feet of fill material that meets TAGM #4046 RSCOs covered by landscape elements (stone, gravel, and/or grass); or
2. Four inches of asphalt pavement underlain with at least 8 inches of NYSDEC-approved fill/aggregate material.

A series of Institutional Controls are required to implement, maintain and monitor these Engineering Controls. The Environmental Easement requires compliance with these Institutional Controls. These Institutional Controls consist of the following:

- Compliance with the Environmental Easement by the Grantee and the Grantee's successors and adherence of all elements of this SMP;
- All Engineering Controls must be maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property (the Site) must be inspected and certified at a frequency and in a manner defined in this SMP;
- Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in this SMP;
- On-Site environmental monitoring devices must be protected and replaced as necessary to ensure continued functioning in the manner specified in this SMP.

The Controlled Property has a series of Institutional Controls in the form of Site restrictions. Adherence to these Institutional Controls is required under the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- Vegetable gardens and farming on the Controlled Property are prohibited;
- Use of groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for the intended use;
- All future activities on the Controlled Property that will disturb residual contaminated material are prohibited unless they are conducted in accordance with the soil management provisions in this SMP;
- The Controlled Property may be used for Restricted Residential use as defined in 6 NYCRR 375-1.8(g)(2)(ii) only provided the long-term Engineering and Institutional Controls included in the SMP remain in use;
- The Controlled Property may not be used for a less restricted level of use, such as residential use nor may the Controlled Property be converted without an amendment or the extinguishment of the Environmental Easement;
- The Grantor agrees to submit to NYSDEC and New York State Department of Health (NYSDOH) a written statement that certifies, under penalty and perjury, that (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC and NYSDOH; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time to evaluate the continued maintenance of any and all controls. This certification will be submitted annually, or an alternate period of time that the NYSDEC may allow. This annual statement must be certified by an expert that the NYSDEC finds acceptable.

These EC/ICs should:

- Prevent ingestion of groundwater with contamination levels that exceed drinking water standards;
- Prevent contact with or inhalation of volatiles from potentially contaminated groundwater;
- Prevent the discharge of contaminants to surface water;

- Prevent ingestion/direct contact with contaminated soil;
- Prevent inhalation of or exposure to contaminants volatilizing from residual contaminated soil; and
- Prevent migration of contaminants that would result in off-Site groundwater or surface water contamination.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved RWP and addenda for the West 61st Street Site. The remedial goals included attainment of SSSALs for on-Site soils for restricted residential use. The SSSALs were approved by NYSDEC and are listed in Section 1.4.1.1. A summary of the remedial strategies and EC/ICs implemented at the Site are as follows:

- Excavation of soils exceeding SSSALs;
- Removal of all USTs;
- Screening for indications of contamination (by visual means, odor, and monitoring with a PID) of all excavated soil during all intrusive Site work;
- Performance of community air monitoring of dust and VOCs/odors in accordance with the NYSDOH requirements;
- Collection and analysis of post-excavation endpoint samples to evaluate the performance of the remedy with respect to attaining the SSSAL goals;
- Appropriate off-site disposal of all material removed from the Site in accordance with all Federal, State, and local rules and regulations for handling, transport, and disposal;
- Import of materials to be used for backfill and cover in compliance with: (1) TAGM #4046 RSCOs and approval given by NYSDEC; and, (2) all Federal, State, and local rules and regulations in handling and transport of material;
- All activities associated with the Remedial Action, including permitting requirements, addressed in accordance with all applicable Federal, State, and local rules and regulations;
- Performance of all required BCP citizen participation activities (including development of a CPP, public contact list, document repositories, public notices, and fact sheets);
- Certification of the completion of the remedy in the FER;
- Publication of a Site Management Plan for long term management of residual contamination as required by the Environmental Easement, which includes plans for (1) Institutional and Engineering Controls, (2) Operations and Maintenance, and (3) reporting;
- Installation and maintenance of an engineered composite cover comprising two elements to prevent human exposure to residual contaminated soil remaining under the Site:
    1. Two feet of fill material that meets TAGM #4046 RSCOs covered by landscape elements (stone, gravel, and/or grass); or
    2. Four inches of asphalt pavement underlain with at least 8 inches of NYSDEC-approved fill/aggregate material.

- Registration of an Environmental Easement, including Institutional Controls, to prevent future exposure to any contamination remaining at the Site (a copy of the Environmental Easement is provided in Appendix B).

Since residual contaminated soil exists beneath the Site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the Site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

The purpose of this Plan is to provide:

- A description of all EC/ICs on the Site;
- The basic operation and intended role of each implemented EC/IC;
- A description of the key components of the ICs created as stated in the Environmental Easement;
- A description of the features that should be evaluated during each annual inspection and compliance certification period;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Soil Management Plan for the safe handling of residual contamination that may be disturbed during maintenance or redevelopment work on the Site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the Site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROL COMPONENTS

2.2.1 Engineering Control Systems

2.2.1.1 Composite Cover System

Exposure to residual contaminated soil is prevented by an engineered composite cover system built on-Site. The composite cover system comprises two elements:

1. Two feet of fill material that meets TAGM #4046 RSCOs covered by landscape elements (stone, gravel, and/or grass); or
2. Four inches of asphalt pavement underlain with at least 8 inches of NYSDEC-approved fill/aggregate material.

Figure 12 shows the NYSDEC-approved design and locations, as related to the final development, for each remedial cover type used on this Site. The laboratory analytical results for all imported soil used for the Site cover system are shown in Tables 5A to 5D. A Soil Management Plan (SoMP) is included in Appendix D, and outlines the procedures required in the event the composite cover system and underlying residual contamination are disturbed. The Soil Management Plan is also discussed in greater detail in Section 2.3 of this EC/IC Plan. Issues related to maintenance of this cover are provided in the Monitoring and Maintenance Plan included in Section 3 of this SMP.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

2.2.2.1 Composite Cover System

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

2.3 INSTITUTIONAL CONTROLS COMPONENTS

2.3.1 Institutional Controls

A series of Institutional Controls are required under the RWP to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to residual contamination by controlling disturbances of the subsurface contamination; and, (3) restrict the use of the Site to restricted residential uses only. Adherence to these Institutional Controls on the Site (Controlled Property) is required under the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement by the Grantor and the Grantor's successors and assigns with all elements of this SMP;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- A composite cover system (that must be inspected, certified, and maintained as required by this SMP) comprising two elements;
    1. Two feet of fill material that meets TAGM #4046 RSCOs covered by landscape elements (stone, gravel, and/or grass); or
    2. Four inches of asphalt pavement underlain with at least 8 inches of NYSDEC-approved fill/aggregate material.
- All Engineering Controls on the Controlled Property must be inspected and certified at a frequency and in a manner defined in the SMP;
- Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in this SMP; and
- Engineering Controls may not be discontinued without an amendment or the extinguishment of this Environmental Easement.

The Controlled Property has a series of Institutional Controls in the form of land use restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- Vegetable gardens and farming on the Controlled Property are prohibited;
- The use of the groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for intended purpose;
- All future activities on the Controlled Property that will disturb residual contaminated material (i.e., penetrates fully through the site cover and demarcation layer into the underlying soil) are prohibited unless they are conducted in accordance with the soil management provisions in this SMP;

- The Controlled Property may only be used for restricted residential use as defined in 6 NYCRR 375-1.8(g)(2)(ii) provided that the long-term Engineering and Institutional Controls included in this SMP are employed;
- The Controlled Property may not be used for a higher level of use, such as residential use without an amendment or the extinguishment of this Environmental Easement; and
- Grantor agrees to submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification will be submitted annually, or an alternate period of time that NYSDEC may allow. This annual statement must be certified by an expert that the NYSDEC finds acceptable.

2.3.2 Soil/Materials Management Plan

The Site has been fully remediated for restricted residential use. Any future intrusive work that will disturb the residual contamination and modifications or repairs to the existing composite cover system will be performed in compliance with the SoMP, which is included in this SMP. Intrusive construction work must also be conducted in accordance with the procedures defined in the Construction Health and Safety Plan (CHASP) which includes a Community Air Monitoring Plan (CAMP) prepared for the Site. The SoMP is presented in Appendix D and the CHASP with the CAMP is presented in Appendix E of this SMP. The CHASP is the responsibility of the property owner and should be in compliance with DER-10 Technical Guide and 29 Code of Federal Regulations (CFR) 1910 and 1926, and all other applicable Federal, State and local regulations. Any intrusive construction work must be certified as compliant with the SMP and included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 4).

2.3.2.1 Soil Screening Methods

Visual, olfactory and PID soil screening and assessment will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (Residual Contamination Zone). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Screening will be performed by qualified environmental professionals under the oversight of the Remedial Engineer. Resumes will be provided in the Annual Site Management Report for all personnel.

2.3.2.2 Stockpile Methods

Soil will be stockpiled based on the known type and/or level of contamination (based on previous data, PID readings, odor, staining, etc.). Stockpiles intended for off-site disposal may be mixed with other compatible stockpiles on-site (compatibility will be determined by the requirements of the receiving disposal facility), but should known hazardous wastes be mixed with non-hazardous wastes, the mixture would be managed as hazardous waste. All soil stockpiles will be properly characterized before off-site disposal as per section 2.3.2.5 of this SMP.

Soil exhibiting obvious contamination (e.g., staining, odors and elevated PID readings) will be stockpiled separately to prevent mixing with potentially uncontaminated excavated material. The location and classification of stockpiles will be tracked in field notes and updated, if necessary, at the end of each workday. Suspect contaminated soil will be placed on a base consisting of rugged polyethylene tarps. Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Soil stockpiles will have side sloped not to exceed a two to one ratio. Soil stockpiles will be continuously encircled with silt fences or other appropriate erosion control and managed to minimize dust generation, run-off, and erosion using water and/or plastic covers, as necessary. Hay bales or other appropriate erosion control will be used as needed near catch basins, surface waters, and other discharge points. Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.

A dedicated water truck equipped with a water cannon or other similar wetting/misting device will be available on-Site for dust control as appropriate depending on the size and location of the soil disturbance area.

2.3.2.3 Materials Excavation and Load Out

The Remediation Engineer or a qualified environmental professional under his/her supervision will oversee all invasive work that will disturb the Residual Management Zone and the excavation and, if needed, load-out of all excavated material. During excavation and stockpiling, the on-site field personnel will continuously monitor the excavated soil for evidence of contamination and conduct periodic screening for VOCs using a PID. Any soil excavated from the Site will be considered suspect contaminated and disposed of off-site where any of the following conditions exist: chemical or petroleum odors; visual chemical or petroleum staining; or elevated PID readings above 5 ppm. Soil excavated from the Site that has chemical or petroleum odors, visual chemical or petroleum staining, or elevated PID readings above 5 ppm will not be reused on-site, but will be characterized for off-site disposal. Soil from the Residual Management Zone is documented as meeting SSSALs. Excavated material from this zone that does not exhibit evidence of contamination may be reused on-site as subsurface fill beneath the restored composite cover system without additional sampling.

All excavations will be considered open excavations and will be managed according to applicable Federal, State, and local regulations. The owner of the Controlled Property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the Site will be investigated by the Remedial Engineer or his/her representative. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, and local transportation requirements (and all other applicable transportation requirements).

A truck wash will be operated on-Site. Prior to leaving the excavation area, all contaminated material containers and transport vehicles will be inspected for evidence of exterior contamination (including inside of wheels and undercarriage), and washed. The Remediation Engineer will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the remedial construction is complete.

Locations where vehicles enter or exit the Site will be inspected daily for evidence of off-Site sediment tracking. The Remedial Engineer will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during Site remediation and development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

The Applicant and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

The Property owner will ensure that Site development activities will not interfere with, or otherwise impair or compromise, remedial activities implemented under the Remediation Work Plan.

If buried tanks, drums, or other containers are encountered during excavation, NYSDEC will be notified and the contingency plan in Section 2.3.2.11 should be implemented. The tank or container and any associated piping will be removed and endpoint sampling completed before excavations related to Site development commence proximal to the structure.

Mechanical processing of historical fill and contaminated soil on-Site is prohibited.

All primary contaminant sources (including but not limited to tanks and contaminated soil) identified during excavation will be surveyed by a surveyor licensed to practice in the State of New York. The survey information will be shown on maps to be reported in the Annual Site Management Report.

2.3.2.4 Materials Transport Off-Site

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Trucks will be queued from West End Avenue (11th Avenue) to West 61st Street. Three flagmen will be used to direct traffic to and from the Site and ensure that school busses and school-related traffic will be given priority during school hours. Trucks will not be parked or permitted to stand along West 61st Street. Trucks will be prohibited from stopping, parking, or standing along West 61st Street due to the nearby and adjacent schools and to minimize disturbance outside the project Site.

Trucks will pick up soil designated for disposal at an off-site location on West 61st Street and proceed directly to Amsterdam Avenue (10th Avenue), travel north to West 66th Street, and travel west on West 66th Street to West End Avenue (11th Avenue). From that location, trucks will head north to the Cross Bronx Expressway or south to the Lincoln Tunnel. A map of the specified truck routes to and from the Site are shown in Figures 1 and 2 of the SoMP (Appendix D). All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-Site queuing of trucks entering the facility to the extent practicable; (d) limiting total distance to major highways; (e) promoting safety in access to highways; (f) overall safety in transport; and (g) community input as pertaining to coordination with adjacent schools.

Prior to leaving the excavation area, all contaminated material containers and transport vehicles will be inspected for evidence of exterior contamination (including inside of wheels and undercarriage), and washed, as necessary, prior to leaving the Site. Truck wash waters will be collected and disposed of off-Site in an appropriate manner. Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

2.3.2.5 Materials Disposal Off-Site

Soil excavated from the Site that has chemical or petroleum odors; visual chemical or petroleum staining; or elevated PID readings above 5 ppm will not be reused on-site but will be segregated and sampled prior to off-site disposal. If analytical results indicate that contaminant concentrations in excavated soil exceed the SSSALs, the corresponding stockpile(s) will be disposed of off-site in a manner consistent with applicable laws and regulations. Fill material that meets the SSSALs, but cannot be used for backfill due to mechanical properties or composition or because it is in excess of the volume required for backfilling, will be stockpiled separately for waste characterization analysis and off-site disposal. Waste characterization will be performed for off-Site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and Quality Assurance/Quality Control (QA/QC) will be reported in the Annual Site Management Report. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

For large projects (i.e., greater than 1,000 cubic yards), the total quantity of material expected to be disposed off-Site will be reported to NYSDEC prior to performance of work. This will include quantity, breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, Construction and Demolition (C&D) recycling facility, etc.

All soil/fill/solid waste excavated and removed from the Site, except soil that meets the Track 1 Unrestricted Use SCOs, will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6 NYCRR Part 360) and Federal regulations. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6 NYCRR Part 360-

16 Registration Facility). If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-Site management of materials from this Site is prohibited without formal NYSDEC approval. Non-hazardous historic fill and contaminated soils taken off-Site will be handled, at minimum, as a Municipal Solid Waste per 6 NYCRR Part 360-1.2. Non-hazardous waste and contaminated soils from the Site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities). Hazardous wastes derived from on-Site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations.

Soils that are contaminated but non-hazardous and are being removed from the Site are considered by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC to be C&D materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C&D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DSHM. This material is prohibited from being sent or redirected to a Part 360-16 Registration Facility. In this case, as dictated by DSHM, special procedures will include, at a minimum, a letter to the C&D facility that provides a detailed explanation that the material is derived from a DER remediation Site, that the soil material is contaminated and that it must not be redirected to on- Site or off- Site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported.

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a letter from the Remedial Engineer or BCP Applicant to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material.

Bill of Lading system or equivalent will be used for off-Site movement of non-hazardous wastes and contaminated soils. This information will be reported in the Annual Site Management Report. Appropriately licensed haulers will be used for material removed from this Site and will be in full compliance with all applicable local, State and Federal regulations.

The Annual Site Management Report will include an accounting of the destination of all material removed from the Site during work performed under this plan, including excavated soil, contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. This information will also be presented in a tabular form in the Annual Site Management Report.

2.3.2.6 Materials Reuse On-Site

The SSSAL criteria for on-Site reuse of material has been approved by NYSDEC and is listed in Section 1.4.1.1. The Remedial Engineer will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material will not remain on-Site. Material excavated from the Residual Management Zone is documented to meet SSSALs; therefore, it may be reused on-site as subsurface fill beneath the restored composite cover system without additional sampling, provided that no evidence of contamination is noted. Soil excavated from the Residual Management Zone on the Site that has chemical or petroleum odors, visual chemical or petroleum staining, or elevated PID readings above 5 ppm will not be reused on-site but will be properly stockpiled and characterized for off-site disposal.

Acceptable demolition material proposed for reuse on-Site, if any, will be sampled for asbestos and certified to be free of asbestos-containing materials.

Concrete crushing or processing on-Site is prohibited. The NYSDEC will consider the use of specially designed crushing devices that are self-contained and capable of providing misting for dust control. NYSDEC approval must be obtained. If dust-free operations are not achieved with such devices, this exception will be revoked.

Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site is prohibited for reuse on-Site.

Contaminated on-Site material, including historic fill and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

2.3.2.7 Fluids Management

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable Federal, State, and local regulations. Liquids discharged into the New York City sewer system will be addressed through approval by New York City Department of Environmental Protection (NYCDEP). Discharge of water generated during remedial construction to surface waters (i.e. a local pond, stream or river) is prohibited without a State Pollutant Discharge Elimination System (SPDES) permit. Dewatered fluids will not be recharged back to the land surface or subsurface of the Site. Dewatering fluids will be managed off-Site.

2.3.2.8 Demarcation

After the completion of soil removal and any other invasive remedial activities and prior to backfilling, as necessary, a land survey will be performed by a New York State licensed surveyor. The survey will define the top elevation of residual contaminated soils. A physical demarcation layer, consisting of orange snow fencing material or equivalent material will be placed on this surface to provide a visual reference. This demarcation layer will constitute the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in this Site Management Plan. The survey will measure the grade covered by the demarcation layer before the placement of cover soils, pavement and sub-soils, structures, or other materials. This survey and the demarcation layer placed on this grade surface will constitute a modification of the physical and written record of the upper surface of the 'Residuals Management Zone' in the Site Management Plan. A map showing the survey results will be included in the Annual Site Management Report and updates to the Site Management Plan. A survey of the current elevation of the demarcation layer is presented in Figure 10.

2.3.2.9 Backfill from Off-Site Sources

All materials proposed for import onto the Site will be approved by the Remedial Engineer and will be in compliance with provisions in this SMP prior to receipt at the Site.

Any imported off-site backfill material will be clean and free of debris, cinders, combustibles, wood, roots, and any staining or odors. Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site. Solid waste will not be imported onto the Site.

All imported soils will meet NYSDEC approved backfill or cover soil quality objectives for this Site. Imported material will be tested via collection of one grab sample and one composite sample per 500 cubic yards of material from each source. The grab sample will be analyzed for TCL VOCs using EPA Method 8260 and the composite sample will be analyzed for TCL SVOCs using EPA Method 8270, PCBs using EPA Method 8082, pesticides using EPA method 8081, and TAL metals using EPA Method 6000/7000 series. Imported soil will be considered appropriate for use as on-site backfill if contaminant concentrations are less than TAGM #4046 RSCOs. Formal requests will be submitted for approval of sources with exceedances. If more than 1,000 cubic yards of soil are imported from a given off-site, non-virgin soil source area, and both samples of the first 1,000 cubic yards meet the limits described above, the sample collection frequency will be reduced to one composite sample for every 2,500 cubic yards of additional soil from the same source, up to 5,000 cubic yards. For sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided that all earlier samples meet the above limits. Native material from a virgin quarry source need not be sampled prior to use as backfill on the Site, provided that detailed information regarding site history and chemical components of the quarry materials is available. If this detailed information is not available, samples will be collected for laboratory analysis as specified above.

Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved SMP or its approval by NYSDEC should be construed as an approval for this purpose.

Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Nothing in this SMP should be construed as an approval for this purpose.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Backfill material brought on-site will be stockpiled in an area separate from the excavated material stockpiles. The location and classification of stockpiles will be tracked on the Site drawings and updated, if necessary, at the end of each workday.

2.3.2.10 Stormwater Pollution Prevention

Smaller-scale soil disturbances for future utility maintenance and landscaping conducted after the completion of Site redevelopment are not anticipated to require coverage under the general SPDES Permit or preparation of a Storm Water Pollution Prevention Plan (SWPPP). However, best management practices will be implemented during small-scale soil disturbances including the placement of barriers, such as silt fencing and hay bales, at the perimeter of soil stockpiles. If the barrier is to be maintained on-site overnight or longer, it will be inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. All necessary repairs will be made immediately.

Accumulated sediments will be removed as required to keep the barrier functional. All undercutting or erosion of the barrier (e.g., silt fence) toe anchor will be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP will be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing, hay bales, or equivalent barriers will be installed around the entire perimeter of the excavation and stockpile area(s). Nearby sewer inlets will be protected with hay bales, silt geofabrics, “silt sack” inserts, or equivalent barriers. Any alterations to the above plan must first be approved by the NYSDEC.

2.3.2.11 Contingency Plan

All excavation will be continuously monitored for the presence of buried tanks, drums or other containers, sludges, or soil which shows evidence of obvious contamination, such as staining, sheen, or odors. The affected area will be cordoned off and no further work will be performed at that location until the appropriate contingency response action is implemented. Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC’s Project Manager. These findings will be also included in Annual Site Management Report.

If underground tanks or other previously unidentified contaminant sources are found during on-Site excavation or development related construction, sampling will be performed on product, sediment and surrounding soils, etc. Post excavation endpoint samples will be collected from the sides and bottom of the excavated area, if required for tank closure. The tanks will be registered in accordance with the NYSDEC Petroleum Bulk Storage regulations. Chemical analytical work will be for full scan parameters (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs). These analyses will not be limited to Spill Technology and Remediation Series (STARS) parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

Buried tanks, drums, or other containers will be removed in accordance with all applicable Federal, State, and local regulations. Spill reporting to the NYSDEC Spill Hotline (800-457-7362) will be conducted as necessary. Copies of all testing results, correspondence with disposal facilities concerning classification of materials, and permits/approvals will be maintained by the Remedial Engineer and will be submitted to the NYSDEC in a Tank Closure Report or Spill Closure Report, as appropriate.

2.3.2.12 Community Air Monitoring Plan

The CAMP is intended to protect the health of the community residents who have the potential to be exposed to on-site contaminants as a result of fugitive discharge of dusts, vapors, and/or nuisance odors. The CAMP detailed in the CHASP provided in Appendix E will be implemented if work zone air monitoring conducted in contaminated work zones exhibits evidence of elevated VOCs, particulate, and/or nuisance odors. Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers. A map showing the estimated locations of mobile sampling stations is shown in Figure 13.

Community Air Monitoring Action Levels and Responses

Instrument	Task to be Monitored	Action Level	Response Action
PID	All soil disturbance tasks	Less than 5 ppm above background at downwind perimeter.	Continue work.
		Between 10 and 25 ppm above background at downwind perimeter.	Stop work and continue monitoring. If organic vapor levels (instantaneous reading) steadily decrease to less than 5 ppm, resume work. If organic vapor levels persists at >5 ppm, identify source and take steps to abate emissions. Work can resume if organic vapor level (15-minute average) is below 5 ppm at 200 feet downwind of work zone or half the distance to the nearest potential receptor, whichever is closer.
		More than 25 ppm above background at downwind perimeter.	Stop work.
Particulate monitor	All soil disturbance tasks	Less than 0.1 mg/m^3 above background (upwind perimeter) at downwind perimeter.	Continue work.
		Between 0.1 mg/m^3 and 0.15 mg/m^3 above background (upwind perimeter) at downwind perimeter.	Apply dust suppression measures. Work can continue provided downwind PM$_{10}$ particulate levels do not exceed 0.15 mg/m^3 above background levels and no visible dust is migrating from the work area.
		Greater than 0.15 mg/m^3 above background (upwind perimeter) at downwind perimeter after dust suppression.	Stop work. Apply additional dust suppression measures. Resume work when less than 0.15 mg/m^3 above background levels and no visible dust is migrating from the work area.
Notes:	ppm – parts per million mg/m^3 – milligrams per cubic meter Full CAMP details are provided in the CHASP located in Appendix E.		

2.3.2.13 Odor, Dust and Nuisance Control Plan

2.3.2.13.1 Odor Control Plan

If the work zone or community air monitoring reveal persistent elevated VOC levels, or if nuisance odors are present, this odor control plan is capable of controlling emissions of nuisance odors off-Site and on-Site If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Controlled Property owner's Remediation Engineer, who is responsible for certifying the Annual Site Management Report.

All necessary means will be employed to prevent on- and off-Site nuisances. At a minimum, procedures will include:

- Limiting the area of open excavations – Contaminated soil will be excavated by sections to minimize the size of excavation that is open at any time.
- Promptly backfilling excavations - Excavations exhibiting odors will be promptly backfilled and adequate volumes of on-site or off-site fill material will be available if it is not possible to backfill with excavated material.
- Using foams to cover exposed odorous soils – Biodegradable, non-hazardous, non-flammable foam, such as Rusmar A-600, Allied AFT- 400, or equivalent with an appropriate applicator unit will be present on-site during the excavation work. The foam will be used to cover stockpiles and exposed soil surfaces if necessary. In addition, odor neutralizing agents (such as Ecosorb 606 by Lenntech Water) will be applied directly to the soil, or in the air, if odors persist.
- Hauling soil only in covered trucks – Contaminated material transported by trucks will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. All trucks loaded with site materials will exit the vicinity of the Site using only approved truck routes to minimize travel through residential areas.
- If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include:
- Direct load-out of soils to trucks for off-Site disposal - Pre-approval will be obtained from disposal facilities to minimize delay in moving soil off-site. Stockpiling of contaminated soil will be avoided to the extent practicable. If these materials cannot be immediately loaded and transported off-site (in accordance with applicable Federal and State requirements), these materials would be stockpiled on and covered with polyethylene sheeting.
- Use of chemical odorants in spray or misting systems.
- Use of staff to monitor odors in the surrounding neighborhood.
- Where odor nuisances have developed during development work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

2.3.2.13.2 Dust Control Plan

Soil disturbances for future utility maintenance and landscaping conducted after the completion of site redevelopment are not anticipated to require large-scale excavations. This dust suppression plan addresses dust management to be implemented appropriate to the extent of invasive on-site work. A dust suppression plan that addresses dust management during invasive on-Site work, will include, at a minimum, the items listed below:

- The excavation size and/or number of excavations will be minimized as practicable.
- Excavated area and stockpiled material will be covered with polyethylene sheeting after excavation activity ceases.
- Dust suppression will be achieved though the use of a dedicated on-Site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations, stockpiles and on-site equipment, if necessary.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-Site roads will be limited in total area to minimize the area required for water truck sprinkling.
- Under the CHASP (Appendix E), soil disturbance work will stop if particulate concentrations reach 125 milligrams per cubic meter (mg/m^3) in the work zone. Additional dust control measures will be applied. Work will resume when particulate concentrations are less than 125 mg/m^3 in the work zone, and no visible dust is migrating from the work area.

2.3.2.13.3 Other Nuisances

A plan for rodent control will be developed and utilized by the contractor prior to and during clearing and grubbing work in accordance with local regulatory requirements.

All future soil disturbance work will conform, at a minimum, to NYCDEP noise control standards.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all systems installed on-Site will be conducted at the frequency specified in the SMP Monitoring and Maintenance Plan schedule outlined in Section 3.1.3. A comprehensive Site-wide inspection will be conducted annually. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;

- Sampling and analysis of appropriate media during monitoring events;
- If Site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring and Maintenance Plan of this SMP (Section 3). The reporting requirements are outlined in the Site Management Reporting Plan (Section 4).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the Site will be conducted to verify the effectiveness of the EC/ICs implemented at the Site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

2.4.2.1 NYSDEC-acceptable Electronic Database

The following information is presented in Appendix F in an electronic database format:

- A Site summary;
- The name of the current Site owner and/or the remedial party implementing the SMP for the Site;
- The location of the Site;
- The current status of Site remedial activity;
- A copy of the Environmental Easement; and
- A contact name and phone number of a person knowledgeable about the Environmental Easement's requirements, in order for NYSDEC to obtain additional information, as necessary.

This information should be: 1) modified as conditions change; (2) revised in Appendix F of this document; and, (3) submitted to NYSDEC in the Annual Site Monitoring Report. Should the Environmental Easement be modified or terminated, the copy of the revised Environmental Easement will also be updated in this manner.

2.4.2.2 Non-routine Notifications

Non-routine notifications are to be submitted by the property owner(s) to the NYSDEC on an as-needed basis for the following reasons:

- 60-day advance notice of any proposed changes in Site use that are consistent with the terms of the Brownfield Cleanup Agreement.
- 10-day advance notice of any proposed ground-intrusive activities, except those required to address urgent or emergency situations.
- Notice within 48-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action taken to mitigate the damage or defect.
- Notice within 48-hours of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in

place at the Site, including a summary of action taken and the impact to the environment and the public.

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action will be submitted to the NYSDEC within 45 days and will describe and document actions taken to restore the effectiveness of the ECs.

3.0 MONITORING AND MAINTENANCE PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring and Maintenance Plan describes the measures for evaluating the performance and effectiveness of the implemented ECs in reducing or mitigating contamination at the Site and maintaining the ECs selected for the Site. ECs at the Site include a composite cover system. This Monitoring and Maintenance Plan is subject to revision by NYSDEC.

3.1.2 Purpose

This Monitoring and Maintenance Plan describes the methods to be used for:

- Evaluating Site information periodically to confirm that the remedy continues to be effective as per the design;
- Providing the steps necessary to allow individuals unfamiliar with the Site to monitor and maintain the ECs;
- Preparing the necessary reports for the various monitoring activities;
- Assessing compliance with NYSDEC TAGM #4046 RSCOs for soil;
- Assessing achievement of the remedial performance criteria; and
- Updating information periodically to reflect changes in Site conditions or the manner in which the cover is maintained.

To adequately address these issues, this Monitoring and Maintenance Plan provides information on:

- Monitoring and maintaining all designed ECs;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- A contingency plan; and
- Annual inspection and certification.

3.1.3 Monitoring Schedule

Monitoring will be conducted on-Site on an annual basis for the five years. Frequency thereafter will be determined by NYSDEC. Monitoring programs are summarized below and outlined in detail in Sections 3.2 through 3.3.

Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Site Cover Inspection	Annually	No samples collected	Visual Inspection
Site-Wide Inspection	Annually	No samples collected	Visual Inspection
Notes: * The frequency of events will be conducted as specified until otherwise approved by the NYSDEC and NYSDOH			

3.2 ENGINEERING CONTROL SYSTEM MONITORING

3.2.1 Composite Cover Monitoring

The Site cover comprises two elements:

1. Two feet of fill material that meets TAGM #4046 RSCOs covered by landscape elements (stone, gravel, and/or grass); or
2. Four inches of asphalt pavement underlain with at least 8 inches of NYSDEC-approved fill/aggregate material. Figure 12 shows the location of the current cover at the Site.

3.2.1.1 Monitoring and Maintenance

The Site cover will be inspected on an annual basis to ensure that it continues to effectively prevent direct exposure to residual contamination below the cover. Inspection frequency is subject to change by NYSDEC and NYSDOH. Unscheduled inspections and/or sampling may take place when a suspected failure of the cover system has been reported or an emergency occurs that is deemed likely to affect the cover system. Monitoring deliverables for the cover system are specified in Section 3.6.

A visual inspection of the Site cover will be performed by a qualified environmental professional on an annual basis. Significant erosion of the site cover soil, to the extent that it does not provide adequate cover, will be noted and repaired. For the asphalt paved area (e.g., tennis court), if minor cracking or damage is observed over less than 25 percent of the asphalt paved area, cracks and/or holes will be patched or repaired as required. If cracking and/or other damage is observed over greater than 25 percent of the asphalt paved area, the area will be repaved with asphalt or concrete to restore a thickness of at least four inches.

A complete list of components to be checked is provided in the Site Cover Inspection Log presented in Appendix G. Inspection logs and records of any repairs made to the Site cover will be included in the Annual Site Management Report.

3.3 GROUNDWATER MONITORING PROGRAM

During RI activities, exceedances of three total metals (iron, selenium, and sodium) two dissolved metals (selenium and sodium) were observed. Pre-remediation groundwater contaminant concentrations did not indicate that active groundwater remediation was warranted. Based on the type and distribution of the identified metals concentrations, these detections are attributable to naturally occurring elements in the soil, bedrock, and groundwater and are not indicative of environmental contamination from historic on-site or off-site operations. Furthermore, remedial activities at the Site included the removal of contaminated soil and storage tanks. Groundwater monitoring will not be performed as no contaminants of concern are present above Class GA standards.

3.4 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections should also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix G). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including Site usage;

- An evaluation of the condition and continued effectiveness of ECs;
- General Site conditions at the time of the inspection;
- The Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that Site records are up to date.

A summary of the inspection program is summarized below:

Inspection Deliverables

Task	**Frequency***	**Quarterly Reporting Requirement**	**Annual Reporting Requirement**
Site Cover Inspection	Annually	NA	In Annual Site Management Report
Site-Wide Inspection	Annually	NA	In Annual Site Management Report
Notes: * The frequency of events will be conducted as specified until otherwise approved by the NYSDEC and NYSDOH			

3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

If imported soil or waste characterization of excavated soil is necessary, all sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plan (QAPP) prepared for the Site (Appendix H). The main components of the QAPP include:

- QA/QC Objectives for data measurement;
- Sampling program:
    - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
    - Sample holding times will be in accordance with the NYSDEC ASP requirements.
    - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample tracking and custody;
- Calibration procedures:
    - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
    - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.

- Analytical procedures;
- Data reduction and validation:
    - Data validation will be performed in accordance with the USEPA validation guidelines for organic and inorganic data review. Validation will include the following:
        - Verification of 100% of all QC sample results (both qualitative and quantitative);
        - Verification of the identification of 100% of all sample results (both positive hits and non-detects);
        - Recalculation of 10% of all investigative sample results; and
        - A Data Usability Summary Report (DUSR) which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.
- Internal QC and checks;
- QA performance and system audits;
- Preventative maintenance procedures and schedules; and
- Corrective action measures.

3.6 MONITORING AND MAINTENANCE REPORTING REQUIREMENTS

No routine maintenance of the Site cover is anticipated. If damage requiring repair is identified during the inspections or anytime between inspections, the repair will be documented in a logbook. Records of any repairs made to the Site cover will be included in the Annual Site Management Report. A Site inspection form (see Appendix G) will be completed during each routine maintenance event.

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-Site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Annual Site Management Report, as specified in the Site Management Reporting Plan (Section 4.0) of this SMP.

All monitoring results will be reported to NYSDEC on an annual basis in the Site Management Report. A report or letter will be prepared for submission, if required by NYSDEC, subsequent to each sampling event. The report (or letter) will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected if performed (e.g., soil, outdoor air, etc.);
- Copies of all field forms completed (e.g., sampling logs, chain-of-custody documentation, etc.);

- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (also to be submitted electronically in the NYSDEC-identified format);
- A copy of the laboratory certification;
- Any observations, conclusions, or recommendations; and
- A determination as to whether plume conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC.

3.7 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

3.7.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, following the Owner or Owner's representative(s) should contact the appropriate party from the contact list. For emergencies, appropriate emergency response personnel should be contacted. In addition, contact should be made promptly to the Owner's qualified environmental professional. These emergency contact lists must be maintained in an easily accessible location at the Site.

Emergency Contact Numbers*

Agency	Phone Number
Medical, Fire, and Police	911
One Call Center	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center	(800) 222-1222
Pollution Toxic Chemical Oil Spills	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
Notes: * Contact number subject to change and should be updated as necessary.	

Other Contact Numbers*

Contact	Phone Number
Bennet Schonfeld (Owner's Representative)	(718) 896-9600
Michelle Lapin (AKRF)	(646) 388-9520
Marcus Simons (AKRF) (Site Safety Officer)	(646) 388-5927
Notes: * Contact number subject to change and should be updated as necessary.	

3.7.2 Map and Directions to Nearest Health Facility

Site Location: 1000 10th Avenue, New York, NY

Nearest Hospital Name: St. Luke's Roosevelt Hospital

Hospital Location: Emergency Room entrance is on West 59th Street between 9th (Columbus Avenue) and 10th Avenue (Amsterdam Avenue)

Hospital Telephone: (212) 523-4000

Directions to the Hospital:

1. Go EAST on West 60th Street

2. Turn RIGHT on Columbus Avenue (9th Avenue)

3. Turn RIGHT on West 59th Street

Total Distance: 0.4 miles

Total Estimated Time: less than 5 minutes

Map Showing Route from the Site to the Hospital is attached as Figure 14

3.7.3 Response Procedures

3.7.3.1 Emergency Contacts/Notification System

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found in Section 3.7.1. The list is also posted prominently at the Site and made readily available to maintenance personnel at all times

3.8 CERTIFICATIONS

Site inspections will take place as outlined above. Frequency of inspection is subject to change by NYSDEC. Inspection certification for all ICs and ECs will be submitted to NYSDEC on a calendar year basis and must be submitted by February 1 of the following year. A qualified environmental professional, as determined by NYSDEC, will perform inspection and certification. Further information on the certification requirements are outlined in the Reporting Plan of the SMP.

4.0 SITE MANAGEMENT REPORTING PLAN

4.1 INTRODUCTION

An Annual Site Management Report will be submitted by February 1 to NYSDEC following the calendar year reporting period. The Site Management Report will be prepared in accordance with NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation requirements. This Site Management Reporting Plan and its requirements are subject to revision by NYSDEC.

This report will include the following:

- Identification of all required EC/ICs required by the Remediation Work Plan for the Site;
- An evaluation of the Engineering and Institutional Control Plan and the Monitoring Plan for adequacy in meeting remedial goals;
- Assessment of the continued effectiveness of all Institutional and Engineering Controls for the Site;
- Certification of the EC/ICs;
- Results of the required periodic Site Inspections; and
- All deliverables generated during the reporting period, as specified in Section 2 EC/IC Plan and Section 3 Monitoring and Maintenance Plan.

The Site Management Reporting Plan is subject to NYSDEC revision.

4.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

Information of EC/ICs can be found in the Engineering and Institutional Control Plan portion of the SMP. Inspection of the EC/ICs will occur at a frequency described in Section 3 Monitoring and Maintenance Plan. After the last inspection of the reporting period, the Remedial Engineer (a Professional Engineer licensed to practice in New York State) will sign and certify the document. The document will certify that:

- On-Site ECs/ICs are unchanged from the previous certification;
- They remain in-place and effective;
- Nothing has occurred that would impair the ability of the controls to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any operation and maintenance plan for such controls;
- Access is available to the Site by NYSDEC and NYSDOH to evaluate continued maintenance of such controls; and
- Site usage is compliant with the environmental easement.

The signed certification will be included in the Annual Site Management Report (see Section 4.3). A copy of a blank certification form is included in Appendix G.

4.3 SITE INSPECTIONS

4.3.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring and Maintenance Plan of this SMP. At a minimum, a Site-wide inspection will be conducted:

- Annually; and
- Whenever a severe condition, such as erosion or flooding event, has taken place which may affect the ECs.

4.3.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections will be recorded on the appropriate forms – Site Cover Inspection Form (Appendix G). Additionally, a general Site-wide inspection form will be completed during the Site-wide inspection (see Appendix G). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records generated for the Site during the calendar year will be included in the Annual Site Management Report.

4.3.3 Evaluation of Records and Reporting

The results of the inspection and Site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The Site remedy continues to be protective of public health and the environment and is performing as designed in the RWP and FER.

4.4 SITE MANAGEMENT REPORT

The Site Management Report will be submitted annually and will be submitted by February 1 of the calendar year following the reporting period. The report will include:

- EC/IC certification;
- All applicable inspection forms and other records generated for the Site during the reporting period;
- Results of analysis for imported fill or off-site disposal of excavated soil, if any;
- A Site evaluation, which will address the following:
    - The compliance of the remedy with the requirements of the Site-specific RWP and FER;
    - The performance and effectiveness of the remedy;
    - The operation and the effectiveness of the Site cover, including identification of any needed repairs or modifications;

  - Any new conclusions or observations regarding Site contamination based on inspections; and
  - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan.
- Comments, conclusions, and recommendations, based on an evaluation of the information included in the report, regarding EC/ICs at the Site.

The Site Management Report will be submitted, in hard-copy format, to the Region 2 NYSDEC offices, located at 41-40 21st Street, Long Island City, New York, and in electronic format to NYSDEC and NYSDOH.

TABLES

Table 1

West 61st Street Tennis Court Area Site

BCP ID C231059

New York, New York

Pre-Remediation Well Installation Details and Groundwater Measurements

Sample Date: 10/7/2005

Well ID	Date of Installation	Total Depth of Well (feet b.g.)	Depth to Water (feet)	Depth to Product (feet)	Water Column (feet)	Top of PVC Riser Elevation	Groundwater Elevation (feet)	Geologic medium screened
MW-3	9/8/2005	23.59	10.02	N/A	13.57	61.23	51.21	Bedrock
MW-5	9/9/2005	22.70	11.70	N/A	11.00	61.44	49.74	Bedrock

Sample Date: 12/1/2005

Well ID	Date of Installation	Total Depth of Well (feet b.g.)	Depth to Water (feet)	Depth to Product (feet)	Water Column (feet)	Top of PVC Riser Elevation	Groundwater Elevation (feet)	Geologic medium screened
MW-3	9/8/2005	23.59	No reading	N/A	No reading	61.23	No reading	Bedrock
MW-5	9/9/2005	22.70	No reading	N/A	No reading	61.44	No reading	Bedrock

Notes: b.g. - Below grade

N/A - Not applicable; product was not observed in the wells.

Elevations based on survey by True North Surveyors, Inc. and refer to datum used by the Topographical Bureau and are given in Manhattan Borough Datum.

Table 2
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Remedial Investigation Analytical Results Notes

GENERAL

NS : No soil cleanup objective listed.

ND : Not detected above the method detection limit.

U : The analyte was not detected at the indicated concentration.

SB : Site Background

J : Data indicates the presence of a compound or analyte that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an estimated value.

M : Concentration calculated using manual integration.

UJ (Bold) : The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R (Bold) : The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.   The presence or absence of the analyte cannot be verified.

J (Bold) The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

Exceedences are highlighted in bold font.

SOIL

TAGM 4046 RSCO : Recommended Soil Cleanup Objective listed in New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) #4046 (exceedances indicated in bold).

Eastern US Background : For heavy metals, Eastern US Soil Background values may be used as soil cleanup objectives.

µg/kg : micrograms per kilogram = parts per billion (ppb)

mg/kg : milligrams per kilogram = parts per million (ppm)

B : Result is less than the reporting CRDL/reporting limit, but greater than or equal to the instrument detection limit/method detection limit.

H : Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.

Metals

***** : Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban or near highways are much higher and typically range from 200-500 ppm.

N : MS/MSD spike recovery exceeds control limits.

GROUNDWATER

NYSDEC Class GA Ambient Standard : New York State Department of Environmental Conservation Technical and Operational Guidance Series (1.1.1): Class GA Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.

NYSDEC Part 371.3 Maximum Contaminant Concentrations : New York State Department of Environmental Conservation Regulation Chapter 4: Quality Services - Part 371: Identification and Listing of Hazardous Waste, section 3e, Table 1.

µg/L : micrograms per Liter = parts per billion (ppb)

mg/L : milligrams per Liter = parts per million (ppm)

SOIL VAPOR

µg/m^3 : micrograms per cubic meter of air

Table 2A
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York

Pre-Remediation Soil Analytical Results

Volatile Organic Compounds

Client ID **Date Sampled** **Lab Sample ID** **µg/Kg**	**TAGM 4046** **RSCO** **µg/Kg**	**B/MW-3(0-2)** **9/8/2005** **210723-004**	**B/MW-3(7-9)** **9/8/2005** **210723-005**	**B/MW-5(0-2)** **9/9/2005** **210723-008**	**B/MW-5(5-7)** **9/9/2005** **210723-009**	**B-12(0-2)** **9/8/2005** **210723-001**
1 1 1-Trichloroethane	**800**	1.9 U	1.7 U	1.8 U	1.6 U	1.9 U
1 1 2 2-Tetrachloroethane	**600**	0.6 U	0.55 U	0.57 U	0.51 U	0.59 U
1 1 2-Trichloroethane	**NS**	0.72 U	0.66 U	0.68 U	0.61 U	0.71 U
1 1-Dichloroethane	**200**	1.6 U	1.4 U	1.5 U	1.3 U	1.5 U
1 1-Dichloroethene	**400**	2.4 U	2.2 U	2.3 U	2 U	2.4 U
1 2-Dichloroethane	**100**	2.2 U	2 U	2.1 U	1.8 U	2.1 U
1 2-Dichloropropane	**NS**	1.3 U	1.2 U	1.3 U	1.1 U	1.3 U
2-Butanone (MEK)	**300**	2.8 U	2.5 U	2.6 U	2.3 U	2.7 U
2-Hexanone	**NS**	2.8 U	2.5 U	2.6 U	2.3 U	2.7 U
4-Methyl-2-pentanone (MIBK)	**1000**	1.2 U	1.1 U	1.1 U	1 U	1.2 U
Acetone	**200**	14 **UJ**	17 **UJ**	13 **UJ**	6.6 **UJ**	16 **UJ**
Benzene	**60**	2.4 J	1.5 U	1.6 U	1.4 U	1.7 U
Bromodichloromethane	**NS**	1.1 U	0.98 U	1 U	0.91 U	1.1 U
Bromoform	**NS**	0.72 U	0.66 U	0.68 U	0.61 U	0.71 U
Bromomethane	**NS**	2.7 U	2.4 U	2.5 U	2.2 U	2.6 U
Carbon disulfide	**2700**	36 **J**	2.8 **J**	1.9 U	1.7 U	3 **J**
Carbon tetrachloride	**600**	2.5 U	2.3 U	2.4 U	2.1 U	2.5 U
Chlorobenzene	**1700**	1.3 U	1.2 U	1.3 U	1.1 U	1.3 U
Chloroethane	**1900**	3.5 U	3.2 U	3.3 U	2.9 U	3.4 U
Chloroform	**300**	1.3 U	1.2 U	1.3 U	1.1 U	1.3 U
Chloromethane	**NS**	1.9 U	1.7 U	1.8 U	1.6 U	1.9 U
cis-1 2-Dichloroethene	**NS**	1.4 U	1.3 U	1.4 U	1.2 U	1.4 U
cis-1 3-Dichloropropene	**NS**	0.48 U	0.44 U	0.46 U	0.4 U	0.47 U
Dibromochloromethane	**NS**	0.6 U	0.55 U	0.57 U	0.51 U	0.59 U
Ethylbenzene	**5500**	6.5	2.2 J	2.1 U	1.8 U	2.1 **UJ**
Methylene chloride	**100**	4.9 **UJ**	4.9 **UJ**	8.1 **UJ**	4.4 **UJ**	10 **UJ**
Methyl-tert-butyl-ether (MTBE)	**120**	0.36 U	0.33 U	0.34 U	0.3 U	0.36 U
Styrene	**NS**	1.2 **UJ**	1.1 **UJ**	1.1 **UJ**	1 **UJ**	1.2 **UJ**
Tetrachloroethene	**1400**	2.3 **UJ**	2.1 **UJ**	2.2 **UJ**	1.9 **UJ**	2.3 **UJ**
Toluene	**1500**	20	2.5 J	1.9 U	1.7 U	2 **UJ**
trans-1 2-Dichloroethene	**300**	1.7 U	1.5 U	1.6 U	1.4 U	1.7 U
trans-1 3-Dichloropropene	**NS**	0.6 U	0.55 U	0.57 U	0.51 U	0.59 U
Trichloroethene	**700**	2 U	1.9 U	8	1.7 U	4.8 J
Vinyl chloride	**200**	2.4 U	2.2 U	2.3 U	2 U	2.4 U
Xylenes (total)	**1200**	96 **UJ**	26 **UJ**	5.1 **UJ**	4.5 **UJ**	5.3 **UJ**

Table 2A
West 61st Street Tennis Court Area Site

BCP ID C231059

New York, New York

Pre-Remediation Soil Analytical Results

Volatile Organic Compounds

Client ID Date Sampled Lab Sample ID µg/Kg	TAGM 4046 RSCO µg/Kg	B-12(2-4) 9/8/2005 210723-002	B-12(11-13) 9/8/2005 210723-003	B-13(0-2) 9/9/2005 210723-010	B-13(6-8) 9/9/2005 210723-011
1 1 1-Trichloroethane	800	1.9 U	1.8 U	1.9 U	2 U
1 1 2 2-Tetrachloroethane	600	0.58 U	0.55 U	0.58 U	0.63 U
1 1 2-Trichloroethane	NS	0.7 U	0.66 U	0.7 U	0.76 U
1 1-Dichloroethane	200	1.5 U	1.4 U	1.5 U	1.6 U
1 1-Dichloroethene	400	2.3 U	2.2 U	2.3 U	2.5 U
1 2-Dichloroethane	100	2.1 U	2 U	2.1 U	2.3 U
1 2-Dichloropropane	NS	1.3 U	1.2 U	1.3 U	1.4 U
2-Butanone (MEK)	300	2.7 U	2.5 U	2.7 U	2.9 **R**
2-Hexanone	NS	2.7 U	2.5 U	2.7 U	2.9 U
4-Methyl-2-pentanone (MIBK)	1000	1.2 U	1.1 U	1.2 U	1.3 **R**
Acetone	200	13 **UJ**	9.5 **UJ**	11 **UJ**	**220 J**
Benzene	60	1.6 U	1.5 U	1.6 U	1.8 **R**
Bromodichloromethane	NS	1.1 U	0.99 U	1.1 U	1.1 U
Bromoform	NS	0.7 U	0.66 U	0.7 U	0.76 U
Bromomethane	NS	2.6 U	2.4 U	2.6 U	2.8 U
Carbon disulfide	2700	2 U	1.9 U	2 U	2.2 **R**
Carbon tetrachloride	600	2.5 U	2.3 U	2.5 U	2.7 U
Chlorobenzene	1700	1.3 U	1.2 U	1.3 U	1.4 U
Chloroethane	1900	3.4 U	3.2 U	3.4 U	3.7 U
Chloroform	300	1.3 U	1.2 U	1.3 U	1.4 U
Chloromethane	NS	1.9 U	1.8 U	1.9 U	2 U
cis-1 2-Dichloroethene	NS	1.4 U	1.3 U	1.4 U	1.5 **R**
cis-1 3-Dichloropropene	NS	0.47 U	0.44 U	0.47 U	0.51 U
Dibromochloromethane	NS	0.58 U	0.55 U	0.58 U	0.63 U
Ethylbenzene	5500	2.1 U	2 U	2.1 **UJ**	2.3 **R**
Methylene chloride	100	4.8 **UJ**	4.9 **UJ**	8.1 **UJ**	5.4 **R**
Methyl-tert-butyl-ether (MTBE)	120	0.35 U	0.33 U	0.35 U	0.38 **R**
Styrene	NS	1.2 **UJ**	1.1 **UJ**	1.2 **UJ**	1.3 **R**
Tetrachloroethene	1400	2.2 **UJ**	2.1 **UJ**	7.2 **J**	2.4 **R**
Toluene	1500	2 U	1.9 U	2 **UJ**	2.2 **R**
trans-1 2-Dichloroethene	300	1.6 U	1.5 U	1.6 U	1.8 U
trans-1 3-Dichloropropene	NS	0.58 U	0.55 U	0.58 U	0.63 U
Trichloroethene	700	2 U	1.9 U	2 J	2.2 **R**
Vinyl chloride	200	2.3 U	2.2 U	2.3 U	2.5 U
Xylenes (total)	1200	5.3 **UJ**	5 **UJ**	5.3 **UJ**	5.7 **R**

Table 2B
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Pre-Remediation Soil Analytical Results
Semi Volatile Organic Compounds

Dilution		**1**	**1**	**1**	**1**	**1**
Client ID	**TAGM 4046**	**B/MW-3(0-2)**	**B/MW-3(7-9)**	**B/MW-5(0-2)**	**B/MW-5(5-7)**	**B-12(0-2)**
Date Sampled	**RSCO**	**9/8/2005**	**9/8/2005**	**9/9/2005**	**9/9/2005**	**9/8/2005**
Lab Sample ID	**µg/Kg**	**210723-004**	**210723-005**	**210723-008**	**210723-009**	**210723-001**
µg/Kg						
1 2 4-Trichlorobenzene	**3400**	65 U	60 U	64 U	56 U	260 U
1 2-Dichlorobenzene	**7900**	65 U	60 U	64 U	56 U	260 U
1 3-Dichlorobenzene	**1600**	59 U	55 U	58 U	51 U	230 U
1 4-Dichlorobenzene	**8500**	61 U	57 U	60 U	53 U	240 U
2 2-oxybis (1-chloropropane)	**NS**	54 U	50 U	54 U	47 U	210 U
2 4 5-Trichlorophenol	**100**	140 U	130 U	140 U	120 U	550 U
2 4 6-Trichlorophenol	**NS**	99 U	91 U	97 U	85 U	390 U
2 4-Dichlorophenol	**400**	130 U	120 U	120 U	110 U	500 U
2 4-Dimethylphenol	**NS**	200 U	180 U	200 U	170 U	780 U
2 4-Dinitrophenol	**200**	130 U	120 U	130 U	110 U	520 U
2 4-Dinitrotoluene	**NS**	70 U	64 U	68 U	60 U	270 U
2 6-Dinitrotoluene	**1000**	71 U	65 U	70 U	61 U	280 U
2-Chloronaphthalene	**NS**	57 U	52 U	56 U	49 U	220 U
2-Chlorophenol	**800**	100 U	92 U	98 U	86 U	390 U
2-Methylnaphthalene	**36400**	170 J	93 JH	60 U	53 U	240 U
2-Methylphenol	**100**	100 U	95 U	100 U	89 U	410 U
2-Nitroaniline	**430**	49 U	45 U	48 U	42 U	190 U
2-Nitrophenol	**330**	130 U	120 U	130 U	120 U	530 U
3 3-Dichlorobenzidine	**NS**	100 U	95 U	100 U	89 U	410 U
3-Nitroaniline	**500**	80 U	74 U	79 U	69 U	310 U
4 6-Dinitro-2-methylphenol	**NS**	280 U	260 U	270 U	240 U	1100 U
4-Bromophenyl phenyl ether	**NS**	59 U	55 U	58 U	51 U	230 U
4-Chloro-3-methylphenol	**240**	130 U	120 U	130 U	110 U	520 U
4-Chloroaniline	**220**	120 U	110 U	120 U	110 U	490 U
4-Chlorophenyl phenyl ether	**NS**	53 U	49 U	52 U	46 U	210 U
4-Methylphenol	**900**	210 U	190 U	200 U	180 U	820 U
4-Nitroaniline	**NS**	56 U	51 U	55 U	48 U	220 U
4-Nitrophenol	**100**	160 U	150 U	160 U	140 U	650 U
Acenaphthene	**50000**	64 U	59 U	63 U	55 U	250 U
Acenaphthylene	**41000**	400	44 U	47 U	53 J	190 U
Anthracene	**50000**	510	59 U	63 U	83 J	480 J
Benzo(a)anthracene	**224**	**1600**	48 U	51 U	150 J	**2200**
Benzo(a)pyrene	**61**	**1200**	44 U	**77** J	**140** J	**2500**
Benzo(b)fluoranthene	**1100**	**1500**	99 U	110 U	180 J	**3200**
Benzo(ghi)perylene	**50000**	750 **J**	40 U	42 U	81 J	1900 **J**
Benzo(k)fluoranthene	**1100**	520	40 U	42 U	58 J	880 J
Benzyl alcohol	**NS**	73 U	67 U	72 U	63 U	290 U
Bis(2-chloroethoxy)methane	**NS**	66 U	61 U	65 U	57 U	260 U
Bis(2-chloroethyl)ether	**NS**	52 U	48 U	51 U	45 U	210 U
Bis(2-ethylhexyl)phthalate	**50000**	51 U	47 U	2000	44 U	200 U
Butyl benzyl phthalate	**50000**	50 U	46 U	49 U	43 U	200 U
Carbazole	**NS**	73 J	52 U	56 U	49 U	280 J
Chrysene	**400**	**1600**	45 U	85 J	160 J	**2300**
Dibenzo(a h)anthracene	**14**	**260** J	40 U	42 U	37 **UJ**	**480 J**
Dibenzofuran	**6200**	61 U	57 U	60 U	53 U	240 U
Diethyl phthalate	**7100**	57 U	52 U	56 U	49 U	220 U
Dimethyl phthalate	**2000**	59 U	55 U	58 U	51 U	230 U
Di-n-butyl phthalate	**8100**	51 U	47 U	72 J	44 U	380 J
Di-n-octyl phthalate	**50000**	41 U	37 U	40 U	35 U	160 U
Fluoranthene	**50000**	2600	45 U	120 J	350	3900
Fluorene	**50000**	85 J	46 U	49 U	68 J	200 U
Hexachlorobenzene	**410**	57 U	52 U	56 U	49 U	220 U
Hexachlorobutadiene	**NS**	79 U	73 U	78 U	68 U	310 U
Hexachlorocyclopentadiene	**NS**	290 U	270 U	280 U	250 U	1100 U
Hexachloroethane	**NS**	68 U	63 U	67 U	59 U	270 U
Indeno(1 2 3-cd)pyrene	**3200**	770 **J**	36 U	68 J	89 J	1800 **J**
Isophorone	**4400**	70 U	64 U	68 U	60 U	270 U
Naphthalene	**13000**	100 J	61 U	65 U	57 U	290 J
Nitrobenzene	**200**	46 U	43 U	46 U	40 U	180 U
n-Nitroso-di-n-propylamine	**NS**	52 U	48 U	51 U	45 U	210 U
n-Nitrosodiphenylamine	**NS**	58 U	53 U	57 U	50 U	230 U
Pentachlorophenol	**1000**	330 U	310 U	330 U	290 U	1300 U
Phenanthrene	**50000**	1500	42 U	75 J	370	2300
Phenol	**30**	110 U	100 U	110 U	97 U	440 U
Pyrene	**50000**	2500	49 U	130 J	280 J	3700

Table 2B
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Pre-Remediation Soil Analytical Results

Semi Volatile Organic Compounds

Dilution		1	1	5	1
Client ID	TAGM 4046	B-12(2-4)	B-12(11-13)	B-13(0-2)	B-13(6-8)
Date Sampled	RSCO	9/8/2005	9/8/2005	9/9/2005	9/9/2005
Lab Sample ID	µg/Kg	210723-002	210723-003	210723-010	210723-011
µg/Kg					
1 2 4-Trichlorobenzene	3400	64 U	59 U	630 U	71 U
1 2-Dichlorobenzene	7900	64 U	59 U	630 U	71 U
1 3-Dichlorobenzene	1600	59 U	54 U	570 U	64 U
1 4-Dichlorobenzene	8500	61 U	56 U	590 U	67 U
2 2-oxybis (1-chloropropane)	NS	54 U	50 U	530 U	59 U
2 4 5-Trichlorophenol	100	140 U	130 U	1400 U	150 U
2 4 6-Trichlorophenol	NS	98 U	90 U	950 U	110 U
2 4-Dichlorophenol	400	130 U	120 U	1200 U	140 U
2 4-Dimethylphenol	NS	200 U	180 U	1900 U	220 U
2 4-Dinitrophenol	200	130 U	120 U	1300 U	140 U
2 4-Dinitrotoluene	NS	69 U	64 U	670 U	76 U
2 6-Dinitrotoluene	1000	70 U	65 U	680 U	77 U
2-Chloronaphthalene	NS	56 U	52 U	550 U	62 U
2-Chlorophenol	800	99 U	91 U	960 U	110 U
2-Methylnaphthalene	36400	61 U	56 U	590 U	67 U
2-Methylphenol	100	100 U	94 U	1000 U	110 U
2-Nitroaniline	430	48 U	45 U	470 U	53 U
2-Nitrophenol	330	130 U	120 U	1300 U	150 U
3 3-Dichlorobenzidine	NS	100 U	94 U	1000 U	110 U
3-Nitroaniline	500	79 U	73 U	770 U	87 U
4 6-Dinitro-2-methylphenol	NS	280 U	250 U	2700 U	300 U
4-Bromophenyl phenyl ether	NS	59 U	54 U	570 U	64 U
4-Chloro-3-methylphenol	240	130 U	120 U	1300 U	140 U
4-Chloroaniline	220	120 U	110 U	1200 U	130 U
4-Chlorophenyl phenyl ether	NS	53 U	49 U	520 U	58 U
4-Methylphenol	900	210 U	190 U	2000 U	230 U
4-Nitroaniline	NS	55 U	51 U	540 U	60 U
4-Nitrophenol	100	160 U	150 U	1600 U	180 U
Acenaphthene	50000	63 U	58 U	1200 J	69 U
Acenaphthylene	41000	90 J	43 U	760 J	52 U
Anthracene	50000	190 J	58 U	2900 J	69 U
Benzo(a)anthracene	224	**820**	48 U	**12000**	120 J
Benzo(a)pyrene	61	**930**	43 U	**11000**	**120** J
Benzo(b)fluoranthene	1100	960	99 U	**12000**	140 J
Benzo(ghi)perylene	50000	680 **J**	39 U	7400	130 **J**
Benzo(k)fluoranthene	1100	490	39 U	**3500**	62 J
Benzyl alcohol	NS	73 U	67 U	710 U	79 U
Bis(2-chloroethoxy)methane	NS	66 U	60 U	640 U	72 U
Bis(2-chloroethyl)ether	NS	52 U	48 U	500 U	57 U
Bis(2-ethylhexyl)phthalate	50000	180 J	47 U	490 U	55 U
Butyl benzyl phthalate	50000	50 U	46 U	480 U	54 U
Carbazole	NS	56 U	52 U	1500 J	62 U
Chrysene	400	**990**	45 U	**12000**	130 J
Dibenzo(a h)anthracene	14	**170** J	39 U	**1400** J	47 **UJ**
Dibenzofuran	6200	61 U	56 U	710 J	67 U
Diethyl phthalate	7100	56 U	52 U	550 U	62 U
Dimethyl phthalate	2000	59 U	54 U	570 U	64 U
Di-n-butyl phthalate	8100	51 U	47 U	490 U	55 U
Di-n-octyl phthalate	50000	40 U	37 U	390 U	44 U
Fluoranthene	50000	1300	45 U	21000	210 J
Fluorene	50000	50 U	46 U	1200 J	54 U
Hexachlorobenzene	410	56 U	52 U	550 U	62 U
Hexachlorobutadiene	NS	78 U	72 U	760 U	86 U
Hexachlorocyclopentadiene	NS	290 U	260 U	2800 U	310 U
Hexachloroethane	NS	68 U	63 U	660 U	74 U
Indeno(1 2 3-cd)pyrene	3200	630 **J**	36 U	**6600**	100 **J**
Isophorone	4400	69 U	64 U	670 U	76 U
Naphthalene	13000	390	60 U	640 U	72 U
Nitrobenzene	200	46 U	42 U	450 U	50 U
n-Nitroso-di-n-propylamine	NS	52 U	48 U	500 U	57 U
n-Nitrosodiphenylamine	NS	58 U	53 U	560 U	63 U
Pentachlorophenol	1000	330 U	310 U	3200 U	360 U
Phenanthrene	50000	840	41 U	17000	190 J
Phenol	30	110 U	100 U	1100 U	120 U
Pyrene	50000	1500	49 U	23000	200 J

Table 2C
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York

Pre-Remediation Soil Analytical Results

Metals

Client ID **Date Sampled** **Lab Sample ID** **mg/Kg**	**Eastern USA Background mg/Kg**	**TAGM 4046 RSCO mg/Kg**	**B/MW-3(0-2)** **9/8/2005** **210723-004**	**B/MW-3(7-9)** **9/8/2005** **210723-005**	**B/MW-5(0-2)** **9/9/2005** **210723-008**	**B/MW-5(5-7)** **9/9/2005** **210723-009**	**B-12(0-2)** **9/8/2005** **210723-001**
Aluminum	**33000**	**SB**	3430 **J**	6760 **J**	5960 **J**	6760 **J**	6030 **J**
Antimony	**NS**	**SB**	1.7 **UJ**	1.4 **UJ**	1.3 **UJ**	1.3 **UJ**	5.2 **J**
Arsenic	**3 – 12**	**7.5 or SB**	11.3 **J**	2.7 **J**	3.3 **J**	1.3 U	**16.6**
Barium	**15 – 600**	**300 or SB**	**2930**	114	93.3	143	**817**
Beryllium	**0 – 1.75**	**0.16 or SB**	0.75 U	0.63 U	0.57 U	0.55 U	0.71 U
Cadmium	**0.1 – 1**	**1 or SB**	**1.8 J**	1.3 U	1.1 U	1.1 U	**14.5**
Calcium	**130 – 35,000**	**SB**	**91400**	13100	**47200**	2240	**44300**
Chromium	**1.5 – 40**	**10 or SB**	18.4	15.3	11.3	14	32.9
Cobalt	**2.5 – 60**	**30 or SB**	2.9 **J**	10.1	4.6	6.8	3.8
Copper	**1 – 50**	**25 or SB**	16.8	29.4	17.4	16	**297**
Iron	**2,000 – 550,000**	**2,000 or SB**	7310	17600	10200	15900	13000
Lead	**200-500 ***	**NS**	**2980**	427	56.9	48.3	**1500**
Magnesium	**100 – 5,000**	**SB**	4690	3190	**6920**	3710	4690
Manganese	**50 – 5,000**	**SB**	146	110	306	77.8	167
Mercury	**0.001 – 0.2**	**0.1**	**2.5**	0.16	0.19	0.072	**0.27**
Nickel	**0.5 – 25**	**13 or SB**	11.4	23.5	10.3	17.9	18.2
Potassium	**8,500 – 43,000**	**SB**	1060 **J**	3940 **J**	2570 **J**	4350 **J**	604 **J**
Selenium	**0.1 – 3.9**	**2 or SB**	2.4 U	2 U	1.8 U	1.8 U	2.4 **J**
Silver	**NS**	**SB**	0.48 U	0.4 U	0.36 U	0.35 U	1.1 **J**
Sodium	**6,000 – 8,000**	**SB**	234 **J**	252 **J**	335 **J**	139 **J**	465 **J**
Thallium	**NS**	**SB**	2 U	1.7 U	1.5 U	2.8 **J**	1.9 U
Vanadium	**1 – 300**	**150 or SB**	11	15.7	16.4	14	24.1
Zinc	**9 – 50**	**20 or SB**	**2060**	**469**	**84.6**	**98.5**	**1100**

Table 2C
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Pre-Remediation Soil Analytical Results
Metals

Client ID **Date Sampled** **Lab Sample ID** **mg/Kg**	**Eastern USA Background mg/Kg**	**TAGM 4046 RSCO mg/Kg**	**B-12(2-4)** **9/8/2005** **210723-002**	**B-12(11-13)** **9/8/2005** **210723-003**	**B-13(0-2)** **9/9/2005** **210723-010**	**B-13(6-8)** **9/9/2005** **210723-011**
Aluminum	**33000**	**SB**	5340 **J**	8620 **J**	4080 **J**	6210 **J**
Antimony	**NS**	**SB**	1.3 **UJ**	3.3 **J**	1.6 **UJ**	1.5 **UJ**
Arsenic	**3 – 12**	**7.5 or SB**	10.1	4.2 **J**	**12.9**	5 **J**
Barium	**15 – 600**	**300 or SB**	387	**4100**	**1450**	**982**
Beryllium	**0 – 1.75**	**0.16 or SB**	0.55 U	0.56 U	0.71 U	0.64 U
Cadmium	**0.1 – 1**	**1 or SB**	1.1 U	**6.1**	1.4 U	1.3 U
Calcium	**130 – 35,000**	**SB**	20000	27800	**45700**	**64700**
Chromium	**1.5 – 40**	**10 or SB**	17.7	22.3	12.2	12.9
Cobalt	**2.5 – 60**	**30 or SB**	5.5	9	4.1	5.9
Copper	**1 – 50**	**25 or SB**	128	**69.6**	24.5	29.9
Iron	**2,000 – 550,000**	**2,000 or SB**	34500	20100	15800	13200
Lead	**200-500 ***	**NS**	**1760**	**786**	**821**	498
Magnesium	**100 – 5,000**	**SB**	**5400**	**5960**	3130	**7270**
Manganese	**50 – 5,000**	**SB**	393	275	302	319
Mercury	**0.001 – 0.2**	**0.1**	0.34	0.18	**0.54**	**0.33**
Nickel	**0.5 – 25**	**13 or SB**	15.4	22.3	24.2	14
Potassium	**8,500 – 43,000**	**SB**	1210 **J**	6820 **J**	1000 **J**	2310 **J**
Selenium	**0.1 – 3.9**	**2 or SB**	1.8 U	1.8 U	2.3 U	2 U
Silver	**NS**	**SB**	0.61 **J**	0.36 U	0.46 U	0.41 U
Sodium	**6,000 – 8,000**	**SB**	294 **J**	310 **J**	353 **J**	364 **J**
Thallium	**NS**	**SB**	1.5 U	1.5 U	1.9 U	1.7 U
Vanadium	**1 – 300**	**150 or SB**	17.1	26.2	22.8	16.2
Zinc	**9 – 50**	**20 or SB**	**284**	**1740**	**809**	**1070**

Table 2D
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York

Pre-Remediation Soil Analytical Results

Pesticides and Polychlorinated Biphenyls

Pesticides

Dilution		1	1	1	1	5
Client ID	TAGM 4046	B/MW-3(0-2)	B/MW-3(7-9)	B/MW-5(0-2)	B/MW-5(5-7)	B-12(0-2)
Date Sampled	RSCO	9/8/2005	9/8/2005	9/9/2005	9/9/2005	9/8/2005
Lab Sample ID	µg/Kg	210723-004	210723-005	210723-008	210723-009	210723-001
4 4'-DDD	2900	0.45 U	0.42 U	0.43 U	0.38 U	2.2 **UJ**
4 4'-DDE	2100	76 **J**	1.6 **J**	0.93 J	2.5 J	30 **J**
4 4'-DDT	2100	0.37 **UJ**	0.34 **UJ**	0.35 **UJ**	0.31 **UJ**	1.8 **R**
Aldrin	41	0.42 U	0.39 U	0.41 U	0.36 U	2.1 U
alpha-BHC	110	0.33 U	0.3 U	0.31 U	0.28 U	1.6 U
alpha-Chlordane	540	0.13 U	0.12 U	0.13 U	0.11 U	1 **U**
beta-BHC	200	1 **U**	0.29 U	0.31 U	0.27 U	1.6 U
delta-BHC	300	0.12 **UJ**	0.11 **UJ**	0.12 **UJ**	0.1 **UJ**	1.9 **U**
Dieldrin	44	0.38 U	0.35 U	0.37 U	0.32 U	1.9 U
Endosulfan I	900	0.17 U	0.16 U	0.17 U	0.15 U	0.86 U
Endosulfan II	900	33 **J**	0.19 U	0.58 J	0.39 J	1 U
Endosulfan sulfate	1000	44 **J**	0.35 **U**	0.2 U	0.5 **U**	7.9 **U**
Endrin	100	1.1 U	0.97 U	1 U	0.9 U	5.2 U
Endrin aldehyde	NS	0.38 U	0.35 U	0.37 U	0.33 U	1.9 U
Endrin ketone	NS	0.17 U	0.16 U	0.16 U	0.15 U	0.84 U
gamma-BHC (Lindane)	60	0.18 U	0.17 U	0.17 U	0.15 U	0.89 U
gamma-Chlordane	540	0.11 U	0.099 U	0.1 U	0.092 U	0.53 U
Heptachlor	100	0.18 U	0.16 U	0.17 U	0.15 U	0.88 U
Heptachlor epoxide	20	14 **J**	0.12 U	0.13 U	0.14 **U**	2.2 **U**
Methoxychlor	NS	150 **J**	2.3 U	2.4 U	3 **U**	32 **UJ**
Toxaphene	NS	5.7 U	5.3 U	5.5 U	4.9 U	28 U

PCBs

Dilution		1	1	1	1	1
Total	10000	ND	ND	ND	ND	26

Table 2D
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Pre-Remediation Soil Analytical Results

Pesticides and Polychlorinated Biphenyls

Pesticides

Dilution Client ID Date Sampled Lab Sample ID	TAGM 4046 RSCO µg/Kg	2 B-12(2-4) 9/8/2005 210723-002	1 B-12(11-13) 9/8/2005 210723-003	10 B-13(0-2) 9/9/2005 210723-010	1 B-13(6-8) 9/9/2005 210723-011
4 4'-DDD	2900	0.87 **UJ**	0.42 U	4.4 **UJ**	0.48 U
4 4'-DDE	2100	11 **J**	5.6	260 **J**	2.6 J
4 4'-DDT	2100	0.7 **R**	0.34 **UJ**	3.6 **R**	0.39 **UJ**
Aldrin	41	0.81 U	0.39 U	4.1 U	0.45 U
alpha-BHC	110	0.63 U	0.3 U	3.2 U	0.35 U
alpha-Chlordane	540	0.25 U	0.12 U	1.3 U	0.14 U
beta-BHC	200	0.61 U	0.29 U	6.8 **U**	0.34 U
delta-BHC	300	0.84 **U**	0.13 **U**	1.2 **UJ**	0.17 **U**
Dieldrin	44	0.73 U	0.35 U	3.7 U	0.41 U
Endosulfan I	900	0.33 U	0.16 U	1.7 U	0.19 U
Endosulfan II	900	4.1 J	1.1 **U**	43 **J**	0.22 U
Endosulfan sulfate	1000	4 **U**	1.3 **U**	53 **J**	0.5 **U**
Endrin	100	3.9 **J**	0.97 U	49 **U**	1.1 U
Endrin aldehyde	NS	0.73 U	0.35 U	3.8 U	0.41 U
Endrin ketone	NS	0.33 U	0.16 U	1.7 U	0.18 U
gamma-BHC (Lindane)	60	0.35 U	0.17 U	1.8 U	0.19 U
gamma-Chlordane	540	0.21 U	0.1 U	1.1 U	0.12 U
Heptachlor	100	0.34 U	0.16 U	1.7 U	0.19 U
Heptachlor epoxide	20	0.85 **U**	0.29 **U**	16 **U**	0.29 **U**
Methoxychlor	NS	12 **UJ**	4.8 **U**	260 **J**	3.3 **U**
Toxaphene	NS	11 U	5.3 U	56 U	6.1 U

PCBs

Dilution		1	1	1	1
Total	10000	ND	ND	ND	ND

Table 2E
West 61st Street Tennis Court Area Site
BCP ID 231059
New York, New York

Pre-Remediation
Toxicity Characteristics Leaching Procedure
TCLP Metals Analytical Results

Method Blank Client ID Lab Sample ID Date Sampled mg/L	NYSDEC Section 371.3 Maximum Contaminant Concentration mg/L	MB-57201 B/MW-3(0-2) 211281-001 9/8/2005 mg/L		MB-57201 B-12(11-13) 211281-002 9/8/2005 mg/L	
Arsenic	**5.0**	0.0195	U	0.0195	U
Barium	**100.0**	0.89		0.491	
Cadmium	**1.0**	0.031	**J**	0.009	**J**
Chromium	**5.0**	0.0065	U	0.0065	U
Lead	**5.0**	**6.82**		0.282	
Selenium	**1.0**	0.025	U	0.025	U
Silver	**5.0**	0.0055	U	0.0055	U

Table 2F
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Pre-Remediation Groundwater Analytical Results
Volatile Organic Compounds

Client ID Date Sampled Lab Sample ID µg/L	**NYSDEC Class GA Ambient Groundwater Standard µg/L**	**MW-2 9/28/2005 210941-014**	**MW-5 10/6/2005 211066-005**
1 1 1-Trichloroethane	**5**	0.4 U	0.4 U
1 1 2 2-Tetrachloroethane	**5**	0.4 U	0.4 U
1 1 2-Trichloroethane	**1**	0.6 U	0.6 U
1 1-Dichloroethane	**5**	0.6 U	0.6 U
1 1-Dichloroethene	**5**	0.7 U	0.7 U
1 2-Dichloroethane	**5**	0.6 U	0.6 U
1 2-Dichloropropane	**1**	0.9 U	0.9 U
2-Butanone (MEK)	**50**	1.2 U	1.2 U
2-Hexanone	**50**	0.8 U	0.8 U
4-Methyl-2-pentanone (MIBK)	**NS**	0.7 U	0.7 U
Acetone	**50**	1.4 **UJ**	1.4 **UJ**
Benzene	**1**	0.4 U	0.4 U
Bromodichloromethane	**50**	0.4 U	0.4 U
Bromoform	**50**	0.8 U	0.8 U
Bromomethane	**5**	1.2 U	1.2 U
Carbon disulfide	**60**	0.9 U	0.9 U
Carbon tetrachloride	**5**	1 U	1 U
Chlorobenzene	**5**	0.4 U	0.4 U
Chloroethane	**5**	0.8 U	0.8 U
Chloroform	**7**	0.7 U	1.1 J
Chloromethane	**NS**	0.5 U	0.5 U
cis-1 2-Dichloroethene	**5**	0.6 U	0.6 U
cis-1 3-Dichloropropene	**0.4**	0.5 U	0.5 U
Dibromochloromethane	**50**	0.5 U	0.5 U
Ethylbenzene	**5**	1 U	1 U
Methylene chloride	**5**	0.4 **UJ**	0.4 U
Methyl-tert-butyl-ether (MTBE)	**10**	0.3 U	0.3 U
Styrene	**5**	0.5 U	0.5 U
Tetrachloroethene	**5**	0.5 U	0.5 U
Toluene	**5**	0.3 U	0.64 J
trans-1 2-Dichloroethene	**5**	0.5 U	0.5 U
trans-1 3-Dichloropropene	**0.4**	0.8 U	0.8 U
Trichloroethene	**5**	1.5 J	0.7 U
Vinyl chloride	**2**	0.8 U	0.8 U
Xylenes (total)	**5**	1 U	1 U

Table 2G
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Pre-Remediation Groundwater Analytical Results

Semi Volatile Organic Compounds

Client ID Date Sampled Lab Sample ID µg/L	NYSDEC Class GA Ambient Groundwater Standard µg/L	MW-3 9/28/2005 210941-016	MW-5 10/6/2005 211066-005
1 2 4-Trichlorobenzene	5	0.8 U	0.7 U
1 2-Dichlorobenzene	5	0.9 U	0.7 U
1 3-Dichlorobenzene	5	0.8 U	0.7 U
1 4-Dichlorobenzene	5	0.5 U	0.5 U
2 2-oxybis (1-chloropropane)	NS	0.7 U	0.6 U
2 4 5-Trichlorophenol	NS	0.9 U	0.8 U
2 4 6-Trichlorophenol	NS	0.9 U	0.8 U
2 4-Dichlorophenol	NS	1 U	0.8 U
2 4-Dimethylphenol	50	0.9 UJ	0.7 **UJ**
2 4-Dinitrophenol	10	6 U	5 U
2 4-Dinitrotoluene	5	0.9 U	0.8 U
2 6-Dinitrotoluene	5	0.7 U	0.6 U
2-Chloronaphthalene	10	0.9 U	0.7 U
2-Chlorophenol	NS	0.7 U	0.6 U
2-Methylnaphthalene	NS	0.8 U	0.6 **UJ**
2-Methylphenol	NS	0.7 U	0.6 **UJ**
2-Nitroaniline	5	1 U	1 U
2-Nitrophenol	NS	0.9 U	0.8 U
3 3-Dichlorobenzidine	5	1 U	1 U
3-Nitroaniline	5	0.8 U	0.7 U
4 6-Dinitro-2-methylphenol	NS	5 U	4 U
4-Bromophenyl phenyl ether	NS	1 U	0.9 U
4-Chloro-3-methylphenol	NS	0.6 U	0.5 U
4-Chloroaniline	5	0.5 U	0.4 U
4-Chlorophenyl phenyl ether	NS	1 U	0.8 U
4-Methylphenol	NS	0.4 U	0.3 **UJ**
4-Nitroaniline	5	1 U	1 U
4-Nitrophenol	NS	2 U	2 U
Acenaphthene	20	0.9 U	0.8 U
Acenaphthylene	20	0.9 U	0.8 U
Anthracene	8	1 U	1 U
Benzo(a)anthracene	31	1 U	1 U
Benzo(a)pyrene	10	1 U	1 U
Benzo(b)fluoranthene	19	2 U	2 U
Benzo(ghi)perylene	10	1 U	1 U
Benzo(k)fluoranthene	10	1 U	0.9 U
Benzyl alcohol	NS	1 **UJ**	1 **UJ**
Bis(2-chloroethoxy)methane	5	0.5 U	0.5 U
Bis(2-chloroethyl)ether	1	1 U	0.9 U
Bis(2-ethylhexyl)phthalate	5	2 U	1 **UJ**
Butyl benzyl phthalate	50	1 U	1 U
Carbazole	NS	1 U	1 U
Chrysene	10	1 U	1 U
Dibenzo(a h)anthracene	NS	2 U	1 U
Dibenzofuran	NS	1 U	0.8 U
Diethyl phthalate	50	1 U	0.8 U
Dimethyl phthalate	50	0.7 U	0.6 U
Di-n-butyl phthalate	50	1 U	1 U
Di-n-octyl phthalate	50	2 U	1 U
Fluoranthene	9	1 U	1 U
Fluorene	8	0.9 U	0.8 U
Hexachlorobenzene	0.04	1 U	1 U
Hexachlorobutadiene	0.5	1 U	0.8 U
Hexachlorocyclopentadiene	5	3 U	2 U
Hexachloroethane	5	1 U	1 U
Indeno(1 2 3-cd)pyrene	10	1 U	1 U
Isophorone	50	0.8 U	0.7 U
Naphthalene	10	0.8 U	0.7 **UJ**
Nitrobenzene	0.4	0.9 U	0.8 U
n-Nitroso-di-n-propylamine	NS	0.8 U	0.7 U
n-Nitrosodiphenylamine	NS	1 U	1 U
Pentachlorophenol	NS	6 U	5 U
Phenanthrene	22	0.8 U	0.7 U
Phenol	1	0.4 U	0.4 **UJ**
Pyrene	8	1 U	1 U

Table 2H
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Pre-Remediation Groundwater Analytical Results

Total Metals

Client ID Date Sampled Lab Sample ID µg/L	**NYSDEC Class GA Ambient Groundwater Standard µg/L**	**MW-3 9/28/2005 210941-016**	**MW-5 10/6/2005 211066-005**
Aluminum	**NS**	92 U	315 **J**
Antimony	**3**	5.4 U	5.4 U
Arsenic	**25**	3.9 U	3.9 U
Barium	**1000**	49.8	56.7
Beryllium	**3**	0.54 U	0.54 U
Cadmium	**5**	1.1 U	1.1 U
Calcium	**NS**	129000	160000
Chromium	**50**	1.3 U	1.3 U
Cobalt	**NS**	2.8 **J**	1.9 **J**
Copper	**200**	11.6	9.4 **J**
Iron	**300**	84.5 **J**	**596**
Lead	**25**	3 **UJ**	3 **U J**
Magnesium	**35000**	10400	33500
Manganese	**300**	86.5	88.3
Mercury	**0.7**	0.07 **UJ**	0.07 U
Nickel	**100**	5.5 **J**	16.9
Potassium	**NS**	16400 **J**	18600 **J**
Selenium	**10**	**23.3 J**	9.2 **J**
Silver	**50**	1.1 U	1.1 U **J**
Sodium	**20000**	**43900 J**	**53400 J**
Thallium	**0.5**	10 U	10 **U J**
Vanadium	**NS**	1.5 U	1.5 U
Zinc	**2000**	11 U	12.1 **J**

Table 2I
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York

Pre-Remediation Groundwater Analytical Results

Dissolved Metals

Client ID Date Sampled Lab Sample ID Units µg/L	NYSDEC Class GA Ambient Groundwater Standard µg/L	MW-3 9/28/2005 210941-016	MW-5 10/6/2005 211066-005
Aluminum	NS	92 U	103 J
Antimony	3	5.4 U	5.4 U
Arsenic	25	3.9 U	3.9 U
Barium	1000	49.7	55.1
Beryllium	3	0.54 U	0.54 U
Cadmium	5	1.1 U	1.1 U
Calcium	NS	133000	165000
Chromium	50	1.3 U	2.4 J
Cobalt	NS	4.2 J	1.8 U
Copper	200	11.8	6.3 J
Iron	300	54 U	293
Lead	25	3 UJ	3 UJ
Magnesium	35000	10600	34500
Manganese	300	73.5	72.2
Mercury	0.7	0.07 UN	0.07 U
Nickel	100	5.6 J	17.3
Potassium	NS	16700 J	19300 J
Selenium	10	**25.9 J**	**16 J**
Silver	50	1.1 U	1.1 U
Sodium	20000	**43900 J**	**55900 J**
Thallium	0.5	10 U	10 UJ
Vanadium	NS	1.5 U	1.5 U
Zinc	2000	11 U	11.4 J

Table 2J

West 61st Street Tennis Court Area Site

BCP ID C231059

New York, New York

Pre-Remediation Groundwater Analytical Results

Pesticides and Polychlorinated Biphenyls

Pesticides

Client ID Date Sampled Lab Sample ID µg/L	NYSDEC Class GA Ambient Groundwater µg/L	MW-3 9/28/2005 210941-016	MW-5 10/6/2005 211066-005
4 4'-DDD	0.3	0.017 U	0.014 **UJ**
4 4'-DDE	0.2	0.01 U	0.0088 U
4 4'-DDT	0.2	0.012 U	0.01 U
Aldrin	ND	0.0068 U	0.0058 U
alpha-BHC	0.01	0.013 U	0.011 **UJ**
alpha-Chlordane	NS	0.0065 U	0.0055 U
beta-BHC	0.04	0.015 U	0.013 U
delta-BHC	0.04	0.0026 **UJ**	0.0022 **UJ**
Dieldrin	0.004	0.0067 U	0.0057 U
Endosulfan I	NS	0.0041 U	0.0035 U
Endosulfan II	NS	0.015 U	0.012 U
Endosulfan sulfate	NS	0.017 U	0.014 U
Endrin	ND	0.03 U	0.025 U
Endrin aldehyde	5	0.033 U	0.028 U
Endrin ketone	5	0.019 U	0.016 **UJ**
gamma-BHC (Lindane)	0.05	0.0061 U	0.0052 U
gamma-Chlordane	0.05	0.0072 U	0.0061 U
Heptachlor	0.04	0.0092 U	0.0078 **UJ**
Heptachlor epoxide	0.03	0.0067 U	0.0057 **UJ**
Methoxychlor	35	0.048 U	0.041 U
Toxaphene	0.06	0.25 U	0.21 U

PCBs

Total	0.09	ND	ND

Table 2K
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Pre-Remediation
Soil Vapor Analytical Results
Volatile Organic Compounds

Dilution **Client ID** **Date Sampled** **Lab Sample ID** **µg/m^3**	**4** **SG-5S** **10/06/2005** **642261**	
1,1,1-Trichloroethane	8.2	
1,2,4-Trimethylbenzene	5.4	
1,2-Dichloroethane	3.2	U
1,3,5-Trimethylbenzene	3.9	U
1,3-Butadiene	1.8	U
1,4-Dichlorobenzene	4.8	U
2,2,4-Trimethylpentane	3.7	U
4-Ethyltoluene	5.9	
Acetone	48	**UJ**
Benzene	2.6	U
Bromodichloromethane	12	
Carbon Disulfide	6.2	U
Chloroform	390	
Chloromethane	4.1	U
Cyclohexane	2.8	U
Dichlorodifluoromethane	9.9	U
Ethylbenzene	14	
Freon TF	6.1	U
Methyl Butyl Ketone	8.2	U
Methyl Ethyl Ketone	16	
Methylene Chloride	6.9	U
n-Heptane	3.3	U
n-Hexane	2.8	U
Tetrachloroethene	67	
Tetrahydrofuran	80	
Toluene	4.5	
Trichloroethene	8.6	
Trichlorofluoromethane	17	
Xylene (m,p)	43	
Xylene (o)	24	
Xylene (total)	69	

Table 3
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Tank Removal Detail Summary

Tank Location (Grid #) and Contents	PBS no.	No. of tanks and capacity	Spills	Address	Handling dates (excavation, clean and cutting)	Further Detail
20 (gasoline)	2-610358	8x550-gallon UST	Spill no. 06-04424 dated 7/20/06 and closed on 11/16/06. (5-gallons of gasoline)	218-226 W. 61st Street	7/20, 7/21 and 7/24/06	Work performed by Brookside of Baldwin, NY from July 20-24, 2006.
25 (No. 2 fuel oil)		1x1,500-gallon UST	Spill no. 06-04434 dated 7/20/06 and closed on 7/27/06. (15-gallons petroleum product)			
			Spill no. 05-14822 dated 3/24/06 and closed on 8/9/07.			

Note: UST = Underground storage tank

Table 4
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Final Endpoint Soil Analytical Results
Notes

GENERAL

NS : No soil cleanup objective listed.

ND : Not detected above the method detection limit.

U : The analyte was not detected at the indicated concentration.

J : Data indicates the presence of a compound or analyte that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an estimated value.

P : There is a >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a P.

TAGM 4046 RSCO : Recommended Soil Cleanup Objective (RSCO) listed in New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) #4046 (exceedances indicated in bold).

SSAL : Sight Specific Action Level

µg/kg : micrograms per kilogram = parts per billion (ppb)

mg/kg : milligrams per kilogram = parts per million (ppm)

Exceedences are highlighted in bold font.

Table 4A
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Final Endpoint Soil Analytical Results

Volatile Organic Compounds

Client ID **Date Sampled** **Lab Sample ID** **µg/kg**	**TAGM RSCOs µg/Kg**	**SSAL µg/Kg**	**EP-20A 12/7/2006 X5783-05**	**EP-20B 12/7/2006 X5783-06**	**EP-20C 12/7/2006 X5783-07**	**EP-20D 12/7/2006 X5783-08**	**EP-21A 12/13/2006 X5870-01**	**EP-21B 12/13/2006 X5870-02**
1,1,1-Trichloroethane	**800**	**NS**	2.3 U	2.3 U	2.2 U	2.2 U	2.4 U	2.3 U
1,1,2,2-Tetrachloroethane	**600**	**NS**	1.7 U	1.7 U	1.6 U	1.6 U	1.8 U	1.7 U
1,1,2-Trichloroethane	**NS**	**NS**	1.6 U	1.6 U	1.5 U	1.5 U	1.7 U	1.6 U
1,1,2-Trichlorotrifluoroethane	**6000**	**NS**	3.6 U	3.6 U	3.5 U	3.5 U	3.8 U	3.6 U
1,1-Dichloroethane	**200**	**NS**	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U	1.5 U
1,1-Dichloroethene	**400**	**NS**	3.1 U	3.1 U	3.0 U	3.0 U	3.3 U	3.1 U
1,2,4-Trichlorobenzene	**3400**	**NS**	3.7 U	3.7 U	3.6 U	3.6 U	3.9 U	3.7 U
1,2-Dibromo-3-Chloropropane	**NS**	**NS**	5.1 U	5.1 U	4.9 U	4.9 U	5.4 U	5.1 U
1,2-Dibromoethane	**NS**	**NS**	2.2 U	2.2 U	2.1 U	2.1 U	2.3 U	2.2 U
1,2-Dichlorobenzene	**7900**	**NS**	2.1 U	2.1 U	2.0 U	2.0 U	2.2 U	2.1 U
1,2-Dichloroethane	**100**	**NS**	1.7 U	1.7 U	1.6 U	1.6 U	1.7 U	1.7 U
1,2-Dichloropropane	**NS**	**NS**	2.2 U	2.1 U	2.1 U	2.1 U	2.3 U	2.2 U
1,3-Dichlorobenzene	**1600**	**NS**	3.0 U	3.0 U	2.9 U	2.9 U	3.2 U	3.0 U
1,4-Dichlorobenzene	**8500**	**NS**	3.0 U	2.9 U	2.8 U	2.8 U	3.1 U	3.0 U
2-Butanone	**300**	**NS**	15 U	15 U	15 U	15 U	16 U	15 U
2-Hexanone	**NS**	**NS**	20 U	19 U	19 U	19 U	21 U	20 U
4-Methyl-2-Pentanone	**1000**	**NS**	11 U	11 U	10 U	10 U	11 U	11 U
Acetone	**200**	**NS**	18 U	18 U	18 U	18 U	19 U	18 U
Benzene	**60**	**NS**	2.2 U	2.1 U	2.1 U	2.1 U	2.3 U	2.2 U
Bromodichloromethane	**NS**	**NS**	1.8 U	1.8 U	1.7 U	1.7 U	1.9 U	1.8 U
Bromoform	**NS**	**NS**	1.7 U	1.7 U	1.6 U	1.6 U	1.8 U	1.7 U
Bromomethane	**NS**	**NS**	11 U	11 U	11 U	11 U	12 U	11 U
Carbon Disulfide	**2700**	**NS**	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	2.0 U
Carbon Tetrachloride	**600**	**NS**	2.4 U	2.4 U	2.3 U	2.3 U	2.5 U	2.4 U
Chlorobenzene	**1700**	**NS**	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	2.0 U
Chloroethane	**1900**	**NS**	12 U	11 U	11 U	11 U	12 U	12 U
Chloroform	**300**	**NS**	1.9 U	1.9 U	1.8 U	1.8 U	2.0 U	1.9 U
Chloromethane	**NS**	**NS**	4.6 U	4.6 U	4.5 U	4.4 U	4.9 U	4.7 U
cis-1,2-Dichloroethene	**NS**	**NS**	1.8 U	1.8 U	1.7 U	1.7 U	1.8 U	1.8 U
cis-1,3-Dichloropropene	**NS**	**NS**	1.8 U	1.8 U	1.7 U	1.7 U	1.9 U	1.8 U
Cyclohexane	**NS**	**NS**	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U	1.8 U
Dibromochloromethane	**NS**	**NS**	1.3 U	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U
Dichlorodifluoromethane	**NS**	**NS**	4.7 U	4.6 U	4.5 U	4.5 U	4.9 U	4.7 U
Ethyl Benzene	**5500**	**NS**	1.9 U	1.9 U	25 J	1.8 U	2.0 U	1.9 U
Isopropylbenzene	**2300**	**NS**	2.3 U	2.2 U	2.2 U	2.2 U	2.4 U	2.3 U
m/p-Xylenes	**1200**	**NS**	4.7 U	4.7 U	150	4.5 U	4.9 U	4.7 U
Methyl Acetate	**NS**	**NS**	4.7 U	4.7 U	4.5 U	4.5 U	4.9 U	4.7 U
Methyl tert-butyl Ether	**120**	**NS**	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	2.0 U
Methylcyclohexane	**NS**	**NS**	2.3 U	2.3 U	2.2 U	2.2 U	2.4 U	2.3 U
Methylene Chloride	**100**	**NS**	9.9 U	9.8 U	9.5 U	9.5 U	10 U	10 U
o-Xylene	**600**	**NS**	2.1 U	2.1 U	99	2.0 U	2.2 U	2.1 U
Styrene	**NS**	**NS**	2.5 U	2.5 U	2.4 U	2.4 U	2.6 U	2.5 U
t-1,3-Dichloropropene	**NS**	**NS**	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	2.0 U
Tetrachloroethene	**1400**	**NS**	4.0 U	3.9 U	3.8 U	3.8 U	4.2 U	4.0 U
Toluene	**1500**	**NS**	2.2 U	2.2 U	34	2.1 U	2.3 U	2.2 U
trans-1,2-Dichloroethene	**300**	**NS**	3.5 U	3.4 U	3.3 U	3.3 U	3.6 U	3.5 U
Trichloroethene	**700**	**NS**	1.7 U	1.7 U	1.6 U	1.6 U	1.8 U	1.7 U
Trichlorofluoromethane	**NS**	**NS**	6.8 U	6.7 U	6.5 U	6.5 U	7.1 U	6.8 U
Vinyl Chloride	**200**	**NS**	4.5 U	4.4 U	4.3 U	4.3 U	4.7 U	4.5 U
Total VOCs	**NS**	**10000**	ND	ND	308	ND	ND	ND

Table 4A
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Final Endpoint Soil Analytical Results

Volatile Organic Compounds

Client ID **Date Sampled** **Lab Sample ID** **µg/kg**	**TAGM RSCOs µg/Kg**	**SSAL µg/Kg**	**EP-21C** **12/13/2006** **X5870-03**	**EP-21D** **12/13/2006** **X5870-04**	**EP-22A** **10/6/2006** **X4845-01**	**EP-22B** **10/6/2006** **X4845-02**	**EP-23A** **10/6/2006** **X4845-03**
1,1,1-Trichloroethane	**800**	**NS**	2.4 U	2.3 U	2.3 U	2.4 U	2.4 U
1,1,2,2-Tetrachloroethane	**600**	**NS**	1.8 U	1.7 U	1.7 U	1.7 U	1.8 U
1,1,2-Trichloroethane	**NS**	**NS**	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
1,1,2-Trichlorotrifluoroethane	**6000**	**NS**	3.9 U	3.7 U	3.7 U	3.7 U	3.7 U
1,1-Dichloroethane	**200**	**NS**	1.6 U	1.5 U	1.5 U	1.5 U	1.5 U
1,1-Dichloroethene	**400**	**NS**	3.3 U	3.2 U	3.2 U	3.2 U	3.2 U
1,2,4-Trichlorobenzene	**3400**	**NS**	4.0 U	3.8 U	3.8 U	3.8 U	3.8 U
1,2-Dibromo-3-Chloropropane	**NS**	**NS**	5.5 U	5.3 U	5.2 U	5.3 U	5.3 U
1,2-Dibromoethane	**NS**	**NS**	2.3 U	2.3 U	2.2 U	2.3 U	2.3 U
1,2-Dichlorobenzene	**7900**	**NS**	2.2 U	2.2 U	2.1 U	2.2 U	2.2 U
1,2-Dichloroethane	**100**	**NS**	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U
1,2-Dichloropropane	**NS**	**NS**	2.3 U	2.2 U	2.2 U	2.2 U	2.2 U
1,3-Dichlorobenzene	**1600**	**NS**	3.2 U	3.1 U	3.1 U	3.1 U	3.1 U
1,4-Dichlorobenzene	**8500**	**NS**	3.2 U	3.1 U	3.0 U	3.1 U	3.1 U
2-Butanone	**300**	**NS**	16 U	16 U	16 U	16 U	16 U
2-Hexanone	**NS**	**NS**	21 U	20 U	20 U	20 U	20 U
4-Methyl-2-Pentanone	**1000**	**NS**	11 U	11 U	11 U	11 U	11 U
Acetone	**200**	**NS**	20 U	19 U	19 U	19 U	19 U
Benzene	**60**	**NS**	2.3 U	2.2 U	2.2 U	2.2 U	2.2 U
Bromodichloromethane	**NS**	**NS**	2.0 U	1.9 U	1.9 U	1.9 U	1.9 U
Bromoform	**NS**	**NS**	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U
Bromomethane	**NS**	**NS**	12 U	11 U	11 U	11 U	11 U
Carbon Disulfide	**2700**	**NS**	2.1 U	2.1 U	2.0 U	2.1 U	2.1 U
Carbon Tetrachloride	**600**	**NS**	2.6 U	2.5 U	2.5 U	2.5 U	2.5 U
Chlorobenzene	**1700**	**NS**	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	**1900**	**NS**	12 U	12 U	12 U	12 U	12 U
Chloroform	**300**	**NS**	2.0 U	2.0 U	1.9 U	2.0 U	2.0 U
Chloromethane	**NS**	**NS**	5.0 U	4.8 U	4.7 U	4.8 U	4.8 U
cis-1,2-Dichloroethene	**NS**	**NS**	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U
cis-1,3-Dichloropropene	**NS**	**NS**	1.9 U	1.9 U	1.8 U	1.9 U	1.9 U
Cyclohexane	**NS**	**NS**	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U
Dibromochloromethane	**NS**	**NS**	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Dichlorodifluoromethane	**NS**	**NS**	5.0 U	4.8 U	4.8 U	4.8 U	4.8 U
Ethyl Benzene	**5500**	**NS**	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene	**2300**	**NS**	2.4 U	2.3 U	2.3 U	2.3 U	2.3 U
m/p-Xylenes	**1200**	**NS**	5.0 U	4.9 U	4.8 U	4.9 U	4.9 U
Methyl Acetate	**NS**	**NS**	5.0 U	4.9 U	4.8 U	4.9 U	4.9 U
Methyl tert-butyl Ether	**120**	**NS**	2.1 U	2.1 U	2.0 U	2.1 U	2.1 U
Methylcyclohexane	**NS**	**NS**	2.4 U	2.4 U	2.3 U	2.4 U	2.4 U
Methylene Chloride	**100**	**NS**	11 U	10 U	10 U	10 U	10 U
o-Xylene	**600**	**NS**	2.2 U	2.2 U	2.1 U	2.2 U	2.2 U
Styrene	**NS**	**NS**	2.7 U	2.6 U	2.6 U	2.6 U	2.6 U
t-1,3-Dichloropropene	**NS**	**NS**	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	**1400**	**NS**	4.3 U	4.1 U	4.1 U	4.1 U	4.1 U
Toluene	**1500**	**NS**	2.4 U	2.3 U	2.3 U	2.3 U	2.3 U
trans-1,2-Dichloroethene	**300**	**NS**	3.7 U	3.6 U	3.6 U	3.6 U	3.6 U
Trichloroethene	**700**	**NS**	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U
Trichlorofluoromethane	**NS**	**NS**	7.3 U	7.0 U	6.9 U	7.0 U	7.0 U
Vinyl Chloride	**200**	**NS**	4.8 U	4.6 U	4.6 U	4.6 U	4.6 U
Total VOCs	**NS**	**10000**	ND	ND	ND	ND	ND

Table 4A
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Final Endpoint Soil Analytical Results

Volatile Organic Compounds

Client ID	TAGM		EP-23B	EP-24A	EP-24B	EP-25A	EP-25B	EP-25B-D
Date Sampled	RSCOs	SSAL	10/6/2006	10/6/2006	10/6/2006	10/6/2006	10/6/2006	10/6/2006
Lab Sample ID			X4845-04	X4845-05	X4845-06	X4845-07	X4845-08	X4845-09
	µg/Kg	µg/Kg						
µg/kg								
1,1,1-Trichloroethane	800	NS	2.4 U	2.3 U	2.5 U	2.4 U	2.4 U	2.4 U
1,1,2,2-Tetrachloroethane	600	NS	1.8 U	1.7 U	1.8 U	1.8 U	1.8 U	1.8 U
1,1,2-Trichloroethane	NS	NS	1.7 U	1.6 U	1.7 U	1.7 U	1.7 U	1.7 U
1,1,2-Trichlorotrifluoroethane	6000	NS	3.8 U	3.7 U	3.9 U	3.8 U	3.8 U	3.8 U
1,1-Dichloroethane	200	NS	1.5 U	1.5 U	1.6 U	1.5 U	1.5 U	1.5 U
1,1-Dichloroethene	400	NS	3.3 U	3.2 U	3.4 U	3.3 U	3.3 U	3.3 U
1,2,4-Trichlorobenzene	3400	NS	3.9 U	3.8 U	4.0 U	3.9 U	3.9 U	3.9 U
1,2-Dibromo-3-Chloropropane	NS	NS	5.4 U	5.2 U	5.6 U	5.4 U	5.4 U	5.4 U
1,2-Dibromoethane	NS	NS	2.3 U	2.2 U	2.4 U	2.3 U	2.3 U	2.3 U
1,2-Dichlorobenzene	7900	NS	2.2 U	2.1 U	2.3 U	2.2 U	2.2 U	2.2 U
1,2-Dichloroethane	100	NS	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U	1.8 U
1,2-Dichloropropane	NS	NS	2.3 U	2.2 U	2.4 U	2.3 U	2.3 U	2.3 U
1,3-Dichlorobenzene	1600	NS	3.2 U	3.1 U	3.3 U	3.2 U	3.2 U	3.2 U
1,4-Dichlorobenzene	8500	NS	3.1 U	3.0 U	3.2 U	3.1 U	3.1 U	3.1 U
2-Butanone	300	NS	16 U	16 U	17 U	16 U	16 U	16 U
2-Hexanone	NS	NS	21 U	20 U	21 U	21 U	20 U	21 U
4-Methyl-2-Pentanone	1000	NS	11 U	11 U	12 U	11 U	11 U	11 U
Acetone	200	NS	19 U	19 U	20 U	19 U	19 U	19 U
Benzene	60	NS	2.3 U	2.2 U	2.4 U	2.3 U	2.3 U	2.3 U
Bromodichloromethane	NS	NS	1.9 U	1.9 U	2.0 U	1.9 U	1.9 U	1.9 U
Bromoform	NS	NS	1.8 U	1.7 U	1.8 U	1.8 U	1.8 U	1.8 U
Bromomethane	NS	NS	12 U	11 U	12 U	12 U	12 U	12 U
Carbon Disulfide	2700	NS	2.1 U	2.0 U	2.2 U	2.1 U	2.1 U	2.1 U
Carbon Tetrachloride	600	NS	2.5 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U
Chlorobenzene	1700	NS	2.1 U	2.0 U	2.1 U	2.1 U	2.1 U	2.1 U
Chloroethane	1900	NS	12 U	12 U	13 U	12 U	12 U	12 U
Chloroform	300	NS	2.0 U	1.9 U	2.1 U	2 U	2 U	2 U
Chloromethane	NS	NS	4.9 U	4.7 U	5.0 U	4.9 U	4.8 U	4.9 U
cis-1,2-Dichloroethene	NS	NS	1.8 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U
cis-1,3-Dichloropropene	NS	NS	1.9 U	1.8 U	2.0 U	1.9 U	1.9 U	1.9 U
Cyclohexane	NS	NS	1.8 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U
Dibromochloromethane	NS	NS	1.3 U	1.3 U	1.4 U	1.3 U	1.3 U	1.3 U
Dichlorodifluoromethane	NS	NS	4.9 U	4.8 U	5.1 U	4.9 U	4.9 U	4.9 U
Ethyl Benzene	5500	NS	2.0 U	2.0 U	2.1 U	2 U	2 U	2 U
Isopropylbenzene	2300	NS	2.4 U	2.3 U	2.5 U	2.4 U	2.4 U	2.4 U
m/p-Xylenes	1200	NS	4.9 U	4.8 U	5.1 U	5 U	4.9 U	5 U
Methyl Acetate	NS	NS	4.9 U	4.8 U	5.1 U	5 U	4.9 U	5 U
Methyl tert-butyl Ether	120	NS	2.1 U	2.0 U	2.2 U	2.1 U	2.1 U	2.1 U
Methylcyclohexane	NS	NS	2.4 U	2.3 U	2.5 U	2.4 U	2.4 U	2.4 U
Methylene Chloride	100	NS	10 U	10 U	11 U	11 U	10 U	10 U
o-Xylene	600	NS	2.2 U	2.1 U	2.3 U	2.2 U	2.2 U	2.2 U
Styrene	NS	NS	2.6 U	2.6 U	2.7 U	2.6 U	2.6 U	2.6 U
t-1,3-Dichloropropene	NS	NS	2.1 U	2.0 U	2.1 U	2.1 U	2.1 U	2.1 U
Tetrachloroethene	1400	NS	4.2 U	4.1 U	4.3 U	4.2 U	4.1 U	4.2 U
Toluene	1500	NS	2.3 U	2.3 U	2.4 U	2.3 U	2.3 U	2.3 U
trans-1,2-Dichloroethene	300	NS	3.6 U	3.6 U	3.8 U	3.7 U	3.6 U	3.7 U
Trichloroethene	700	NS	1.8 U	1.7 U	1.8 U	1.8 U	1.8 U	1.8 U
Trichlorofluoromethane	NS	NS	7.1 U	6.9 U	7.4 U	7.2 U	7.1 U	7.2 U
Vinyl Chloride	200	NS	4.7 U	4.6 U	4.9 U	4.7 U	4.7 U	4.7 U
Total VOCs	NS	10000	ND	ND	ND	ND	ND	ND

Table 4B
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Final Endpoint Soil Analytical Results
Semi Volatile Organic Compounds

Dilution Client ID Date Sampled Lab Sample ID µg/Kg	**SSAL µg/Kg**	**1 EP-20A 12/7/2006 X5783-05**	**1 EP-20B 12/7/2006 X5783-06**	**1 EP-20C 12/7/2006 X5783-07**	**1 EP-20CRE 12/7/2006 X5783-07RE**	**1 EP-20D 12/7/2006 X5783-08**	**5 EP-21A 12/13/2006 X5870-01**	**5 EP-21B 12/13/2006 X5870-02**
Total SVOCs	**200000**	625	912	5316	4154	0	5820	7160

Dilution Client ID Date Sampled Lab Sample ID µg/Kg	**SSAL µg/Kg**	**10 EP-21C 12/13/2006 X5870-03**	**10 EP-21CRE 12/13/2006 X5870-03RE**	**5 EP-21D 12/13/2006 X5870-04**	**5 EP-21DRE 12/13/2006 X5870-04RE**	**1 EP-22A 10/6/2006 X4845-01**	**1 EP-22ARE 10/6/2006 X4845-01RE**	**1 EP-22B 10/6/2006 X4845-02**
Total SVOCs	**200000**	25650	25950	15680	15980	7369	5420	224

Dilution Client ID Date Sampled Lab Sample ID µg/Kg	**SSAL µg/Kg**	**5 EP-23A 10/6/2006 X4845-03**	**5 EP-23ARE 10/6/2006 X4845-03RE**	**1 EP-23B 10/6/2006 X4845-04**	**1 EP-23BRE 10/6/2006 X4845-04RE**	**5 EP-24A 10/6/2006 X4845-05**	**5 EP-24ARE 10/6/2006 X4845-05RE**	**5 EP-24B 10/6/2006 X4845-06**
Total SVOCs	**200000**	31960	22390	14468	13146	47620	33220	36690

Dilution Client ID Date Sampled Lab Sample ID µg/Kg	**SSAL µg/Kg**	**5 EP-24BRE 10/6/2006 X4845-06RE**	**5 EP-25A 10/6/2006 X4845-07**	**5 EP-25ARE 10/6/2006 X4845-07RE**	**5 EP-25B 10/6/2006 X4845-08**	**5 EP-25BRE 10/6/2006 X4845-08RE**	**5 EP-25B-D 10/6/2006 X4845-09**	**5 EP-25B-DRE 10/6/2006 X4845-09RE**
Total SVOCs	**200000**	25750	28980	19710	43890	30090	14410	13120

Table 4C
West 61st Street Tennis Court Area Site
BCP ID C 231059
New York, New York
Final Endpoint Soil Analytical Results

Metals

Client ID Date Sampled Lab Sample ID mg/Kg	SSALS mg/Kg	EP-20A 12/7/2006 X5783-05	EP-20B 12/7/2006 X5783-06	EP-20C 12/7/2006 X5783-07	EP-20D 12/7/2006 X5783-08	EP-21A 12/13/2006 X5870-01	EP-21B 12/13/2006 X5870-02	EP-21C 12/13/2006 X5870-03	EP-21D 12/13/2006 X5870-04	EP-22A 10/6/2006 X4845-01	EP-22B 10/6/2006 X4845-02
Arsenic	**18**	2.120	0.431 U	3.280	0.417 U	6.790	7.130	4.630	4.210	1.310	1.140
Chromium	**40**	16.2	20.6	16.4	21.3	17.2	29.1	13.4	17.2	25.4	13.5
Lead	**1,000**	26.0	13.5	330	4.970	552	131	599	356	35.3	50.2
Mercury	**2**	0.113	0.022	0.272	0.006 J	1.7	0.205	0.563	0.864	0.030	0.025

Table 4C
West 61st Street Tennis Court Area Site
BCP ID C 231059
New York, New York
Final Endpoint Soil Analytical Results

Metals

Client ID **Date Sampled** **Lab Sample ID** **mg/Kg**	**SSALS** **mg/Kg**	**EP-23A** **10/6/2006** **X4845-03**	**EP-23B** **10/6/2006** **X4845-04**	**EP-24A** **10/6/2006** **X4845-05**	**EP-24B** **10/6/2006** **X4845-06**	**EP-25A** **10/6/2006** **X4845-07**	**EP-25B** **10/6/2006** **X4845-08**	**EP-25B-D** **10/6/2006** **X4845-09**
Arsenic	**18**	11.0	5.420	13.5	12.2	13.7	5.750	6.920
Chromium	**40**	20.7	20.3	18.9	20.6	24.2	21.4	24.2
Lead	**1,000**	883	352	933	682	693	424	406
Mercury	**2**	0.385	0.203	0.560	0.381	0.260	0.287	0.417

Table 4D
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Final Endpoint Soil Analytical Results

Pesticides and Polychlorinated Biphenyls

Pesticides

Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**2**
Client ID	**TAGM**	**EP-20A**	**EP-20B**	**EP-20C**	**EP-20D**	**EP-21A**	**EP-21B**	**EP-21C**	**EP-21D**	**EP-22A**
Date Sampled	**RSCOs**	**12/7/2006**	**12/7/2006**	**12/7/2006**	**12/7/2006**	**12/13/2006**	**12/13/2006**	**12/13/2006**	**12/13/2006**	**10/6/2006**
Lab Sample ID		**X5783-05**	**X5783-06**	**X5783-07**	**X5783-08**	**X5870-01**	**X5870-02**	**X5870-03**	**X5870-04**	**X4845-01**
	μg/Kg									
μg/Kg										
4,4-DDD	**2900**	0.76 U	0.76 U	0.75 U	0.74 U	0.79 U	0.78 U	0.81 U	0.78 U	1.6 U
4,4-DDE	**2100**	0.85 U	0.85 U	0.84 U	0.83 U	0.89 U	0.87 U	0.91 U	0.87 U	9.7
4,4-DDT	**2100**	0.78 U	0.78 U	0.77 U	0.76 U	0.81 U	0.80 U	0.83 U	0.80 U	29 P
Aldrin	**41**	1.3 U	1.3 U	1.3 U	1.3 U	1.4 U	1.4 U	1.4 U	1.4 U	2.7 U
alpha-BHC	**110**	0.69 U	0.69 U	0.68 U	0.68 U	0.72 U	0.71 U	0.74 U	0.71 U	1.4 U
alpha-Chlordane	**540**	0.91 U	0.91 U	0.89 U	0.89 U	0.94 U	0.93 U	0.97 U	0.93 U	20
beta-BHC	**200**	0.95 U	0.95 U	0.93 U	0.93 U	0.99 U	0.97 U	1.0 U	0.97 U	2.0 U
delta-BHC	**300**	1.8 U	1.8 U	1.7 U	1.7 U	1.8 U	1.8 U	1.9 U	1.8 U	3.6 U
Dieldrin	**44**	0.89 U	0.90 U	0.88 U	0.88 U	0.93 U	0.92 U	0.95 U	0.92 U	1.8 U
Endosulfan I	**900**	0.95 U	0.96 U	0.94 U	0.93 U	0.99 U	0.98 U	1.0 U	0.98 U	2.0 U
Endosulfan II	**900**	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	2.1 U
Endosulfan Sulfate	**1000**	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U	2.4 U
Endrin	**100**	0.92 U	0.93 U	0.91 U	0.90 U	0.96 U	0.94 U	0.98 U	0.95 U	1.9 U
Endrin aldehyde	**NS**	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	2.2 U
Endrin ketone	**NS**	0.89 U	0.89 U	0.88 U	0.87 U	0.93 U	0.91 U	0.95 U	0.91 U	1.8 U
gamma-BHC	**60**	0.78 U	0.78 U	0.76 U	0.76 U	0.81 U	0.80 U	0.83 U	0.80 U	1.6 U
gamma-Chlordane	**NS**	0.95 U	0.95 U	0.93 U	0.93 U	0.98 U	0.97 U	1.0 U	0.97 U	20
Heptachlor	**100**	1.0 U	1.0 U	0.99 U	0.99 U	1.0 U	1.0 U	1.1 U	1.0 U	2.1 U
Heptachlor epoxide	**20**	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U	2.4 U
Methoxychlor	**NS**	0.93 U	0.93 U	0.92 U	0.91 U	0.97 U	0.95 U	1.0 U	0.96 U	1.9 U
Toxaphene	**NS**	3.9 U	3.9 U	3.8 U	3.8 U	4.0 U	4.0 U	4.1 U	4.0 U	8.0 U

PCBs

Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Client ID	**TAGM**	**EP-20A**	**EP-20B**	**EP-20C**	**EP-20D**	**EP-21A**	**EP-21B**	**EP-21C**	**EP-21D**	**EP-22A**
Date Sampled	**RSCOs**	**12/7/2006**	**12/7/2006**	**12/7/2006**	**12/7/2006**	**12/13/2006**	**12/13/2006**	**12/13/2006**	**12/13/2006**	**10/6/2006**
Lab Sample ID		**X5783-05**	**X5783-06**	**X5783-07**	**X5783-08**	**X5870-01**	**X5870-02**	**X5870-03**	**X5870-04**	**X4845-01**
TOTAL	**1000**	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 4D
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, New York
Final Endpoint Soil Analytical Results
Pesticides and Polychlorinated Biphenyls

Pesticides

Dilution Client ID Date Sampled Lab Sample ID μg/Kg	TAGM RSCOs μg/Kg	1 EP-22B 10/6/2006 X4845-02	5 EP-23A 10/6/2006 X4845-03	2 EP-23B 10/6/2006 X4845-04	10 EP-24A 10/6/2006 X4845-05	2 EP-24B 10/6/2006 X4845-06	2 EP-25A 10/6/2006 X4845-07	2 EP-25B 10/6/2006 X4845-08	2 EP-25B-D 10/6/2006 X4845-09
4,4-DDD	**2900**	0.79 U	59 P	1.6 U	7.8 U	1.7 U	1.6 U	1.6 U	1.6 U
4,4-DDE	**2100**	0.89 U	4.5 U	1.8 U	8.7 U	1.9 U	1.8 U	1.8 U	1.8 U
4,4-DDT	**2100**	13 P	4.1 U	27 P	8.0 U	1.7 U	1.7 U	37 P	66 P
Aldrin	**41**	1.4 U	7.0 U	2.8 U	14 U	2.9 U	2.8 U	2.7 U	2.8 U
alpha-BHC	**110**	0.72 U	3.7 U	1.4 U	7.1 U	1.5 U	1.5 U	1.4 U	1.4 U
alpha-Chlordane	**540**	0.94 U	4.8 U	1.9 U	9.3 U	2.0 U	1.9 U	1.9 U	1.9 U
beta-BHC	**200**	0.99 U	5.0 U	2.0 U	9.7 U	2.1 U	2.0 U	2.0 U	2.0 U
delta-BHC	**300**	1.8 U	9.3 U	3.7 U	18 U	3.9 U	3.7 U	3.6 U	3.7 U
Dieldrin	**44**	0.93 U	4.7 U	1.9 U	9.1 U	2.0 U	1.9 U	1.8 U	1.9 U
Endosulfan I	**900**	0.99 U	5.0 U	2.0 U	9.7 U	2.1 U	2.0 U	2.0 U	2.0 U
Endosulfan II	**900**	1.1 U	5.4 U	2.1 U	10 U	2.3 U	2.2 U	2.1 U	2.1 U
Endosulfan Sulfate	**1000**	1.2 U	6.2 U	2.4 U	12 U	2.6 U	2.5 U	2.4 U	2.4 U
Endrin	**100**	0.96 U	24 P	1.9 U	63 P	6.2 P	2.0 U	1.9 U	1.9 U
Endrin aldehyde	**NS**	1.1 U	5.7 U	2.3 U	11 U	2.4 U	2.3 U	2.2 U	2.3 U
Endrin ketone	**NS**	0.93 U	4.7 U	1.9 U	9.1 U	12 P	1.9 U	1.8 U	6.3
gamma-BHC	**60**	0.81 U	4.1 U	1.6 U	8.0 U	1.7 U	1.7 U	1.6 U	1.6 U
gamma-Chlordane	**NS**	0.98 U	5.0 U	2.0 U	9.7 U	2.1 U	2.0 U	1.9 U	2.0 U
Heptachlor	**100**	1.0 U	5.3 U	2.1 U	10 U	2.2 U	2.1 U	2.1 U	2.1 U
Heptachlor epoxide	**20**	1.2 U	6.1 U	2.4 U	12 U	2.5 U	2.4 U	2.4 U	2.4 U
Methoxychlor	**NS**	0.97 U	79 P	1.9 U	230 P	66 P	21 P	32 P	68 P
Toxaphene	**NS**	4.0 U	20 U	8.1 U	40 U	8.5 U	8.2 U	8.0 U	8.1 U

PCBs

Dilution Client ID Date Sampled Lab Sample ID	TAGM RSCOs	1 EP-22B 10/6/2006 X4845-02	1 EP-23A 10/6/2006 X4845-03	1 EP-23B 10/6/2006 X4845-04	1 EP-24A 10/6/2006 X4845-05	1 EP-24B 10/6/2006 X4845-06	1 EP-25A 10/6/2006 X4845-07	1 EP-25B 10/6/2006 X4845-08	1 EP-25B-D 10/6/2006 X4845-09
TOTAL	**1000**	ND	230	ND	690	59	38	72	88

Table 5

West 61st Street Tennis Court Area Site

BCP ID C231059

New York, NY

Imported Backfill Soil Analytical Results

Notes

GENERAL

NS : No soil cleanup objective listed.

ND : No Detect

NA : Not Analyzed

U : The analyte was not detected at the indicated concentration.

SB : Site Background

Exceedences are highlighted in bold font.

TAGM 4046 RSCO : Recommended Soil Cleanup Objective listed in New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) #4046.

Part 375 Soil Cleanup Objective : Soil Clean-up Objectives listed in NYSDEC (New York State Department of Environmental Conservation) "Part 375" Regulations (6 NYCRR Park 375).

Eastern US Background : For heavy metals, Eastern US Soil Background values may be used as soil cleanup objectives.

mg/kg : milligrams per kilogram = parts per million (ppm)

[1] Part 375 and TAGM RSCO include both 1ppb surface and 10 ppb subsurface guidance level.

[2] Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

Table 5A

West 61st Street Tennis Court Area Site

BCP ID C231059

New York, NY

Imported Backfill Soil Analytical Results

Volatile Organic Compounds

Client ID	NYSDEC	NYSDEC	SB-1	S-1	S-2	BF-1
Lab Sample ID	Part 375	TAGM #4046	09070938-01	08100170-01	0100170-02	L0904064-01
Date Sampled	Residential	RSCO	7/27/2009	10/3/2008	10/3/2008	4/2/2009
mg/kg	mg/kg	mg/kg				
1 ,1,2-Trichloro-1,2,2-trifluoroethane	NS	6	0.01 U	NA	NA	NA
1,1,1,2-Tetrachloroethane	NS	NS	0.01 U	0.01 U	0.01 U	0.0036 U
1,1,1-Trichloroethane	100	0.8	0.01 U	0.01 U	0.01 U	0.0036 U
1,1,2,2-Tetrachloroethane	NS	0.6	0.01 U	0.01 U	0.01 U	0.0036 U
1,1,2-Trichloroethane	NS	NS	0.01 U	0.01 U	0.01 U	0.0054 U
1,1-Dichloroethane	19	0.2	0.01 U	0.01 U	0.01 U	0.0054 U
1,1-Dichloroethene	100	0.4	0.01 U	0.01 U	0.01 U	0.0036 U
1,1-Dichloropropene	NS	NS	0.01 U	0.01 U	0.01 U	0.018 U
1,2,3-Trichlorobenzene	NS	NS	0.01 U	0.01 U	0.01 U	0.018 U
1,2,3-Trichloropropane	NS	0.4	0.01 U	0.01 U	0.01 U	0.036 U
1,2,4,5-Tetramethylbenzene	NS	NS	0.01 U	NA	NA	0.014 U
1,2,4-Trichlorobenzene	NS	3.4	0.01 U	0.01 U	0.01 U	0.018 U
1,2,4-Trimethylbenzene	47	10	0.01 U	0.01 U	0.01 U	0.018 U
1,2-Dibromo-3-chloropropane	NS	NS	0.01 U	0.01 U	0.01 U	0.018 U
1,2-Dibromoethane	NS	NS	0.01 U	0.01 U	0.01 U	0.014 U
1,2-Dichlorobenzene	100	7.9	0.01 U	0.01 U	0.01 U	0.018 U
1,2-Dichloroethane	2.3	0.1	0.01 U	0.01 U	0.01 U	0.0036 U
1,2-Dichloropropane	NS	NS	0.01 U	0.01 U	0.01 U	0.012 U
1,3,5-Trimethylbenzene	47	3.3	0.01 U	0.01 U	0.01 U	0.018 U
1,3-Dichlorobenzene	17	1.6	0.01 U	0.01 U	0.01 U	0.018 U
1,3-Dichloropropane	NS	0.3	0.01 U	0.01 U	0.01 U	0.018 U
1,4-Dichlorobenzene	9.8	8.5	0.01 U	0.01 U	0.01 U	0.018 U
1,4-Diethylbenzene	NS	NS	0.02 U	NA	NA	0.014 U
2,2-Dichloropropane	NS	NS	0.01 U	0.01 U	0.01 U	0.018 U
2-Butanone	100	0.3	0.02 U	0.02 U	0.02 U	0.036 U
2-Hexanone	NS	NS	0.01 U	0.02 U	0.02 U	0.036 U
4-Ethyltoluene	NS	NS	NA	NA	NA	0.014 U
4-Methyl-2-pentanone	NS	1	0.02 U	0.01 U	0.01 U	0.036 U
Acetone	100	0.2	0.01 U	0.02 U	0.02 U	0.036 U
Acrylonitrile	NS	NS	NA	NA	NA	0.036 U
Benzene	2.9	0.06	0.01 U	0.01 U	0.01 U	0.0036 U
Bromobenzene	NS	NS	0.01 U	0.01 U	0.01 U	0.018 U
Bromochloromethane	NS	NS	0.01 U	0.01 U	0.01 U	0.018 U
Bromodichloromethane	NS	NS	0.01 U	0.01 U	0.01 U	0.0036 U
Bromoform	NS	NS	0.01 U	0.01 U	0.01 U	0.014 U
Bromomethane	NS	NS	0.01 U	0.01 U	0.01 U	0.0071 U
Carbon disulfide	NS	2.7	0.01 U	0.01 U	0.01 U	0.036 U
Carbon tetrachloride	1.4	0.6	0.01 U	0.01 U	0.01 U	0.0036 U
Chlorobenzene	100	1.7	0.01 U	0.01 U	0.01 U	0.0036 U
Chloroethane	NS	1.9	0.01 U	0.01 U	0.01 U	0.0071 U
Chloroform	10	0.3	0.01 U	0.01 U	0.01 U	0.0054 U
Chloromethane	NS	NS	0.01 U	0.01 U	0.01 U	0.018 U
cis-1,2-Dichloroethene	59	NS	NA	0.01 U	0.01 U	0.0036 U
cis-1,3-Dichloropropene	NS	NS	NA	0.01 U	0.01 U	0.0036 U
cis-1,3-Dichloropropylene	NS	NS	0.01 U	NA	NA	NA
Dibromochloromethane	NS	NS	0.01 U	0.01 U	0.01 U	0.0036 U
Dibromomethane	NS	NS	0.01 U	0.01 U	0.01 U	0.036 U
Dichlorodifluoromethane	NS	NS	0.01 U	0.01 U	0.01 U	0.036 U
Ethylbenzene	30	5.5	0.01 U	0.01 U	0.01 U	0.0036 U
Hexachlorobutadiene	NS	NS	0.01 U	0.01 U	0.01 U	0.018 U
Isopropylbenzene	NS	2.3	0.01 U	0.01 U	0.01 U	0.0036 U
Methyl tert butyl ether	62	0.12	0.02 U	NA	NA	NA
Methyl tert butyl ether	62	0.12	0.01 U	0.01 U	0.01 U	0.0071 U
Methylene chloride	51	0.1	0.01 U	NA	NA	0.036 U
Naphthalene	100	13	0.01 U	0.01 U	0.01 U	0.018 U
n-Butylbenzene	100	10	0.01 U	0.01 U	0.01 U	0.0036 U
n-Propylbenzene	100	3.7	0.01 U	0.01 U	0.01 U	0.0036 U
o-Chlorotoluene	NS	NS	NA	0.01 U	0.01 U	0.018 U
o-Xylene	100	0.6	0.01 U	0.01 U	0.01 U	0.0071 U
p/m-Xylene	100	1.2	0.01 U	0.01 U	0.01 U	0.0071 U
p-Chlorotoluene	NS	NS	NA	0.01 U	0.01 U	0.018 U
p-Isopropyltoluene	NS	10	0.01 U	0.01 U	0.01 U	0.0036 U
sec-Butylbenzene	100	10	0.01 U	0.01 U	0.01 U	0.0036 U
Styrene	NS	NS	0.01 U	0.01 U	0.01 U	0.0071 U
tert-Butylbenzene	100	10	0.01 U	0.01 U	0.01 U	0.018 U
Tetrachloroethene	5.5	1.4	0.01 U	0.01 U	0.01 U	0.0036 U
Toluene	100	1.5	0.01 U	0.01 U	0.01 U	0.0054 U
trans-1,2-Dichloroethene	100	0.3	0.01 U	0.01 U	0.01 U	0.0054 U
trans-1,3-Dichloropropene	NS	NS	NA	0.01 U	0.01 U	0.0036 U
Trichloroethene	10	0.7	0.01 U	0.01 U	0.01 U	0.0036 U
Trichlorofluoromethane	NS	NS	0.01 U	0.01 U	0.01 U	0.018 U
Vinyl acetate	NS	NS	NA	NA	NA	0.036 U
Vinyl chloride	0.21	0.2	0.01 U	0.01 U	0.01 U	0.0071 U

Table 5B

West 61st Street Tennis Court Area Site

BCP ID C231059
New York, NY
Imported Backfill Soil Analytical Results
Semi-Volatile Organic Compounds

Client ID	NYSDEC	NYSDEC	SB-1	S-1	S-2	BF-1
Lab Sample ID	TAGM #4046	Part 375	09070938-01	08100170-01	0100170-02	L0904064-01
Date Sampled	RSCO	Residential	7/27/2009	10/3/2008	10/3/2008	4/2/2009
Dilution			1	1	1	5
mg/kg	mg/kg	mg/kg				
1,2,4,5-Tetrachlorobenzene	NS	NS	NA	NA	NA	1.9 U
1,2,4-Trichlorobenzene	3.4	NS	0.165 U	0.165 U	0.165 U	0.48 U
1,2-Dichlorobenzene	7.9	100	0.165 U	0.165 U	0.165 U	0.48 U
1,3-Dichlorobenzene	1.6	17	0.165 U	0.165 U	0.165 U	0.48 U
1,4-Dichlorobenzene	8.5	9.8	0.165 U	0.165 U	0.165 U	0.48 U
2,4,5-Trichlorophenol	0.1	NS	0.165 U	0.165 U	0.165 U	0.48 U
2,4,6-Trichlorophenol	NS	NS	0.165 U	0.165 U	0.165 U	0.48 U
2,4-Dichlorophenol	0.4	NS	0.165 U	0.165 U	0.165 U	0.95 U
2,4-Dimethylphenol	NS	NS	0.165 U	0.165 U	0.165 U	0.48 U
2,4-Dinitrophenol	0.2	NS	0.165 U	0.165 U	0.165 U	1.9 U
2,4-Dinitrotoluene	NS	NS	0.165 U	0.165 U	0.165 U	0.48 U
2,6-Dinitrotoluene	1	NS	0.165 U	0.165 U	0.165 U	0.48 U
2-Chloronaphthalene	NS	NS	0.165 U	0.165 U	0.165 U	0.095 U
2-Chlorophenol	0.8	NS	0.165 U	0.165 U	0.165 U	0.57 U
2-Methylnaphthalene	36.4	NS	0.165 U	0.165 U	0.165 U	0.095 U
2-Methylphenol	0.1	100	0.165 U	0.165 U	0.165 U	0.57 U
2-Nitroaniline	0.43	NS	0.165 U	0.165 U	0.165 U	0.48 U
2-Nitrophenol	0.33	NS	0.165 U	0.165 U	0.165 U	1.9 U
3,3'-Dichlorobenzidine	NS	NS	0.165 U	0.165 U	0.165 U	0.95 U
3-Methylphenol	NS	100	0.165 U	0.165 U	0.165 U	0.57 U
3-Nitroaniline	0.5	NS	0.165 U	0.165 U	0.165 U	0.48 U
4,6-Dinitro-o-cresol	NS	NS	NA	0.165 U	0.165 U	1.9 U
4,6-Dinitro-2-methylphenol	NS	NS	0.165 U	NA	NA	NA
4-Bromophenyl phenyl ether	NS	NS	0.165 U	0.165 U	0.165 U	0.48 U
4-Chloro-3-methyl phenol	0.24	NS	0.165 U	NA	NA	NA
4-Chloroaniline	0.22	NS	0.165 U	0.165 U	0.165 U	0.48 U
4-Chlorophenyl phenyl ether	NS	NS	0.165 U	0.165 U	0.165 U	0.48 U
4-Methylphenol	0.9	34	0.165 U	NA	NA	NA
4-Nitroaniline	NS	NS	0.165 U	0.165 U	0.165 U	0.67 U
4-Nitrophenol	0.1	NS	0.165 U	0.165 U	0.165 U	0.95 U
Acetophenone	NS	NS	NA	NA	NA	1.9 U
Acenaphthene	50	100	0.165 U	0.165 U	0.165 U	0.095 U
Acenaphthylene	41	100	0.165 U	0.165 U	0.165 U	0.095 U
Aniline	0.1	NS	0.165 U	NA	NA	NA
Anthracene	50	100	0.165 U	0.165 U	0.165 U	0.095 U
Benzidine	NS	NS	0.165 U	NA	NA	NA
Benzo(a)anthracene	0.224	1	0.165 U	0.165 U	0.165 U	0.095 U
Benzo(a)pyrene	0.061	1	0.165 U	0.165 U	0.165 U	0.23
Benzo(b)fluoranthene	1.1	1	0.165 U	0.165 U	0.165 U	0.2

Table 5B

West 61st Street Tennis Court Area Site

BCP ID C231059

New York, NY

Imported Backfill Soil Analytical Results

Semi-Volatile Organic Compounds

Client ID	**NYSDEC**	**NYSDEC**	**SB-1**	**S-1**	**S-2**	**BF-1**
Lab Sample ID	**TAGM #4046**	**Part 375**	**09070938-01**	**08100170-01**	**0100170-02**	**L0904064-01**
Date Sampled	**RSCO**	**Residential**	**7/27/2009**	**10/3/2008**	**10/3/2008**	**4/2/2009**
Dilution			**1**	**1**	**1**	**5**
mg/kg	**mg/kg**	**mg/kg**				
Benzo(g,h,i)perylene	**50**	**100**	0.165 U	0.165 U	0.165 U	0.095 U
Benzo(k)fluoranthene	**1.1**	**1**	0.165 U	0.165 U	0.165 U	0.11
Benzoic acid	**2.7**	**NS**	0.165 U	0.165 U	0.165 U	4.8 U
Benzyl alcohol	**NS**	**NS**	0.165 U	0.165 U	0.165 U	0.95 U
Biphenyl	**NS**	**NS**	NA	NA	NA	0.48 U
Bis(2-cHloroethoxy)methane	**NS**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
Bis(2-chloroethyl)ether	**NS**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
Bis(2-chloroisopropyl)ether	**NS**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
Bis(2-ethylhexyl)phthalate	**50**	**NS**	0.165 U	0.165 U	0.165 U	0.95 U
Butyl benzyl phthalate	**50**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
Carbazole	**NS**	**NS**	0.165 U	NA	NA	0.48 U
Chrysene	**0.4**	**1**	0.165 U	0.165 U	0.165 U	0.095 U
Dibenz(a,h)anthracene	**0.014**	**0.33**	NA	0.165 U	0.165 U	0.095 U
Dibenzofuran	**6.2**	**14**	0.165 U	0.165 U	0.165 U	0.48 U
Diethylphthalate	**7.1**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
Dimethylphthalate	**2**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
Di-n-butylphthalate	**8.1**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
Di-n-octylphthalate	**50**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
Fluoranthene	**50**	**100**	0.165 U	0.165 U	0.165 U	0.12
Fluorene	**50**	**100**	0.165 U	0.165 U	0.165 U	0.095 U
Hexachlorobenzene	**0.41**	**0.33**	0.165 U	0.165 U	0.165 U	0.38 U
Hexachlorobutadiene	**NS**	**NS**	0.165 U	0.165 U	0.165 U	0.24 U
Hexachlorocyclopentadiene	**NS**	**NS**	0.165 U	0.165 U	0.165 U	0.95 U
Hexachloroethane	**NS**	**NS**	0.165 U	0.165 U	0.165 U	0.38 U
Indeno(1,2,3-cd)pyrene	**3.2**	**0.5**	0.165 U	0.165 U	0.165 U	0.095 U
Isophorone	**4.4**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
Naphthalene	**13**	**100**	0.165 U	0.165 U	0.165 U	NA
Nitrobenzene	**0.2**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
NitrosoDiPhenylAmine(NDPA)/DPA	**NS**	**NS**	NA	0.165 U	0.165 U	1.4 U
N-Nitrosodi-n-propylamine	**NS**	**NS**	0.165 U	0.165 U	0.165 U	0.48 U
N-Nitrosodiphenylamine	**NS**	**NS**	0.165 U	NA	NA	NA
P-Chloro-M-Cresol	**0.24**	**NS**	NA	0.165 U	0.165 U	0.48 U
Pentachlorophenol	**1**	**2.4**	0.165 U	0.165 U	0.165 U	0.38 U
Phenanthrene	**50**	**100**	0.165 U	0.165 U	0.165 U	0.095 U
Phenol	**0.03**	**100**	0.165 U	0.165 U	0.165 U	0.67 U
Pyrene	**50**	**100**	0.165 U	0.165 U	0.165 U	NA
Pyridine	**NS**	**NS**	0.165 U	NA	NA	0.095

Table 5C

West 61st Street Tennis Court Area Site

BCP ID C231059

New York, NY

Imported Backfill Soil Analytical Results

Metals

Client ID	**NYSDEC**	**NYSDEC**	**Eastern USA**	**SB-1**	**S-1**	**S-2**	**BF-1**
Lab Sample ID	**TAGM #4046**	**Part 375**	**Soil**	**09070938-01**	**08100170-01**	**0100170-02**	**L0904064-01**
Date Sampled	**RSCO**	**Residential**	**Background**	**7/27/2009**	**10/3/2008**	**10/3/2008**	**4/2/2009**
mg/kg	**mg/kg**	**mg/kg**	**mg/kg**				
Aluminum	**SB**	**NS**	**33,000**	17,370	4,080	3,960	2,400
Antimony	**SB**	**NS**	**NS**	1 U	2.8	2.4	2.9 U
Arsenic	**7.5 or SB**	**16**	**3 – 12**	2.87	2.11	1.53	5.6
Barium	**300 or SB**	**350**	**15 – 600**	195	32.9	31	18
Beryllium	**0.16 or SB**	**14**	**0 – 1.75**	0.5 U	0.5 U	0.5 U	0.29 U
Cadmium	**1 or SB**	**2.5**	**0.1 – 1**	0.61	0.5 U	0.5 U	0.58 U
Calcium	**SB**	**NS**	**130 – 35,000**	7,140	817	590	4,500
Chromium	**10 or SB**	**36**	**1.5 – 40**	26.1	10.8	11.4	12
Cobalt	**30 or SB**	**NS**	**2.5 – 60**	16.9	5.31	6.48	1.2 U
Copper	**25 or SB**	**270**	**1 – 50**	31.1	14.5	14.9	13
Iron	**2,000 or SB**	**NS**	**2,000 – 550,000**	26,530	10,700	10,900	2,900
Lead	**SB**	**400**	**200 – 500 [2]**	4.74	7.9	4.77	11
Magnesium	**SB**	**NS**	**100 – 5,000**	**8,570**	1,670	1,490	900
Manganese	**SB**	**2,000**	**50 – 5,000**	181	248	236	100
Mercury	**0.1**	**0.81**	**0.001 – 0.2**	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	**13 or SB**	**140**	**0.5 – 25**	24.3	6.28	6.51	5.7
Potassium	**SB**	**NS**	**8,500 – 43,000**	11,530	467	410	1,300
Selenium	**2 or SB**	**36**	**0.1 – 3.9**	1 U	1 U	1 U	1.2 U
Silver	**SB**	**36**	**NS**	1 U	1 U	1 U	0.58 U
Sodium	**SB**	**NS**	**6,000 – 8,000**	670	5 U	5 U	200
Thallium	**SB**	**NS**	**NS**	1 U	1 U	1 U	1.2 U
Vanadium	**150 or SB**	**NS**	**1 – 300**	39.2	12.6	13.4	5.9
Zinc	**20 or SB**	**2,200**	**9 – 50**	75.8	23.6	20.6	36

Table 5D
West 61st Street Tennis Court Area Site
BCP ID C231059
New York, NY

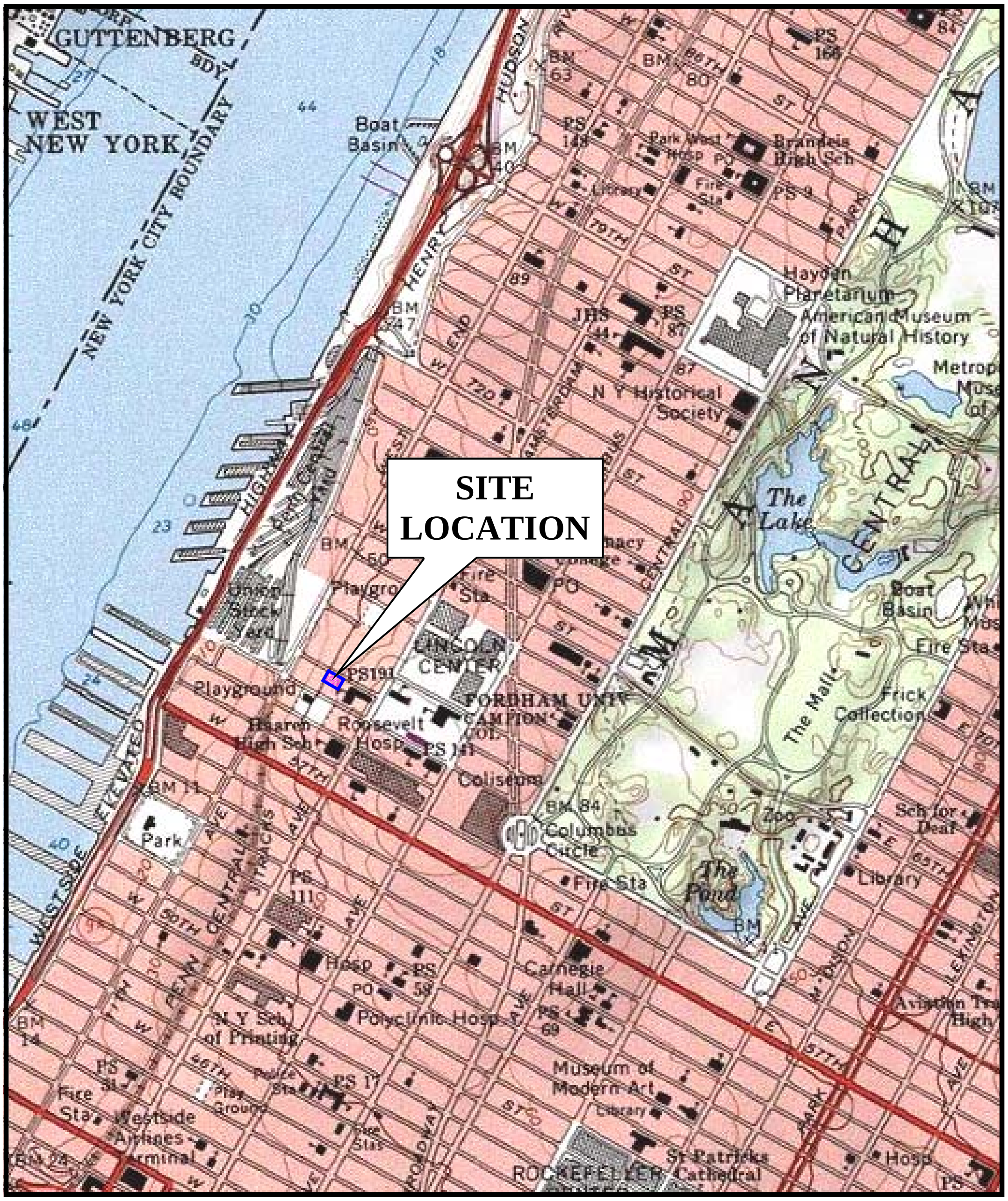
Imported Backfill Soil Analytical Results

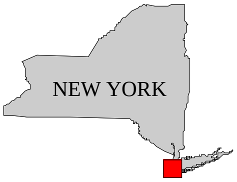
Pestides & Polychlorinated Biphenyls

Client ID	NYSDEC	NYSDEC	SB-1	S-1	S-2	BF-1
Lab Sample ID	Part 375	TAGM #4046	09070938-01	08100170-01	0100170-02	L0904064-01
Date Sampled	Residential	RSCO	7/27/2009	10/3/2008	10/3/2008	4/2/2009
Pesticides - mg/kg	mg/kg	mg/kg				
2,4,5-T	NS	1.9	0.1 U	NA	NA	NA
2,4,5-TP (Silvex)	58	0.7	0.1 U	NA	NA	NA
2,4-D	NS	0.5	0.1 U	NA	NA	NA
4,4'-DDD	2.6	2.9	0.0016 U	0.024 U	0.016 U	0.00476 U
4,4'-DDE	1.8	2.1	0.0016 U	0.024 U	0.016 U	0.00476 U
4,4'-DDT	1.7	2.1	0.0016 U	0.024 U	0.016 U	0.00476 U
Aldrin	0.019	0.041	0.0008 U	0.012 U	0.008 U	0.00476 U
Alpha-BHC	0.097	0.11	0.0008 U	0.012 U	0.008 U	0.00476 U
Beta-BHC	0.072	0.2	0.0008 U	0.012 U	0.00366 U	0.00476 U
Chlordane	0.91	0.54	0.002 U	0.03 U	0.008 U	0.0476 U
Delta-BHC	100	0.3	0.0008 U	0.012 U	0.008 U	0.00476 U
Dieldrin	0.039	0.044	0.00033 U	0.00495 U	0.0033 U	0.00476 U
Endosulfan I	4.8	0.9	0.0008 U	0.012 U	0.008 U	0.00476 U
Endosulfan II	4.8	0.9	0.0016 U	0.024 U	0.016 U	0.00476 U
Endosulfan sulfate	4.8	1	0.0016 U	0.024 U	0.016 U	0.00476 U
Endrin	2.2	0.1	0.0016 U	0.024 U	0.016 U	0.00476 U
Endrin ketone	NS	NS	0.0016 U	NA	NA	NA
Heptachlor	0.42	0.1	0.0016 U	0.024 U	0.016 U	0.00476 U
gamma-BHC (Lindane)	0.28	0.06	0.0008 U	NA	NA	NA
gamma-Chlordane	NS	0.54	0.0008 U	NA	NA	NA
Heptachlor	0.42	0.1	0.0008 U	0.012 U	0.008 U	0.00476 U
Heptachlor epoxide	NS	0.02	0.0008 U	0.012 U	0.008 U	0.00476 U
Lindane	0.28	0.06	NA	0.012 U	0.008 U	0.00476 U
Methoxychlor	NS	NS	0.008 U	0.12 U	0.08 U	0.019 U
Mitotane	NS	NS	0.0016 U	NA	NA	NA
Parathion	NS	1.2	0.0016 U	NA	NA	NA
Toxaphene	NS	NS	0.02 U	NA	NA	NA
trans-Chlordane	NS	0.54	NA	0.03 U	0.02 U	0.00476 U

Polychlorinated Biphenyls - mg/kg						
Aroclor 1016	NS	NS	0.000017 U	0.0255 U	0.017 U	0.0476 U
Aroclor 1221	NS	NS	0.000017 U	0.0255 U	0.017 U	0.0476 U
Aroclor 1232	NS	NS	0.000017 U	0.0255 U	0.017 U	0.0476 U
Aroclor 1242	NS	NS	0.000017 U	0.0255 U	0.017 U	0.0476 U
Aroclor 1248	NS	NS	0.000017 U	0.0255 U	0.017 U	0.0476 U
Aroclor 1254	NS	NS	0.000017 U	0.0255 U	0.017 U	0.0476 U
Aroclor 1260	NS	NS	0.000017 U	0.0255 U	0.017 U	0.0476 U
Total PCBs	1/10[1]	1/10[1]	ND	ND	ND	ND

FIGURES





SCALE IN FEET

0' 1000' 2000' 4000'

SCALE: 1"=2000'

N

SOURCE:

7.5 MINUTE SERIES USGS TOPOGRAPHIC MAP
QUADRANGLE: CENTRAL PARK, NY 1995

WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

USGS TOPOGRAPHIC MAP OF PROJECT SITE LOCATION

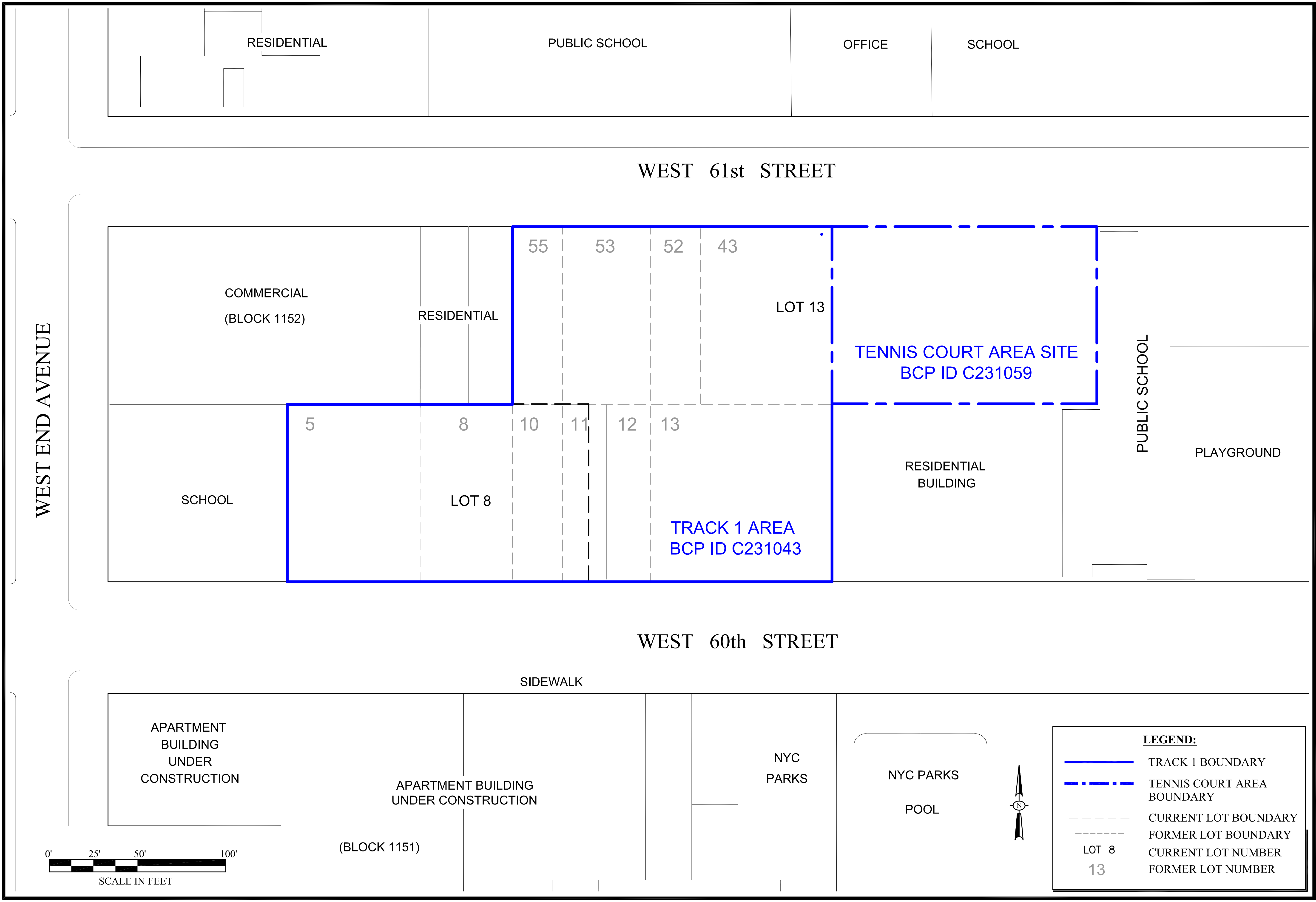
AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
11.05.09

PROJECT No.
10321

SCALE
AS SHOWN

FIGURE
1



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WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

SITE LOCATION MAP

DATE
11.05.09

APPROX SCALE
1"=50'

PROJECT No.
10321

FIGURE No.
2

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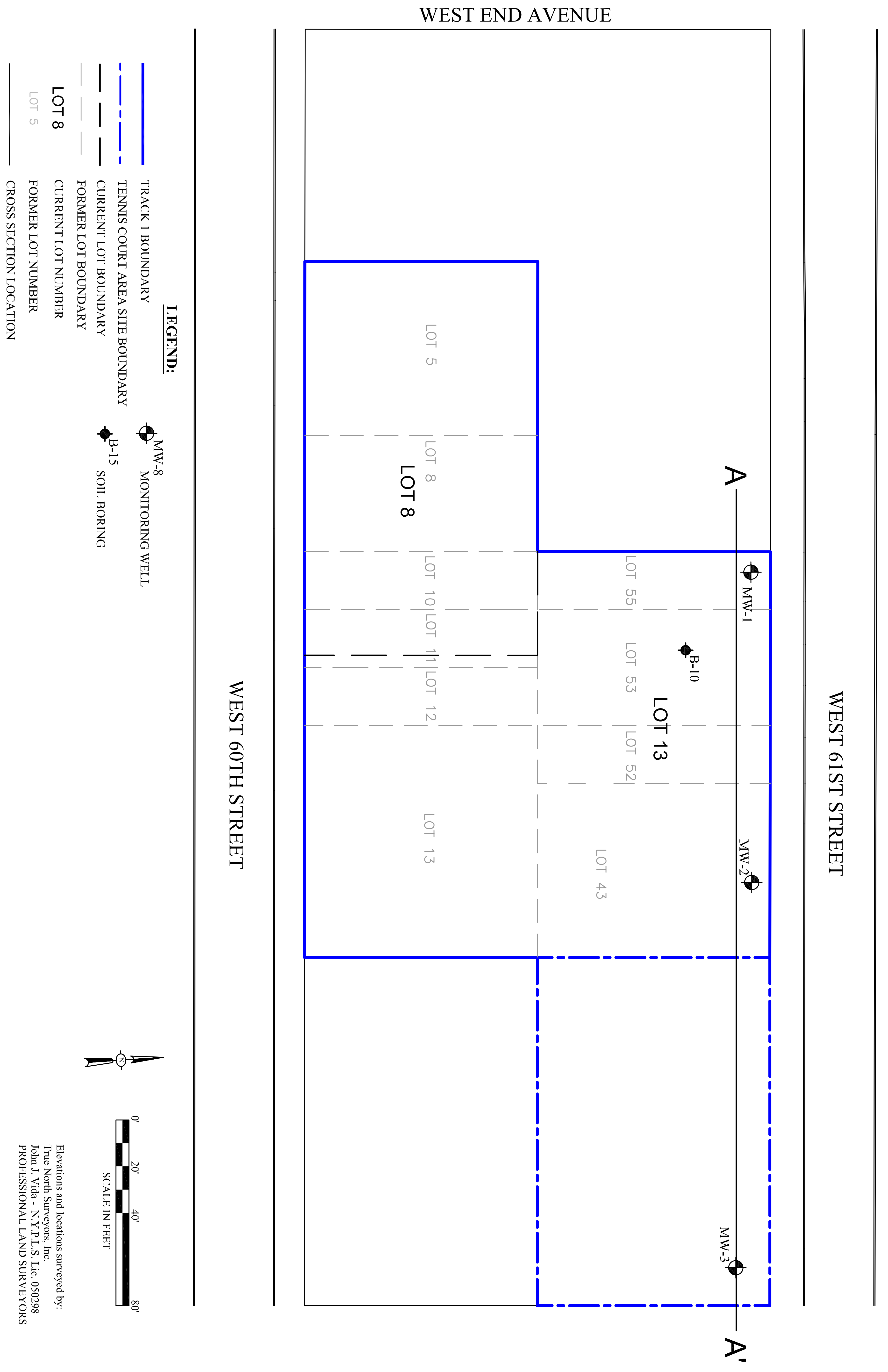

DATE **10.29.09**

PROJECT NO. **10321**

SCALE **1"=40'**

FIGURE **3**

WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

GEOLOGIC CROSS SECTION LOCATION

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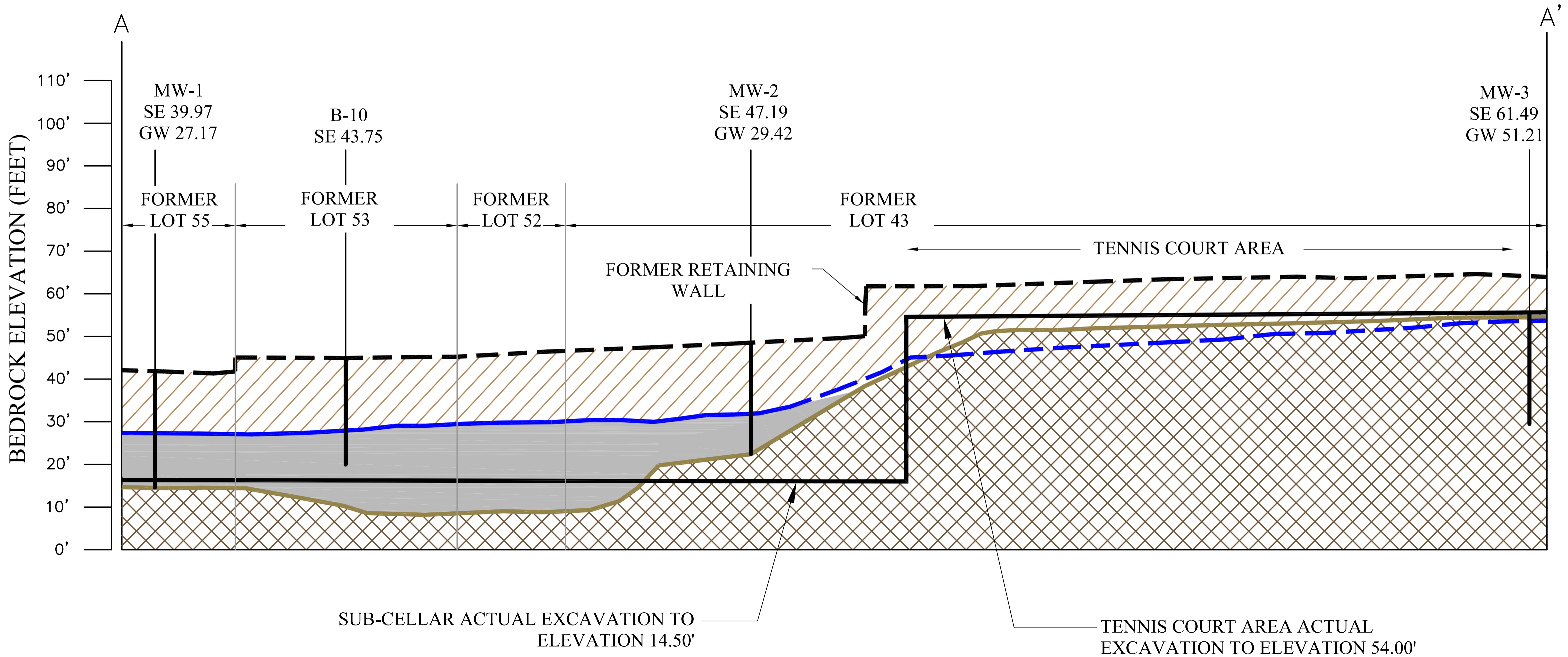

SECTION A-A'

LEGEND:

▬ GROUNDWATER LEVEL

- - INFERRED GROUNDWATER LEVEL

▬ BEDROCK INTERFACE

- - SURFACE ELEVATION

▬ EXTENT OF ACTUAL EXCAVATION

▨ MANHATTAN SCHIST

▨ FILL (BRICK, CONCRETE, ASH, SLAG, WOOD, GLASS, ASPHALT)

▩ NATIVE SOIL (SAND AND SILT, TRACE GRAVEL)

GW GROUNDWATER ELEVATION

SE PRE-REMEDIATION SURFACE ELEVATION

NOTES:

1. WATER LEVELS MEASURED ON OCTOBER 7, 2005.
2. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.

0' 15' 30' 60'

SCALE IN FEET

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WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

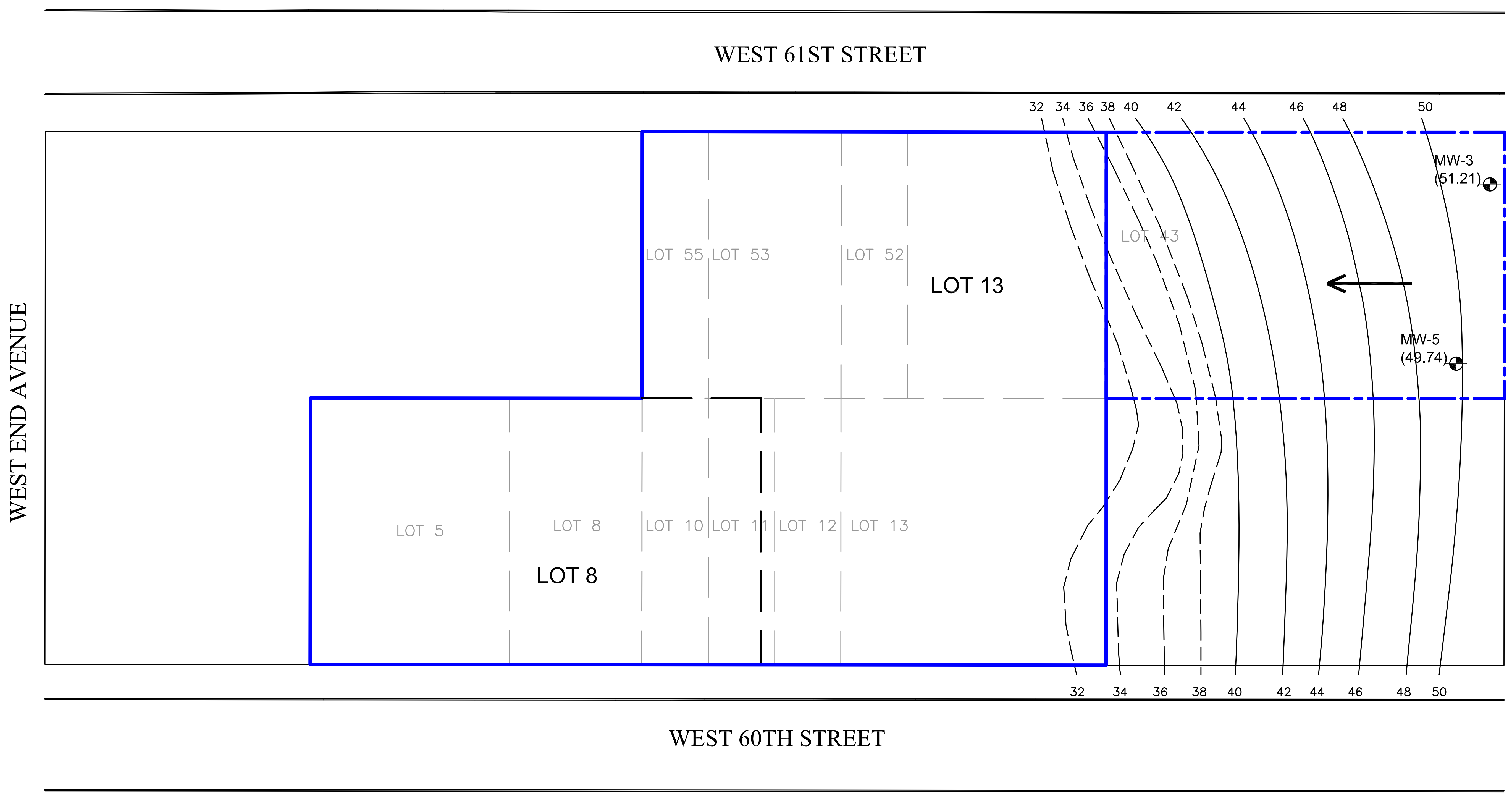
GEOLOGIC CROSS SECTION A-A'

DATE
10.29.09

SCALE
1"=30'

PROJECT No.
10321

FIGURE No.
3A



LEGEND:

━━━━	TRACK 1 BOUNDARY
━ · ━ · ━	TENNIS COURT AREA SITE BOUNDARY
— — —	CURRENT LOT BOUNDARY
- - - - - - -	FORMER LOT BOUNDARY
LOT 8	CURRENT LOT NUMBER
LOT 5	FORMER LOT NUMBER
MW-9 ⊕	BEDROCK MONITORING WELL
(31.00)	GROUNDWATER ELEVATION
44 ——	GROUNDWATER EQUIPOTENTIAL LINE BASED ON WELL ELEVATIONS
32 --------	GROUNDWATER EQUIPOTENTIAL LINE BASED ON BEDROCK ELEVATIONS
⟵	INFERRED GROUNDWATER DIRECTION

NOTE:

1. WATER LEVELS MEASURED ON OCTOBER 7, 2005.
2. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN (MBD), WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.

N

0' 20' 40' 80'
SCALE IN FEET

Elevations and locations surveyed by:
True North Surveyors, Inc.
John J. Vida - N.Y.P.L.S. Lic. 050298
PROFESSIONAL LAND SURVEYORS

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

BEDROCK AQUIFER EQUIPOTENTIAL MAP

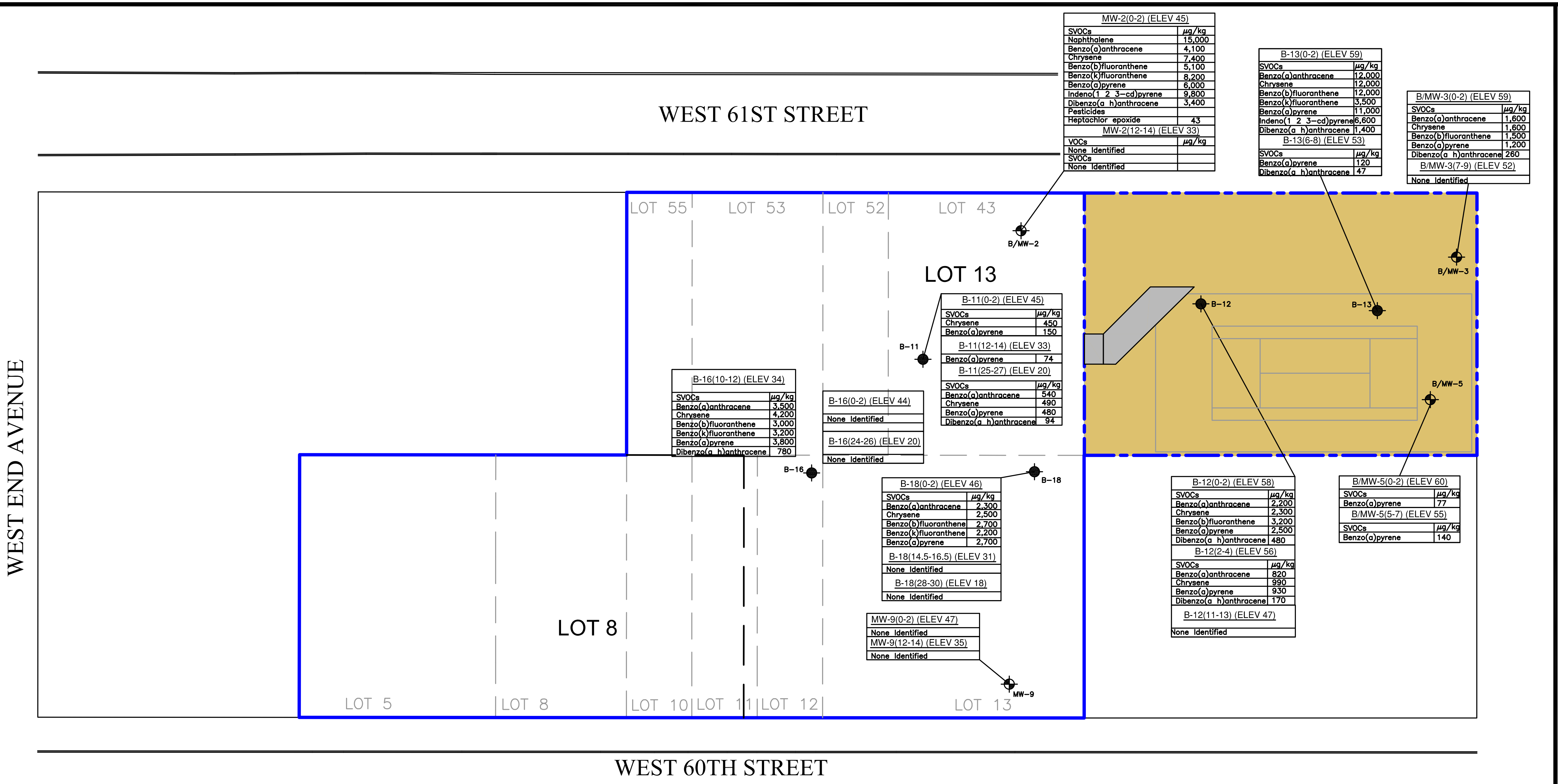
DATE
11.05.09

SCALE
1"=40'

PROJECT No.
10321

FIGURE No.
4

M:\AKRF Project Files\10321 - Algin Properties W. 60th St\10321 - FER\Track 4 Report\SMP\Figures\F6a_Bedrock_Equipotential_Map.dwg



MW-2(0-2) (ELEV 45)

SVOCs	μg/kg
Naphthalene	15,000
Benzo(a)anthracene	4,100
Chrysene	7,400
Benzo(b)fluoranthene	5,100
Benzo(k)fluoranthene	8,200
Benzo(a)pyrene	6,000
Indeno(1 2 3–cd)pyrene	9,800
Dibenzo(a h)anthracene	3,400
Pesticides	
Heptachlor epoxide	43

MW-2(12-14) (ELEV 33)

VOCs	μg/kg
None Identified	
SVOCs	
None Identified	

B-13(0-2) (ELEV 59)

SVOCs	μg/kg
Benzo(a)anthracene	12,000
Chrysene	12,000
Benzo(b)fluoranthene	12,000
Benzo(k)fluoranthene	3,500
Benzo(a)pyrene	11,000
Indeno(1 2 3–cd)pyrene	6,600
Dibenzo(a h)anthracene	1,400

B-13(6-8) (ELEV 53)

SVOCs	μg/kg
Benzo(a)pyrene	120
Dibenzo(a h)anthracene	47

B/MW-3(0-2) (ELEV 59)

SVOCs	μg/kg
Benzo(a)anthracene	1,600
Chrysene	1,600
Benzo(b)fluoranthene	1,500
Benzo(a)pyrene	1,200
Dibenzo(a h)anthracene	260

B/MW-3(7-9) (ELEV 52)

None Identified

B-11(0-2) (ELEV 45)

SVOCs	μg/kg
Chrysene	450
Benzo(a)pyrene	150

B-11(12-14) (ELEV 33)

Benzo(a)pyrene	74

B-11(25-27) (ELEV 20)

SVOCs	μg/kg
Benzo(a)anthracene	540
Chrysene	490
Benzo(a)pyrene	480
Dibenzo(a h)anthracene	94

B-16(10-12) (ELEV 34)

SVOCs	μg/kg
Benzo(a)anthracene	3,500
Chrysene	4,200
Benzo(b)fluoranthene	3,000
Benzo(k)fluoranthene	3,200
Benzo(a)pyrene	3,800
Dibenzo(a h)anthracene	780

B-16(0-2) (ELEV 44)

None Identified

B-16(24-26) (ELEV 20)

None Identified

B-18(0-2) (ELEV 46)

SVOCs	μg/kg
Benzo(a)anthracene	2,300
Chrysene	2,500
Benzo(b)fluoranthene	2,700
Benzo(k)fluoranthene	2,200
Benzo(a)pyrene	2,700

B-18(14.5-16.5) (ELEV 31)

None Identified

B-18(28-30) (ELEV 18)

None Identified

MW-9(0-2) (ELEV 47)

None Identified

MW-9(12-14) (ELEV 35)

None Identified

B-12(0-2) (ELEV 58)

SVOCs	μg/kg
Benzo(a)anthracene	2,200
Chrysene	2,300
Benzo(b)fluoranthene	3,200
Benzo(a)pyrene	2,500
Dibenzo(a h)anthracene	480

B-12(2-4) (ELEV 56)

SVOCs	μg/kg
Benzo(a)anthracene	820
Chrysene	990
Benzo(a)pyrene	930
Dibenzo(a h)anthracene	170

B-12(11-13) (ELEV 47)

None Identified

B/MW-5(0-2) (ELEV 60)

SVOCs	μg/kg
Benzo(a)pyrene	77

B/MW-5(5-7) (ELEV 55)

SVOCs	μg/kg
Benzo(a)pyrene	140

LEGEND:

━━━━	TRACK 1 BOUNDARY
━ · ━ · ━	TENNIS COURT AREA SITE BOUNDARY
— — —	CURRENT LOT BOUNDARY
— — —	FORMER LOT BOUNDARY
LOT 8	CURRENT LOT NUMBER
LOT 5	FORMER LOT NUMBER
🟨	TENNIS COURT AREA EXCAVATION TO ELEVATION 54.00'
▨	EXHUAUST SYSTEM EXCAVATION TO ELEVATION RANGE 39.64' TO 42.64'.
⊕ B/MW-7	MONITORING WELL/SOIL BORING
● B-17	SOIL BORING
μg/kg	MICROGRAM PER KILOGRAM
ELEV 40	BOTTOM OF SAMPLE ELEVATION

SCALE IN FEET

NOTES:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. ALL PARAMETERS LISTED WERE DETECTED ABOVE THEIR RESPECTIVE RECOMMENDED SOIL CLEANUP OBJECTIVES (RSCOs) LISTED IN NYSDEC TAGM #4046.

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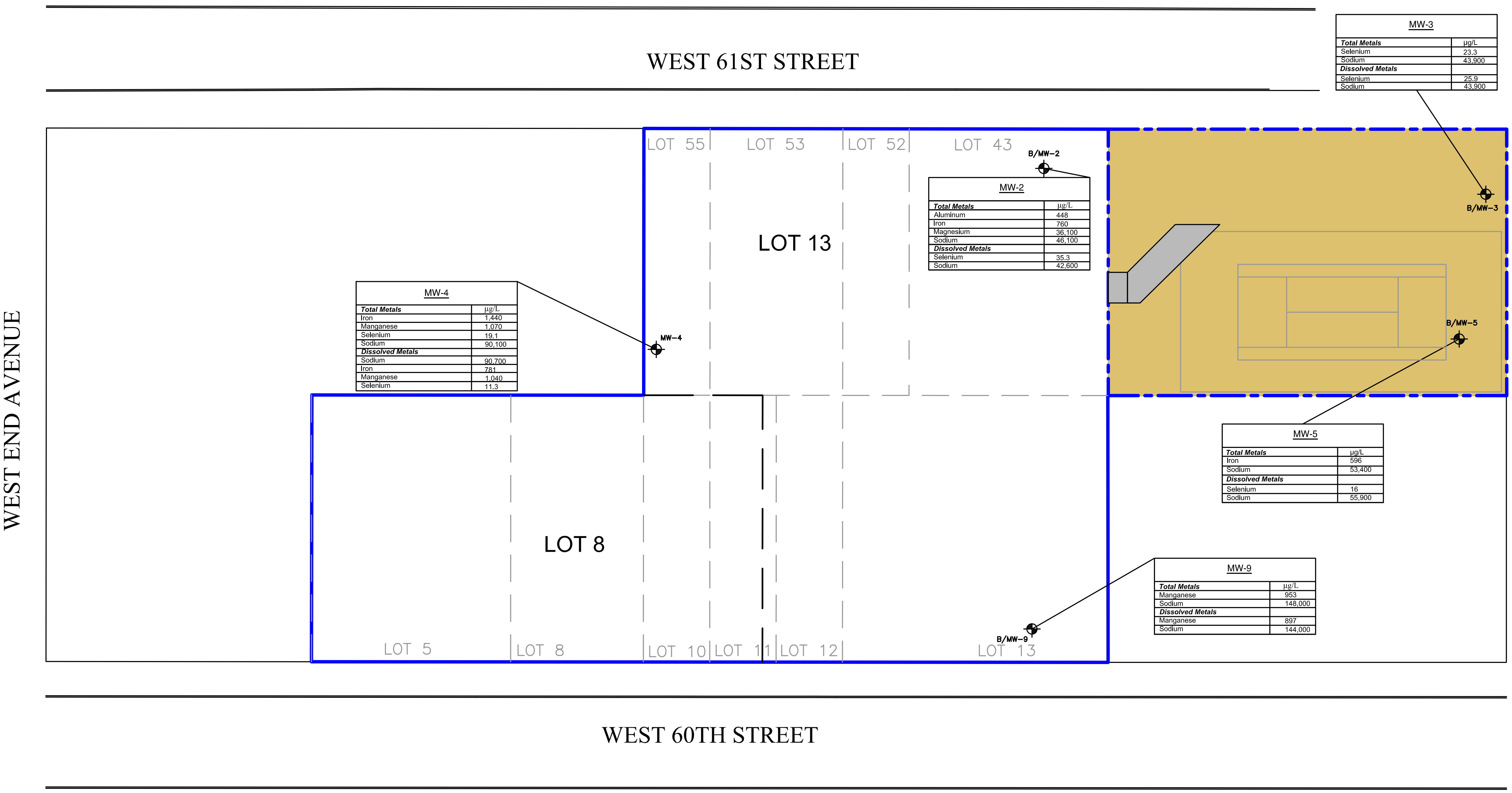
WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK
PRE-REMEDIATION SOIL EXCEEDANCES OF TAGM RSCOs

DATE	11.05.09
PROJECT NO.	10321
SCALE	1"=40'
FIGURE	5

M:\AKRF Project Files\10321 - Algin Properties W. 60th St\10321 - FER\Track 4 Report\SMP\Figures\F5_Pre Remediation Soil Exceedances of TAGM.dwg, jszalus



MW-3

Total Metals	µg/L
Selenium	23.3
Sodium	43,900
Dissolved Metals	
Selenium	25.9
Sodium	43,900

MW-2

Total Metals	µg/L
Aluminum	448
Iron	760
Magnesium	36,100
Sodium	46,100
Dissolved Metals	
Selenium	35.3
Sodium	42,600

MW-4

Total Metals	µg/L
Iron	1,440
Manganese	1,070
Selenium	19.1
Sodium	90,100
Dissolved Metals	
Sodium	90,700
Iron	781
Manganese	1,040
Selenium	11.3

MW-5

Total Metals	µg/L
Iron	596
Sodium	53,400
Dissolved Metals	
Selenium	16
Sodium	55,900

MW-9

Total Metals	µg/L
Manganese	953
Sodium	148,000
Dissolved Metals	
Manganese	897
Sodium	144,000

LEGEND:

━━━━	TRACK 1 BOUNDARY
━ · ━ · ━	TENNIS COURT AREA SITE BOUNDARY
— — —	CURRENT LOT BOUNDARY
— — —	FORMER LOT BOUNDARY
LOT 8	CURRENT LOT NUMBER
LOT 5	FORMER LOT NUMBER
🟨	TENNIS COURT AREA EXCAVATION TO ELEVATION 54.00'
⬜	EXHUAUST SYSTEM EXCAVATION TO ELEVATION RANGE 39.64' TO 42.64'.
⊕ B/MW-7	MONITORING WELL/SOIL BORING
µg/L	MICROGRAM PER LITER

0' 20' 40' 80'
SCALE IN FEET

NOTES:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.

2. ALL PARAMETERS LISTED WERE DETECTED ABOVE THEIR RESPECTIVE CLASS GA GROUNDWATER QUALITY STANDARDS IN PART 703. (NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION TECHNICAL AND OPERATIONAL GUIDANCE SERIES (1.1.1): CLASS GA AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES AND GROUNDWATER EFFLUENT LIMITATIONS.)

N

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Environmental Consultants
440 Park Avenue South, New York, NY 10016

WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

PRE-REMEDIATION GROUNDWATER EXCEEDANCES OF GROUNDWATER QUALITY STANDARDS

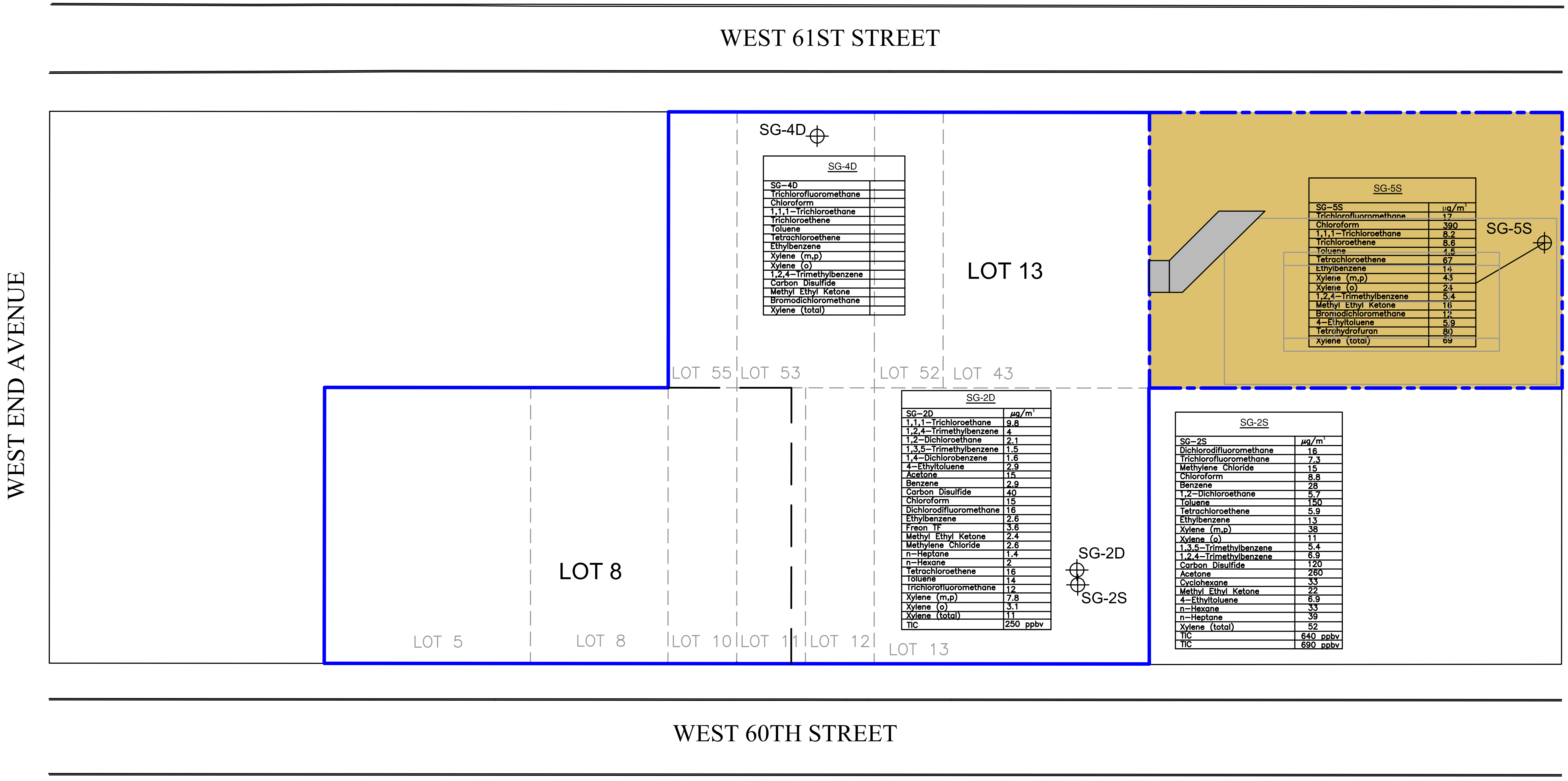
DATE
11.05.09

PROJECT NO.
10321

SCALE
1"=40'

FIGURE
6

M:\AKRF Project Files\10321 - Algin Properties W. 60th St\10321 - FER\Track 4 Report\SMP\Figures\F6 Pre Remediation Groundwater.dwg, jszalus



SG-4D

SG-4D	
Trichlorofluoromethane	
Chloroform	
1,1,1-Trichloroethane	
Trichloroethene	
Toluene	
Tetrachloroethene	
Ethylbenzene	
Xylene (m,p)	
Xylene (o)	
1,2,4-Trimethylbenzene	
Carbon Disulfide	
Methyl Ethyl Ketone	
Bromodichloromethane	
Xylene (total)	

SG-5S

SG-5S	µg/m³
Trichlorofluoromethane	17
Chloroform	390
1,1,1-Trichloroethane	8.2
Trichloroethene	8.6
Toluene	4.5
Tetrachloroethene	67
Ethylbenzene	14
Xylene (m,p)	43
Xylene (o)	24
1,2,4-Trimethylbenzene	5.4
Methyl Ethyl Ketone	16
Bromodichloromethane	12
4-Ethyltoluene	5.9
Tetrahydrofuran	80
Xylene (total)	69

SG-2D

SG-2D	µg/m³
1,1,1-Trichloroethane	9.8
1,2,4-Trimethylbenzene	4
1,2-Dichloroethane	2.1
1,3,5-Trimethylbenzene	1.5
1,4-Dichlorobenzene	1.6
4-Ethyltoluene	2.9
Acetone	15
Benzene	2.9
Carbon Disulfide	40
Chloroform	15
Dichlorodifluoromethane	16
Ethylbenzene	2.6
Freon TF	3.6
Methyl Ethyl Ketone	2.4
Methylene Chloride	2.6
n-Heptane	1.4
n-Hexane	2
Tetrachloroethene	16
Toluene	14
Trichlorofluoromethane	12
Xylene (m,p)	7.8
Xylene (o)	3.1
Xylene (total)	11
TIC	250 ppbv

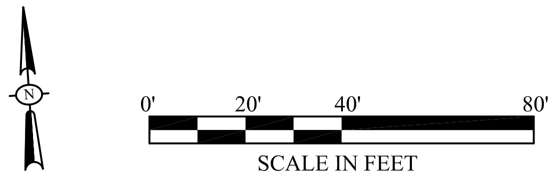
SG-2S

SG-2S	µg/m³
Dichlorodifluoromethane	16
Trichlorofluoromethane	7.3
Methylene Chloride	15
Chloroform	8.8
Benzene	28
1,2-Dichloroethane	5.7
Toluene	150
Tetrachloroethene	5.9
Ethylbenzene	13
Xylene (m,p)	38
Xylene (o)	11
1,3,5-Trimethylbenzene	5.4
1,2,4-Trimethylbenzene	6.9
Carbon Disulfide	120
Acetone	260
Cyclohexane	33
Methyl Ethyl Ketone	22
4-Ethyltoluene	6.9
n-Hexane	33
n-Heptane	39
Xylene (total)	52
TIC	640 ppbv
TIC	690 ppbv

LEGEND:

━━━	TRACK 1 BOUNDARY
━ · ━ · ━	TENNIS COURT AREA SITE BOUNDARY
— — —	CURRENT LOT BOUNDARY
- - -	FORMER LOT BOUNDARY
LOT 8	CURRENT LOT NUMBER
LOT 5	FORMER LOT NUMBER
🟨	TENNIS COURT AREA EXCAVATION TO ELEVATION 54.00'
⬜	EXHUAUST SYSTEM EXCAVATION TO ELEVATION RANGE 39.64' TO 42.64'.

⌖ SG-5S	SOIL VAPOR PROBE
S	SHALLOW PROBE (5' 6")
µg/m³	MICROGRAM PER CUBIC METER



NOTES:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. NO CURRENT NYSDOH SOIL VAPOR GUIDANCE VALUES EXIST.

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WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

SOIL VAPOR PROBE DETECTIONS

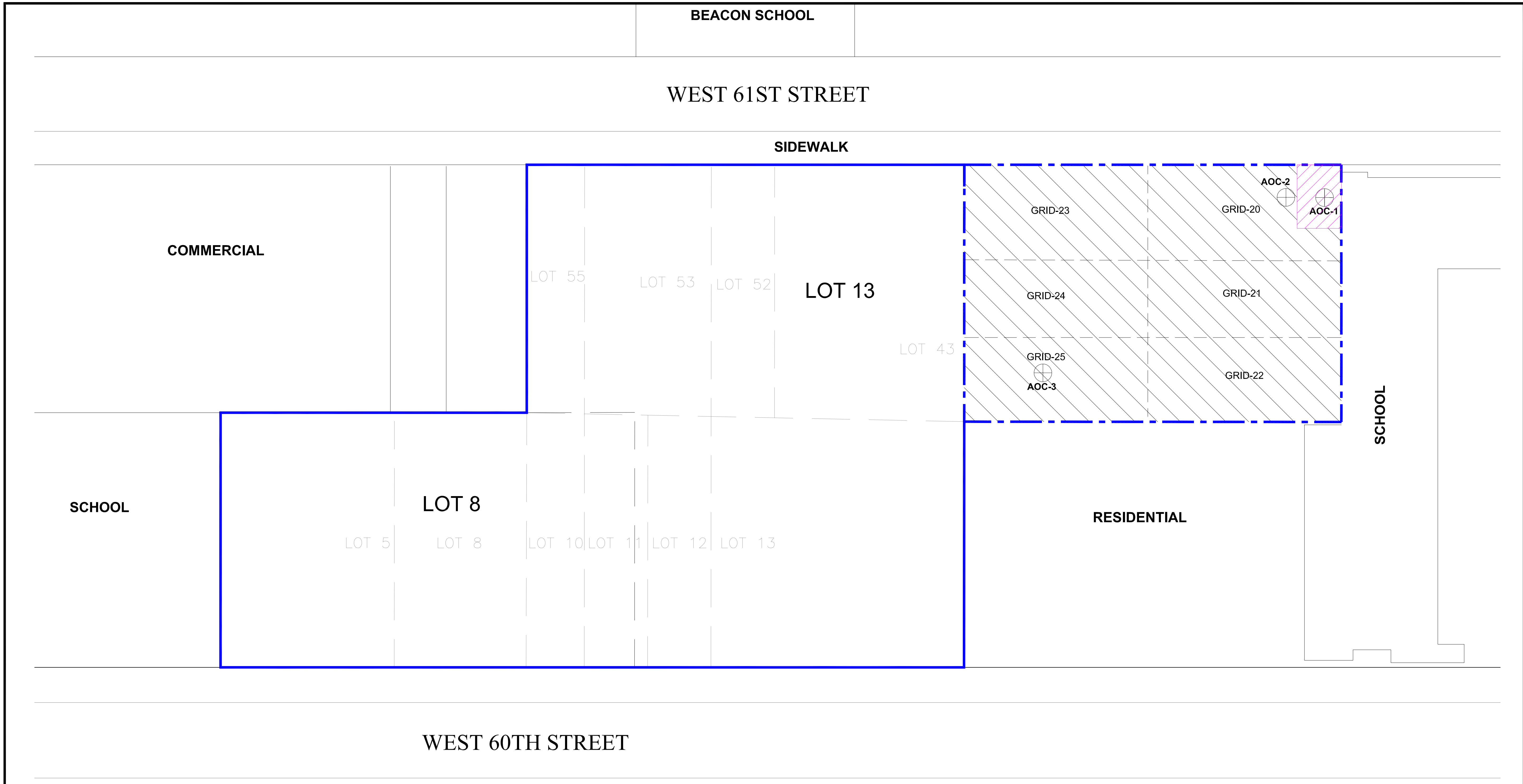
DATE
11.05.09

PROJECT NO.
10321

SCALE
1"=40'

FIGURE
7

M:\AKRF Project Files\10321 - Algin Properties W. 60th St\10321 - FER\Track 4 Report\SMP\Figures\F7Soil GaS.dwg, jszalus



LEGEND:

- GRID BOUNDARY
- TRACK 1 BOUNDARY
- TENNIS COURT AREA SITE BOUNDARY
- CURRENT LOT BOUNDARY
- FORMER LOT BOUNDARY
- GRID-51 GRID LOCATION
- LOT 8 CURRENT LOT NUMBER
- LOT 5 FORMER LOT NUMBER
- ⊕ AOC-2 AREA OF CONCERN
- ▨ EXCAVATION OF CHARACTERISTIC HAZARDOUS WASTE LEAD SOIL
- ▨ HISTORIC URBAN FILL

NOTES:

1. AOC-1 ELEVATED LEAD IN SAMPLE B/MW-3 (0-2')
2. AOC-2 ONE OR MORE USTS NEAR GATEHOUSE
3. AOC-3 ONE OR MORE USTS IN SOUTHWEST CORNER OF PARKING LOT

N

0' 20' 40' 80'
SCALE IN FEET

EACH GRID IS APPROXIMATELY 1,000 CUBIC YARDS PER 16 FT DEPTH

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WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

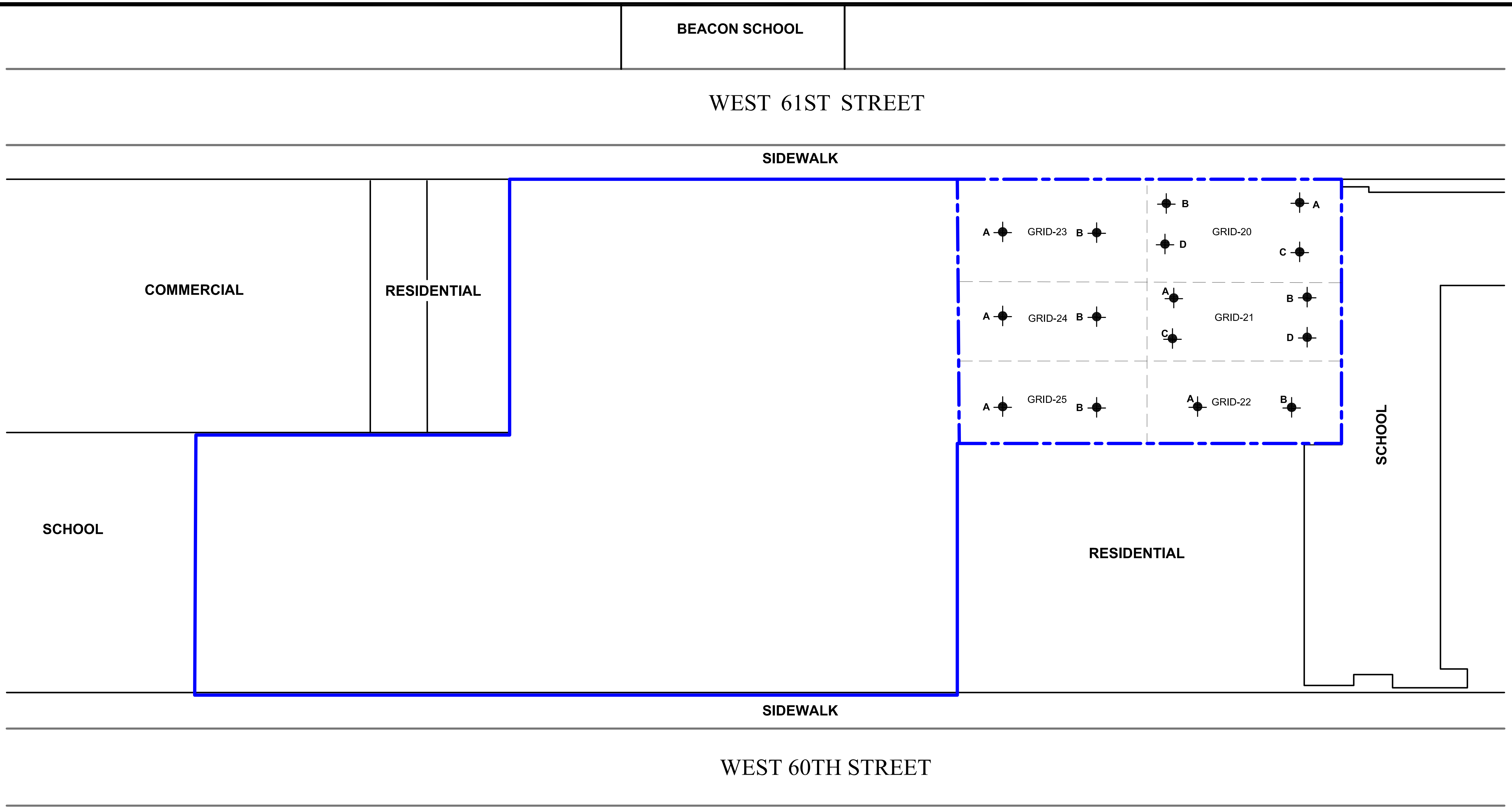
AREAS OF CONCERN

DATE
11.05.09

SCALE
1"=40'

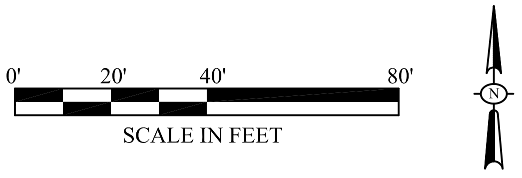
PROJECT No.
10321

FIGURE No.
8



LEGEND:

TRACK 1 BOUNDARY
TENNIS COURT AREA SITE BOUNDARY
GRID BOUNDARY
GRID-51 GRID LOCATION
C ENDPOINT SAMPLE LOCATION



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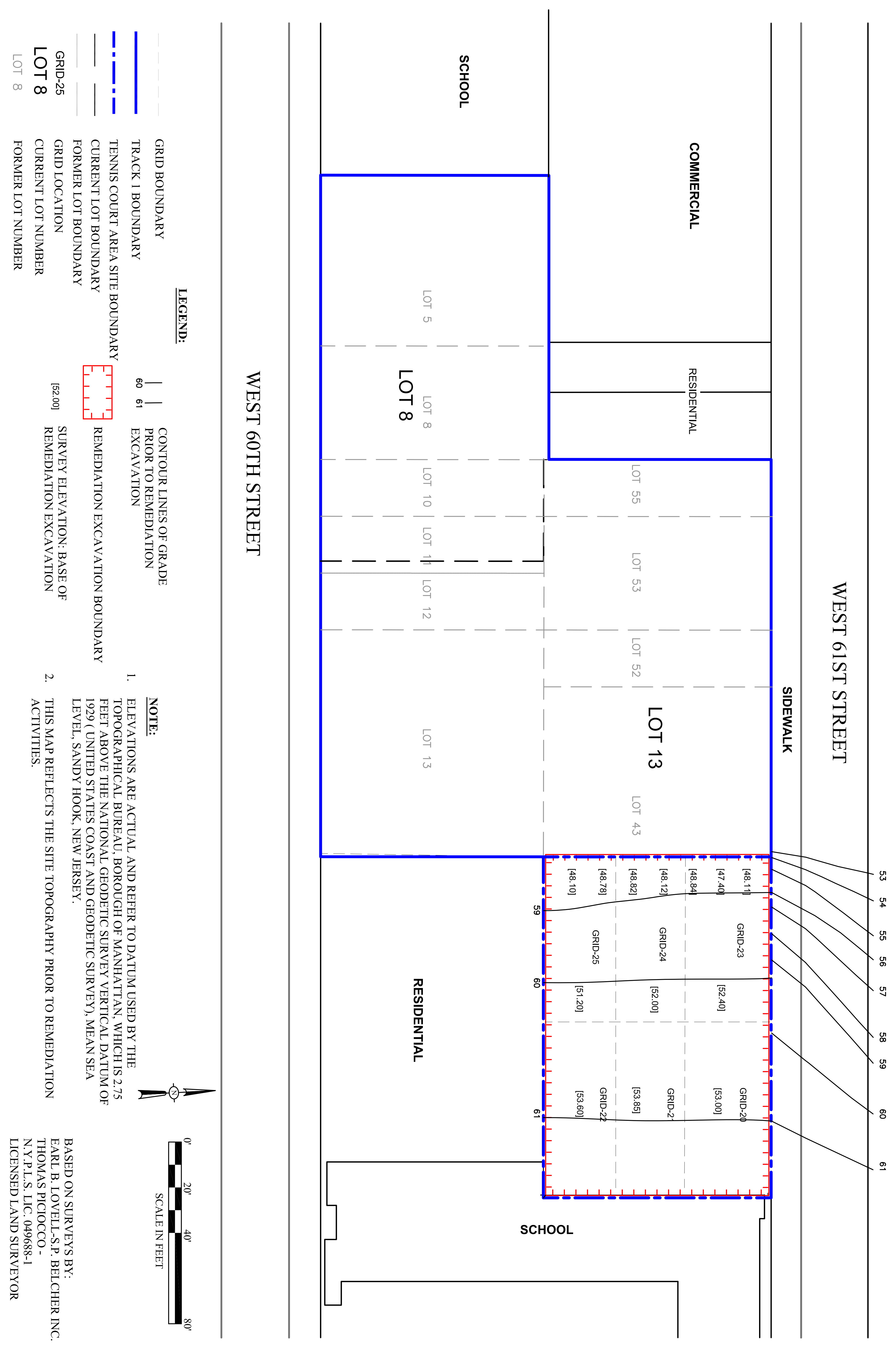
WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK
ENDPOINT SAMPLE LOCATIONS

DATE
11.05.09

PROJECT NO.
10321

SCALE
1"=40'

FIGURE
9



NOTE:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. THIS MAP REFLECTS THE SITE TOPOGRAPHY PRIOR TO REMEDIATION ACTIVITIES.

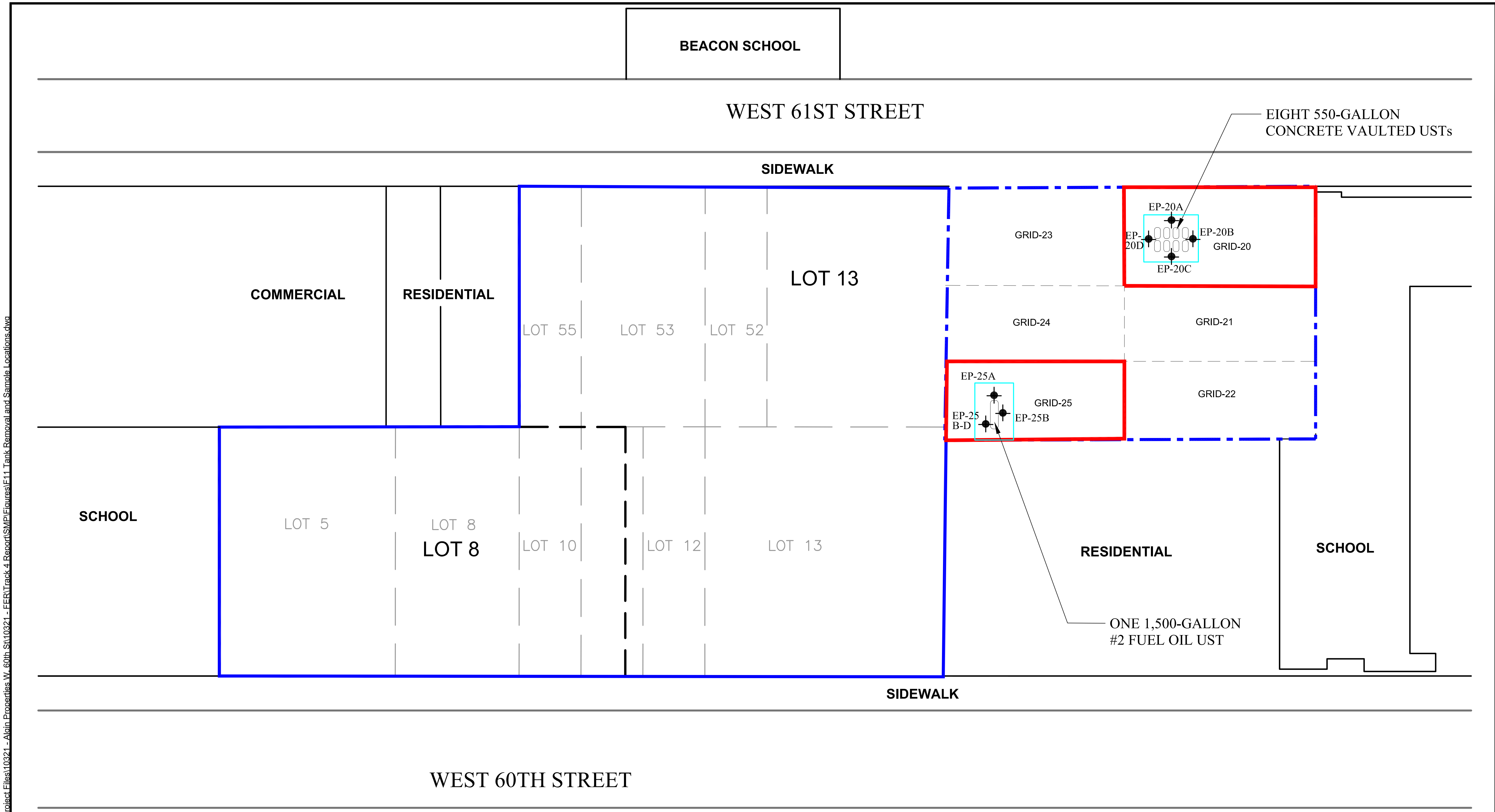
BASED ON SURVEYS BY:
EARL B. LOVELL-S.P. BELCHER INC.
THOMAS PICIOCCO -
N.Y.P.L.S. LIC. 049688-1
LICENSED LAND SURVEYOR

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

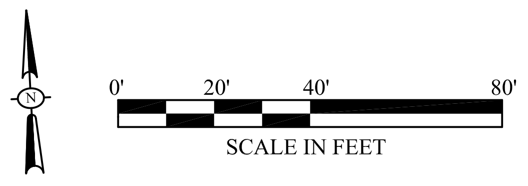
BASE REMEDIATION CONTOUR MAP AND CUT ELEVATIONS

DATE	SCALE	PROJECT No.	FIGURE No.
12.10.09	1"=40'	10321	10



LEGEND:

– – – – – –	GRID BOUNDARY
━━━━━	TRACK 1 BOUNDARY
━ · ━ · ━	TENNIS COURT AREA SITE BOUNDARY
— — —	CURRENT LOT BOUNDARY
— — —	FORMER LOT BOUNDARY
━━━━━	SAMPLED GRID BOUNDARY
GRID-51	GRID LOCATION
LOT 8	CURRENT LOT NUMBER
LOT 5	FORMER LOT NUMBER
⌖ EP-20A	SAMPLE LOCATION
UST	UNDERGROUND STORAGE TANK
☐	APPROXIMATE TANK EXCAVATION BOUNDARY



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WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

TANK REMOVAL AND SAMPLE LOCATIONS

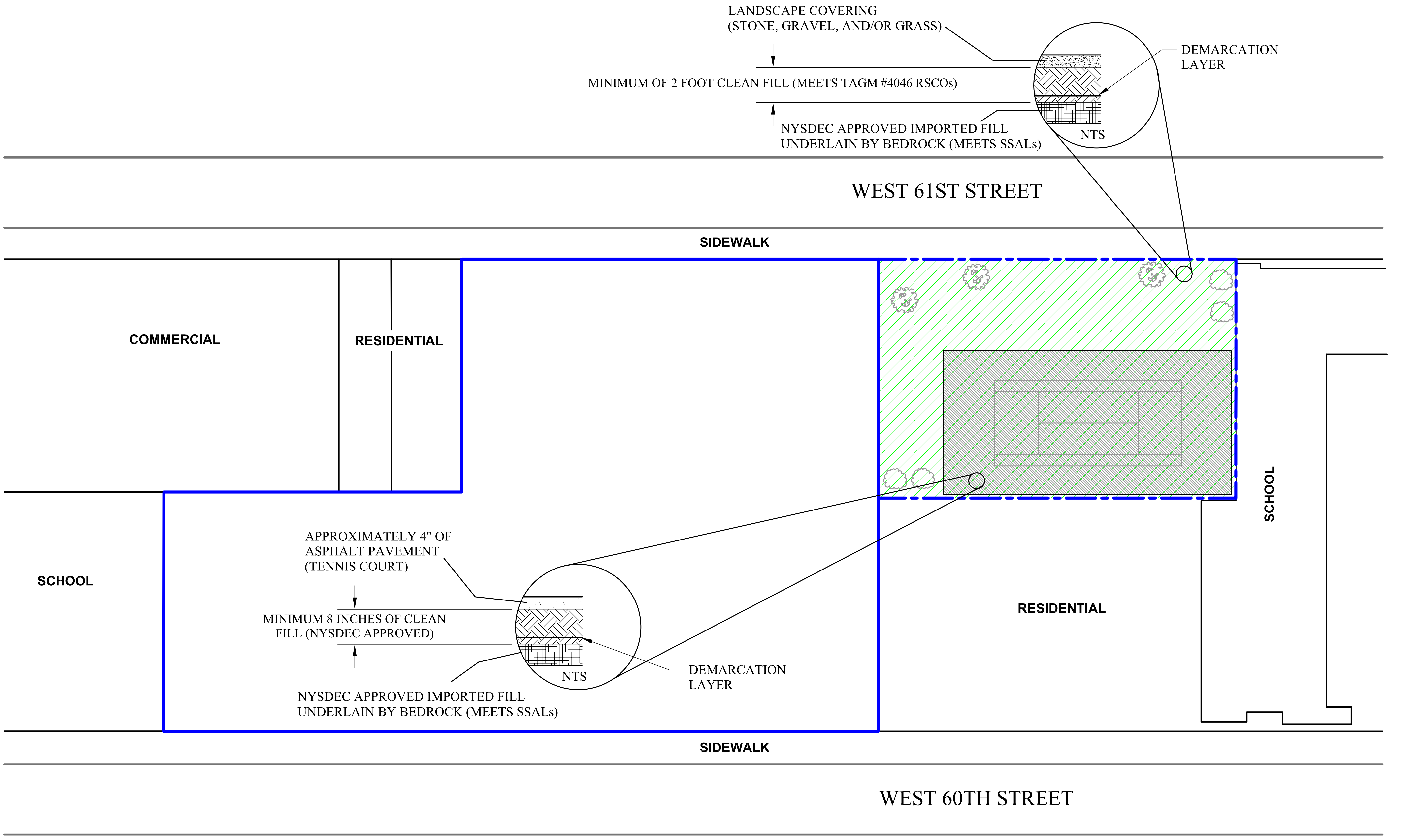
DATE
11.05.09

SCALE
1"=40'

PROJECT No.
10321

FIGURE No.
11

2007 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\10321 - Alvin Properties W. 60th St\10321 - FER\Track 4 Report\SMP\Figures\F11 Tank Removal and Sample Locations.dwg



LEGEND:

▬▬	TRACK 1 BOUNDARY
▬ · ▬	TENNIS COURT AREA SITE BOUNDARY
──	LANDSCAPED ELEMENTS
▨	COVERED BY 2 FEET OF CLEAN FILL
▨	COVERED BY CLEAN FILL AND ASPHALT PAVEMENT (TENNIS COURT)
NTS	NOT TO SCALE

0' 20' 40' 80'
SCALE IN FEET

N

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WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

SITE COVER COMPONENTS
POST DEVELOPMENT

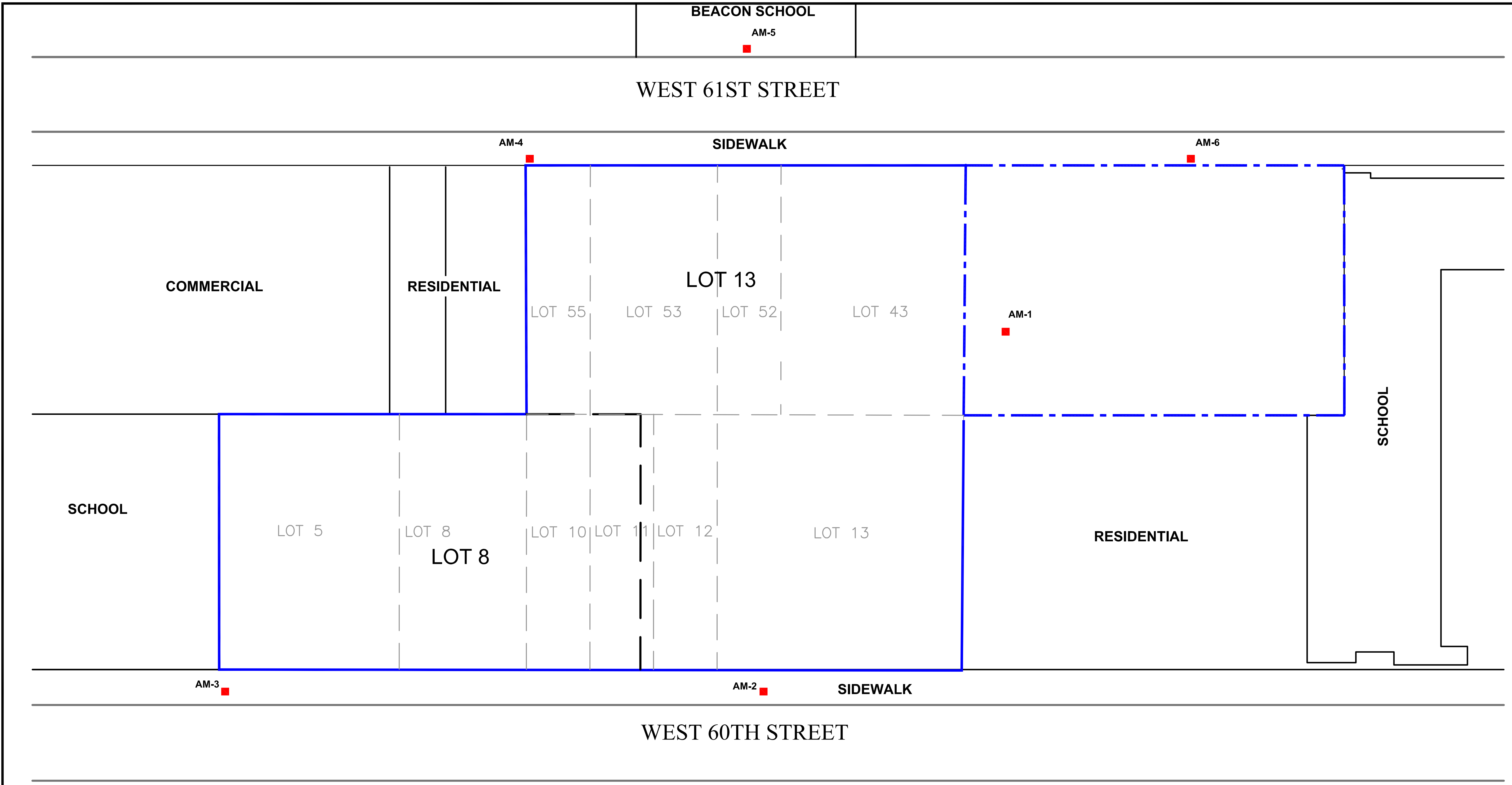
DATE
12.10.09

SCALE
1"=40'

PROJECT No.
10321

FIGURE No.
12

2007 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\10321 - Algin Properties W. 60th St\10321 - FER\Track 4 Report\SMP\Figures\F12 Enr Control Components.dwg

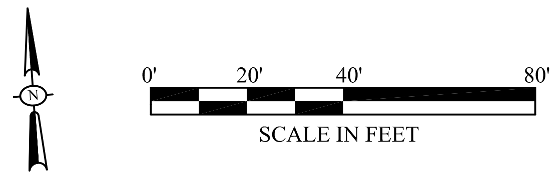


LEGEND:

━━━━	TRACK 1 BOUNDARY
━ · ━ · ━	TENNIS COURT SITE AREA BOUNDARY
—— ——	CURRENT LOT BOUNDARY
─ ─ ─ ─	FORMER LOT BOUNDARY
GRID-51	GRID LOCATION
LOT 8	CURRENT LOT NUMBER
LOT 8	FORMER LOT NUMBER
AM-2 ■	AIR MONITORING LOCATION

NOTES:

AM-1 WAS VARIABLE DEPENDING ON CONSTRUCTION ACTIVITIES



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Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

AIR MONITORING STATION LOCATIONS

DATE
11.05.09

SCALE
1"=40'

PROJECT No.
10321

FIGURE No.
13

2006 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\10321 - Algin Properties W. 60th St\10321 - FER\Track 4 Report\SMP\Figures\F13 Air Monitoring Locations.dwg

APPENDIX A

METES AND BOUNDS

True North Surveyors, P.C.   John Vida, P.L.S.

111 Kosciuszko Road
Whitehouse Station, NJ 08889

Phone (908) 534-6248
Fax (908) 534-6237

March 1, 2007

West 60th Street Associates
64-35 Yellowstone Blvd.
Forest Hills, N.Y. 11375

Legal Description
of
"Tennis Court"
Being part of Tax Lot No. 13
City of Manhattan, N.Y.

Beginning at a point in the Southerly sideline of West 61st Street said point being distant 400.00 feet Easterly from the intersection formed by the said line of West 61st Street with the Easterly sideline of West End Avenue; running thence

(1) Along said line of West 61st Street, North 90 degrees 00 minutes 00 seconds East, a distance of 150.00 feet to a point, thence
(2) South 00 degrees 00 minutes 00 seconds West, a distance of 100.00 feet 5 inches to the middle of the block; thence
(3) Along said middle of the block; South 90 degrees 00 minutes 00 seconds West, a distance of 150.00 feet to a point; thence
(4) North 00 degrees 00 minutes 00 seconds East, a distance of 100.00 feet 5 inches to the point and place of Beginning.

Square Footage: 15,062.5

APPENDIX B

ENVIRONMENTAL EASEMENT

RECEIPT : MA010060766

DEPARTMENT OF FINANCE
MANHATTAN PAYMENT CENTER
66 JOHN STREET
NEW YORK
2ND FLOOR

12/23/2009 4:31:09 PM	CASHIER: NYC1465
1 SALE ITEM	TOTAL DUE: $182.00

ITEM DESCRIPTION	TOTAL
9500 ACRIS Recording Fees and Taxes Tran ID 20091223006330000001P149D	$182.00

ACR SUBTOTAL:	**$182.00**
SUBTOTAL:	**$182.00**
TAX:	**$0.00**
TOTAL DUE:	**$182.00**

1 PAYMENT ITEM

Attorney Check 00012539	$182.00

TOTAL DUE:	**$182.00**
AMOUNT RECEIVED:	**$182.00**

THANK YOU

TP-584.2 (10/96)

Recording Office Time Stamp

Real Estate Transfer Tax Return For Public Utility Companies' and Governmental Agencies' Easements and Licenses

This form may only be used by public utility companies regulated by the Public Service Commission and governmental agencies for the recording of easements and licenses where the consideration for the grant of such easement or license is $500.00 or less.

Name of grantee (public utility company or governmental agency): The New York State Department of Environmental Conservation

Federal employer identification number *(if applicable)*: 14-6013200

Address of grantee: 625 Broadway, Albany, New York 12233-1500

Name and telephone number of person to contact: Yvonne Ward (518)402-9521

	Name(s) of Grantor Of Easement or License	Address of Property	Consideration Given For Easement or License
1.	West 60th Street, LLC	218 West Street previously	$0.00
2.	and West End Enterprises, LLC	229-235 West 60th Street	
3.		New York, New York County	
4.			
5.			
6.		Tax Map No.(s): Block 1152 Lot 13	
7.		(former Lot 43)	
8.			
9.			
10.	ENVIRONMENTAL EASEMENT HELD BY NYSDEC		
11.	PURSUANT TO TITLE 36 OF ARTICLE 71		
12.	OF THE NYS ENVIRONMENTAL CONSERVATION LAW		
13.	Site No.: C231059		
14.			
15.			

If more than fifteen conveyances are to be recorded, attach a schedule of such other conveyances.

Signature of Grantee

I certify that the grantee is a public utility regulated by the Public Service Commission or is a governmental agency and the grantee of the easements and/or licenses above; that it is true to the best knowledge of the grantee that the granting of each such easement and/or license is exempt from Real Estate Transfer Tax imposed by Article 31 of the Tax Law by reason that each such conveyance is for a consideration of five hundred dollars or less and/or the conveyance is being made to a governmental agency.

Name of grantee

NYSDEC

Signature of partner, officer of corporation, governmental official, etc.

Senior Attny

Title

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 16th day of Decem, 2009, between Owner(s) West 60th Street Associates, LLC, and West End Enterprises, LLC having an office at c/o Algin Management Co., LLC, 64-35 Yellowstone Boulevard, Forest Hills, New York 11375, (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and of ensuring the potential restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at 218 West 61st Street Tennis Court Area Site, previously known as 229-235 West 60 Street, City, County and State of New York, known and designated on the tax map of the Registrar of the City of New York as tax map parcel numbers: Block 1152 Lot 13 (former Lot 43), being the same as that property conveyed to Grantor by Bargain and Sale Deed dated November 29, 2004 and recorded in the Office of the City Register of the City of New York in City Register File No. (CRFN): 2005000175550, comprising of approximately 0.346± acres, and hereinafter more fully described in the ALTA/ACSM Land Title Survey dated June 25, 2008, prepared by Control Point Associates, Inc, and corresponding Schedule "A" property description, both documents are attached hereto and made a part hereof (the "Controlled Property"); and

WHEREAS, the Commissioner does hereby acknowledge that the Department accepts this Environmental Easement in order to ensure the protection of human health and the environment and to achieve the requirements for remediation established at this Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the covenants and mutual promises contained herein and the terms and conditions of Brownfield Cleanup Agreement Number A2-0580-01-07, Grantor grants, conveys and releases to Grantee a permanent Environmental Easement pursuant to Article 71, Title 36 of the ECL in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the potential restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The following controls apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property:

A. The Controlled Property may be used for restricted residential use as described within 6 NYCRR Part 375- 1.8 (g) (2) (iii), as long as the following long-term engineering controls are employed and the land use restrictions specified below are adhered to:

The Controlled Property has one primary Engineering Control as follows:

(i) Composite Cover System.

Institutional Controls consist of the following:

(i) All Engineering Controls must be operated and maintained as specified in the Site Manage Plan (SMP);

(ii) A composite cover system consists of two feet of soil covered by asphalt pavement or landscaping material must be inspected, certified and maintained as required in the SMP;

(iii) All Engineering Controls on the Controlled Property must be inspected and certified at a frequency and in a manner defined in the SMP;

(iv) Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(v) Engineering Controls may not be discontinued without an amendment or the extinguishment of this Environmental Easement;

(vi) Vegetable gardens and farming on the Controlled Property are prohibited;

(vii) The use of the groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for intended purpose;

(viii) All future activities on the Controlled Property that will disturb residual contaminated material (i.e., penetrates fully through the site cover and demarcation layer into the underlying soil) are prohibited unless they are conducted in accordance with the soil management provisions in the SMP ;

B. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the Site Management Plan ("SMP") that the Department has approved for the Controlled Property and all Department-approved amendments to that SMP.

The Grantor hereby acknowledges receipt of a copy of the NYSDEC-approved Site Management Plan, dated November, 2009. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system on the Controlled Property, and providing certified reports to the NYSDEC, is treatment system on the Controlled Property, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. Upon notice of not less than thirty (30) days the Department in exercise of its discretion and consistent with applicable law may revise the SMP. The notice shall be a final agency determination. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Regional Remediation Engineer
NYSDEC - Region 2
Division of Environmental Remediation
One Hunter's Point Plaza
47-40 21st Street
Long Island City, NY 11101-5407
Phone: (718) 482-4995 fax: (718) 482-6358

or

Site Control Section
Division of Environmental Remediation
NYS DEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553 Fax: (518) 402-9595

C. The Controlled Property may not be used for a higher level of use such as unrestricted residential or restricted residential use and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

D. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant of Title 36 to Article 71 of the Environmental Conservation Law.

E. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

F. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Controlled Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer the underlying fee interest to the Controlled Property by operation of law, by deed, or by indenture, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person intentionally violates this Environmental Easement, the Grantee may revoke the Certificate of Completion provided under ECL Article 27, Title 14 with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach. Grantor shall then have a reasonable amount of time from receipt of such notice to cure. At the expiration of said second period, Grantee may commence any proceedings and take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement in accordance with applicable law to require compliance with the terms of this Environmental Easement.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar its enforcement rights in the event of a subsequent breach of or noncompliance with any of the terms of this Environmental Easement.

6. Notice. Whenever notice to the State (other than the annual certification) or approval from the State is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:
County, NYSDEC Site Number, NYSDEC Contract or Order Number, and the
County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to: Site Number: C 231059
Department of Environmental Enforcement
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

Such correspondence shall be delivered by hand, or by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. This Environmental Easement may be amended only by an amendment executed by the Commissioner of the New York State Department of Environmental

Conservation and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. <u>Extinguishment.</u> This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. <u>Joint Obligation</u>. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Grantor's Name:

COMPANY: WEST 60 th STREET ASSOCIATES, LLC

MEMBER: LHL REALTY CO., LLC

By: ______________________ 12/16/09
Laurence Ginsberg, Manager Date

By: Liane Ginsberg 12/16/09
Liane Ginsberg, Manager Date

By: Hilary Feshbach 12/16/09
Hilary Feshbach, Manager Date

COMPANY: WEST END ENTERPRISES, LLC

By: ______________________ 12/16/09
Laurence Ginsberg, Manager Date

By: Liane Ginsberg 12/16/09
Liane Ginsberg, Manager Date

By: Hilary Feshbach 12/16/09
Hilary Feshbach, Manager Date

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation

~~By:~~ ~~Alexander B. Grannis, Commissioner~~

By:

Dale A. Desnoyers, Director
Division of Remediation

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Queens)

On the 16th day of December, in the year 2009, before me, the undersigned, personally appeared Laurence T. Ginsberg, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public - State of New York

DANIELLE G. SALCAU
Notary Public, State of New York
No. 02SA6167635
Qualified in Queens County
Commission Expires June 04, 2011

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Queens)

On the 16th day of December, in the year 2009 before me, the undersigned, personally appeared Diane Ginsberg, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public - State of New York

DANIELLE G. SALCAU
Notary Public, State of New York
No. 02SA6167635
Qualified in Queens County
Commission Expires June 04, 2011

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Queens)

On the 16th day of December, in the year 2009, before me, the undersigned, personally appeared Hilary Feshbach, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public - State of New York

DANIELLE G. SALCAU
Notary Public, State of New York
No. 02SA6167635
Qualified in Queens County
Commission Expires June 04, 2011

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the 18th day of December, in the year 2009, before me, the undersigned, personally appeared Dale Desnoyers, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
mmission Expires August 22, 2010

SCHEDULE "A" PROPERTY DESCRIPTION

True North Surveyors, P.C. John Vida, P.L.S.

111 Kosciuszko Road
Whitehouse Station, NJ 08889

Phone (908) 534-6248
Fax (908) 534-6237

March 1, 2007

West 60th Street Associates
64-35 Yellowstone Blvd.
Forest Hills, N.Y. 11375

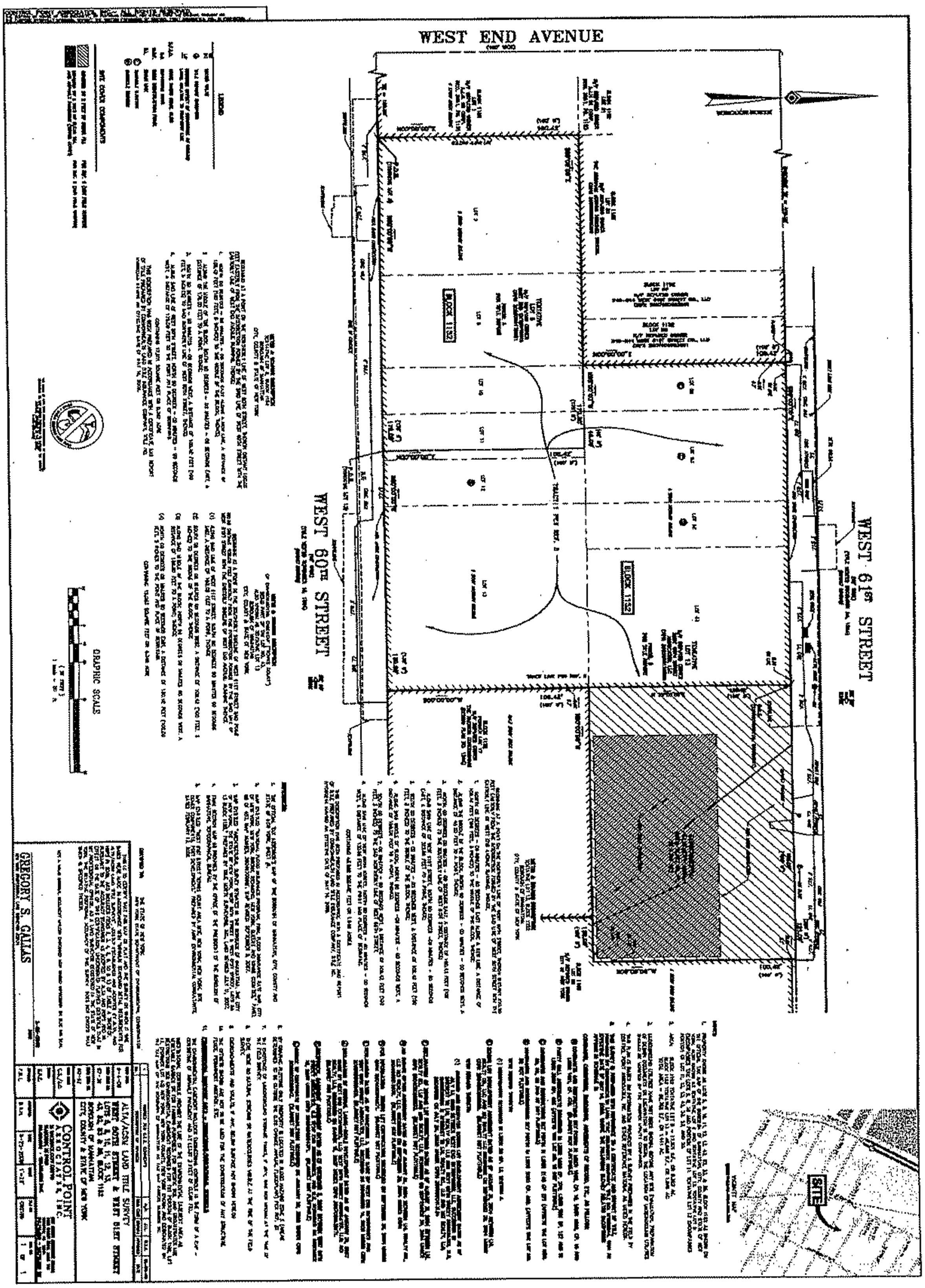
Legal Description
of
"Tennis Court"
Being part of Tax Lot No. 13
City of Manhattan, N.Y.

Beginning at a point in the Southerly sideline of West 61st Street said point being distant 400.00 feet Easterly from the intersection formed by the said line of West 61st Street with the Easterly sideline of West End Avenue; running thence

(1) Along said line of West 61st Street, North 90 degrees 00 minutes 00 seconds East, a distance of 150.00 feet to a point, thence
(2) South 00 degrees 00 minutes 00 seconds West, a distance of 100.00 feet 5 inches to the middle of the block; thence
(3) Along said middle of the block; South 90 degrees 00 minutes 00 seconds West, a distance of 150.00 feet to a point; thence
(4) North 00 degrees 00 minutes 00 seconds East, a distance of 100.00 feet 5 inches to the point and place of Beginning.

Square Footage: 15,062.5

SURVEY


WEST END AVENUE
WEST 60th STREET
WEST 61st STREET
BLOCK 1152
BLOCK 1152
GRAPHIC SCALE
GREGORY S. GALLS
CONTROL POINT ASSOCIATES, INC.
ALTA/ACSM LAND TITLE SURVEY
SITE

APPENDIX C

REMEDIATION WORK PLAN AND ADDENDA (CD)

AKRF
Environmental and Planning Consultants

440 Park Avenue South
New York, NY 10016
tel: 212 696-0670
fax: 212 213-3191
www.akrf.com

October 3, 2006

Mr. Shaminder Chawla
1 Hunter's Point Plaza
47-40 21st Street
Long Island City, NY 11101-5407

Re: Algin Management West 61st Street Site
New York, New York

Dear Mr. Chawla:

AKRF, Inc. (AKRF) is pleased to submit this Remedial Work Plan Addendum Letter to AKRF's, June 2006 Remediation Work Plan Addendum for the above-referenced site. This letter includes communication procedures, mitigation measures, community air monitoring requirements, and a soil removal schedule related to areas of known and unknown odorous soils.

Communication

In the event that an underground storage tank, drum, odor, stained-soil, or evidence of a previous spill or release is identified at a location which has not been designated as an Area of Concern (AOC) in the Construction (IRM) Work Plan, that location will be considered the center of a new work zone. All applicable work zone requirements of the IRM will apply, including notification of the new work zone to the NYSDEC, and the other emergency site contacts listed in Table 1.

In addition, if concerns from surrounding community members are communicated to Algin Management and/or one of their representatives, immediate measures will be taken to disseminate the concerns to the NYSDEC and relevant owner representatives. In addition, the owner and/or one of their representatives will personally communicate with the complainant whenever possible.

Due to previous concerns expressed by the Beacon School, located across West 61st Street, a schedule of weekly on-site activities will be provided to Ms. Ruth Lacey, Principal, in an effort to coordinate school and construction activities. The schedule will be presented each Monday, or in the event of a school closure, the following school day. Also, in the event of a new work zone discovery with the potential to adversely affect the school, Ms. Lacey will be personally notified in conjunction with the notification of the NYSDEC and other emergency contacts.

Table 1
Contact Information

Company	Individual Name	Title	Contact Number
AKRF	Michelle Lapin	Project Director	646-388-9520 (office)
	Amy Yilmaz	Project Manager	917-583-9407 (cell) 646-388-9826 (office)
VJB Construction Corp.	John Sjolund	Construction Management Project Executive	212-268-4364 (office)
	Ralph Wicks	Construction Management Project Supervisor	212-268-4364 201-538-4638 (cell)
Algin Management Co., LLC	Larry Ginsberg	Owner	718-896-9600
NYSDEC	Daniel Walsh	Solid and Hazardous Waste Supervisor	718-482-4599
	Shaminder Chawla	Project Manager	718-482-4897
The Beacon School	Ruth Lacey	Principal	212-245-2807 (office) 917-886-3973 (cell)

Mitigation Measures

If incidental nuisance odors are recognized during construction activities, AKRF will take immediate action to mitigate the odors. This will be done by applying foam and using plastic sheeting to cover the area of concern. Additionally, photoionization detector (PID) readings (for measurement of volatile organic compounds) will be taken downwind from the area where the odors were first observed. Following the discovery of odors, AKRF will notify all appropriate parties, as indicated in Table 1, and inform them of the procedures that will be taken to mitigate the odors.

During soil removal activities or disturbances of known petroleum-contaminated soils, AKRF will direct the contractor to apply foam to suppress odors. Odorous soils will be continually sprayed with foam during truck loading and excavation activities. When possible, odorous soil will be directly loaded from the area of concern into trucks for immediate off-site disposal. No trucks loaded with contaminated material will remain on-site.

During non-trucking activities, stockpiled materials will not be placed above the surface of the excavation. Odor suppressing foam will be applied to the stockpiled materials and subsequently covered with plastic sheeting.

Nuisance dust will be mitigated through the application of water. Particulate monitoring will be conducted upwind and downwind of work activities. In addition, SUMMA canisters for laboratory analysis of volatile organic compounds will be available on-site.

Community Air Monitoring

In accordance with AKRF's June 2005 Expanded Community Air Monitoring and Odor/Vapor Control Plan, air monitoring stations have been established around the perimeter of the site, both upwind and downwind of work activities. Figure 1 illustrates air monitoring locations AM-1 through AM-6. The AKRF representative, roving monitor, performing the community air monitoring will be wearing a safety vest and hard hat.

Monitoring is conducted at each location, for a 15-minute sampling interval, on a rotational basis, utilizing a PID and a dust/particulate monitor (Dust Trak). Resultant concentrations are documented on the community air monitoring log sheet in the field. Any exceedances of the community air monitoring action levels will be reported in the daily log, to the NYSDEC Project Manager, and emergency contacts, as necessary.

If unexpected odors or dust are observed during construction activities, additional community air monitoring, in excess of the normal rotation, will be conducted at downwind air monitoring locations. Comments will be placed within the air monitoring log indicating the reason for the additional monitoring. In addition, air samples may be collected using SUMMA canisters for laboratory analysis of volatile organic compounds following odor events.

Due to the close proximity of the Beacon School, three air monitoring locations, AM-4, AM-5, and AM-6, are located along West 61st Street. Additional air monitoring will be conducted along West 61st Street during work activities that may cause nuisance odors or dust.

Site Access

In response to the NYSDEC's request to utilize West 60th Street as the point of site egress, Algin Management considered the construction of a fill access ramp in the southeast corner of the property. However, during a meeting between Con Edison and Algin Management on September 27, 2006 it was determined that the utility vault location will be in the southeast corner of the property along West 60th Street. It was further determined, that the vault will supply both temporary and permanent power to the site; therefore, the vault construction must be completed as soon as possible making the construction of an access ramp impractical.

In addition, the southwestern corner of the property was evaluated as a potential option for the access ramp construction; however, the construction site across West 60th Street has the area designated and permitted as their loading zone, negating the turning radius requirements of our trucks. It is apparent at this time that access ramp construction along West 60th Street is unattainable. VJB Construction has suggested that all trucking, of non-odorous soils, be conducted through the current, northeastern West 61st Street access gate during times agreed upon with the Beacon School.

Soil Removal Schedule

In an effort to minimize the impact of nuisance odors and/or dust affecting the surrounding schools and the community, all trucking of non-odorous soils will be conducted during times agreed upon with the Beacon School [i.e., before 7:30 AM, between 9:00 and 11:00 AM, after school hours (3:45 PM on Monday, Tuesday, Thursday, and Friday and 2:30 PM on Wednesday), and/or on school holidays]. Odorous soils will be removed only after school hours and/or on designated school closures. For the safety of the community, dedicated flag personnel will be stationed at the intersection of West End Avenue and West 61st Street, the site entrance, and exit during all trucking activities. The following two-week soil removal schedule has been provided for your reference. Please refer to Figure 1 for locations of remaining known odorous and non-odorous soils.

Table 2
Soil Removal Schedule

Date	**Times**	**Location**	**Odor/Non-Odor**
10/2/06 (School Closed)	7:00 AM to 6:30 PM	G-39, 40, and 44-52	Odor
10/3/06	3:45 PM to 6:30 PM	G-39, 40, and 44-52	Odor
10/4/06	3:45 PM to 6:30 PM	G-39, 40, and 44-52	Odor
10/5/06	3:45 PM to 6:30 PM	G-39, 40, and 44-52	Odor
10/6/06	3:45 PM to 6:30 PM	G-39, 40, and 44-52	Odor
10/9/06 (School Closed)	7:00 AM to 6:30 PM	To be determined	Odor/Non-Odor
10/10/06	3:45 PM to 6:30 PM	To be determined	Odor/Non-Odor
10/11/06	3:45 PM to 6:30 PM	To be determined	Odor/Non-Odor
10/12/06	3:45 PM to 6:30 PM	To be determined	Odor/Non-Odor
10/13/06	3:45 PM to 6:30 PM	To be determined	Odor/Non-Odor

In closing, AKRF, on behalf of Algin Management, appreciates your consideration of our Remedial Work Plan Addendum. Please do not hesitate to contact us if questions or concerns arise.

Sincerely,
AKRF, Inc.

Amy Yilmaz

cc: Mr. Daniel Walsh, NYSDEC
Ms. Michelle Lapin, AKRF
Mr. Larry Ginsberg, Algin Management
Mr. Bennet Schonfeld, Algin Management
Mr. Sean Paroff, Algin Management
Mr. David Freeman, Esq., Paul, Hastings, Janofsky & Walker LLP

LEGEND:

— - —	GRID BOUNDARY
▨	KNOWN ODOROUS SOILS
● GRID-51	GRID LOCATIONS
■ AM-2	AIR MONITORING LOCATIONS
◐	EXISTING GROUNDWATER MONITORING WELL INSTALLED DURING REMEDIAL INVESTIGATION. SOIL AND GROUNDWATER SAMPLES COLLECTED.
⊕	AREA OF CONCERN

EACH GRID IS APPROXIMATELY 1,000 CUBIC YARDS PER 16 FT DEPTH

NOTES:

AOC-1	ELEVATED LEAD IN SAMPLE B/MW-3 (0-2")
AOC-2	ONE OR MORE USTS NEAR GATEHOUSE
AOC-3	ONE OR MORE USTS IN SOUTHWEST CORNER OF PARKING LOT
AOC-4	ONE OR MORE POTENTIAL USTS ON LOT 53
AOC-5	ESTIMATED EXTENT OF PETROLEUM-CONTAMINATED SOIL AND/OR GROUNDWATER
AOC-6	POSSIBLE VAULTED 1,050-GALLON TANK IN BASEMENT OF LOT 8
AOC-7	ELEVATED ACETONE IN SAMPLE B/MW-4 (12-14)

N

0' 20' 40' 80'
SCALE IN FEET

NOTE: ELEVATIONS IN MANHATTAN BOROUGH DATUM (MBD)

M:\AKRF Project Files\10321 - Algin Properties W. 60th St\Figures\RAWP Figures\RWP_SP_Figure_1_AM.dwg

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

West 61st Street Site
NEW YORK, NEW YORK

GRID AND AIR MONITORING LOCATIONS

DATE
09.29.06

SCALE
1"=40'

PROJECT No.
10321

FIGURE No.
1 - AM

AKRF, Inc.
440 Park Avenue South New York, NY 10016
212-696-0670

Submitted to:

Algin Management Co., LLC
64-35 Yellowstone Boulevard
Forest Hills, NY 11375

REMEDIATION WORK PLAN ADDENDUM

West 61st Street Site

New York, New York

Project Number: 10321
BCP ID 231043

JUNE 2006

AKRF

Environmental and Planning Consultants

34 South Broadway
White Plains, New York 10601
tel: 914-949-7336
fax: 914-949-7559

www.akrf.com

June 30, 2006

Mr. Shaminder Chawla
Division of Environmental Remediation
NYSDEC-Region 2
47-40 21st Street
Long Island City, New York 11101

Re: Remediation Work Plan Addendum
West 61st Street Site
BCP ID C231043

Dear Mr.Chawla:

AKRF, Inc. is pleased to provide the New York State Department of Environmental Conservation (NYSDEC) with two copies of this addendum to the March 2006 Remediation Work Plan (RWP). This addendum includes the following modifications and amendments to the RWP:

- RWP Appendix P – This appendix includes the final stipulation letter-agreement, approved by our client.
- RWP Table 2 (Revised) – Some of the Site Specific Soil Action Levels (SSSALs) have been revised based on comments from the NYSDEC.
- RWP Tables 4A, 4B, 4C, 4D, 4E, 4F, and 4G – These tables provide parameter rankings for volatile organic compounds, semi-volatile organic compounds, total carcinogenic poly-cyclic aromatic hydrocarbons, arsenic, chromium, lead, and mercury for the samples collected during the Remedial Investigation.
- RWP Figure 14REV – The soil removal depths in the Court Yard area have been extended downward to the native soil interface based on the results of the Waste Characterization Sampling for the purpose of achieving a Track 1 Cleanup.
- RWP Figure 16 – This figure depicts the thickness of the historic fill throughout the site.
- RWP Appendix Q – This appendix contains an Erosion and Sediment Control Plan. (A Stormwater Pollution Prevention Plan [SWPPP] is not required for this site.)
- RWP Appendix R – This appendix consists of the May 25, 2006 and June 16, 2006 letters with attachments that provides the preliminary results of the petroleum delineation, waste characterization,

and endpoint samples collected in March and April of this year. The analytical results and findings are included in this letter.

- RWP Appendix A, Sub-Appendix F- This Revised Expanded Community Air Monitoring Odor/Vapor Control Plan was prepared in accordance with NYSDEC comments and replaces the previous Expanded Community Air Monitoring Odor/Vapor Control Plan included in both the March 2006 Remediation Health and Safety Plan and the February 2006 Interim Remedial Measure Health and Safety Plan.

If you have any questions, regarding this material, please contact AKRF Project Manager Richard Gardineer, P.E. at (914) 922-2369 or me at (646) 388-9520.

Sincerely,
AKRF, Inc.

Micelle Lapin, P.E.
Senior Vice President

cc: Ms. Julia Guastella, NYSDOH
Mr. David Freeman, Paul, Hastings, Janofsky, and Walker, LLP
Mr. Bennet Schonfeld, Algin Management Company, LLC

West 61st Street Site

NEW YORK, NEW YORK

Remediation Work Plan Addendum

NYSDEC BCP Number: C231043

AKRF Project Number: 10321

Prepared for:

Algin Management Company, LLC
64-35 Yellowstone Boulevard
Forest Hills, New York 11375

Prepared by:

AKRF Engineering, P.C.
440 Park Avenue South
New York, NY 10016
212-696-0670

Reviewed and Approved by:

JUNE 2006

Table 2 (Revised 6/21/06)
Site Specific Soil Action Levels
West 61st Street, New York, NY

Compound	Action Level (mg/kg)	Source
Lead	1,000	Site Specific Action Level
Mercury	2	Site Specific Action Level
Arsenic	18	Site Specific Action Level
Chromium	40	Site Specific Action Level
Benzene	0.06	TAGM #4046
Toluene	1.5	TAGM #4046
Ethylbenzene	5.5	TAGM #4046
O-xylene	1.2	TAGM #4046
M/P-xylene	0.6	TAGM #4046
Naphthalene	13.0	TAGM #4046
Total VOCs	10.0	TAGM #4046
Individual VOC	TAGM #4046	TAGM #4046
Total SVOCs	200	Site Specific Action Level
PCB	1	TAGM #4046
Pesticides/Herbicides: Heptachlor epoxide 4,4' DDD	 0.02 2.9	TAGM #4046
Other Criteria	Petroleum-contaminated soil	DER-10

Notes:
mg/kg = milligrams per kilogram
TAGM #4046 = New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum #4046 – Determination of Soil Cleanup Objectives and Cleanup Levels.
VOCs = volatile organic compounds
SVOCs = semi-volatile organic compounds
DER – Division of Environmental Remediation

TABLE 4A
PARAMETER RANKING
WEST 61st STREET SITE
NEW YORK, NEW YORK

Ranking of Total VOCs in Ascending Concentration

Parameter NYSDEC-RSCO	**Total VOCs 10,000 ug/Kg**	**Total SVOCs 500,000 ug/Kg**	**cPAHs ug/Kg**	**Lead 500 mg/Kg**	**Arsenic 12 mg/Kg**	**Mercury 0.2 mg/Kg**	**Chromium 40 mg/Kg**
MW-2(12-14)	ND	ND	ND	18.3	2.3	0.058	16.3
B/MW-5(5-7)	ND	2,099	814	48.3	ND	0.072	14
MW-8(13-15)	ND	278	ND	133	2.5	0.099	**107**
B-12(2-4)	ND	10,160	4,990	**1,760**	10.1	**0.34**	17.7
B-12(11-13)	ND	ND	ND	**786**	4.2	0.18	22.3
B-18(28-30)	ND	ND	ND	6.8	1.6	ND	13.9
B-15(13-13.5)	0.8	ND	ND	7.7	4.6	0.021	17.3
B-10(0.5-2.5)	1.2	73,380	22,510	277	3	0.14	10.4
B-11(25-27)	2	5,093	2,714	153	4.7	0.02	26.9
B-11(0-2)	2.4	4,108	1,380	364	**14.6**	0.12	11.2
MW-8(0-2)	2.5	2,110	390	510	4.4	**1.5**	27.6
MW-9(12-14)	3.9	ND	ND	6	2.7	0.018	9
B-11(12-14)	3.9	658	276	672	4.6	**0.43**	19.1
B-16(10-12)	4.4	57,320	17,180	134	3.7	**0.7**	17.5
B-15(0-2)	4.6	3,920	1,020	232	5.5	0.13	27
B-17(14-16)	6.3	243,260	105,600	**2580**	7.7	**0.81**	15.1
MW-1(0-2)	7.3	31,110	15,260	**803**	7.4	**0.87**	15.8
B/MW-3(7-9)	7.5	93	ND	427	2.7	0.16	15.3
B-12(0-2)	7.8	26,590	13,360	**1,500**	**16.6**	**0.27**	32.9
B/MW-5(0-2)	8	2,627	162	56.9	3.3	0.19	11.3
B-14(15-17)	8	698	215	20.6	1.4	0.064	179
MW-1(15-17)	8.6	ND	ND	7.7	4.1	0.039	13
B-14(20-22)	8.9	ND	ND	31.8	3.1	0.11	14.2
B-16(24-26)	8.9	188	ND	27	2.4	0.051	25.2
B-13(0-2)	9.2	135,170	58,500	**821**	**12.9**	**0.54**	12.2
MW-9(0-2)	9.5	ND	ND	6	3.2	ND	17.1
B-10(15-15.5)	12	ND	ND	85.1	1.6	**0.46**	13.1
B-16(0-2)	12.2	3,060	980	84.2	9.6	0.087	20.4
MW-6(15-17)	13	ND	ND	32.4	1.8	0.083	25.2
B-17(0-2)	13	5,160	6,668	27.9	1.8	0.077	7.6
B-18(14.5-16.5)	17	ND	ND	25.6	1.7	**0.21**	12.1
B-18(0-2)	23	41,320	14,660	88.2	3.8	0.096	15.1
MW-2(0-2)	26.4	104,710	44,000	475	**16.8**	**0.3**	17.2
MW-7(6-8)	34.5	43,770	18,258	292	6.3	**0.36**	21
MW-4(0-2)	38.3	1,590	410	89.2	2.5	ND	3.8
MW-6(2-4)	63.6	4,980	470	90.5	5	**0.59**	105
B/MW-3(0-2)	64.9	16,138	7,450	**2,980**	11.3	**2.5**	18.4
B-14(0-2)	90.2	43,800	8,700	423	5.5	0.11	**53.6**
B-13(6-8)	220	1,402	714	498	5	**0.33**	12.9
MW-4(12-14)	292.9	ND	ND	70.6	3.4	0.15	13.1
MW-7(0-2)	771	21,240	13,540	417	3.7	0.17	19
B-17(18-20)	8,900	800	ND	18.9	3.5	0.029	**278**

Note: The VOC, SVOC, and cPAH concentrations are in parts per billion (ug/Kg); the metal concentrations are in parts per million (mg/Kg).
Concentrations above the TAGM #4046 RSCO values are marked in bold.
ND- Not detected in the sample.

TABLE 4B
PARAMETER RANKING
WEST 61st STREET SITE
NEW YORK, NEW YORK

Ranking of Total SVOCs in Ascending Order

Parameter NYSDEC-RSCO	Total SVOCs 500,000 ug/Kg	Total VOCs 10,000 ug/Kg	cPAHs ug/Kg	Lead 500 mg/Kg	Arsenic 12 mg/Kg	Mercury 0.2 mg/Kg	Chromium 40 mg/Kg
MW-1(15-17)	ND	8.6	ND	7.7	4.1	0.039	13
MW-2(12-14)	ND	ND	ND	18.3	2.3	0.058	16.3
MW-4(12-14)	ND	292.9	ND	70.6	3.4	0.15	13.1
MW-6(15-17)	ND	13	ND	32.4	1.8	0.083	25.2
MW-9(0-2)	ND	9.5	ND	6	3.2	ND	17.1
MW-9(12-14)	ND	3.9	ND	6	2.7	0.018	9
B-10(15-15.5)	ND	12	ND	85.1	1.6	**0.46**	13.1
B-12(11-13)	ND	ND	ND	**786**	4.2	0.18	22.3
B-14(20-22)	ND	8.9	ND	31.8	3.1	0.11	14.2
B-15(13-13.5)	ND	0.8	ND	7.7	4.6	0.021	17.3
B-18(14.5-16.5)	ND	17	ND	25.6	1.7	**0.21**	12.1
B-18(28-30)	ND	ND	ND	6.8	1.6	ND	13.9
B/MW-3(7-9)	93	7.5	ND	427	2.7	0.16	15.3
B-16(24-26)	188	8.9	ND	27	2.4	0.051	25.2
MW-8(13-15)	278	ND	ND	133	2.5	0.099	**107**
B-11(12-14)	658	3.9	276	672	4.6	**0.43**	19.1
B-14(15-17)	698	8	215	20.6	1.4	0.064	179
B-17(18-20)	800	8,900	ND	18.9	3.5	0.029	**278**
B-13(6-8)	1,402	220	714	498	5	**0.33**	12.9
MW-4(0-2)	1,590	38.3	410	89.2	2.5	ND	3.8
B/MW-5(5-7)	2,099	ND	814	48.3	ND	0.072	14
MW-8(0-2)	2,110	2.5	390	510	4.4	**1.5**	27.6
B/MW-5(0-2)	2,627	8	162	56.9	3.3	0.19	11.3
B-16(0-2)	3,060	12.2	980	84.2	9.6	0.087	20.4
B-15(0-2)	3,920	4.6	1,020	232	5.5	0.13	27
B-11(0-2)	4,108	2.4	1,380	364	**14.6**	0.12	11.2
MW-6(2-4)	4,980	63.6	470	90.5	5	**0.59**	105
B-11(25-27)	5,093	2	2,714	153	4.7	0.02	26.9
B-17(0-2)	5,160	13	6,668	27.9	1.8	0.077	7.6
B-12(2-4)	10,160	ND	4,990	**1,760**	10.1	**0.34**	17.7
B/MW-3(0-2)	16,138	64.9	7,450	**2,980**	11.3	**2.5**	18.4
MW-7(0-2)	21,240	771	13,540	417	3.7	0.17	19
B-12(0-2)	26,590	7.8	13,360	**1,500**	**16.6**	**0.27**	32.9
MW-1(0-2)	31,110	7.3	15,260	**803**	7.4	**0.87**	15.8
B-18(0-2)	41,320	23	14,660	88.2	3.8	0.096	15.1
MW-7(6-8)	43,770	34.5	18,258	292	6.3	**0.36**	21
B-14(0-2)	43,800	90.2	8,700	423	5.5	0.11	**53.6**
B-16(10-12)	57,320	4.4	17,180	134	3.7	**0.7**	17.5
B-10(0.5-2.5)	73,380	1.2	22,510	277	3	0.14	10.4
MW-2(0-2)	104,710	26.4	44,000	475	**16.8**	**0.3**	17.2
B-13(0-2)	135,170	9.2	58,500	**821**	**12.9**	**0.54**	12.2
B-17(14-16)	243,260	6.3	105,600	**2580**	7.7	**0.81**	15.1

Note: The VOC, SVOC, and cPAH concentrations are in parts per billion (ug/Kg); the metal concentrations are in parts per million (mg/Kg).
Concentrations above the TAGM #4046 RSCO values are marked in bold.
ND- Not detected in the sample.

TABLE 4C
PARAMETER RANKING
WEST 61st STREET SITE
NEW YORK, NEW YORK

Ranking of cPAHs in Ascending Order

Parameter NYSDEC-RSCO	**cPAHs ug/Kg**	**Total VOCs 10,000 ug/Kg**	**Total SVOCs 500,000 ug/Kg**	**Lead 500 mg/Kg**	**Arsenic 12 mg/Kg**	**Mercury 0.2 mg/Kg**	**Chromium 40 mg/Kg**
MW-1(15-17)	ND	8.6	ND	7.7	4.1	0.039	13
MW-2(12-14)	ND	ND	ND	18.3	2.3	0.058	16.3
B/MW-3(7-9)	ND	7.5	93	427	2.7	0.16	15.3
MW-4(12-14)	ND	292.9	ND	70.6	3.4	0.15	13.1
MW-6(15-17)	ND	13	ND	32.4	1.8	**0.083**	25.2
MW-8(13-15)	ND	ND	278	133	2.5	0.099	**107**
MW-9(0-2)	ND	9.5	ND	6	3.2	ND	17.1
MW-9(12-14)	ND	3.9	ND	6	2.7	0.018	9
B-10(15-15.5)	ND	12	ND	85.1	1.6	**0.46**	13.1
B-12(11-13)	ND	ND	ND	**786**	4.2	0.18	22.3
B-15(13-13.5)	ND	0.8	ND	7.7	4.6	0.021	17.3
B-16(24-26)	ND	8.9	188	27	2.4	0.051	25.2
B-17(18-20)	ND	8,900	800	18.9	3.5	0.029	**278**
B-18(14.5-16.5)	ND	17	ND	25.6	1.7	**0.21**	12.1
B-18(28-30)	ND	ND	ND	6.8	1.6	ND	13.9
B/MW-5(0-2)	162	8	2,627	56.9	3.3	0.19	11.3
B-14(15-17)	215	8	698	20.6	1.4	0.064	179
B-11(12-14)	276	3.9	658	672	4.6	**0.43**	19.1
MW-8(0-2)	390	2.5	2,110	510	4.4	**1.5**	27.6
MW-4(0-2)	410	38.3	1,590	89.2	2.5	ND	3.8
MW-6(2-4)	470	63.6	4,980	90.5	5	**0.59**	105
B-13(6-8)	714	220	1,402	498	5	**0.33**	12.9
B/MW-5(5-7)	814	ND	2,099	48.3	ND	0.072	14
B-16(0-2)	980	12.2	3,060	84.2	9.6	0.087	20.4
B-15(0-2)	1,020	4.6	3,920	232	5.5	0.13	27
B-11(0-2)	1,380	2.4	4,108	364	**14.6**	0.12	11.2
B-11(25-27)	2,714	2	5,093	153	4.7	0.02	26.9
B-12(2-4)	4,990	ND	10,160	**1,760**	10.1	**0.34**	17.7
B-17(0-2)	6,668	13	5,160	27.9	1.8	0.077	7.6
B/MW-3(0-2)	7,450	64.9	16,138	**2,980**	11.3	**2.5**	18.4
B-14(0-2)	8,700	90.2	43,800	423	5.5	0.11	**53.6**
B-12(0-2)	13,360	7.8	26,590	**1,500**	**16.6**	**0.27**	32.9
MW-7(0-2)	13,540	771	21,240	417	3.7	0.17	19
B-18(0-2)	14,660	23	41,320	88.2	3.8	0.096	15.1
MW-1(0-2)	15,260	7.3	31,110	**803**	7.4	**0.87**	15.8
B-16(10-12)	17,180	4.4	57,320	134	3.7	**0.7**	17.5
MW-7(6-8)	18,258	34.5	43,770	292	6.3	**0.36**	21
B-10(0.5-2.5)	22,510	1.2	73,380	277	3	0.14	10.4
MW-2(0-2)	44,000	26.4	104,710	475	**16.8**	**0.3**	17.2
B-13(0-2)	58,500	9.2	135,170	**821**	**12.9**	**0.54**	12.2
B-17(14-16)	105,600	6.3	243,260	**2580**	7.7	**0.81**	15.1
B-14(20-22)	ND	8.9	ND	31.8	3.1	0.11	14.2

Note: The VOC, SVOC, and cPAH concentrations are in parts per billion (ug/Kg); the metal concentrations are in parts per million (mg/Kg).
Concentrations above the TAGM #4046 RSCO values are marked in bold.
ND- Not detected in the sample.

TABLE 4D
PARAMETER RANKING
WEST 61st STREET SITE
NEW YORK, NEW YORK

Ranking of Arsenic in Ascending Concentration

Parameter NYSDEC-RSCO	**Arsenic 12 mg/Kg**	**Total VOCs 10,000 ug/Kg**	**Total SVOCs 500,000 ug/Kg**	**cPAHs ug/Kg**	**Lead 500 mg/Kg**	**Mercury 0.12 mg/Kg**	**Chromium 40 mg/Kg**
B/MW-5(5-7)	ND	ND	2,099	814	48.3	0.072	14
B-14(15-17)	1.4	8	698	215	20.6	0.064	179
B-10(15-15.5)	1.6	12	ND	ND	85.1	**0.46**	13.1
B-18(28-30)	1.6	ND	ND	ND	6.8	ND	13.9
B-18(14.5-16.5)	1.7	17	ND	ND	25.6	**0.21**	12.1
MW-6(15-17)	1.8	13	ND	ND	32.4	**0.083**	25.2
B-17(0-2)	1.8	13	5,160	6,668	27.9	0.077	7.6
MW-2(12-14)	2.3	ND	ND	ND	18.3	0.058	16.3
B-16(24-26)	2.4	8.9	188	ND	27	0.051	25.2
MW-4(0-2)	2.5	38.3	1,590	410	89.2	ND	3.8
MW-8(13-15)	2.5	ND	278	ND	133	0.099	**107**
B/MW-3(7-9)	2.7	7.5	93	ND	427	0.16	15.3
MW-9(12-14)	2.7	3.9	ND	ND	6	0.018	9
B-10(0.5-2.5)	3	1.2	73,380	22,510	277	0.14	10.4
B-14(20-22)	3.1	8.9	ND	ND	31.8	0.11	14.2
MW-9(0-2)	3.2	9.5	ND	ND	6	ND	17.1
B/MW-5(0-2)	3.3	8	2,627	162	56.9	0.19	11.3
MW-4(12-14)	3.4	292.9	ND	ND	70.6	0.15	13.1
B-17(18-20)	3.5	8,900	800	ND	18.9	0.029	**278**
MW-7(0-2)	3.7	771	21,240	13,540	417	0.17	19
B-16(10-12)	3.7	4.4	57,320	17,180	134	**0.7**	17.5
B-18(0-2)	3.8	23	41,320	14,660	88.2	0.096	15.1
MW-1(15-17)	4.1	8.6	ND	ND	7.7	0.039	13
B-12(11-13)	4.2	ND	ND	ND	**786**	0.18	22.3
MW-8(0-2)	4.4	2.5	2,110	390	510	**1.5**	27.6
B-11(12-14)	4.6	3.9	658	276	672	**0.43**	19.1
B-15(13-13.5)	4.6	0.8	ND	ND	7.7	0.021	17.3
B-11(25-27)	4.7	2	5,093	2,714	153	0.02	26.9
MW-6(2-4)	5	63.6	4,980	470	90.5	**0.59**	105
B-13(6-8)	5	220	1,402	714	498	**0.33**	12.9
B-14(0-2)	5.5	90.2	43,800	8,700	423	0.11	**53.6**
B-15(0-2)	5.5	4.6	3,920	1,020	232	0.13	27
MW-7(6-8)	6.3	34.5	43,770	18,258	292	**0.36**	21
MW-1(0-2)	7.4	7.3	31,110	15,260	**803**	**0.87**	15.8
B-17(14-16)	7.7	6.3	243,260	105,600	**2580**	**0.81**	15.1
B-16(0-2)	9.6	12.2	3,060	980	84.2	0.087	20.4
B-12(2-4)	10.1	ND	10,160	4,990	**1,760**	**0.34**	17.7
B/MW-3(0-2)	11.3	64.9	16,138	7,450	**2,980**	**2.5**	18.4
B-13(0-2)	**12.9**	9.2	135,170	58,500	**821**	**0.54**	12.2
B-11(0-2)	**14.6**	2.4	4,108	1,380	364	0.12	11.2
B-12(0-2)	**16.6**	7.8	26,590	13,360	**1,500**	**0.27**	32.9
MW-2(0-2)	**16.8**	26.4	104,710	44,000	475	**0.3**	17.2

Note: The VOC, SVOC, and cPAH concentrations are in parts per billion (ug/Kg); the metal concentrations are in parts per million (mg/Kg).
Concentrations above the TAGM #4046 RSCO values are marked in bold.
ND- Not detected in the sample.

TBLE 4E
PARAMETER RANKING
WEST 61st STREET SITE
NEW YORK, NEW YORK

Ranking of Chromium in Ascending Concentration

Parameter NYSDEC-RSCO	Chromium 40 mg/Kg	Total VOCs 10,000 ug/Kg	Total SVOCs 500,000 ug/Kg	cPAHs ug/Kg	Lead 500 mg/Kg	Arsenic 12 mg/Kg	Mercury 0.2 mg/Kg
MW-4(0-2)	3.8	38.3	1,590	410	89.2	2.5	ND
B-17(0-2)	7.6	13	5,160	6,668	27.9	1.8	0.077
MW-9(12-14)	9	3.9	ND	ND	6	2.7	0.018
B-10(0.5-2.5)	10.4	1.2	73,380	22,510	277	3	0.14
B-11(0-2)	11.2	2.4	4,108	1,380	364	**14.6**	0.12
B/MW-5(0-2)	11.3	8	2,627	162	56.9	3.3	0.19
B-18(14.5-16.5)	12.1	17	ND	ND	25.6	1.7	**0.21**
B-13(0-2)	12.2	9.2	135,170	58,500	**821**	**12.9**	**0.54**
B-13(6-8)	12.9	220	1,402	714	498	5	**0.33**
MW-1(15-17)	13	8.6	ND	ND	7.7	4.1	0.039
MW-4(12-14)	13.1	292.9	ND	ND	70.6	3.4	0.15
B-10(15-15.5)	13.1	12	ND	ND	85.1	1.6	**0.46**
B-18(28-30)	13.9	ND	ND	ND	6.8	1.6	ND
B/MW-5(5-7)	14	ND	2,099	814	48.3	ND	0.072
B-14(20-22)	14.2	8.9	ND	ND	31.8	3.1	0.11
B-17(14-16)	15.1	6.3	243,260	105,600	**2580**	7.7	**0.81**
B-18(0-2)	15.1	23	41,320	14,660	88.2	3.8	0.096
B/MW-3(7-9)	15.3	7.5	93	ND	427	2.7	0.16
MW-1(0-2)	15.8	7.3	31,110	15,260	**803**	7.4	**0.87**
MW-2(12-14)	16.3	ND	ND	ND	18.3	2.3	0.058
MW-9(0-2)	17.1	9.5	ND	ND	6	3.2	ND
MW-2(0-2)	17.2	26.4	104,710	44,000	475	**16.8**	**0.3**
B-15(13-13.5)	17.3	0.8	ND	ND	7.7	4.6	0.021
B-16(10-12)	17.5	4.4	57,320	17,180	134	3.7	**0.7**
B-12(2-4)	17.7	ND	10,160	4,990	**1,760**	10.1	**0.34**
B/MW-3(0-2)	18.4	64.9	16,138	7,450	**2,980**	11.3	**2.5**
MW-7(0-2)	19	771	21,240	13,540	417	3.7	0.17
B-11(12-14)	19.1	3.9	658	276	672	4.6	**0.43**
B-16(0-2)	20.4	12.2	3,060	980	84.2	9.6	0.087
MW-7(6-8)	21	34.5	43,770	18,258	292	6.3	**0.36**
B-12(11-13)	22.3	ND	ND	ND	**786**	4.2	0.18
MW-6(15-17)	25.2	13	ND	ND	32.4	1.8	**0.083**
B-16(24-26)	25.2	8.9	188	ND	27	2.4	0.051
B-11(25-27)	26.9	2	5,093	2,714	153	4.7	0.02
B-15(0-2)	27	4.6	3,920	1,020	232	5.5	0.13
MW-8(0-2)	27.6	2.5	2,110	390	510	4.4	**1.5**
B-12(0-2)	32.9	7.8	26,590	13,360	**1,500**	**16.6**	**0.27**
B-14(0-2)	**53.6**	90.2	43,800	8,700	423	5.5	0.11
MW-6(2-4)	105	63.6	4,980	470	90.5	5	**0.59**
MW-8(13-15)	**107**	ND	278	ND	133	2.5	0.099
B-14(15-17)	179	8	698	215	20.6	1.4	0.064
B-17(18-20)	**278**	8,900	800	ND	18.9	3.5	0.029

Note: The VOC, SVOC, and cPAH concentrations are in parts per billion (ug/Kg); the metal concentrations are in parts per million (mg/Kg).
Concentrations above the TAGM #4046 RSCO values are marked in bold.
ND- Not detected in the sample.

TABLE 4F
PARAMETER RANKING
WEST 61st STREET SITE
NEW YORK, NEW YORK

Ranking of Lead in Ascending Concentration

Parameter NYSDEC-RSCO	**Lead 500 mg/Kg**	**Total VOCs 10,000 ug/Kg**	**Total SVOCs 500,000 ug/Kg**	**cPAHs ug/Kg**	**Arsenic 12 mg/Kg**	**Mercury 0.2 mg/Kg**	**Chromium 40 mg/Kg**
MW-9(0-2)	6	9.5	ND	ND	3.2	ND	17.1
MW-9(12-14)	6	3.9	ND	ND	2.7	0.018	9
B-18(28-30)	6.8	ND	ND	ND	1.6	ND	13.9
MW-1(15-17)	7.7	8.6	ND	ND	4.1	0.039	13
B-15(13-13.5)	7.7	0.8	ND	ND	4.6	0.021	17.3
MW-2(12-14)	18.3	ND	ND	ND	2.3	0.058	16.3
B-17(18-20)	18.9	8,900	800	ND	3.5	0.029	**278**
B-14(15-17)	20.6	8	698	215	1.4	0.064	179
B-18(14.5-16.5)	25.6	17	ND	ND	1.7	**0.21**	12.1
B-16(24-26)	27	8.9	188	ND	2.4	0.051	25.2
B-17(0-2)	27.9	13	5,160	6,668	1.8	0.077	7.6
B-14(20-22)	31.8	8.9	ND	ND	3.1	0.11	14.2
MW-6(15-17)	32.4	13	ND	ND	1.8	**0.083**	25.2
B/MW-5(5-7)	48.3	ND	2,099	814	ND	0.072	14
B/MW-5(0-2)	56.9	8	2,627	162	3.3	0.19	11.3
MW-4(12-14)	70.6	292.9	ND	ND	3.4	0.15	13.1
B-16(0-2)	84.2	12.2	3,060	980	9.6	0.087	20.4
B-10(15-15.5)	85.1	12	ND	ND	1.6	**0.46**	13.1
B-18(0-2)	88.2	23	41,320	14,660	3.8	0.096	15.1
MW-4(0-2)	89.2	38.3	1,590	410	2.5	ND	3.8
MW-6(2-4)	90.5	63.6	4,980	470	5	**0.59**	105
MW-8(13-15)	133	ND	278	ND	2.5	0.099	**107**
B-16(10-12)	134	4.4	57,320	17,180	3.7	**0.7**	17.5
B-11(25-27)	153	2	5,093	2,714	4.7	0.02	26.9
B-15(0-2)	232	4.6	3,920	1,020	5.5	0.13	27
B-10(0.5-2.5)	277	1.2	73,380	22,510	3	0.14	10.4
MW-7(6-8)	292	34.5	43,770	18,258	6.3	**0.36**	21
B-11(0-2)	364	2.4	4,108	1,380	**14.6**	0.12	11.2
MW-7(0-2)	417	771	21,240	13,540	3.7	0.17	19
B-14(0-2)	423	90.2	43,800	8,700	5.5	0.11	**53.6**
B/MW-3(7-9)	427	7.5	93	ND	2.7	0.16	15.3
MW-2(0-2)	475	26.4	104,710	44,000	**16.8**	**0.3**	17.2
B-13(6-8)	498	220	1,402	714	5	**0.33**	12.9
MW-8(0-2)	510	2.5	2,110	390	4.4	**1.5**	27.6
B-11(12-14)	672	3.9	658	276	4.6	**0.43**	19.1
B-12(11-13)	**786**	ND	ND	ND	4.2	0.18	22.3
MW-1(0-2)	**803**	7.3	31,110	15,260	7.4	**0.87**	15.8
B-13(0-2)	**821**	9.2	135,170	58,500	**12.9**	**0.54**	12.2
B-12(0-2)	**1,500**	7.8	26,590	13,360	**16.6**	**0.27**	32.9
B-12(2-4)	**1,760**	ND	10,160	4,990	10.1	**0.34**	17.7
B-17(14-16)	**2580**	6.3	243,260	105,600	7.7	**0.81**	15.1
B/MW-3(0-2)	**2,980**	64.9	16,138	7,450	11.3	**2.5**	18.4

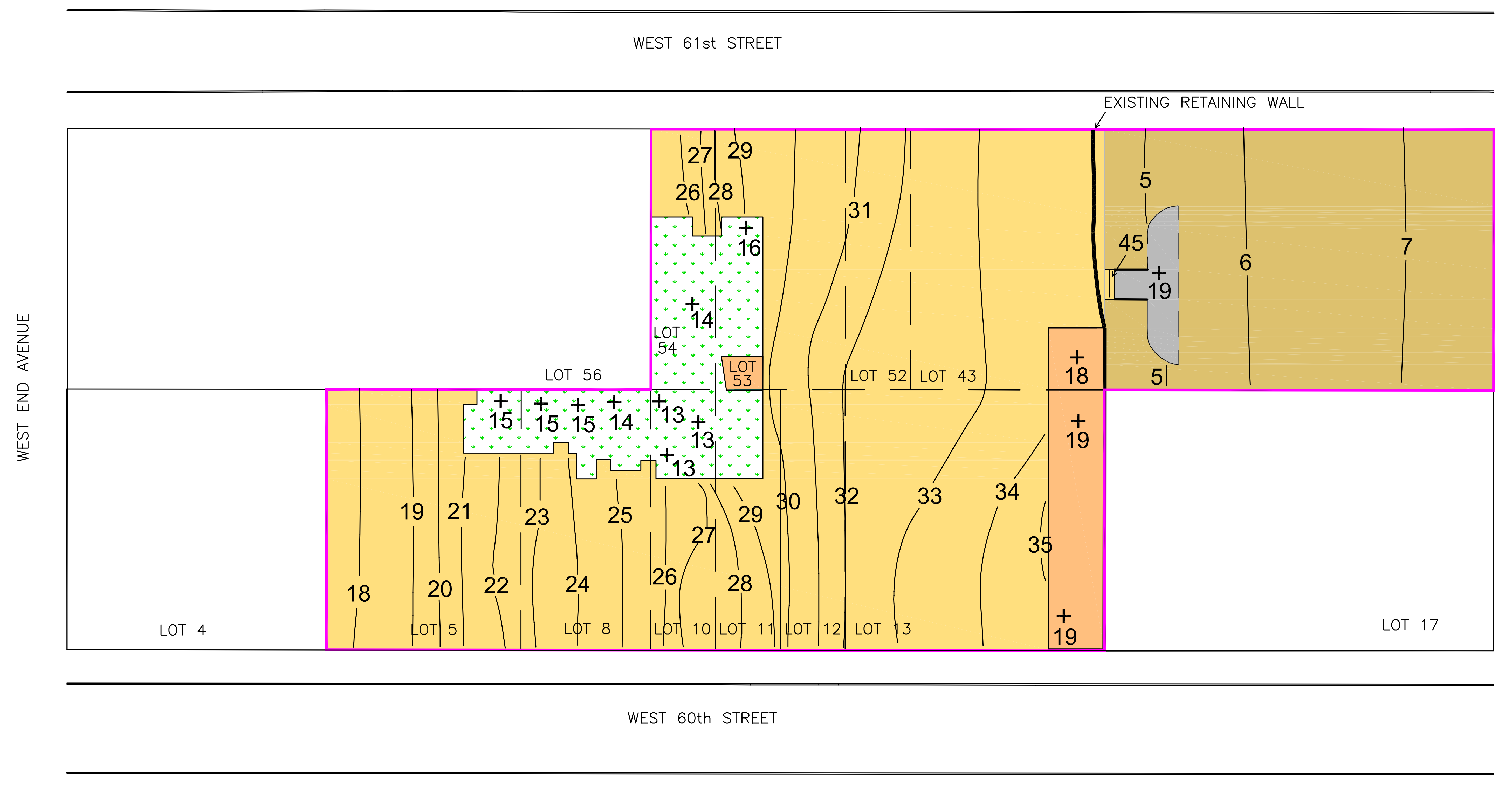
Note: The VOC, SVOC, and cPAH concentrations are in parts per billion (ug/Kg); the metal concentrations are in parts per million (mg/Kg).
Concentrations above the TAGM #4046 RSCO values are marked in bold.
ND- Not detected in the sample.

TABLE 4G
PARAMETER RANKING
WEST 61st STREET SITE
NEW YORK, NEW YORK

Ranking of Mercury in Ascending Concentration

Parameter NYSDEC-RSCO	**Mercury 0.2 mg/Kg**	**Total VOCs 10,000 ug/Kg**	**Total SVOCs 500,000 ug/Kg**	**cPAHs ug/Kg**	**Lead 500 mg/Kg**	**Arsenic 12 mg/Kg**	**Chromium 40 mg/Kg**
MW-4(0-2)	ND	38.3	1,590	410	89.2	2.5	3.8
MW-9(0-2)	ND	9.5	ND	ND	6	3.2	17.1
B-18(28-30)	ND	ND	ND	ND	6.8	1.6	13.9
MW-9(12-14)	0.018	3.9	ND	ND	6	2.7	9
B-11(25-27)	0.02	2	5,093	2,714	153	4.7	26.9
B-15(13-13.5)	0.021	0.8	ND	ND	7.7	4.6	17.3
B-17(18-20)	0.029	8,900	800	ND	18.9	3.5	**278**
MW-1(15-17)	0.039	8.6	ND	ND	7.7	4.1	13
B-16(24-26)	0.051	8.9	188	ND	27	2.4	25.2
MW-2(12-14)	0.058	ND	ND	ND	18.3	2.3	16.3
B-14(15-17)	0.064	8	698	215	20.6	1.4	179
B/MW-5(5-7)	0.072	ND	2,099	814	48.3	ND	14
B-17(0-2)	0.077	13	5,160	6,668	27.9	1.8	7.6
MW-6(15-17)	**0.083**	13	ND	ND	32.4	1.8	25.2
B-16(0-2)	0.087	12.2	3,060	980	84.2	9.6	20.4
B-18(0-2)	0.096	23	41,320	14,660	88.2	3.8	15.1
MW-8(13-15)	0.099	ND	278	ND	133	2.5	**107**
B-14(0-2)	0.11	90.2	43,800	8,700	423	5.5	**53.6**
B-14(20-22)	0.11	8.9	ND	ND	31.8	3.1	14.2
B-11(0-2)	0.12	2.4	4,108	1,380	364	**14.6**	11.2
B-15(0-2)	0.13	4.6	3,920	1,020	232	5.5	27
B-10(0.5-2.5)	0.14	1.2	73,380	22,510	277	3	10.4
MW-4(12-14)	0.15	292.9	ND	ND	70.6	3.4	13.1
B/MW-3(7-9)	0.16	7.5	93	ND	427	2.7	15.3
MW-7(0-2)	0.17	771	21,240	13,540	417	3.7	19
B-12(11-13)	0.18	ND	ND	ND	**786**	4.2	22.3
B/MW-5(0-2)	0.19	8	2,627	162	56.9	3.3	11.3
B-18(14.5-16.5)	**0.21**	17	ND	ND	25.6	1.7	12.1
B-12(0-2)	**0.27**	7.8	26,590	13,360	**1,500**	**16.6**	32.9
MW-2(0-2)	**0.3**	26.4	104,710	44,000	475	**16.8**	17.2
B-13(6-8)	**0.33**	220	1,402	714	498	5	12.9
B-12(2-4)	**0.34**	ND	10,160	4,990	**1,760**	10.1	17.7
MW-7(6-8)	**0.36**	34.5	43,770	18,258	292	6.3	21
B-11(12-14)	**0.43**	3.9	658	276	672	4.6	19.1
B-10(15-15.5)	**0.46**	12	ND	ND	85.1	1.6	13.1
B-13(0-2)	**0.54**	9.2	135,170	58,500	**821**	**12.9**	12.2
MW-6(2-4)	**0.59**	63.6	4,980	470	90.5	5	105
B-16(10-12)	**0.7**	4.4	57,320	17,180	134	3.7	17.5
B-17(14-16)	**0.81**	6.3	243,260	105,600	**2580**	7.7	15.1
MW-1(0-2)	**0.87**	7.3	31,110	15,260	**803**	7.4	15.8
MW-8(0-2)	**1.5**	2.5	2,110	390	510	4.4	27.6
B/MW-3(0-2)	**2.5**	64.9	16,138	7,450	**2,980**	11.3	18.4

Note: The VOC, SVOC, and cPAH concentrations are in parts per billion (ug/Kg); the metal concentrations are in parts per million (mg/Kg).
Concentrations above the TAGM #4046 RSCO values are marked in bold.
ND- Not detected in the sample.

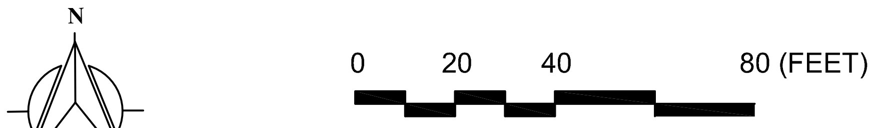


Legend:

—	PROPERTY BOUNDARY
+	DEPTH IN FEET TO LOWER LIMIT OF CONSTRUCTION
—30—	CONTOUR HAVING THE SAME DEPTH IN FEET TO LOWER LIMIT OF CONSTRUCTION
— —	LOT BOUNDARIES
🟨	SUB-CELLAR EXCAVATION TO ELEVATION 14.50
▨	COURTYARD EXCAVATION TO ELEVATION 37.00
🟧	CELLAR EXCAVATION TO ELEVATION 30.00
🟫	RECREATION ARA EXCAVATION TO ELEVATION 54.00
⬜	EXHAUST SYSTEM EXCAVATION TO ELEVATION RANGE 39.64 TO 42.00

Notes:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. THE SOIL REMOVAL DEPTHS WERE COMPUTED BY SUBTRACTING THE ELEVATION OF THE LOWER LIMIT OF CONSTRUCTION EXCAVATION FOR EACH BUILDING (SEE LEGEND) FROM THE EXISTING SURFACE ELEVATION CONTOURS SHOWN ON FIGURE 6.



NOTE: ELEVATIONS IN MANHATTAN BOROUGH DATUM

AKRF
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440 Park Avenue South, New York, N.Y. 10016

WEST 61st STREET SITE
New York, New York

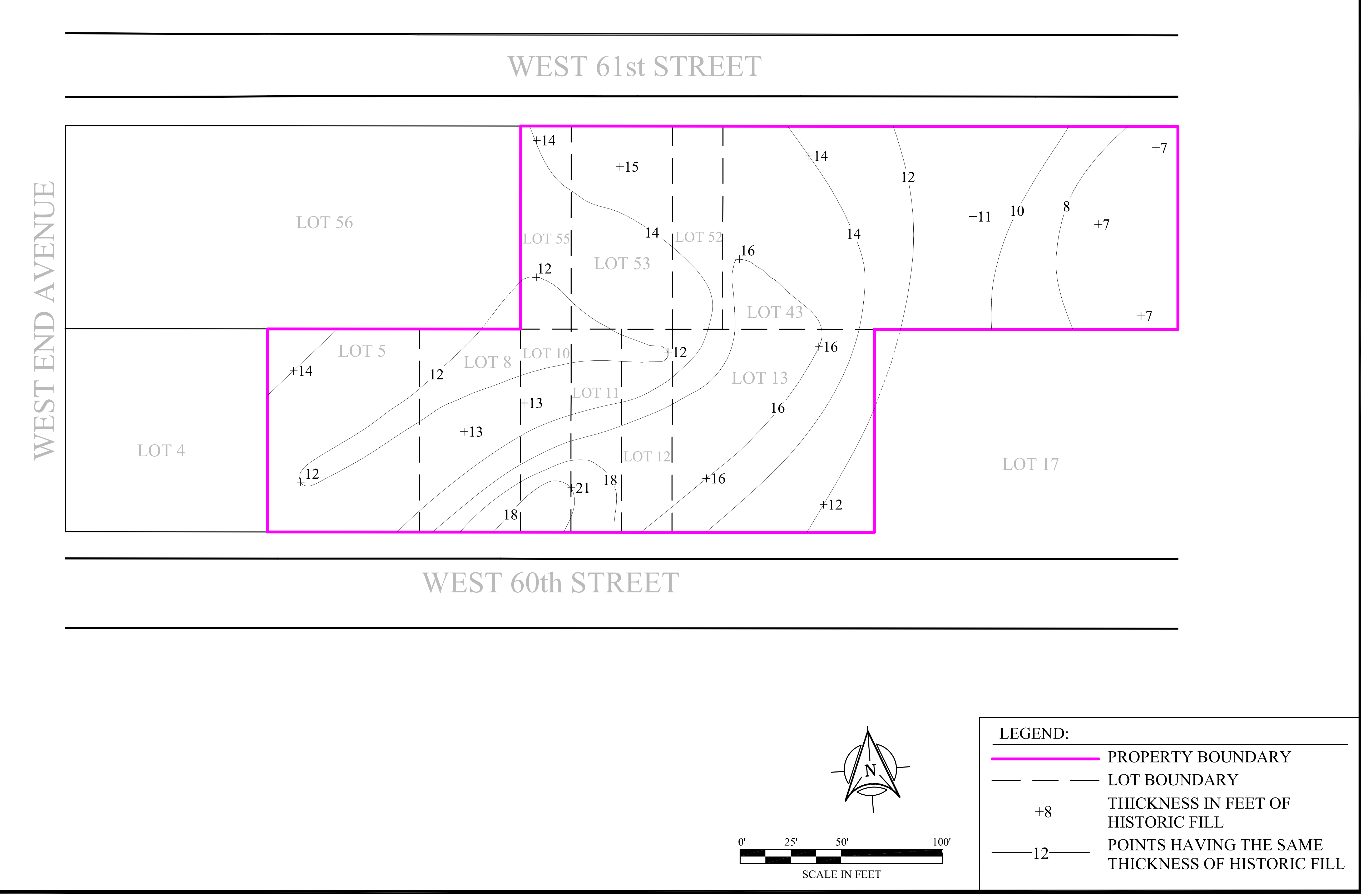
SOIL REMOVAL DEPTHS

DATE
06.22.06

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
14 REV



LEGEND:

	PROPERTY BOUNDARY
— — —	LOT BOUNDARY
+8	THICKNESS IN FEET OF HISTORIC FILL
——12——	POINTS HAVING THE SAME THICKNESS OF HISTORIC FILL

AKRF
Environmental Consultants
440 PARK AVENUE SOUTH, NEW YORK, NY 10016

WEST 61st STREET SITE
NEW YORK, NEW YORK

ISOPACHOUS MAP OF HISTORIC FILL

DATE
06.06.06

SCALE
AS SHOWN

PROJECT No.
10321

FIGURE No.
16

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June 26, 2006

Mr. Shaminder Chawla
Division of Environmental Remediation
NYSDEC-Region 2
47-40 21st Street
Long island City, New York 11101

Re: RWP Appendix P – Stipulation List
West 61st Street Site – BCP ID C231043
New York, New York

Dear Mr. Chawla:

AKRF, Inc. and Algin Management Company, LLC understands that this Stipulation List for the West 61st Street Site included in this letter constitutes a formal and binding amendment to the existing Remediation Work Plan, dated March 2006, for project number BCP ID C231043 in the New York State Brownfield Cleanup Program. Where a difference or conflict exists between the work or requirements proposed in the Remediation Work Plan (RWP) and this Stipulation List, the work or requirements proposed in the Stipulation List will supersede. The Stipulation List will become part of the final Remediation Work Plan – West 61st Street Site and will be placed with that document in all publicly accessible repositories for the project. A certification that this document has been placed in project repositories, and that the repositories are complete with all project documents, will be submitted to the NYSDEC Project Manager.

STIPULATION LIST

1. This List of Stipulations will be appended to the final approved Remediation Work Plan The contents of this list will be added to the Interim Remedial Measure (IRM) Work Plan and the RWP, and will supersede the content in the RWP where there is a conflict in purpose or intent.
2. The remedial objectives and intent for work covered under the IRM Work Plan will apply to those elements also covered by this RWP. If differences emerge between this RWP and the IRM Work Plan, other than changes approved by the New York State Department of Environmental Conservation (NYSDEC), the approved RWP Work Plan will supersede.
3. A waterproofing/vapor barrier, consistent with Appendix F of the Remediation Work Plan, will be installed beneath the 18-inch concrete floor slab of the buildings, as shown in Remediation Work Plan Appendix O. Ventilation in the parking lot areas and occupied basement spaces of the buildings will be in accordance with the applicable City of New York Building Codes.

4. The current end use plan for the West 61st Street Site includes a parking garage and storage in the basement and sub-basement, retail stores on the first floor, residences on the second floor and above, and a recreational area on the eastern portion of Lot 43 along West 61st Street.
5. The estimated quantity of soil/fill excavation is approximately 51,000 cubic yards, broken down as follows: 36,960 cubic yards (cy) of fill and native soil; 5,600 cy of petroleum contaminated soil; 4,800 cy of fill and native soil to be disposed of as waste; 3,600 cy of construction and demolition debris; and 40 cy of lead-contaminated soil to be disposed of as a characteristic hazardous waste.
6. A groundwater-monitoring plan to assess the performance of the remedy will be implemented in accordance with DER-10, Section 6.3 to assess the performance of the remedy and verify that on-site contaminants have been removed to NYSDEC-approved standards. Groundwater monitoring will be performed on a quarterly basis for one year after completion of remedial activities and will encompass various on-site and at least one off-site groundwater monitoring wells at locations approved by NYSDEC. The groundwater monitoring program will consist of: (1) collection of depth to groundwater measurements from all wells; (2) calculation of groundwater elevations and generation of a groundwater elevation contour map to determine groundwater flow direction; (3) collection of groundwater samples for laboratory analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, and metals. Sampling and analytical details will be furnished in the Groundwater Monitoring Plan, submitted with the Site Management Plan in the Final Remedial Report to NYSDEC at the completion of remediation.
7. Maps of the site showing exceedances of Standards, Criteria, and Guidance (SCGs) for soil, and groundwater are attached as Figures 15A, 15B, and 15C of the Remedial Investigation Report (RIR) and Figure 15 of the RWP.
8. A Revised Supplemental Community Air Monitoring and Odor/Vapor Control Plan has been submitted to NYSDEC and the New York State Department of Health (NYSDOH) to replace the existing Appendix F of both the Interim Remedial Measure Health and Safety Plan (HASP) and the remediation HASP.
9. All documents and reports to follow will be submitted in both hard copy and in digital format on CD. Digital submittal will include PDF format files for all documents. Data in tabular form will also be submitted in active source files format (such as Excel) to enable direct evaluation buy NYSDEC staff.
10. Remedial Cover Designs are discussed and/or illustrated in the RWP. Based on the proposed uses of the site, the cover is as follows: (1) for buildings, the native soil will be covered with a three-to-six inch thickness of a sub-base fill, an eighteen inch thick structural slab with a waterproofing/vapor barrier material (specifications in Appendices O and F respectively, of the RWP); for the recreation area running track and tennis court, the fill material will be covered with a six-inch sub-base, three inches of asphalt concrete base course, one-inch asphalt concrete top course or rubberized course; for grass areas, the soil will be covered with twenty four inches of clean soil, the top six inches of which will be topsoil. All soil will meet Technical and Administrative Guidance #4046 Recommended Soil Cleanup Objective values,
11. Track 4 cleanup undertaken at the West 61st Site will be in conformance with the Site Specific Soil Action Levels (SSSALs) listed in Revised Table 2 in the RWP Addendum.
12. The hours of operation of remedial construction will conform to New York City Department of Building codes or otherwise according to specified variances issued by that agency. NYSDEC will be notified of any variances issued by the Department of Buildings.

13. The Volunteer will make every effort to minimize noise at the site. The Volunteer's contractor will attempt to schedule tank removal activities on Thursdays and Fridays whenever possible. The volunteer's contractor will make every effort to remove the petroleum-contaminated soil during the month of August.
14. The planned use of the site is consistent with the current zoning for the property as determined by the New York City Department of Planning.
15. Full compliance will be achieved with governmental requirements including site safety requirements mandated by OSHA.
16. A separate list of all local, regional, and national governmental permits, certificates or other approvals or authorizations required to perform the remedial and developmental_work is found in RWP Section 4.1.4. This list will be updated in the final remedial report. It will include a citation of the law, statute or code to be complied with, the originating agency, and a contact name and contact telephone number.
17. In addition to the remedial action objectives listed in the RWP, this remedy aspires to achieve attainment of SCGs for environmental media on the West 61st Street Site.
18. NYSDEC will be permitted the opportunity to participate in a pre-remediation/ construction meeting at the site. Whenever possible, advance notice and scheduling will be provided to enable NYSDEC attendance.
19. The_Volunteer and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work and the structural integrity of excavations and structures that may be affected by those excavations (such as building foundations, roadways, sidewalks, utilities, etc.).
20. Concrete crushing and mechanical processing of historic fill through the use of equipment not normally used in excavation will not be utilized without NYSDEC approval.
21. Trucks exiting the site will be securely covered with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited.
22. Queuing of trucks will be performed on-site whenever possible. Queuing of trucks will not occur on West 61st Street.
23. All trucks will be washed and brush-scrubbed prior to leaving the site.
24. Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.
25. Site development activities will not interfere with, or otherwise impair remedial activities proposed in the RWP. Development-related activities will not compromise the performance of remediation necessary at the site.
26. Stockpiles of contaminated or potentially contaminated materials will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.
27. Soil stored in stockpiles overnight will be continuously encircled with silt fences or other sediment control measures as shown in Sheet No. Q-1 of RWP Appendix Q (Erosion and Sediment Control Plan). Hay/Straw bales and/or silt fencing will be used as needed near catch basins, surface waters, at downhill portions of the site along West 60th and 61st Streets, and other discharge points.
28. Gravel will be used on unpaved roadways to provide a clean and dust-free road surface.

29. On-site roads will be limited in total area in order to minimize the area required for water truck sprinkling.

30. Odor control methods will be capable of controlling emissions of nuisance odors off-site. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Remediation Engineer that will sign the certification of the Final Remedial Report.

31. Advanced odor control methods defined in the Revised_Expanded Odor Control Plan will be applied to minimize stockpile mass (i.e. direct load-out) for petroleum-contaminated soils and other odor-producing soils excavated from the Site.

32. The means to be considered for minimization of odors during remedial actions include, but are not limited to: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; (c) use of foams to cover exposed odorous soils; (d) use of chemical odorants in spray or misting systems; and, (e) use of staff to monitor odors in surrounding neighborhoods.

Contractor Management

33. Contractor documents will be submitted to NYSDEC and NYSDOH.

34. The Remedial Engineer will be responsible to insure compliance with all provisions of the approved remedial work plan, including those performed by contractors.

Contingency Plans

35. If any additional underground tanks or other unknown sources are identified during on-site excavation of construction at the site, sampling will be performed on product, sediment and surrounding soil with chemical analytical work for full scan parameters. The analyses will include Target Compound List (TCL) VOCs, SVOCs, pesticides, and PCBs, and Target Analyte List (TAL) Metals with Category A Deliverables for locations above the desired construction elevation, where endpoint samples will be collected.

36. Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated to the NYSDEC Region 2 Project Manager. These findings will be included in daily or periodic electronic media reports.

Off-site Disposal

37. All soil/fill excavated and removed from the site will be disposed of in accordance with all local, state and federal laws. If on-site soil is proposed for placement at an off-site non-permitted facility in or at a New York State registration facility, a formal request with an associated plan will be made to NYSDEC Project Manager. Unregulated off-site management of materials from this site will not be performed without formal NYSDEC approval. Uncontaminated metal objects located in Lot 8 and possibly found in other areas of the site, may be taken to scrap metal dealers located in New York State.

38. Letters will be provided to NYSDEC that fully demonstrate that the disposal of on-site material at disposal facilities conforms to applicable laws. This will include, at minimum: a letter from the Volunteer to the facility providing soil chemistry data and noting that the soil/fill is a contaminated media being removed from a Brownfield site in New York State as part of a remediation project; a letter from the receiving facility stating that they understand the source and that the material is acceptable under all appropriate permits.

39. Non-hazardous historic fill taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2 in New York State.
40. Historical fill (Municipal Solid Waste) and contaminated soils from this site are prohibited from being disposed of at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).
41. In New York State, native and other soils that are contaminated and non-hazardous that are being removed from remediation sites are considered Construction and Demolition (C/D) materials with contamination not typical of virgin soils by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C/D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DSHM. This material is prohibited from being redirected to a Part 360-16 Registration Facility. As dictated by DSHM, special procedures will include, at a minimum, written correspondence to the C/D facility that provides detailed explanation that the material is derived from a DER remediation site, that the soil material is contaminated and that it must not be redirected to on-site or off-site Soil Recycling Facilities. The chemical data for the soil must be attached to the correspondence.
42. The Final Remedial Action Report (RAR) will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, historic fill, solid waste, and hazardous waste, and fluids, and documentation associated with that disposal showing requisite approvals for receipt of the material. Letters from the Volunteers representative describing the material prior to receipt by the disposal facility and letters accepting material by the receiving facility and stating that the material complies with all state permits, approvals and regulations will be provided.
43. Bill of Lading system or equivalent will be used for off-site movement of non-hazardous wastes and contaminated soils. This information will be reported in the Final Remediation Report.
44. Hazardous wastes derived from on-site, if any, will be stored, transported, and disposed in full compliance with applicable local, state, and federal regulations.
45. All liquids to be removed from the site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, state, and federal regulations. Liquids discharged into city sewer systems will be addressed through approval by NYCDEP.
46. Dewatering fluids will be managed off-site and will not be recharged back to the site.

On-site Materials Reuse

47. Discharge of water generated during remedial construction to surface waters will not be performed without a SPDES permit.
48. The Final RAR must describe the fate of ‘residual free product’ identified in the RWP and, in particular, must specify if the residual free product was fully removed. All process wastes exceeding SSSALs will be excavated and disposed at an appropriate facility
49. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from on-site or from off-site is prohibited from reuse or use on-site.
50. Historical fill is prohibited from being reused as backfill in utility trenches or landscape berms.
51. Residual product must be removed from the Site to the extent required by the IRM Work Plan (IRMWP) or as acceptable to the Department. All process wastes exceeding SSSALs will be excavated and disposed at an appropriate facility.

52. The Final RAR must describe the fate of 'residual free product' identified in the RWP and, in particular, must specify if the residual free product was fully removed.

Import of Soil

53. The goal for all soils or fill imported onto the Site will be to meet Technical Administrative Guidance Memorandum (TAGM) 4046 Recommended Soil Cleanup Objectives (RSCOs). The Department will consider exceedances of TAGM values for imported fill. Sampling and analysis of imported material will be performed and will be reported in the Final RAR.
54. Solid waste will not be brought on-site. Solid waste will not be used for grading fill or cover soil on-site.
55. The use of C/D screenings from off-site sources for import onto the site will not be permitted.
56. Non-virgin off-site source areas will not be used as sources for clean backfill. Specific approval by NYSDEC is required if such usage is pursued. Sampling frequency defined in this report, including provisions for reduction in frequency, will not apply to such sources.
57. Soils that meet 'exempt fill' requirements less than 6 NYCRR Part 360 but do not meet TAGM 4046 RSCOs will not be imported onto the site.

Site Cover

58. On-site soils removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. This will be expressed in the final Site Management Plan._On-site soil found to meet the guidance values of TAGM 4046 may be used as backfill beneath the building foundation, up to within 24 inches of the ground surface in the courtyard area or any grass area, and beneath the paved portions of the recreation area.
59. Any change to the type and thickness of cover material at any portion of the Site that was described in the approved RWP will require NYSDEC approval prior to implementation.
60. Screening of soils and fill will be performed (i.e. visual, olfactory, FID/PID, etc.) for all excavations during invasive work that may penetrate residual contamination, including excavations for remediation and development. This will be performed regardless of when the invasive work is done or who does it (including post-remedial development work; including but not limited to subsurface foundation work and utility work).

Remedial Performance Monitoring

61. Chemical labs used for all end-point sample results and contingency sampling will be NYSDOH ELAP certified.
62. End point sampling will be performed in accord with DER-10 sample frequency requirements.
63. Elevated levels of tentatively identified compounds (TICs) were present in pre-excavation soil vapor samples in the area of proposed Building A. To verify that remedial activities address this contamination, additional identification and analyses of up to the 10 highest TICs for volatile organic compounds at each sample location will be performed during post-excavation sampling in the area of Building A area to ensure that the remaining soil is not serving as a residual source of contamination, consistent with the Technical and Administrative Guidance Memorandum #4046 Recommended Soil Cleanup Objectives. (RSCOs).

64. All hotspots and structures to be remediated (USTs, vaults and associated piping, transformers, etc.) will be removed and end-point remedial performance sampling completed before excavations related to site-wide development commence.

65. After the completion of soil removal and other invasive remedial activities, a land survey will be performed by a New York State licensed surveyor. The survey will define the top elevation of all residual soils. This constitutes the top of the ‘Residuals Management Zone’, the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in the Site Management Plan. The survey will measure the grade covered by the demarcation layer before the placement of cover soils, pavement and sub-soils, structures, or other materials. This survey and the demarcation layer placed on this grade surface will constitute the physical and written record of the upper surface of the ‘Residuals Management Zone’ for the Long-Term Soil Management Plan as part of overall site Institutional Controls and Environmental Easements. A sheet showing a map of the survey results will be included in the Final Remedial Report, the Site Management Plan, and Environmental Easements.

66. A surveyed site map showing the metes and bounds for the subject site as described in the governing agreement with New York State will be appended to the final RWP. All areas defined by the Site will be subject to the proposed remedy. If peripheral roadway areas are to be included, the remedial plans, including remedy and institutional controls, will be expressed prior to approval of the RWP. The map should include pertinent roadways and on-site structures. Both hard copy and digital form of this map will be submitted.

67. Metes and bounds description of the site will include a global positioning system coordinate for the starting point for the description, which was included in the RIR.

Remedial Engineer Certifications

68. The Final Remediation Report will include a certification by a Professional Engineer that all invasive work done during the remediation and development (i.e. grading cuts, utility trenches, footings, etc.) was performed in accordance with the contaminant field screening methodology and in accord with dust and odor suppression methodology defined in the remedial work plan.

69. The Final Remediation Report will include a certification by a Professional Engineer that all import of soils from off-site, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan or other pertinent project plans.

70. All primary contaminant sources (including but not limited to tanks and hotspots) identified during site characterization, remedial investigation, and remedial action <u>have been</u> surveyed by a surveyor licensed to practice in the State of New York. The location of these sources will be reported in the Final Remedial Report.

71. The Final RAR will include a site map and plan that shows the design detail and location for each of the proposed final cover surfaces applied to the site. This should include, at a minimum, building (structure) areas, concrete/asphalt areas, and soil cover on open areas.

72. All invasive work performed during remedy or subsequent development on this site until a Certificate of Completion (COC) is issued will be witnessed by the Remedial Engineer or his/her qualified representative.

73. Remedial Engineer will review any pre-remedial plans submitted by contractors for compliance with the RWP and will certify compliance in the Final Remedial Action Report.

74. Resumes will be provided for all personnel responsible for field screening (i.e. those representing the Remedial Engineer) of invasive work during remediation and development work for unknown contaminant sources.

Health and Safety

75. The Applicant, Volunteer, Responsible Party and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the preparation of an appropriate Health and Safety Plan and for the appropriate performance of work according to that plan.

76. The Health and Safety Plans (IRM HASP and RHASP) and all agreements made related to invasive activities will be required for all work performed until the issuance of a Certificate of Completion. Required management of activities after that time will be addressed under an Environmental Easement to be reported in the Final Remediation Report.

77. The Site Safety Coordinator will be identified. A resume will be provided.

78. Exceedances observed in the Community Air Monitoring Plan (CAMP) will be reported in the daily report to the NYSDEC and NYSDOH Project Managers.

Reporting

79. Daily Reports will be provided to the NYSDEC Project Manager, Shaminder Singh at spsingh@gw.dec.state.ny.us and NYSDOH Project Manager Julia M. Guastella at jmg07@health.state.ny.us by email during all periods of major invasive activity on remedial projects. These reports will include daily activities with alpha-numeric identification of work areas. These reports will include a summary of air sampling results, odor and dust problems and corrective actions, and all complaints received from the public.

80. Daily reports will include any communication with local residents, nearby schools (Beacon School), public officials and/or community boards with type of complaints received and response provided. This communications will also be immediately reported to the NYSDEC via phone and an separate e-mail.

81. Daily reports are not intended as a means to convey sensitive or time-critical information (i.e. notification of an accident, spill or emergency) or notification of changes to approved plans. These communications must be made directly with Project Managers.

82. Monthly reports will be submitted to NYSDEC and NYSDOH, and will include a summary of all work performed.

83. An emergency contact sheet will be submitted to NYSDEC's Project Manager. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.

84. Before completion of a project (before approval of a final Remedial Report and issuance of a Certificate of Completion), all project reports must be submitted in digital form (PDF). For older projects that have passed through the Remedial Investigation Work Plan and Remedial Investigation phase, the approved documents must be scanned and resubmitted in digital form to the Project Manager for NYSDEC to provide a complete digital project archive.

85. Photographs will be taken of all remedial action activities and submitted to NYSDEC in digital form on a CD(s). Photos should illustrate all remedial program elements and should be of acceptable quality. Representative photos of the site prior to any remedial actions should be provided. Representative photos should be provided of contaminant sources and source areas and

structures before and during remediation. Photos will be submitted to NYSDEC on CD and will be sent to NYSDECs Project Manager (2 copies) and to NYSDOH Project Manager (1 copy). CD's should have a label and a general file inventory structure that separates photos into directories and sub-directories according to logical lines. A photo log keyed to photo file ID numbers should be prepared to provide explanation for all representative photos. For larger and longer projects, photos should be submitted on a monthly basis or other agreed upon time interval.

86. A site map will be submitted that shows a predefined grid for use to identify locations in reports provided to NYSDEC.
87. Mandatory job-site record keeping will be required. These records must be maintained on-site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

Fact Sheets and Repositories

88. A certification of mailing will be sent by the Applicant to the NYSDEC Project Manager following distribution of all Fact Sheets and notices, providing certification that the Fact Sheets were mailed, when they were mailed, a copy of the Fact Sheet, a list of recipients (contact list) and a statement that the repository was inspected and contained all of the applicable project documents.
89. Fact Sheets are the property of New York State. The applicant will be requested to assist in their preparation (including the development of draft Fact Sheets) and their distribution. However, only Fact Sheets approved by the Department will be issued under any project. No changes will be made in approved Fact Sheets authorized for release by the Department without the express consent of the Department in writing. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.
90. A Fact Sheet #4 will be prepared and sent to the project Contact List announcing the approval of the RWP.

Site Management Plan

91. The Final RAR will include a section entitled Site Management Plan that will address management of residual contamination at the site in conjunction with the Easements. This should be a stand-alone-format document (as separate bound copy as well as an appendix to RAR) that can be used for site management in the future.
92. An annual inspection and certification will be a required element in the Site Management Plan to be submitted in the Final RAR.
93. The Final RAR will provide a Site Management Plan that will include a monitoring schedule for performance of soil vapor and groundwater sampling. A specific plan for that work will be provided. The groundwater plan should include assessment of the performance of local volatile organic compounds (VOC) remedial efforts and site-wide source removal performance. The groundwater monitoring plan for the VOC remedy will also require a schedule for submission of a specific proposal to the Department regarding the need for additional remedial efforts, if any are found to be necessary.
94. The Site Management Plan will include provisions for, at a minimum: an annual inspection certification of the adequacy of engineering and institutional controls; groundwater use prohibition; maintenance of cap; soil management plan for residual contamination left on-site; prohibition on change in use to unrestricted residential; restriction on vegetable gardens.
95. The Final Site Management Plan must be submitted in the Final Remedial Report and must include a listing of all Institutional Controls, Engineering Controls, operation, monitoring and maintenance for the site, residual contamination management, and annual inspection and certification that the

controls are still in-place and effective. The Site Management Plan must be cited in the Environmental Easement.

96. Groundwater sampling for site-wide remedy evaluation will be performed for full scan parameters, and will consist of Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and Target Analyte List (TAL) metals. Groundwater samples to monitor performance of a remedy will be analyzed for the specific contaminants of concern (i.e., TCL VOCs for areas exhibiting elevated dissolved VOCs in groundwater). Final well arrays and analytical plan will be determined as part of the final Site Management Plan in the Final RAR.

97. The Site Management Plan in the Final RAR will include a monitoring plan for groundwater at the down-gradient site perimeter to evaluate site-wide performance of the remedy. Appropriately placed groundwater monitor wells will be installed immediately down-gradient of all volatile organic compound remediation areas for the purpose of evaluation of the effectiveness of the remedy that is implemented.

Environmental Easement

98. Environmental Easement in the former parking lot portion of Lot 43 will be required if residual contamination is left on-site after the remedial action is complete. The execution of the Environmental Easements will be documented in the Final Remedial Report.

99. The Environmental Easements must include a listing of all Institutional Controls, Engineering Controls, and Operation, Monitoring and Maintenance, and Annual Certification for the site.

100. The deed provision/environmental easement will require groundwater use prohibitions, change in use provisions and application of the Site Management Plan and all of its elements.

Final Remedial Report

101. The Final Remedial Report will include as-built drawings for all constructed elements, certifications, manifests and bills of lading; and the Site Management Plan.

102. The Final Remedial Report will include as-built drawings for all constructed elements, certifications, manifests and bills of lading; and the Site Management Plan.

103. The Final RAR will include a certification by a Professional Engineer that all export including transport and disposal of soil, fill, water, or other material from the property was performed in accordance with the Work Plan, and were taken to facilities licensed to accept this material in full compliance with all federal, state and local laws.

104. The Final RAR will include a certification by a Professional Engineer that all import of soils from off-site, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan or other pertinent project plans.

105. The parking garage will be vented (Stipulation 3) and the bottom of the floor slab and outside sidewalls will be constructed with a vapor barrier / waterproofing system as described in RWP Appendix F.

106. Spill closure letters will be sent to the Department's Project Manager Shaminder Singh documenting closure activities for individual spills numbered for this project as a means to achieve closure of those spills. This will be accomplished and all spills closed before the Final Remedial Report is approved.

107. UST closures will, at a minimum, conform to criteria defined in DER-10.

108. The Erosion and Sediment Control Plan (ESCP) is included as Appendix Q of the Remediation Work Plan Addendum, which will be included in the project repositories

109. The presence of methane in the subsurface caused by historic fill will be assessed in areas where historic fill remains on the site, and, to the extent present, will be addressed in the final Site Management Plan in the Final RAR.

110. All references to “cap” in the Remediation Work Plan (RWP) are modified to read, “cover.”

111. Sidewall samples will be collected for all hotspot removals in areas under the former buildings. SSSAL’s determined for the project will be applied to the sidewall samples to determine if additional later soil removal will be required (note: this will include PCB limits of 10 mg/kg).

112. Excavations of hotspots will not be terminated based on specific design depths (i.e., 7 feet below the top of slab). Termination will be based on post-excavation sample results with due consideration of practicability.

113. An itemized and detailed summary of actual costs for the remedial activity will be prepared based on actual costs and submitted as an appendix to the Final Remediation Report.

114. End point sampling will not be cancelled but will be relocated if an obstruction is identified in a pre-defined sampling location.

115. Annual inspections performed under the final Site Management Plan will include the garage areas to insure continued ventilation as described in the RWP.

116. If a Track 1 Cleanup is not achieved for the entire site, an environmental easement for the site will specify that unrestricted residential usage of the site is prohibited without prior approval by NYSDEC.

117. The environmental easement will specify that changes in the use of retail and parking area will require notice and prior approval by NYSDEC.

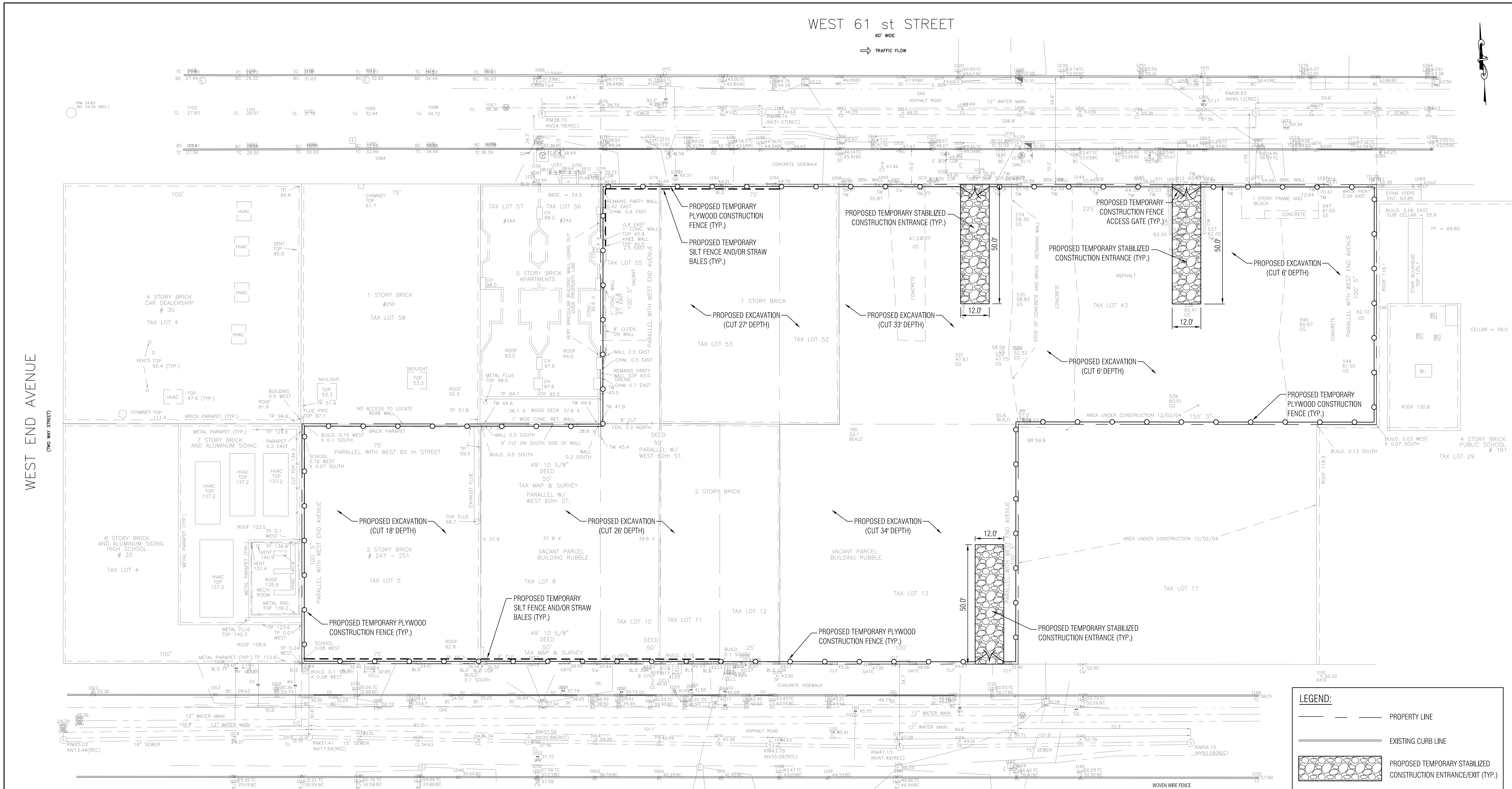
118. Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated to the NYSDEC’s Project Manager. These findings will be included in daily or periodic electronic media reports.

If you have any questions, please contact either Richard Gardineer, P.E. at (914) 922-2369 or me at (646) 388-9520 at your earliest convenience.

Sincerely,
AKRF, Inc.

Michelle Lapin, P.E.
Senior Vice President

cc: Julia Guastella, NYSDOH
Larry Ginsberg, Algin Management Company, LLC
David Freeman, Paul, Hastings, Janofsky, and Walker, LLP



SURVEYOR'S LEGEND

TP TOP OF PARAPET
(TYP.) TYPICAL
CLF CHAIN LINK FENCE
CONC. CONCRETE
RET. RETAINING
FF FIRST FLOOR
GV GAS VALVE
WV WATER VALVE
S SANITARY
TC TOP OF CURB
BC BOTTOM OF CURB
GS GROUND SHOT ELEVATION
DC DROP CURB
TC TOP CURB
BC BOTTOM CURB
CH CHIMNEY
BL HVAC BLOWER
V SANI. VENT
BR BRICK RETAINING WALL
CW CONCRETE WALL
CELL CELLAR ENTRANCE METAL DOOR
TELEPHONE
ELECTRIC
GAS
WATER
DRAIN INLET ◩

GENERAL NOTES:

ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.

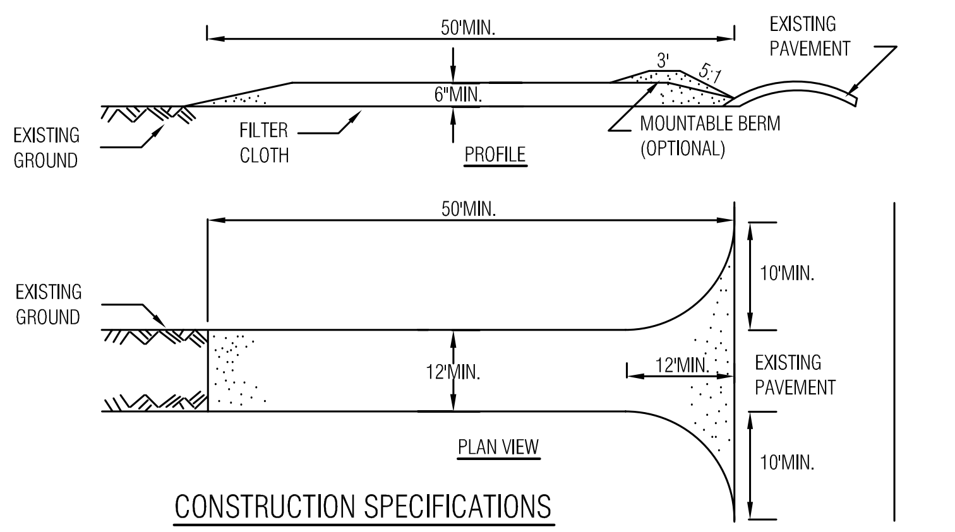
THERE WAS NO ABOVE GROUND STREAM VISIBLE ON THE SUBJECT PROPERTY AT THE TIME OF SURVEY.

DIMENSIONS SHOWN ARE IN THE UNITED STATES STANDARD OF MEASUREMENT (STANDARD FOOT).

STREET ELEVATIONS ARE EVERY 25'±.

AREA OF PARCEL = 62,762.5 SQ. FT.

AREA OF PARCEL = 1.4408 ACRES



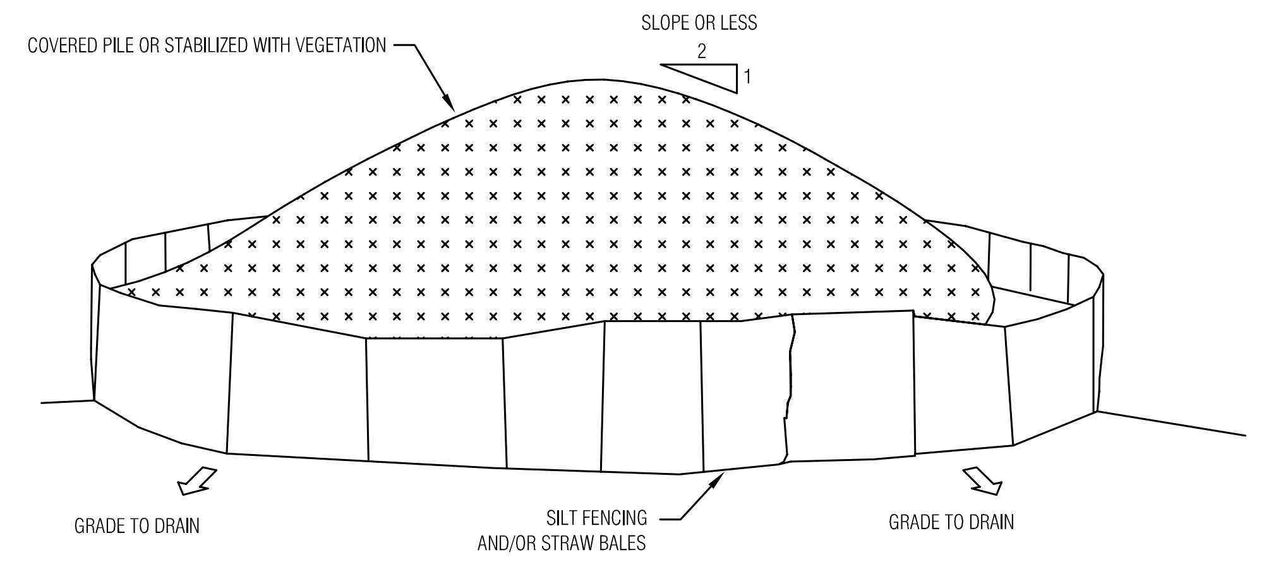
CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

SOURCE: NYSDEC STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL

TEMPORARY STABILIZED CONSTRUCTION ENTRANCE/ EXIT (TYP.)

N.T.S.

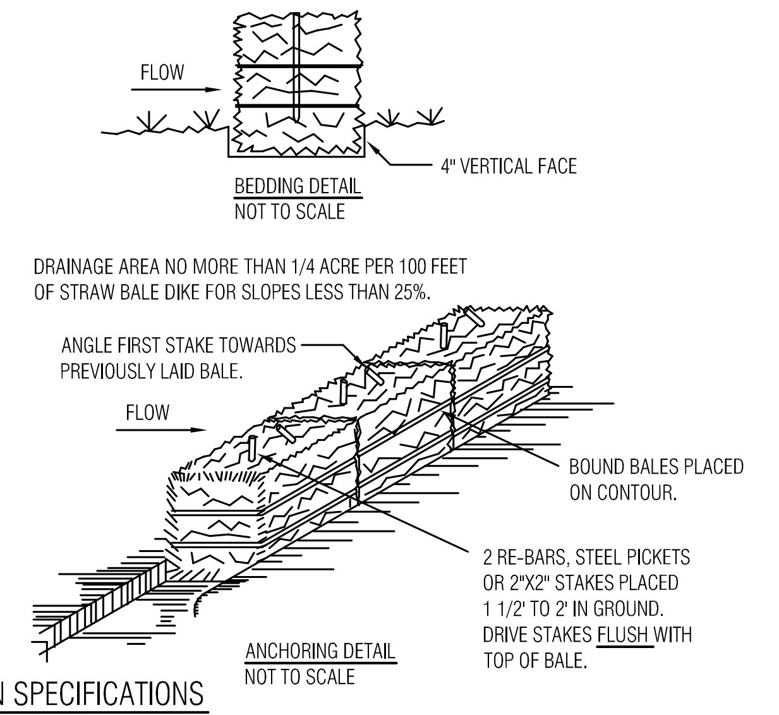


CONSTRUCTION SPECIFICATIONS

1. AREA CHOSEN FOR FILL MATERIAL SHALL BE DRY AND STABLE
2. MAXIMUM SLOPE OF FILL MATERIAL PILE SHALL BE 1:2
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING OR STRAW BALES THEN COVERED OR STABILIZED WITH VEGETATION.

STOCKPILE DETAIL (TYP.)

N.T.S.



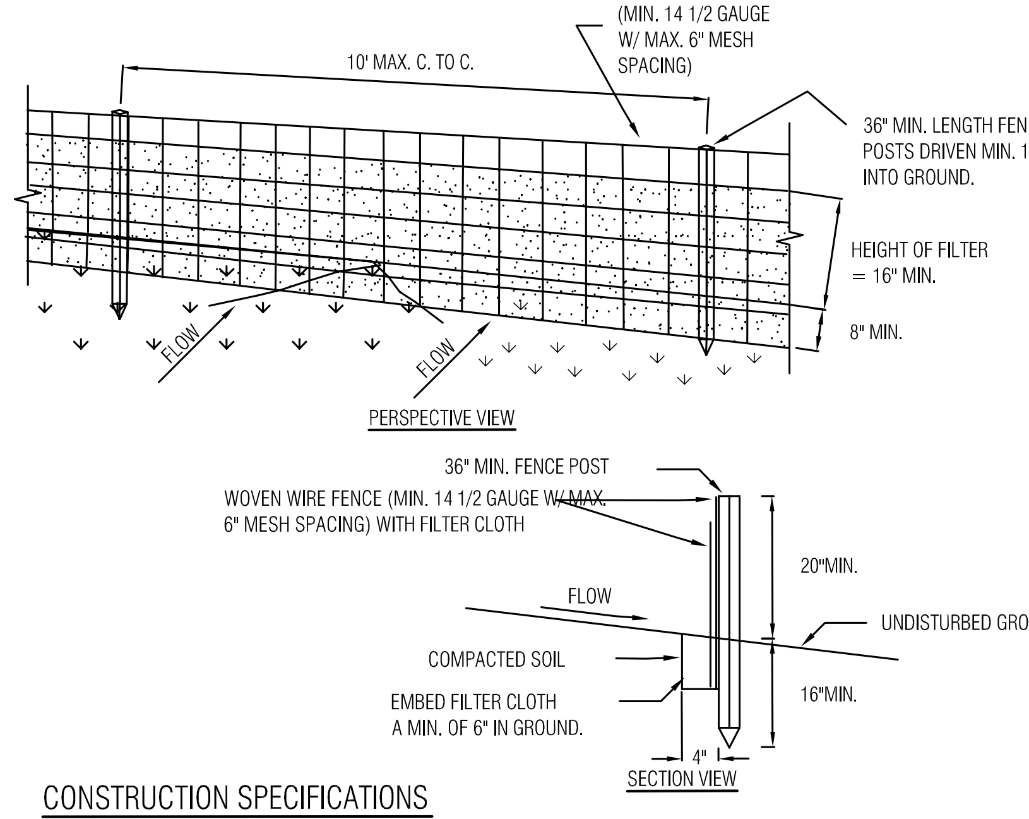
CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULLNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

ADAPTED FROM: NYSDEC STANDARDS & SPECIFICATIONS FOR EROSION & SEDIMENT CONTROL

STRAW BALE DIKE (TYP.)

N.T.S.



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

ADAPTED FROM: NYSDEC STANDARDS & SPECIFICATIONS FOR EROSION & SEDIMENT CONTROL

SILT FENCE (TYP.)

N.T.S.

LEGEND:

— — —	PROPERTY LINE
▬	EXISTING CURB LINE
▨	PROPOSED TEMPORARY STABILIZED CONSTRUCTION ENTRANCE/EXIT (TYP.)
- - -	PROPOSED TEMPORARY STRAW BALE AND/OR SILT FENCE
—○—○—	PROPOSED TEMPORARY PLYWOOD CONSTRUCTION FENCE (TYP.)
⋌	PROPOSED TEMPORARY CONSTRUCTION FENCE GATE (TYP.)

EROSION & SEDIMENT CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION, INSPECTION, AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES DESCRIBED ON THE EROSION & SEDIMENT CONTROL PLAN.
2. CONTRACTOR IS RESPONSIBLE TO INSTALL EROSION AND SEDIMENT CONTROL PRACTICES PRIOR TO ANY SOIL DISTURBANCE AND TO MAINTAIN THEM UNTIL PERMANENT PROTECTION IS ESTABLISHED. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT EDITION OF "NEW YORK GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL".
3. CONTRACTOR RESPONSIBLE TO STABILIZE DISTURBED AREAS NO LATER THAT 14 DAYS AFTER CONSTRUCTION ACTIVITY HAS CEASED.
4. CONTRACTOR RESPONSIBLE TO KEEP PUBLIC RIGHT-OF-WAY ALONG SITE BOUNDARIES CLEAR OF SOIL AND DEBRIS AND IS RESPONSIBLE FOR ANY STREET CLEANING AS NECESSARY DURING THE COURSE OF THE PROJECT.
5. CONTRACTOR RESPONSIBLE FOR DUST CONTROL THROUGHOUT CONSTRUCTION PERIOD AND UNTIL SITE IS PERMANENTLY STABILIZED.
6. CONTRACTOR RESPONSIBLE TO REMOVE EROSION AND SEDIMENT CONTROL MEASURES AFTER THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

0 10 20 40
SCALE: 1" = 20'

REVISIONS

No.	DATE	DESCRIPTION

PREPARED BY

AKRF
AKRF ENGINEERING, P.C.
440 PARK AVENUE SOUTH
NEW YORK, NY 10016
Tel:(212)696-0670 Fax:(212)726-0942

PREPARED FOR

ALGIN MANAGEMENT CO., L.L.C.,
64-35 YELLOWSTONE BLVD.
FOREST HILLS, NY 11375

SHEET TITLE

EROSION & SEDIMENT
CONTROL PLAN

DRAWN BY RC	ORIG. DATE 06/08/06
CHECKED BY AM	PROJECT No. 80070
	SHEET No. Q-1

ANDREW MALEK, P.E.

AKRF

Environmental and Planning Consultants

34 South Broadway
White Plains, New York 10601
tel: 914-949-7336
fax: 914-949-7559

www.akrf.com

June 16, 2006

Mr. Stuart Berry
Allied Environmental Group, Inc.
2163 Merrick Avenue
Merrick, New York 11566

Re: Waste Characterization Letter Report Update
West 61st Street Site
New York, New York

Dear Mr. Berry:

Civetta Cousins, JV and Pure Earth Trucking and have informed me that they are negotiating with Allied Environmental Group, Inc. for the acceptance of material from the West 61st Street Site in New York at various Clean Earth facilities located in New Jersey and Pennsylvania. They have requested that AKRF, Inc. provide you with completed New Jersey and Pennsylvanian certification sheets and the analytical results.

Enclosed are five sets of this Waste Characterization Letter Report Update, which contains updated analytical data from subsurface samples collected in March and April of this year. A copy of the May 26, 2006 report was previously sent to Jim Case of your company. This report updates the information presented in the May report. Please distribute this update to each of the disposal or reuse facilities. This report includes a sampling grid and vertical sub-grids of various depths and thicknesses, based on the anticipated wastes present at the West 61st Street Site. The analytical parameters, sample frequency, and methods were consistent with the information and directions of Allied Environmental Group, Inc. staff.

Attachment D, an updated grid summary sheet, reflects the current classification of each sub-grid, the tentative destination of the material in each sub-grid, and any additional testing needed to demonstrate that the sub-grid is acceptable for each of the proposed disposal facilities. Hopefully this will aid the various facility staff members in their review of the data. In reviewing this summary sheet, please note the following:

- Sub-grid 20A (0-6’) contains a location (boring MW-3 [0-6’]) of lead-contaminated soil that is classified as hazardous waste (D008). Excluding the lead hot spot identified at MW-3 collected during the field phase of the Remedial Investigation, the sub-cell meets the Clean Earth Philadelphia facility waste soil acceptance criteria, and may meet the beneficial use acceptance criteria for the FDP facility in New Jersey. We intend to collect additional samples in this sub-grid for asbestos, and hazardous waste characteristics (e.g., corrosivity, reactivity for sulfur and cyanide, ignitability). The waste classification sample collected in this area meets all other beneficial use facility criteria. Our client intends to remove the lead “hot spot” and test the side walls and bottom for lead and TCLP-lead following New Jersey Department of Environmental Protection (NJDEP) guidelines. The remaining soil in the sub-grid will be tested to determine whether it is acceptable for the beneficial use facility. If it doesn't meet the criteria, it will go to the Philadelphia facility as waste soil.

- Sub-grids 23A (0-6'), 24B (6'-12') and 25B (6'-12') meet the waste soil criteria for acceptance at the Philadelphia facility. They may also be capable of meeting the beneficial use criteria for acceptance at the FDP facility in Jersey City. The lead concentration is greater than 613 parts per million [ppm], but less than 1,200 ppm. The material in this cell will be sampled for asbestos and hazardous waste characteristics for acceptance at the beneficial use FDP facility. Assuming that these sub-cells will meet the aforementioned criteria, they will not be sampled for waste soil criteria for the Philadelphia facility.
- Sub-grid 26A (0-6') contains lead-contaminated soil that is classified as hazardous waste lead (D008). All other parameters meet the Philadelphia facility waste soil acceptance criteria. The lead hot spot will be excavated and endpoint samples from the sidewall and bottom will be collected and analyzed for lead and TCLP-lead following NJDEP guidelines. The remaining soil will be transported to the Philadelphia facility as waste soil.
- Sub-grid 29A (0-6') contains lead-contaminated soil that is classified as hazardous waste lead (D008). All other parameters meet the Philadelphia waste soil acceptance criteria. Four mid-point sidewall samples and a bottom sample were collected on Friday, June 9, 2006 and are being analyzed for lead and TCLP-lead. Additional post-excavation samples will be collected if these samples contain lead in concentrations above the TCLP standard. The remaining non-hazardous soil in this sub-grid will be transported to the Philadelphia facility as waste soil.
- Sub-grid 32A (0-14') contains lead-contaminated soil with lead concentrations above the acceptance criteria of the FDP facility (greater than 1,200 ppm). It was analyzed by Severn Trent Laboratory (STL) and did not exceed the TCLP-lead regulatory concentration. This sub-cell has to be sampled for waste characterization parameters for acceptance at the Philadelphia facility as waste soil.
- Sub-grids 33A (0-14') and 34A (0-10') contain lead in concentrations above 613 ppm, but less than 1,200 ppm. These sub-grids need to be sampled for asbestos and hazardous waste characteristics for disposal at the FDP facility.
- Sub-grid 40A (0-10') contains lead in concentrations above 613 ppm, but less than 1,200 ppm. The sub-grid was sampled on June 9th for asbestos and hazardous waste characteristics for disposal at the FDP facility.
- Sub-grid 44C (14'-24') was analyzed for both the Elizabeth, New Jersey, Beneficial Use requirements, and the Carteret, New Jersey, Petroleum soil requirements. The sample met the Petroleum soil standards. The sample appeared to meet the Beneficial Use standards; however, the sample was not analyzed for three required volatile organic compounds: 1,1,1-trichloroethane, 1,3-dichlorobenzene and acrylonitrile. The sample must be analyzed for these three volatile organic compounds prior to disposal at the Elizabeth, New Jersey, beneficial use facility.
- Sub-grid 47A (0-10') contains semivolatile organic compounds in concentrations above the beneficial use criteria for acceptance at the Elizabeth New Jersey facility. The sub-cell was sampled on June 9, 2006 for petroleum-contaminated soil criteria for acceptance at the Carteret facility.
- Sub-grid 52B (6'-18') appears to meet the petroleum-contaminated soil criteria, but needs paint filter – percent solids analysis. It is intended to be transported to the Carteret facility as petroleum-contaminated soil.
- Sub-grid 53A (0-6') contained lead-contaminated soil that is classified as hazardous waste lead (D008). This sample collection point is located at the intersection of four sample grid locations, all of which are

proposed for transportation to beneficial use facilities. The lead hot spot will be excavated and four side wall samples and one bottom sample will be collected and analyzed for lead and TCLP-lead, consistent with NJDEP guidance. The remaining soil in the four grids will be transported to the two designated beneficial use facilities.

- Sub-grid 54 (0-6’) is located at the intersection of four sample grid locations. This sample is deemed to as an additional sample for grid 25A (0-6’) for acceptance as waste soil at the Philadelphia facility.

The May 26, 2006 Letter is also included in this package. This letter addresses sampling methodology, the rationale regarding the grids and sub-grids, and a problem regarding the detection limit for thallium. The thallium issue is discussed in “Off-Site Beneficial Use” in the second page of the letter. As mentioned, the thallium concentrations in the soil and historic fill samples collected during the Remedial Investigation did not exceed 2 milligrams per kilogram. Subsequently, the laboratory raised its detection limit from approximately 2 milligrams per kilogram to 4 milligrams per kilogram. A copy of the analytical results for metals from the Remedial Investigation is included with beneficial use analytical results in Attachment F of this letter report.

Until the additional data for the sub-cells discussed above is provided, we understand that you may not wish to approve all of the sub-cells. Hopefully, your facilities can notify us as soon as possible of the sub-cells that are approved. We will promptly provide the information described above, so that the acceptability of remaining cells can be determined.

Enclosed in this letter is a disk containing all of the laboratory analytical data in the form that it was received from Severn Trent Laboratory. We will also be sending electronic copies of the analytical tables in Attachments E, F, G, and H or this report.

If you or the Clean Earth facility reviewers have any questions, please contact me at your earliest convenience.

Respectfully,
AKRF, Inc.

Richard A. Gardineer, P.E.
Technical Director

cc: Larry Ginsberg - Algin Management Company, LLC
Vincemt Bagnoli - VJB Construction
Ram Narine - Civetta Cousins, JV
Philip Guenzer - Alchemy Development, LLC
Jim Case - Allied Environmental Group, Inc. (w/o attachments)
Shaminder Chawla - NYSDEC

AKRF

Environmental and Planning Consultants

34 South Broadway
White Plains, New York 10601
tel: 914-949-7336
fax: 914-949-7559
www.akrf.com

May 26, 2006

Mr. Lawrence Ginsberg
Algin Management Company, LLC
64-35 Yellowstone Boulevard
Forest Hills, New York 11375

Re: Analytical Results
Waste Characterization Sampling
West 61st Street Site

Dear Mr. Ginsberg:

AKRF, Inc. is pleased to provide you with the analytical results from samples collected during March and April of this year at Algin's West 61st Street Site in New York City. These analytical results were generated from samples collected from the advancement of borings at various locations on the Site for the purposes of: delineating the extent of suspected petroleum-contaminated soil in the southern portion of the Site, along West 60th Street; characterizing the various types of materials at the Site for transportation and placement at off-site facilities, and the possible reuse of some uncontaminated native soil for backfill on the Site; and providing preliminary data for endpoint sampling that will be used to demonstrate to the New York State Department of Environmental Conservation (NYSDEC) that the remaining on-site soil meets cleanup criteria. This data will be incorporated into a Waste Characterization Report, which will be submitted to the NYSDEC, and to the receiving facilities for submission to the New Jersey Department of Environmental Protection, if requested. In addition to submitting this analytical data to Allied Environmental for review to determine its acceptability at various Clean Earth facilities, we understand that you desire this information to be distributed to the foundation construction companies, with whom you are presently negotiating.

Sampling Methodology

In previous discussions with Algin, we proposed, and you concurred, that the direct loading of hauling vehicles would be utilized at the Site whenever possible, rather than employing the double-handling of the material, which involves excavating, stockpiling, sampling, and loading the hauling vehicles. To accomplish this, samples of the various materials within the landfill had to be collected in-situ, analyzed, and used to categorize the on-site soil for off-site placement and possible reuse in on-site fill areas. Based on the data gathered during the Remedial Investigation, four categories of material were found to be present in the on-site fill: fill and native soil that appears to meet the chemical and physical standards for beneficial use as fill at non-residential facilities located in New Jersey; petroleum-contaminated soil; fill considered to be a waste because it does not meet non-residential standards for beneficial use in New Jersey; and construction and demolition debris that contains a significant amount of metal from the previous structure on Lot 8. Before determining the sampling program, AKRF contacted two "waste brokers," Brookside Environmental and Allied Environmental Group (Allied), Inc., a Division of Clean Earth, to determine the preliminary price and analytical requirements for acceptance at various potential off-site facilities. After reviewing this information, AKRF recommended utilizing the various facilities operated by Clean Earth. AKRF then worked with Allied Environmental Group to put together a sampling program that would meet the requirements of their various facilities. Allied provided sample collection and analytical requirements for the former Allied Signal Site in

Elizabeth, New Jersey, that is intended to be used for the fill meeting beneficial use at non-residential sites in New Jersey. Sample collection and analytical requirements were provided by Allied for the Clean Earth of Carteret, New Jersey facility that will be used for petroleum-contaminated soil. Sample collection and analytical requirements were also provided by Allied for the Clean Earth of Philadelphia, Pennsylvania, facility that will be used to dispose of the material that is not acceptable for placement at the Elizabeth or Carteret facilities. Most recently, Allied provided requirements for a second beneficial use facility, FDP in Jersey City, New Jersey, that will accept soil containing lead at higher concentrations. Allied will provide a disposal facility for the lead-contaminated soil determined to be a characteristic hazardous waste. The sampling and analytical requirements for each of the first three facilities is included in Attachment A.

On-Site Sample Collection

To meet the requirements of the off-site receiving facilities and the coverage of the NYSDEC-required endpoint samples, the Site was divided into horizontal grids and vertical sub-grids. The area of each grid was approximately 1,750 square feet. The depth of each grid was based on the testing frequency (test per cubic yards) for the anticipated type of material (e.g., beneficial use, petroleum-contaminated, waste) present. Samples were collected from the borings, which were advanced in the approximate center of each grid. The sampling grid is included as Figure 1. The grid dimensions and volumes are included in Attachment B. The types of materials and maximum sample volumes are included in Attachment C. Attachment D contains the anticipated off-site destination of the soil in each sub-grid.

Off-Site Beneficial Use

Samples collected from the sub-grids tentatively identified as candidates for beneficial use (from the Remedial Investigation), were analyzed for specific chemicals required by the State of New Jersey for acceptance at non-residential receiving facilities for placement as fill. The maximum volume per sample is 1,000 cubic yards. Attachment F compares the analytical results with the New Jersey standards for acceptance as beneficial use at a non-residential site. Please note that the detection limit for thallium is approximately 4.0 parts per million, which exceeds New Jersey's allowable beneficial use acceptance criteria for non-residential facilities of 2 parts per million. The criteria is footnoted to state, "health-based criterion is lower than analytical limits; cleanup criterion is based on practical quantitation level." Last fall, Severn Trent Laboratories (STL) changed its detection limit from approximately 1.5 parts per million to the detection limit of approximately 4.0 parts per million. The samples collected and analyzed during the Remedial Investigation field activities at this Site were analyzed to detection limits below 2.0 parts per million. No thallium was detected. Therefore, AKRF believes that these recent analytical results are acceptable for thallium, and that thallium meets the criteria for beneficial use.

The second potential site for receipt of this material is the FDP site in Jersey City, New Jersey. This facility will be used for soil that contains lead in concentrations above 613 parts per million, but less than 1,200 parts per million. In addition to the analytical requirements for beneficial use at non-residential facilities, additional composite samples need to be collected and analyzed for asbestos, corrosivity, reactivity (sulfide and cyanide), and ignitability, in accordance with FDP's requirements

Attachment E lists each sub-grid and the acceptable facility for each particular sub-grid. Soil in sub-grids 20A(6'-8'), 23A(0-6'), 24B(6'-12'), 25B(6'-12'), 33A(0-12'), 34(0-12'), 40A(0-10'), and 54A(0-6') exceed the lead concentration for the Allied Signal Site, but should qualify for the FDP facility. Certain sub-grids situated in the former parking lot in the eastern portion of Lot 43, originally identified as waste fill, have been found acceptable for the Allied Signal Site for beneficial use as fill. These sub-grids include 21A(0-6'), 22A(0-6'), 24A(0-6'), and 25C(12'-18').

Petroleum-Contaminated Soil

At the beginning of the waste characterization sampling in mid-March, plume delineation activities to locate the vertical and horizontal limit of the suspected petroleum contamination were undertaken in the grids located in the southern portion of the Site, along West 60th Street. The observations and samples collected are included in Attachment F. The observations and preliminary results from the plume delineation were used in the setup of the various sub-grids in Grid Nos. 47 through 52. In addition, during the collection of the samples in Grid No. 30, the deepest area was found to contain suspected petroleum. This sub-grid (30C[18'-

24’]) was analyzed for petroleum parameters. The sub-grids that were found to contain petroleum, and that are acceptable for disposal at Clean Earth of Carteret, New Jersey, are listed in Attachment D. Sub-grids 30C(18’-24’) and 52B(6’-18’) meet the chemical criteria and were analyzed for percent solids. However, they are required to be analyzed for percent solids using the “paint filter” method. These two sub-grids will be sampled and immediately analyzed, when the grids are accessible to sample collection by hand augur. Sub-grid 47A(0-10’) contained elevated concentrations of polynuclear aromatic hydrocarbons (PAHs) and needs to be sampled for petroleum parameters, which will occur within the next ten days. The analytical results are included in Attachment G.

<u>Waste Soil</u>

Samples were collected and analyzed for waste soil criteria in suspected areas of the Site, based on the results of the Remedial Investigation field observations and sample analytical results. The sub-grids found to contain the waste soil that does not meet the criteria for acceptance at the beneficial use sites are listed in Attachment D. Some of these sub-grids were found to contain elevated lead concentrations and, therefore, failed the Toxicity Characteristic Leaching Procedure (TCLP) analysis. In addition to the sample collected at MW-3 in the Remedial Investigation Report, sub-grids 26A(0-6’), 29A(0-6’), and 53A(0-6’) failed the TCLP analysis and are considered to contain characteristic hazardous waste (lead). There are three options to dispose this material: 1) remove the entire sub-grid as a hazardous waste (approximately $122,500 extra for transportation and disposal); 2) remove a portion of each sub-grid (6’ by 6’ by 6’) and sample the sidewalls and bottom for lead and TCLP-lead (approximately $5,000 extra for transportation, disposal, and analysis of 5 samples);and 3) divide each sub-gird into five smaller sub-grids, with each sub-grid analyzed for lead and TCLP lead only (approximately $24,500 for transportation, disposal and analysis of 12 samples). These estimated costs do not include excavation and AKRF time, because the equipment and staff will be at the site in any event. Sub-grid 32A(0-14’), originally considered to be utilized for beneficial use was found to contain lead in a concentration above 1,200 parts per million. STL performed a TCLP analysis on this sample; the sample was determined to be non-hazardous. This sub-grid will be sampled for disposal as waste fill and transported to the Clean Earth of Philadelphia, PA. The analytical results are included in Attachment H.

The construction and demolition material in Lot 8 is considered to be waste fill. Please be reminded that before this material is removed from the Site, all metal objects and other material not acceptable at the Philadelphia facility must be removed.

<u>Endpoint Sampling</u>

The analytical results of the collected endpoint samples have not been received for the entire former parking lot portion of Lot 43 or the southeastern portion of the Site along Lot 17, which is situated in the cellar of the Project Site. However, all of the endpoint samples, situated in the footprint of the areas of the building being excavated to approximately elevation 14.0 (excluding grids 49, 50, and 51), have been received. Based on the petroleum delineation and the characterization sampling, we have an indication of the lower limit of petroleum in this area; however, we did not want to collect endpoint samples below the plume that could result in contaminating the endpoint sample, resulting in a “false positive.”

Regarding your specific concerns of the need to excavate below elevation 14.0 in the grids containing the cellar and sub-cellar, we offer the following information:

- The bedrock elevation in Grid Nos. 26, 27, 29, 30, 31, 34, 35, 38, 39, 42, 46, and 47 is above elevation 14.0. Unless the bedrock is found to be contaminated during removal, there is no need to excavate for waste removal beneath elevation 14.0.
- The soil at approximate elevation 14.0, which is above the bedrock in Grid Nos. 28, 32, 33, 36, 37, 41, 44, and 46, meets NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objective (RSCO) values.
- The soil at approximate elevation 14.0, which is above the bedrock in Grid Nos. 40, 43, and 45, contains one or metals in concentrations above Eastern US Background concentrations, referenced in TAGM #4046. We will need specific NYSDEC approval to consider that these grids meet TAGM #4046 RSCO criteria. The soil at elevation 14.0 in Grid No. 48 contains petroleum; the bedrock is situated approximately at elevation 13.0.

- In Grid Nos. 49, 50, 51, and 52, petroleum-contaminated soil was encountered downward to elevations 13.4, 12.9, 12.2, and 11.9, respectively. The endpoint sample in Grid No. 52 contained nickel at a concentration above the RSCO value; each of the other chemicals was below its RSCO value (NYSDEC approval will have to be obtained for this grid.), Grid Nos. 49 through 51 may have to be excavated deeper, should the analysis of the future endpoint samples indicate chemical concentrations above the RSCO values.

Additional Off-Site Receiving Facilities

We understand that the foundation contractor may wish to use one or more facilities other than the Clean Earth sites listed in this letter. Each of these sites has site-specific sample collection criteria involving analyses to be performed and sampling frequencies (cubic yards per sample). One facility, EnCap in Rutherford, New Jersey, has a requirement that the sample must be collected in the presence of a New Jersey certified professional, which did not occur at the West 61st Street Site. If the contractor proposes a different site, we suggest that the following occur:

- All additional sampling for waste characterization for the particular facility be undertaken and funded by the contractor.
- The contractor must provide a letter from the receiving facility stating that the material is acceptable for the facility, and include a copy of a current operation permit issued by the appropriate State agency regulating the facility.
- The contractor must provide the name and address of each hauling company proposed to transport each type of material. The hauler of the petroleum-contaminated and lead (failed TCLP analysis) wastes must provide a valid NYSDEC 6 New York Code of Rules and Regulations (NYCRR) Part 364 Transportation Permit, approved to transport these waste streams. In addition, the transporter of the contaminated lead waste must have an Environmental Protection Agency (EPA) Transporter Identification Number.

Additional Endpoint Testing

At the completion of the removal of on-site soil to the desired elevations, NYSDEC may require additional endpoint sampling of the sidewalls and bottom to supplement the endpoint sampling that has occurred in this present sampling effort.

On-Site Sampling and Analysis

We will be providing you shortly with more detailed costs for undertaking the sampling of the three elevated lead areas and the costs involved in testing for asbestos, ignitability, corrosivity, and reactivity for the sub-grids intended for shipment to the FDP facility in Jersey City, New Jersey.

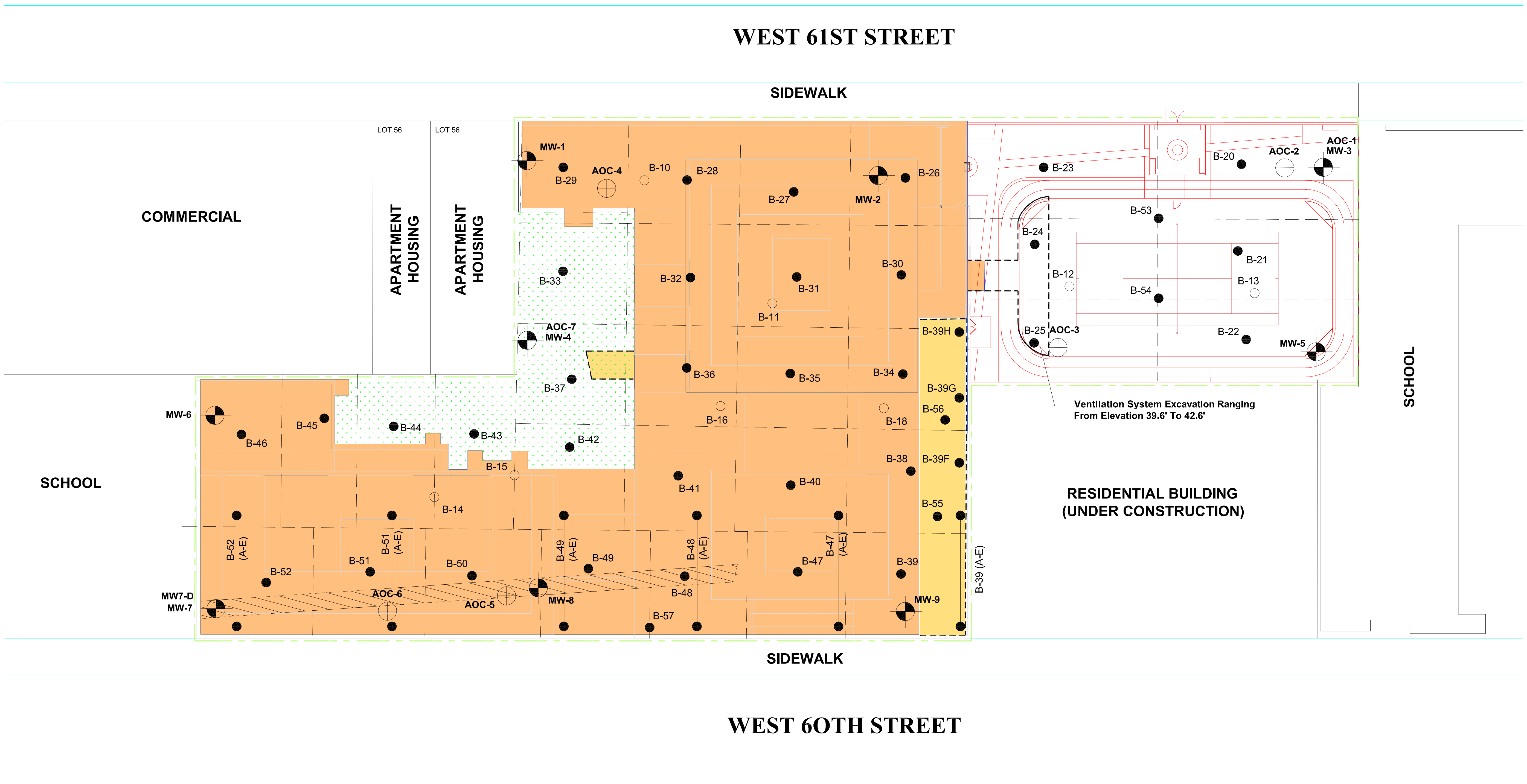
If you have any questions, please contact me at your earliest convenience.

Respectfully,
AKRF, Inc.

Michelle Lapin, P.E.
Senior Vice President

cc: Vincent Bagnoli, VJB Construction Corporation
David Freeman, Paul, Hastings, Janofsky, & Walker, LLP
James Case, Allied Environmental Group, Inc.

FIGURE



Legend:

―	GRID BOUNDARY	⊕	EXISTING GROUNDWATER MONITORING WELL INSTALLED DURING REMEDIAL INVESTIGATION. SOIL AND GROUNDWATER SAMPLES COLLECTED.
⊕	AREA OF CONCERN	○	BORING DRILLED DURING REMEDIAL INVESTIGATION. SOIL SAMPLES COLLECTED.
═	PROPOSED BUILDING	● B-51	BORING LOCATION FOR WASTE CHARACTERIZATION AND ENDPOINT SAMPLING
UST	UNDERGROUND STORAGE TANK	● B-51 (A-E)	BORING LOCATIONS FOR PETROLEUM INVESTIGATION
AST	ABOVEGROUND STORAGE TANK		
🟩	COURTYARD EXCAVATION TO ELEVATION 37.0		
🟧	SUB-CELLAR EXCAVATION TO ELEVATION 14.5 (MBD)		
🟨	CELLAR EXCAVATION TO ELEVATION 30.0 (MBD)		

EACH GRID IS APPROXIMATELY 1,000 CUBIC YARDS PER 16 FT DEPTH

Notes:

AOC-1	ELEVATED LEAD IN SAMPLE B/MW-3 (0-2")
AOC-2	ONE OR MORE USTS NEAR GATEHOUSE
AOC-3	ONE OR MORE USTS IN SOUTHWEST CORNER OF PARKING LOT
AOC-4	ONE OR MORE POTENTIAL USTS ON LOT 53
AOC-5	ESTIMATED EXTENT OF PETROLEUM-CONTAMINATED SOIL AND/OR GROUNDWATER
AOC-6	POSSIBLE VAULTED 1,050-GALLON TANK IN BASEMENT OF LOT 8
AOC-7	ELEVATED ACETONE IN SAMPLE B/MW-4 (12-14)

N

0 20 40 80 (FEET)

NOTE: ELEVATIONS IN MANHATTAN BOROUGH DATUM (MBD)

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

West 61st Street Site
New York, New York

PROPOSED SAMPLE LOCATIONS FOR WASTE CHARACTERIZATION, PETROLEUM INVESTIGATION, AND ENDPOINT SAMPLING

DATE
03.15.06

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
1

M:\AKRF Project Files\10321 - Algin Properties W. 60th St\Figures\RAWP Figures\RWP_SP_Figure_1_grid.dwg

ATTACHMENT A
SAMPLING AND ANALYTICAL REQUIREMENTS

Table - 1
General Fill Acceptance Criteria - Former Allied Signal Site
Elizabeth, New Jersey

Contaminant	CASRN	(RDCSCC)	(NRDCSCC)	(IGWSCC)	Maximum Onsite Concentration	Revised Final Acceptance Criteria	Rationale
Acenaphthene	83-32-9	3400	10000(c)	100		10000	NRDCSCC
Acetone (2-propanone)	67-64-1	1000(d)	1000(d)	100		100	IGWSCC
Acrylonitrile	107-13-1	1	5	1		1	IGWSCC
Aldrin	309-00-2	0.04	0.17	50		0.17	NRDCSCC
Anthracene	120-12-7	10000(c)	10000(c)	100		10000	NRDCSCC
Antimony	7440-36-0	14	340	(h)	1660	1660	M.O.C.
Arsenic	7440-38-2	20 (e)	20 (e)	(h)	429	50	M.O.C.
Barium	7440-39-3	700	47000(n)	(h)		47000	NRDCSCC
Benzene	71-43-2	3	13	1		1	IGWSCC
Benzo(b)fluoranthene (3,4-Benzofluoranthene)	205-99-2	0.9	4	50	14	14	M.O.C.
Benzo(a)anthracene (1,2-Benzanthracene)	56-55-3	0.9	4	500	13	13	M.O.C.
Benzo(a)pyrene (BaP)	50-32-8	0.66(f)	0.66(f)	100	8.3	8.3	M.O.C.
Benzo(k)fluoranthene	207-08-9	0.9	4	500	5	5	M.O.C.
Benzyl Alcohol	100-51-6	10000(c)	10000(c)	50		50	IGWSCC
Beryllium	7440-41-7	1(f) 2 (e)	1(f) 2 (e)	(h)	4.6	4.6	M.O.C.
Bis(2-chloroethyl) ether	111-44-4	0.66(f)	3	10		3	NRDCSCC
Bis(2-chloroisopropyl)ether	108-60-1	2300	10000(c)	10		10000	NRDCSCC
Bis(2-ethylhexyl) phthalate	117-81-7	49	210	100		210	NRDCSCC
Bromodichloromethane (Dichlorobromomethane)	75-27-4	11	46	1		1	IGWSCC
Bromoform	75-25-2	86	370	1		1	IGWSCC
Bromomethane (Methyl bromide)	74-83-9	79	1000 (d)	1		1	IGWSCC
2-Butanone (Methyl ethyl ketone) (MEK)	78-93-3	1000 (d)	1000 (d)	50		50	IGWSCC
Butylbenzyl phthalate	85-68-7	1100	10000 (c)	100		10000	NRDCSCC
Cadmium	7440-43-9	[1] 39	100	(h)		100	NRDCSCC
Carbon tetrachloride	56-23-5	2 (k)	4 (k)	1	1000	1	IGWSCC
4-Chloroaniline (p-Chloroaniline)	106-47-8	230	4200	(r)		4200	NRDCSCC
Chlorobenzene	108-90-7	37	680	1		1	IGWSCC
Chloroform	67-66-3	19 (k)	28 (k)	1	1500	1	IGWSCC
4-Chloro-3-methyl phenol (p-Chloro-m-cresol)	59-50-7	10000 (c)	10000 (c)	100		10000	NRDCSCC
Chloromethane (Methyl chloride)	74-87-3	520	1000 (d)	10		10	IGWSCC
2-Chlorophenol (o-Chlorophenol)	95-57-8	280	5200	10		5200	NRDCSCC
Chromium – hexavalent (VI)	18540-29-9	240; 270 (g);	6100; 20 (g); (i)	(h)		60 (v)	NRDCSCC
Chromium – trivalent (III)	16065-83-1	120,000	(i)	(i)		120000 / 60 (v)	NRDCSCC
Chrysene	218-01-9	9	40	500		40	NRDCSCC
Copper	7440-50-8	600 (m)	600 (m)	(h)		600	NRDCSCC
Cyanide	57-12-5	1100	21000 (o)	(h)		21000	NRDCSCC
4,4'-DDD (p,p'-TDE)	72-54-8	3	12	50		12	NRDCSCC
4,4'-DDE (p,p'-DDX)	72-55-9	2	9	50		9	NRDCSCC
4,4'-DDT	50-29-3	2	9	500		9	NRDCSCC
Dibenz(a,h)anthracene	53-70-3	0.66 (f)	0.66 (f)	100	0.93	0.93	M.O.C.
Dibromochloromethane (Chlorodibromomethane)	124-48-1	110	1000 (d)	1		1	IGWSCC
Di-n-butyl phthalate	84-74-2	5700	10000 (c)	100		10000	NRDCSCC
Di-n-octyl phthalate	117-84-0	1100	10000 (c)	100		10000	NRDCSCC
1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	5100	10000 (c)	50		10000	NRDCSCC
1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	5100	10000 (c)	100		10000	NRDCSCC

Table - 1
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Elizabeth, New Jersey

Contaminant	CASRN	(RDCSCC)	(NRDCSCC)	(IGWSCC)	Maximum Onsite Concentration	Revised Final Acceptance Criteria	Rationale
1,4-Dichlorobenzene (p Dichlorobenzene)	106-46-7	570	10000 (c)	100		10000	NRDCSCC
3,3'-Dichlorobenzidine	91-94-1	2	6	100		6	NRDCSCC
1,1-Dichloroethane	75-34-3	570	1000 (d)	10	1400	10	IGWSCC
1,2-Dichloroethane	107-06-2	6	24	1	1700	1	IGWSCC
1,1-Dichloroethene	75-35-4	8	150	10		10	IGWSCC
1,2-Dichloroethene (trans)	156-60-5	1000 (d)	1000 (d)	50		50	IGWSCC
1,2-Dichloroethene (cis)	156-59-2	79	1000 (d)	1		1	IGWSCC
2,4-Dichlorophenol	120-83-2	170	3100	10		3100	NRDCSCC
1,2-Dichloropropane	78-87-5	10	43	(r)		10	IGWSCC
1,3-Dichloropropene(cis and trans)	542-75-6	4	5 (l)	1		1	IGWSCC
Dieldrin	60-57-1	0.042	0.18	50		0.18	NRDCSCC
Diethyl phthalate	84-66-2	10000 (c)	10000 (c)	50		10000	NRDCSCC
2,4-Dimethyl phenol	105-67-9	1100	10000 (c)	10		10000	NRDCSCC
Dimethyl phthalate	131-11-3	10000 (c)	10000 (c)	50		10000	NRDCSCC
2,4-Dinitrophenol	51-28-5	110	2100	10		2100	NRDCSCC
Dinitrotoluene(2,4-/2,6- mixture)	25321-14-6	1 (l)	4 (l)	10 (l)		4	NRDCSCC
Endosulfan	115-29-7	340	6200	50		6200	NRDCSCC
Endrin	72-20-8	17	310	50		310	NRDCSCC
Ethylbenzene	100-41-4	1000 (d)	1000 (d)	100		100	IGWSCC
Fluoranthene	206-44-0	2300	10000 (c)	100		10000	NRDCSCC
Fluorene	86-73-7	2300	10000 (c)	100		10000	NRDCSCC
Heptachlor	76-44-8	0.15	0.65	50		0.65	NRDCSCC
Hexachlorobenzene	118-74-1	0.66 (f)	2	100		100	NRDCSCC
Hexachlorobutadiene	87-68-3	1	21	100		21	NRDCSCC
Hexachlorocyclopentadiene	77-47-4	400	7300	100		7300	NRDCSCC
Hexachloroethane	67-72-1	6	100	100		100	NRDCSCC
Indeno(1,2,3-cd)pyrene	193-39-5	0.9	4	500		4	NRDCSCC
Isophorone	78-59-1	1100	10000 (c)	50		10000	NRDCSCC
Lead	7439-92-1	400 (p)	600 (q)	(h)	613	613	M.O.C.
Lindane (gamma BHC) (gamma HCH)	58-89-9	0.52	2.2	50		2.2	NRDCSCC
2-Methylphenol (o-creosol)	95-48-7	2800	10000 (c)	(r)		10000	NRDCSCC
4-Methylphenol (p-creosol)	106-44-5	2800	10000 (c)	(r)		10000	NRDCSCC
Methoxychlor	72-43-5	280	5200	50		5200	NRDCSCC
Mercury	7439-97-6	14	270	(h)		270	NRDCSCC
4-Methyl-2-pentanone (MIBK)	108-10-1	1000 (d)	1000 (d)	50		50	IGWSCC
Methylene chloride (Dichloromethane)	75-09-2	49	210	1		1	IGWSCC
Naphthalene	91-20-3	230	4200	100		4200	NRDCSCC
Nickel	7440-02-0	250	2400 (k) (n)	(h)		2400	NRDCSCC
Nitrobenzene	98-95-3	28	520	10		520	NRDCSCC
N-Nitrosodiphenylamine	86-30-6	140	600	100		600	NRDCSCC
N-Nitrosodi-n-propylamine	621-64-7	0.66 (f)	0.66 (f)	10		0.66	NRDCSCC
PCBs (Polychlorinated biphenyls)	1336-36-3	0.49	2	50	150	5	Below IGWSCC and M.O.C.
Pentachlorophenol	87-86-5	6	24	100		24	NRDCSCC
Phenol	108-95-2	10000 (c)	10000 (c)	50		10000	NRDCSCC
Pyrene	129-00-0	1700	10000 (c)	100		10000	NRDCSCC
Selenium	7782-49-2	63	3100 (n)	(h)		3100	NRDCSCC
Silver	7440-22-4	110	4100 (n)	(h)		4100	NRDCSCC
Styrene	100-42-5	23	97	100		100	IGWSCC
1,1,1,2-Tetrachloroethane	630-20-6	170	310	1		1	IGWSCC
1,1,2,2-Tetrachloroethane	79-34-5	34	70 (k)	1	87000	1	IGWSCC

Table - 1
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Elizabeth, New Jersey

Contaminant	CASRN	(RDCSCC)	(NRDCSCC)	(IGWSCC)	Maximum Onsite Concentration	Revised Final Acceptance Criteria	Rationale
Tetrachloroethene (Tetrachloroethylene) (PCE)	127-18-4	4 (k)	6 (k)	1	26	1	IGWSCC
Thallium	7440-28-0	2 (i)	2 (i)	(h)		2	NRDCSCC
Toluene	108-88-3	1000 (d)	1000 (d)	500		500	IGWSCO
Total Organic Contaminant Compounds	NA	10,000	10,000	—		10,000 (u)	
Total VOCs	NA	1,000	1,000	—		1000	
Toxaphene	8001-35-2	0.10 (k)	0.2 (k)	50		0.2	NRDCSCC
1,2,4-Trichlorobenzene	120-82-1	68	1200	100		100	IGWSCC
1,1,1-Trichloroethane	71-55-6	210	1000 (d)	50		50	IGWSCC
1,1,2-Trichloroethane	79-00-5	22	420	1		1	IGWSCC
Trichloroethene (Trichloroethylene) (TCE)	79-01-6	23	54 (k)	1	2400	1	IGWSCC
2,4,5-Trichlorophenol	95-95-4	5600	10000 (c)	60		10000	NRDCSCG
2,4,6-Trichlorophenol	88-06-2	62	270	10		270	NRDCSCC
Vanadium	7440-62-2	370	7100 (n)	(h)		7100	NRDCSCC
Vinyl chloride	75-01-4	2	7	10		10	IGWSCC
Xylenes (Total)	1330-20-7	410	1000 (d)	[10] 67 (s)		67	IGWSCC
Zinc	7440-66-6	1500 (m)	1500 (m)	(h)		1500	NRDCSCC

NJDEP Clean Up Criteria Notes

(a) Criteria are health based using an incidental ingestion exposure pathway except where noted below.
(b) Criteria are subject to change based on site specific factors (e.g., aquifer classification, soil type, natural background, environmental impacts, etc.).
(c) Health based criterion exceeds the 10,000 mg/kg maximum for total organic contaminants.
(d) Health based criterion exceeds the 1000 mg/kg maximum for total volatile organic contaminants.
(e) Cleanup standard proposal was based on natural background.
(f) Health based criterion is lower than analytical limits; cleanup criterion based on practical quantitation level.
(g) Criterion based on the inhalation exposure pathway.
(h) The impact to ground water values for inorganic constituents will be developed based upon site specific chemical and physical parameters.
(i) Site specific determination required for SCC for the allergic contact dermatitis exposure pathway.
(j) Contaminant not regulated for this exposure pathway.
(k) Criteria based on inhalation exposure pathway, which yielded a more stringent criterion than the incidental ingestion exposure pathway.
(l) No criterion derived for this contaminant.
(m) Criterion based on ecological (phytotoxicity) effects.
(n) Level of the human health based criterion is such that evaluation for potential environmental impacts on a site by site basis is recommended.
(o) Level of the criterion is such that evaluation for potential acute exposure hazard is recommended.
(p) Criterion based on the USEPA Integrated Exposure Uptake Biokinetic (IEUBK) model utilizing the default parameters. The concentration is considered to
(q) Criteria were derived from a model developed by the Society for Environmental Geochemistry and Health (SEGH) and were designed to be protective for
(r) Insufficient information available to calculate impact to ground water criteria.
(s) Criterion based on new drinking water standard.

Site Specific Material Acceptance Criteria Notes

(t) NA

Analytical Requirements For Clean Earth of Carteret, Inc.

I. Contaminated Soil from Residential Source:

- TPH every 100 cubic yards (150 tons) - *NJ Method GC/FID OQA-QAM-025 or SW-846 Method 8015*
- VO Scan every 800 cubic yards (1200 tons) - *SW-846 Method 8260*

II. Contaminated Soil from Commercial Source:

- TPH every 100 cubic yards (150 tons) - *NJ Method GC/FID OQA-QAM-025 or SW-846 Method 8015*
- VO Scan every 800 cubic yards (1200 tons) - *SW-846 Method 8260*
- PCB's every 800 cubic yards (1200 tons)
- TCLP RCRA Metals every 800 cubic yards (1200 tons)
- RCRA Characteristics (Ignitability, Corrosivity, Reactivity) every 800 cubic yards (1200 tons)
- PAH's every 800 cubic yards (1200 tons) - *SW-846 Method 8270*

Notes:

1. Total TPH not to exceed 10,000 PPM/vol.
2. All Incoming Soil must be RCRA Non-Hazardous.
3. All Analysis must be performed by a New Jersey Certified Laboratory.
4. TPH Sampling Frequency: (5) 20 yard grabs composited for each 100 yards of material.
5. Other Sampling Frequency: (8) 100 yard grabs composited for each 800 yards of material.
6. Percent Moisture not to exceed 15 percent. (No Free Liquids – Must Pass Paint Filter Test).
7. PAH constituents exceeding NJNRDSCC are evaluated on a case-by-case basis.

Clean Earth of Philadelphia
Analytical Acceptance Requirements

Non-Petroleum Sources

Frequency	Sample Type	Analysis	Method	Limit
First 90 Tons	Grab	Volatile Organics TCLP Volatile Organics	8260B 1311/8260B	<30,000 TCLP Limits
Second 90 Tons	Grab	Volatile Organics TCLP Volatile Organics	8260B 1311/8260B	<30,000 TCLP Limits
Every 180 tons thereafter	Grab	Volatile Organics TCLP Volatile Organics	8260B 1311/8260B	<30,000 TCLP Limits
Every 900 Tons	Composite	Semivolatile Organics TCLP Metals** Ignitibility Corrosivity Reactivity-Sulfide/Cyanide PCBs TOX Total Sulfur TCLP Organics***	8270C 1311/6010 1010 9040 SW-846 7.3 8082 9023 ASTM D129 1311/8000	<400,000 TCLP Limits negative >2 - <12.5 RCRA Limits <50 <1000 None TCLP Limits

**Includes As, Ba, Cd, Cr, Cu, Hg,Ni, Pb, Se, Ag, Zn

Coal Tar Sources

Frequency	Sample Type	Analysis	Method	Limit
First 90 Tons	Grab	Volatile Organics TPH- DRO to C-44 Semivolatile Organics	8260B 8015M* 8270C	<30,000 <400,000 <400,000
Second 90 Tons	Grab	Volatile Organics TPH- DRO to C-44 Semivolatile Organics	8260B 8015M* 8270C	<30,000 <400,000 <400,000
Every 180 tons thereafter	Grab	Volatile Organics TPH- DRO to C-44 Semivolatile Organics	8260B 8015M* 8270C	<30,000 <400,000 <400,000
Every 900 Tons	Composite	TCLP Metals** Ignitibility Corrosivity Reactivity-Sulfide/Cyanide PCBs Total Sulfur TCLP Organics***	1311/6010 1010 9040 SW-846 7.3 8082 ASTM D129 1311/8000	TCLP Limits negative >2 - <12.5 RCRA Limits <50 None TCLP Limits

**Includes As, Ba, Cd, Cr, Cu, Hg,Ni, Pb, Se, Ag, Zn

Method 418.1M cannot be used for coal tar sources

*** Includes VOA, Semivoa, pesticides, herbicides

ATTACHMENT B
SAMPLING GRID DIMENSIONS AND VOLUMES
WEST 61ST STREET SITE, NEW YORK, NY

Grid No.	N/S Distance (in feet)[1]	E/W Distance (in feet)[2]	Area (in square feet [sf])	Depth for 100 cubic yards (cy) (in feet)	Depth for 500 cy (in feet)	Depth for 1,000 cy (in feet)
20	33.33’	75’	2500 sf	1.1’	2.2’	10.0’
21	33.33’	75’	2500 sf	1.1’	2.2’	10.0’
22	33.33’	75’	2500 sf	1.1’	2.2’	10.0’
23	33.33’	75’	2500 sf	1.1’	2.2’	10.0’
24	33.33’	75’	2500 sf	1.1’	2.2’	10.0’
25	33.33’	75’	2400 sf	1.1’	2.2’	10.0’
26	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
27	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
28	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
29	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
30	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
31	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
32	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
33	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
34	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
35	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
36	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
37	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
38	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
39	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
40	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
41	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
42	40’	43.75’	1750 sf	1.5’	7.7’	15.4’
43	58’	31.25’	1813 sf	1.5’	7.4’	14.9’
44	58’	31.25’	1813 sf	1.5’	7.4’	14.9’

ATTACHMENT B
SAMPLING GRID DIMENSIONS AND VOLUMES
WEST 61ST STREET SITE, NEW YORK, NY

Grid No.	**N/S Distance (in feet)[1]**	**E/W Distance (in feet)[2]**	**Area (in square feet [sf])**	**Depth for 100 cubic yards (cy) (in feet)**	**Depth for 500 cy (in feet)**	**Depth for 1,000 cy (in feet)**
45	58’	31.25’	1813 sf	1.5’	7.4’	14.9’
46	58’	31.25’	1813 sf	1.5’	7.4’	14.9’
47	42’	42.7’	1793 sf	1.5’	7.5’	15.1’
48	42’	42.7’	1793 sf	1.5’	7.5’	15.1’
49	42’	42.7’	1793 sf	1.5’	7.5’	15.1’
50	42’	42.7’	1793 sf	1.5’	7.5’	15.1’
51	42’	42.7’	1793 sf	1.5’	7.5’	15.1’
52	42’	42.7’	1793 sf	1.5’	7.5’	15.1’

Comment: Each grid is rectangular in shape.

Notes: [1] The “N/S Distance” represents the distance from the northern boundary of the grid to the southern boundary. The N/S distance is perpendicular to West 60th and West 61st Streets.

[2] The “E/W Distance” represents the distance from the eastern boundary of the grid to the western boundary. The E/W distance is parallel to West 60th and West 61st Streets.

ATTACHMENT C
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE, NEW YORK, NY

Grid No.	Depth to Final Grade	Sub-Grid Depth	Soil Type	Type of Sample	Grid Volume (cubic yards)
20	7’	7’ – 1 Sampling Grid			
20A		0-6’	Fill	Waste Class./Beneficial Use	650 (6-VOC)
		6’-8’		Endpoint	
21	7’	7’ – 1 Sampling Grid			
21A		0-6’	Fill	Waste Class./Beneficial Use	650 (6-VOC)
		6’-8’		Endpoint	
22	7’	7’ – 1 Sampling Grid			
22A		0-6’	Fill	Waste Class./Beneficial Use	650 (6-VOC)
		6’-8’	Fill	Endpoint	
23	6’	6’ – 1 Sampling Grid			
23A		0-6’	Fill	Waste Class./Beneficial Use	557 (6-VOC)
		6’-8’	Fill	Endpoint	
24	20’	14’ – 2 Sampling Grids			
24A		0-6’	Fill	Waste Class./Beneficial Use	557 (6-VOC)
24B		6’-12’	Fill/NS	Beneficial Use	557
		12’-14’	BR	Endpoint	
25	20’	20’ – 3 Sampling Grids			
25A		0-6’	Fill	Waste Class./Beneficial Use	557 (6-VOC)
25B		6’-12’	Fill/NS	Beneficial Use	557
25C		12’-18’	Fill/NS	Beneficial Use	557
		18’-20’	Fill/NS/BR	Endpoint	
26	33.5’	27’ - 3 Sampling Sub-Grids			
26A		0-6’	Contaminated Fill	Waste Classification	388 (6-VOC)
26B		6’-20’	Fill	Beneficial Use	905
26C		20’-26’	NS	Beneficial Use	388
		26’-27’	NS/BR	Endpoint	
27	33’	30’ – 3 Sampling Sub-Grids			
27A		0-10’	Fill	Beneficial Use	650
27B		10’-20’	Fill/NS	Beneficial Use	650
27C		20’-30’	Fill/NS	Beneficial Use	650
		30’-30.5’	NS/BR	Endpoint	

ATTACHMENT C
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE, NEW YORK, NY

Grid No.	Depth to Final Grade	Sub-Grid Depth	Soil Type	Type of Sample	Grid Volume (cubic yards)
28	30’	30’ – 2 Sampling Sub-Grids			
28A		0-15’	Fill	Beneficial Use	970
28B		15’-30’	Fill/NS	Beneficial Use	970
		30’-30.5’	NS	Endpoint	
29	26’	26’ – 3 Sampling Sub-Grids			
29A		0-6’	Contaminated Fill	Waste Classification	388 (5-VOC)
29B		6’-16’	Fill	Beneficial Use	650
29C		16’-24’	Fill/NS	Beneficial Use	520
		24’-26’	NS/BR	Endpoint	
30	33.5’	26’ – 3 Sampling Sub-Grids			
30A		0-10’	Fill	Beneficial Use	650
30B		10’-18’	Fill/NS	Beneficial Use	520
30C		18’-24’	Fill/Petroleum	Waste Class. Pet.	388
		25’-26’	NS/BR	Endpoint	
31	33’	26’ - 2 Sampling Sub-Grids			
31A		0-16’	Fill	Beneficial Use	1,035
31B		16’-25’	Fill/NS	Beneficial Use	582
		25’-26’	NS/BR	Endpoint	
32	30’	30’ – 3 Sampling Sub-Grids			
32A		0-14’	Fill	Beneficial Use	905
32B		14’-20’	Fill/NS	Beneficial Use	388
32C		20’-30’	Fill/NS	Beneficial Use	650
		30’-31’	NS	Endpoint	
33	25’	25’ – 2 Sampling Sub-Grids			
		2’-4’	Fill	Endpoint	
33A		0-12’	Fill	Beneficial Use	776
		10’-12’	Fill	Endpoint	
33B		12’-24’	Fill/NS	Beneficial Use	776
		24’-26’	NS	Endpoint	
34	34’	24’ – 2 Sampling Sub-Grids			
34A		0-10’	Fill	Beneficial Use	650
34B		10’-24’	NS	Beneficial Use	905
		18’-18.5’	NS	Endpoint	
		24’-24.5’	NS/BR	Endpoint	
35	33’	30’ – 3 Sampling Sub-Grids			
35A		0-10’	Fill	Beneficial Use	650

ATTACHMENT C
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE, NEW YORK, NY

Grid No.	Depth to Final Grade	Sub-Grid Depth	Soil Type	Type of Sample	Grid-Volume (cubic yards)
35B		10’-20’	Fill/NS	Beneficial Use	650
35C		20’-28’	Fill/NS	Beneficial Use	520
		28’-30’	NS/BR	Endpoint	
36	30’	30’- 3 Sampling Sub-Grids			
36A		0-10’	Fill	Beneficial Use	650
36B		10’-18’	Fill/NS	Beneficial Use	520
36C		18’-30’	Fill/NS	Beneficial Use	776
		30’-32’	NS	Endpoint	
37	24’	24’ – 2 Sampling Sub-Grids			
		5’-6’	Fill	Endpoint	
37A		0-12’	Fill	Beneficial Use	776
		12’-14’	NS	Endpoint	
37B		12’-24’	NS	Beneficial Use	776
		24’-26’	NS/BR	Endpoint	
38	18’	18’ – 2 Sampling Sub-Grids			
38A		0-10’	Fill	Beneficial Use	650
38B		10’-18’	NS	Beneficial Use	520
		18’-20’	NS/BR	Endpoint	
39	35’	20’ – 2 Sampling Sub-Grids			
39A		0-12’	Fill	Beneficial Use MS/MSD, Duplicate	776
39B		12’-24’	Fill	Beneficial Use	776
		18’-20’	NS/BR	Endpoint (1st boring)	
		24’-26’	NS/BR	Endpoint (2nd boring)	
40	33.5’	34’ – 3 Sampling Sub-Grids			
40A		0-10’	Fill	Beneficial Use	650
40B		10’-20’	Fill/NS	Beneficial Use	650
40C		20’-32’	Fill/NS	Beneficial Use	776
		32’-34’	NS/BR	Endpoint	
41	31’	31 ’ – 3 Sampling Sub-Grids			
41A		0-10’	Fill	Beneficial Use	650
41B		10’-20’	Fill/NS	Beneficial Use	650
41C		20’-30’	Fill/NS	Beneficial Use	650
		30’-32’	NS/BR	Endpoint	
42	27’	24’ – 2 Sampling Sub-Grids			
42A		0-12’	Fill	Beneficial Use	776
		2’-4’		Endpoint	

ATTACHMENT C
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE, NEW YORK, NY

Grid No.	Depth to Final Grade	Sub-Grid Depth	Soil Type	Type of Sample	Grid Volume (cubic yards)
42B		12’-22’	Fill	Beneficial Use	650
		14’-16’	NS	Endpoint	
		22’-24’	NS/BR	Endpoint	
43	25’	25’ – 2 Sampling Sub-Grids			
43A		0-6’	C+D	Waste Classification	402 (6-VOC+?)
		2’-4’	NS	Endpoint	
43B		6’-14’	NS	Waste Classification	536 (6-VOC)
		14’-24’	NS	Beneficial Use	670
		24’-26’	NS	Endpoint	
44	24’	24’ – 2 Sampling Sub-Grids			
44A		0-6’	C+D	Waste Classification	402 (5-VOC)
44B		6’-14’	NS	Waste Classification	536 (5-VOC)
44C		14’-24’	NS	Waste Class. Pet./Beneficial Use	670
		24’-26’	NS	Endpoint	
45	19’	19’ – 2 Sampling Sub-Grids			
45A		0-6’	Fill/Petroleum	Waste Class. Pet.	402
45B		6’-18’	Fill/NS	Beneficial Use	804
		18’-20’	NS	Endpoint	
46	18’	18’ – 2 Sampling Sub-Grids			
46A		0-6’	Fill	Waste Classification	402 (4-VOC)
46B		6’-14’	Fill/NS	Beneficial Use	536
		20’-22’	NS	Endpoint	
46C		14’-20’	NS/BR	Waste Class.Pet.	402
		Endpoint sampling after removal			
47	34’	22’ – 3 Sampling Sub-Grids			
47A		0-10’	Fill	Beneficial Use	665
47B		10’-18’	Fill/NS	Waste Classification	532 (6-VOC)
47C		18’-22’	NS/BR	Waste Class. Pet.	266
		Endpoint sampling after removal			
48	31’	31’ – 2 Sampling Sub-Grids			
48A		0-10’	Fill	Beneficial Use	665

ATTACHMENT C
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE, NEW YORK, NY

Grid No.	Depth to Final Grade	Sub-Grid Depth	Soil Type	Type of Sample	Grid Volume (cubic yards)
48B		10-16	Fill/NS	Waste Class. Pet.	402
48C		16’-24’	Fill/NS	Waste Class. Pet.	532
48D		24’-30’	Fill/NS	Waste Class. Pet.	402
		Endpoint sampling after removal			
49	28’	28’ – 3 Sampling Sub-Grids			
49A		0-10’	Fill	Beneficial Use	665
49B		10’- 20’	Fill/NS	Waste Class. Pet.	665
49C		20’-28’	NS/BR	Waste Class. Pet.	532
		Endpoint sampling after removal			
50	25’	25’ – 2 Sampling Sub-Grids			
50A		0-14’	C+D	Beneficial Use	931
50B		14’-20’	C+D/Fill/NS	Waste Class. Pet	402
		20’-26’	C+D/Fill/NS	Waste Class. Pet	402
		Endpoint sampling after removal			
51	23’	23’ – 2 Sampling Sub-Grids			
51A		0-12’	Fill/NS	Beneficial Use	798
51B		12’-18’	Fill/NS	Beneficial Use	402
51C		18’-24’	NS	Waste Class Pet.	402
		Endpoint sampling after removal			
52	18’	18’ – 3 Sampling Grids			
52A		0-6’	Fill	Waste Class./Beneficial Use	402 (4-VOC)
52B		6’-18’	Fill/NS	Waste Class. Pet.	798
52C		18’-20’	NS	Endpoint	
53	7’	7’ – 1 Sampling Grid			
53A		0-6’	Fill	Waste Class./Beneficial Use	402 (6-VOC)
		6’-8’		Endpoint	
54	7’	7’ – 1 Sampling Grid			
54A		0-6’	Fill	Waste Class./Beneficial Use	402 (8-VOC)
		6’-8’		Endpoint, MS/MSD, Duplicate	
55	24’	22’ – 2 Sampling Grids			
55A		0-12’	Fill	Beneficial Use	
55B		12’-20’	NS	Beneficial Use	
		20’-22’	NS/BR	Endpoint	
56	24’	24’ – 2 Sampling Grids			

ATTACHMENT C
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE, NEW YORK, NY

Grid No.	Depth to Final Grade	Sub-Grid Depth	Soil Type	Type of Sample	Grid Volume (cubic yards)
56A		0-12’	Fill	Beneficial Use	
56B		12’-24’	NS	Beneficial Use	
		24’-26’	NS/BR	Endpoint	
57		8’-10’	Above WT	VOCs. SVOCs Metals	
		12’-14’	WT interface	VOCs. SVOCs Metals	
		14’-16’	Bedrock interface	VOCs, SVOCs, Metals	

Notes:
Beneficial Use - Sampling for acceptance at former Allied Signal Site in Elizabeth, NJ.
Waste Classification – Sampling for acceptance at Clean Earth of Philadelphia, Penn.
Waste Class. Pet. – Sampling for acceptance at Clean Earth of Carteret, NJ.
Endpoint – Sampling for New York State Department of Environmental Conservation (NYSDEC) cleanup criteria.
C+D – Construction and demolition debris as defined in 6 New York Code of Rules and Regulations (NYCRR) Section 360-1.
Fill – Fill material previously brought to the Site.
NS – Native Soil – sand and silt with some gravel.
BR – Bedrock
Depth – Depth of excavation to final grade or to remove known petroleum contamination.
Sub-Grid – Division of grid by elevation (depth range) to achieve 1,000-cubic yard volumes.

ATTACHMENT D (REVISED 6/16/06)
WASTE CHARACTERIZATION AND OFF-SITE DESTINATION
WEST 61ST SITE, NEW YORK, NY

Grid No.	Sub-Grid	Depth (ft)	Waste Characterized As	Remarks
20	20A	0-6’	Hazardous Waste – TCLP Lead at MW-3 (0-2’)	Remove lead-contaminated soil and collect samples.
			Meets Waste Soil Criteria After Lead Hot Spot Removal	Clean Earth, Philadelphia, PA
			High Lead (721 ppm), Needs Additional Testing	FDP Site in Jersey City, NJ
	20A	6’-8’	End Point Sample	
21	21A	0-6’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	21A	6’-8’	End Point Sample	
22	22A	0-6’	Meets Beneficial Use Criteria,	Allied Signal, Elizabeth, NJ
	22B	6’-8’	End Point Sample	
23	23A	0-6’	Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
			High Lead (1,000 ppm), Needs Additional Testing	FDP Site in Jersey City, NJ
	23B	6’-8’	End Point Sample	
24	24A	0-6’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
			Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
	24B	6’-12’	High Lead (877 ppm), Needs Additional Testing	FDP Site in Jersey City, NJ
	24C	12’-14’	End Point Sample	
25	25A	0-6’	Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
			Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	25B	6’-12’	High Lead (697 ppm), Needs Additional Testing	FDP Site in Jersey City, NJ
	25C	12’-18’	Meets Beneficial Use Criteria,	Allied Signal, Elizabeth, NJ
	25D	18’-20’	End Point Sample	
26	26A	0-6’	Hazardous Waste-TCLP Lead	Remove lead-contaminated soil and collect samples
			Meets Waste Soil Criteria After Lead Hot Spot Removal	Clean Earth, Philadelphia, PA
	26B	6’-20’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	26C	20’-26’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	26D	26’-27’	End Pont Sample	

ATTACHMENT D (REVISED 6/16/06)
WASTE CHARACTERIZATION AND OFF-SITE DESTINATION
WEST 61ST SITE, NEW YORK, NY

27	27A	0-10’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	27B	10’-20’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	27C	20’-30’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	27D	30’-30.5’	End Point Sample	
28	28A	0-15’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	28B	15’-30’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	28C	30’-30.5’	End Point Sample	
29	29A	0-6’	Hazardous Waste - TCLP Lead	Remove lead-contaminated soil and collect samples
			Meets Waste Soil Criteria After Lead Hot Spot Removal	Clean Earth, Philadelphia, PA
	29B	6’-16’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	29C	16’-24’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	29D	24’-26’	End Point Sample	
30	30A	0-10’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	30B	10’-18’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	30C	18’-24’	Appears to Meet Petroleum Criteria (Needs Paint Filter Analysis for % Solids)	Clean Earth, Carteret, NJ
	30D	24’-26’	End Point Sample	
31	31A	0-16’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	31B	16’-25’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	31C	25’-26’	End Point Sample	
32	32A	0-14’	High Lead, passed TCLP, Needs Waste Class Sampling Parameters	Clean Earth, Philadelphia, PA
	32B	14’-20’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	32C	20’-30’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	32D	30’-31’	End Point Sample	
33	33A	0-12’	High Lead (730 ppm), Needs Additional Sampling	FDP Site in Jersey City, NJ
	33B	12’-24’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	33C	24’-26’	End Point Sample	
34	34A	0-10’	High Lead (917 ppm), Needs	FDP Site in Jersey City, NJ

ATTACHMENT D (REVISED 6/16/06)
WASTE CHARACTERIZATION AND OFF-SITE DESTINATION
WEST 61^{ST} SITE, NEW YORK, NY

			Additional sampling	
	34B	10’-24’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	34C	24’-24.5’	End Point Sample	
35	35A	0-10’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	35B	10’-20’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	35C	20’-28’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	35D	28’-30’	End Point Sample	
36	36A	0-10’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	36B	10’-18’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	36C	18’-30’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	36D	30’-32’	End Point Sample	
37	37A	0-12’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	37B	12’-24’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	37C	24’-26’	End Point Sample	
38	38A	0-10’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	38B	10’-18’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	38C	18’-20’	End Point Sample	
39	39A	0-12’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	39B	12’-24’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	39C	24’-26’	End Point Sample	
40	40A	0-10’	High Lead (1,160 ppm), Needs additional sampling	FDP Site in jersey City, NJ
	40B	10’-20’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	40C	20’-32’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	40D	32’-34’	End Point Sample	
41	41A	0-10’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	41B	10’-20’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	41C	20’-30’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	41D	30’-32’	End Point Sample	
42	42A	0-12’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	42B	12’-22’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	42C	22’-24’	End Point Sample	

ATTACHMENT D (REVISED 6/16/06)
WASTE CHARACTERIZATION AND OFF-SITE DESTINATION
WEST 61ST SITE, NEW YORK, NY

43	43A	0-6’	Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
	43B	6’-14’	Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
	43C	14’-24’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	43D	24’-26’	End Point Sample	
44	44A	0-6’	Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
	44B	6’-14’	Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
	44C	14’-24’	Meets Petroleum Criteria	Clean Earth, Carteret, NY
			Appears to Meet Beneficial Use Criteria - Needs tests for 1,1,1 TCA, 1,3 dichlorobenzene, and acrylonitrile	Allied Signal, Elizabeth, NJ
	44D	24’-26’	End Point Sample	
45	45A	0-6’	Meets Petroleum Criteria	Clean Earth, Carteret, NJ
	45B	6’-18’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	45C	18’-20’	End Point Sample	
46	46A	0-6’	Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
	46B	6’-14’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	46C	14’-20’	Meets Petroleum Criteria	Clean Earth, Carteret, NJ
47	47A	0-10’	High SVOCs – Resampled on 6/9/06 for Petroleum Waste Parameters	Clean Earth, Carteret, NJ
	47B	10’-18’	Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
	47C	18’-24’	Meets Petroleum Criteria	Clean Earth, Carteret, NJ
48	48A	0-10’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	48B	10’-16’	Appears to Meet Petroleum Criteria. Needs VOCs and additional TPH tests	Clean Earth, Carteret, NJ
	48C	16’-24’	High Sulfide, otherwise meets Petroleum Criteria	Clean Earth, Carteret, NJ
	48D	24’-30’	High Sulfide, otherwise meets Petroleum Criteria	Clean Earth, Carteret, NJ
49	49A	0-10’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	49B	10’-20’	Meets Petroleum Criteria	Clean Earth, Carteret, NJ
	49C	20’-28’	Meets Petroleum Criteria	Clean Earth, Carteret, NJ
50	50A	0-14’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ

ATTACHMENT D (REVISED 6/16/06)
WASTE CHARACTERIZATION AND OFF-SITE DESTINATION
WEST 61ST SITE, NEW YORK, NY

	50B	14’-20’	Meets Petroleum Criteria	Clean Earth, Carteret, NJ
	50C	20’-26’	High Sulfide, otherwise meets Petroleum Criteria	Clean Earth, Carteret, NJ
51	51A	0-12’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	51B	12’-18’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	51C	18’-24’	Meets Petroleum Criteria	Clean Earth, Carteret, NJ
52	52A	0-6’	Meets Waste Soil Criteria	Clean Earth, Philadelphia, PA
	52B	6’-18’	Appears to Meet Petroleum Criteria -Needs Paint Filter for % Solids, SVOCs, and PCBs	Clean Earth, Carteret, NJ
	52C	18’-20’	End Point Sample	
53	53A	0-6’	Hazardous Waste-TCLP Lead	Remove lead - contaminated soil and collect samples
	53B	6’-8’	Covered in Adjacent Grids	
54	54A	0-6’	Covered in Adjacent Grids – Use Analysis For Sub-Grid 25A	FDP Site in Jersey City, NJ
	54B	6’-8’	End Point Sample	
55	55A	0-12’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	55B	12’-20’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	55C	20’-22’	End Point Sample	
56	56A	0-12’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	56B	12’-24’	Meets Beneficial Use Criteria	Allied Signal, Elizabeth, NJ
	56C	24’-26’	End Point Sample	
57	57A	8’-10’	Con Ed Vault	
	57B	12’-14’		
	57C	14’-16’		

ATTACHMENT E
PETROLEUM DELINEATION
WEST 61ST STREET SITE, NEW YORK, NY

Location	Depth of Sample	Soil Type	Sample Type	Purpose of Sample / Parameters
B-39A	7.5’-8’	Fill	Grab	Elevated PID reading, clean above this zone.
	14.5’-15’	Native/BR	Grab	Clean at bottom of boring/bedrock.
B-39C	5.5’-6’	Fill	Grab	Clean above water table.
	15.5’-16’	Native/BR	Grab	Clean at bottom of boring/bedrock.
B-39E	5.5’-6’	Fill	Grab	Clean above water table.
	10.5’-11’	Native/BR	Grab	Clean at bottom of boring/bedrock.
B-39F	6.5’-7’	Fill	Grab	Clean above water table.
	19.5’-20’	Native	Grab	Clean at bottom of boring.
B-39G	3.5’-4’	Fill	Grab	Elevated PID.
	14.5’-15’	Native	Grab	End of contaminated zone, and clean above water table.
	16.5’-17’	Native	Grab	Clean below water table.
B39H	2’-2.5’	Fill	Grab	Elevated PID.
	10’-10.5’	Fill	Grab	End of contaminated zone, and clean above water table.
	16.5’-17’	Native	Grab	Clean below water table.
B-39I	3.5’-4’	Fill	Grab	Elevated PID.
	6.5’-7’	Fill	Grab	End of contaminated zone.
	14.5’-15’	Fill	Grab	Clean in smear zone.
	17.5’-18’	Native	Grab	Contaminated in water table.
	22’-22.5’	Native	Grab	Bedrock interface and elevated PID.
B-47A	16’-16.5’	Native	Grab	Clean above water table.
	17.5’-18’	Native	Grab	Bedrock interface – Elevated PID.
B-47C	31’-31.5’	Native/BR	Grab	Clean (entire boring clean).
	33’-33.5’	Native/BR	Grab	Clean.
B-47E	7.5’-8’	Fill	Grab	Elevated PID.
	15’-15.5’	Native	Grab	Clean zone/Endpoint.
	18’-18.5’	Native	Grab	Clean in water table.
B-48A	16’-16.5’	Native	Grab	Clean above water table.
	21’-21.5’	Native	Grab	Contaminated zone in water table.
	26’-26.5’	Native	Grab	Clean zone/endpoint.
B-48C	15’-15.5’	Native	Grab	Contaminated above water table.
	17’-17.5’	Native	Grab	Contaminated in smear zone.
	18.5’-19’	Native	Grab	Contaminated in water table.
	25’-25.5’	Native	Grab	Clean zone.
B-48E	15.5’-16’	Fill	Grab	Clean above water table.
	21’-21.5’	Native	Grab	Beginning of contaminated zone – elevated PID.
	23’-23.5’	Native.	Grab	Clean zone.
B-48F	19’-19.5’	Native	Grab	Clean above water table.
	22’-22.5’	Native	Grab	Clean in water table.
B-49A	13’-13.5’	Native	Grab	Clean above water table .
	16.5’-17’	Native	Grab	Clean in water table.
B-49C	16’-16.5’	Native	Grab	Bottom of clean interval/smear zone.

ATTACHMENT E
PETROLEUM DELINEATION
WEST 61ST STREET SITE, NEW YORK, NY

Location	Depth of Sample	Soil Type	Sample Type	Purpose of Sample / Parameters
	19’-19.5’	Native	Grab	Contaminated zone.
	24’-25’	Native	Grab	Clean below contamination/endpoint.
B-49D	14’-14.5’	Native	Grab	Bottom of clean zone.
	16.5’-17’	Native	Grab	Top of contaminated zone/highest PID.
	22.5’-23’	Native	Grab	Clean below contamination.
B-49E	16.5’-17’	Native	Grab	Clean above water table.
	19’-19.5’	Native	Grab	Clean in water table.
B-51A	8’-8.5’	Fill	Grab	Clean above water table.
	11.5’-12’	Native	Grab	Contaminated in water table/refusal.
B-51D	13.5’-14’	Native	Grab	Clean above water table.
	18’-18.5’	Native	Grab	Contaminated in water table.
	22.5’-23’	Native	Grab	Clean zone below contamination.
B-51E	13.5’-14’	Native/Fill	Grab	Clean in smear zone (entire boring clean).
B-51F	17’-17.5’	Native	Grab	Clean above water table.
	20’-20.5’	Native	Grab	Contaminated in water table.
B-52A	12’-14’	Fill	Grab	Clean in smear zone.
	14’-16’	Native	Grab	Contaminated in water table.
	26’-28’	Native	Grab	Contaminated into weathered bedrock.
B-52E	2’-4’	Fill	Grab	Contaminated zone.
	10’-12’	Native	Grab	Clean below contaminated zone.
	15.5’-16’	Native	Grab	Contaminated zone in water table.
	24’-26’	Native	Grab	Clean below contamination.
B-52E-N20	15.5’-16’	Fill	Grab	Bottom of clean zone.
	19.5’-20’	Native	Grab	Top of contaminated zone (water table).
	28’-28.5’	Native	Grab	Clean zone below contamination.
B-52E-N30	10’-10.5’	Native	Grab	Bottom of clean zone.
	13.5’-14’	Native	Grab	Contaminated zone.
	20’-20.5’	Native	Grab	Clean zone below contamination.

Notes:
1) C&D – Construction and demolition debris as defined in 6 New York Code of Rules and Regulations (NYCRR) Subpart 360-1.
2) NJDEP – New Jersey Department of Environmental Protection
3) PID – Photoionizaton Detector – used to detect volatile organic compounds in soil samples.
4) Native – Native soil, BR - Bedrock

Sampling Rationale: Samples were collected to determine the horizontal and vertical extent of petroleum contamination. In areas where no contamination was apparent, one sample was collected at a depth two to three feet above the groundwater, and a second soil sample was collected at or below the groundwater interface. If the interface appeared to be uncontaminated, the boring is considered to be completed and the two samples were analyzed for confirmation. If contamination was evident at or below the groundwater interface, a confirmatory sample from the uncontaminated soil or soil at the bedrock interface was collected. All samples were analyzed for volatile organic compounds (VOCs) using Environmental Protection Agency (EPA) Method 8260, following NJDEP Protocol.

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements ug/Kg**	**B-39A(7.5-8)** **212414-001** **1** **3/20/2006** **ug/Kg**	**B-39A(14.5-15)** **212414-002** **1** **3/20/2006** **ug/Kg**	**B-39C(5.5-6)** **212414-005** **1** **3/20/2006** **ug/Kg**
Chloromethane	*	62 U	57 U	63 U
Vinyl chloride	200	99 U	91 U	100 U
Bromomethane	*	150 U	140 U	150 U
Chloroethane	1,900	99 U	91 U	100 U
Acrolein	NS	970 U	890 U	980 U
1 1-Dichloroethene	400	87 U	80 U	88 U
Acetone	200	210 J	160 U	**210 J**
Methylene chloride	100	76 JB	71 JB	88 JB
trans-1 2-Dichloroethene	300	62 U	57 U	63 U
Acrylonitrile	NS	200 U	180 U	200 U
1 1-Dichloroethane	200	75 U	69 U	75 U
cis-1 2-Dichloroethene	*	75 U	69 U	75 U
2-Butanone (MEK)	*	150 U	140 U	150 U
Chloroform	300	87 U	80 U	88 U
1 1 1-Trichloroethane	800	50 U	46 U	50 U
Carbon tetrachloride	600	120 U	110 U	130 U
Benzene	60	50 U	46 U	50 U
1 2-Dichloroethane	100	75 U	69 U	75 U
Trichloroethene	700	87 U	80 U	88 U
1 2-Dichloropropane	*	110 U	100 U	110 U
Bromodichloromethane	*	50 U	46 U	50 U
2-Chloroethylvinylether	NS	75 U	69 U	75 U
cis-1 3-Dichloropropene	*	62 U	57 U	63 U
4-Methyl-2-pentanone (MIBK)	1,000	87 U	80 U	88 U
Toluene	1,500	37 U	34 U	200 J
trans-1 3-Dichloropropene	*	37 U	34 U	38 U
1 1 2-Trichloroethane	6,000	75 U	69 U	75 U
Tetrachloroethene	1,400	62 U	57 U	63 U
Dibromochloromethane	*	62 U	57 U	63 U
Chlorobenzene	1,700	50 U	46 U	50 U
1 1 1 2-Tetrachloroethane	600	87 U	80 U	88 U
Ethylbenzene	5,500	120 U	110 U	130 U
Styrene	*	62 U	57 U	63 U
Bromoform	*	99 U	91 U	100 U
1 1 2 2-Tetrachloroethane	600	50 U	46 U	50 U
Xylenes (total)	1,200	120 U	110 U	130 U
1 3-Dichlorobenzene	1,600	75 U	69 U	75 U
1 4-Dichlorobenzene	8,500	62 U	57 U	63 U
1 2-Dichlorobenzene	7,900	75 U	69 U	75 U
1 2 4-Trichlorobenzene	3,400	110 U	100 U	110 U
Naphthalene	13,000	62 U	260 J	63 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene Chloride
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth of Carteret Acceptance Requirements ug/Kg	B-39C(15.5-16) 212414-006 1 3/20/2006 ug/Kg	B-39E(5.5-6) 212414-003 1 3/20/2006 ug/Kg	B-39E(10.5-11) 212414-004 1 3/20/2006 ug/Kg
Chloromethane	*	62 U	96 U	55 U
Vinyl chloride	200	99 U	150 U	89 U
Bromomethane	*	150 U	230 U	130 U
Chloroethane	1,900	99 U	150 U	89 U
Acrolein	NS	970 U	1500 U	860 U
1 1-Dichloroethene	400	87 U	130 U	77 U
Acetone	200	170 U	**320 J**	150 U
Methylene chloride	100	59 JB	**160 JB**	84 JB
trans-1 2-Dichloroethene	300	62 U	96 U	55 U
Acrylonitrile	NS	200 U	310 U	180 U
1 1-Dichloroethane	200	74 U	110 U	66 U
cis-1 2-Dichloroethene	*	74 U	110 U	66 U
2-Butanone (MEK)	*	150 U	230 U	130 U
Chloroform	300	87 U	130 U	77 U
1 1 1-Trichloroethane	800	49 U	76 U	44 U
Carbon tetrachloride	600	120 U	190 U	110 U
Benzene	60	49 U	76 U	44 U
1 2-Dichloroethane	100	74 U	110 U	66 U
Trichloroethene	700	87 U	130 U	77 U
1 2-Dichloropropane	*	110 U	170 U	100 U
Bromodichloromethane	*	49 U	76 U	44 U
2-Chloroethylvinylether	NS	74 U	110 U	66 U
cis-1 3-Dichloropropene	*	62 U	96 U	55 U
4-Methyl-2-pentanone (MIBK)	1,000	87 U	130 U	77 U
Toluene	1,500	37 U	57 U	33 U
trans-1 3-Dichloropropene	*	37 U	57 U	33 U
1 1 2-Trichloroethane	6,000	74 U	110 U	66 U
Tetrachloroethene	1,400	62 U	96 U	55 U
Dibromochloromethane	*	62 U	96 U	55 U
Chlorobenzene	1,700	49 U	76 U	44 U
1 1 1 2-Tetrachloroethane	600	87 U	130 U	77 U
Ethylbenzene	5,500	120 U	190 U	110 U
Styrene	*	62 U	96 U	55 U
Bromoform	*	99 U	150 U	89 U
1 1 2 2-Tetrachloroethane	600	49 U	76 U	44 U
Xylenes (total)	1,200	120 U	190 U	110 U
1 3-Dichlorobenzene	1,600	74 U	110 U	66 U
1 4-Dichlorobenzene	8,500	62 U	96 U	55 U
1 2-Dichlorobenzene	7,900	74 U	110 U	66 U
1 2 4-Trichlorobenzene	3,400	110 U	170 U	100 U
Naphthalene	13,000	62 U	96 U	55 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID	**Clean Earth of Carteret Acceptance Requirements**	**B-39F(6.5-7)**	**B-39F(19.5-20)**	**B-39G(3.5-4)**
Lab Sample ID		**212414-007**	**212414-008**	**212414-009**
Dilution		**1**	**1**	**1**
Date Sampled		**3/21/2006**	**3/21/2006**	**3/21/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound				
Chloromethane	*	100 U	44 U	55 U
Vinyl chloride	200	170 U	71 U	88 U
Bromomethane	*	250 U	110 U	130 U
Chloroethane	1,900	170 U	71 U	88 U
Acrolein	NS	1600 U	690 U	860 U
1 1-Dichloroethene	400	150 U	62 U	77 U
Acetone	200	**540 J**	120 U	**270** J
Methylene chloride	100	**170 JB**	65 JB	70 JB
trans-1 2-Dichloroethene	300	100 U	44 U	55 U
Acrylonitrile	NS	330 U	140 U	180 U
1 1-Dichloroethane	200	130 U	53 U	66 U
cis-1 2-Dichloroethene	*	130 U	53 U	66 U
2-Butanone (MEK)	*	250 U	110 U	130 U
Chloroform	300	150 U	62 U	77 U
1 1 1-Trichloroethane	800	84 U	35 U	44 U
Carbon tetrachloride	600	210 U	88 U	110 U
Benzene	60	84 U	35 U	44 U
1 2-Dichloroethane	100	130 U	53 U	66 U
Trichloroethene	700	150 U	62 U	77 U
1 2-Dichloropropane	*	190 U	80 U	99 U
Bromodichloromethane	*	84 U	35 U	44 U
2-Chloroethylvinylether	NS	130 U	53 U	66 U
cis-1 3-Dichloropropene	*	100 U	44 U	55 U
4-Methyl-2-pentanone (MIBK)	1,000	150 U	62 U	77 U
Toluene	1,500	63 U	27 U	33 U
trans-1 3-Dichloropropene	*	63 U	27 U	33 U
1 1 2-Trichloroethane	6,000	130 U	53 U	66 U
Tetrachloroethene	1,400	100 U	44 U	55 U
Dibromochloromethane	*	100 U	44 U	55 U
Chlorobenzene	1,700	84 U	35 U	44 U
1 1 1 2-Tetrachloroethane	600	150 U	62 U	77 U
Ethylbenzene	5,500	210 U	88 U	110 U
Styrene	*	100 U	44 U	55 U
Bromoform	*	170 U	71 U	88 U
1 1 2 2-Tetrachloroethane	600	84 U	35 U	44 U
Xylenes (total)	1,200	210 U	88 U	110 U
1 3-Dichlorobenzene	1,600	130 U	53 U	66 U
1 4-Dichlorobenzene	8,500	100 U	44 U	55 U
1 2-Dichlorobenzene	7,900	130 U	53 U	66 U
1 2 4-Trichlorobenzene	3,400	190 U	80 U	99 U
Naphthalene	13,000	100 U	44 U	55 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements ug/Kg**	**B-39G(14.5-15)** **212414-010** **1** **3/21/2006** **ug/Kg**	**B-39G(16.5-17)** **212414-011** **1** **3/21/2006** **ug/Kg**	**B-39H(2-2.5)** **212414-012** **1** **3/21/2006** **ug/Kg**
Chloromethane	*	55 U	68 U	86 U
Vinyl chloride	200	88 U	110 U	140 U
Bromomethane	*	130 U	160 U	210 U
Chloroethane	1,900	88 U	110 U	140 U
Acrolein	NS	860 U	1100 U	1300 U
1 1-Dichloroethene	400	77 U	95 U	120 U
Acetone	200	150 U	**370 J**	240 U
Methylene chloride	100	78 JB	95 JB	**120 JB**
trans-1 2-Dichloroethene	300	55 U	68 U	86 U
Acrylonitrile	NS	180 U	220 U	280 U
1 1-Dichloroethane	200	66 U	82 U	100 U
cis-1 2-Dichloroethene	*	66 U	82 U	100 U
2-Butanone (MEK)	*	130 U	160 U	210 U
Chloroform	300	77 U	95 U	120 U
1 1 1-Trichloroethane	800	44 U	54 U	69 U
Carbon tetrachloride	600	110 U	140 U	170 U
Benzene	60	44 U	54 U	69 U
1 2-Dichloroethane	100	66 U	82 U	**1800**
Trichloroethene	700	77 U	95 U	120 U
1 2-Dichloropropane	*	99 U	120 U	160 U
Bromodichloromethane	*	44 U	54 U	69 U
2-Chloroethylvinylether	NS	66 U	82 U	100 U
cis-1 3-Dichloropropene	*	55 U	68 U	86 U
4-Methyl-2-pentanone (MIBK)	1,000	77 U	95 U	120 U
Toluene	1,500	33 U	41 U	100 J
trans-1 3-Dichloropropene	*	33 U	41 U	52 U
1 1 2-Trichloroethane	6,000	66 U	82 U	100 U
Tetrachloroethene	1,400	55 U	68 U	86 U
Dibromochloromethane	*	55 U	68 U	86 U
Chlorobenzene	1,700	44 U	54 U	69 U
1 1 1 2-Tetrachloroethane	600	77 U	95 U	120 U
Ethylbenzene	5,500	110 U	140 U	170 U
Styrene	*	55 U	68 U	86 U
Bromoform	*	88 U	110 U	140 U
1 1 2 2-Tetrachloroethane	600	44 U	54 U	69 U
Xylenes (total)	1,200	110 U	140 U	170 U
1 3-Dichlorobenzene	1,600	66 U	82 U	100 U
1 4-Dichlorobenzene	8,500	55 U	68 U	86 U
1 2-Dichlorobenzene	7,900	66 U	82 U	100 U
1 2 4-Trichlorobenzene	3,400	99 U	120 U	160 U
Naphthalene	13,000	55 U	68 U	86 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements** **ug/Kg**	**B-39H(10-10.5)** **212414-013** **1** **3/21/2006** **ug/Kg**	**B-39H(16.5-17)** **212414-014** **1** **3/21/2006** **ug/Kg**	**B-39I(3.5-4)** **212414-015** **1** **3/21/2006** **ug/Kg**
Chloromethane	*	54 U	50 U	66 U
Vinyl chloride	200	86 U	80 U	110 U
Bromomethane	*	130 U	120 U	160 U
Chloroethane	1,900	86 U	80 U	110 U
Acrolein	NS	830 U	780 U	1000 U
1 1-Dichloroethene	400	75 U	70 U	93 U
Acetone	200	**260 J**	170 J	**290 J**
Methylene chloride	100	93 JB	76 JB	**220 JB**
trans-1 2-Dichloroethene	300	54 U	50 U	66 U
Acrylonitrile	NS	170 U	160 U	210 U
1 1-Dichloroethane	200	64 U	60 U	79 U
cis-1 2-Dichloroethene	*	64 U	60 U	79 U
2-Butanone (MEK)	*	130 U	120 U	160 U
Chloroform	300	75 U	70 U	93 U
1 1 1-Trichloroethane	800	43 U	40 U	53 U
Carbon tetrachloride	600	110 U	100 U	130 U
Benzene	60	43 U	40 U	53 U
1 2-Dichloroethane	100	64 U	60 U	79 U
Trichloroethene	700	75 U	70 U	93 U
1 2-Dichloropropane	*	96 U	91 U	120 U
Bromodichloromethane	*	43 U	40 U	53 U
2-Chloroethylvinylether	NS	64 U	60 U	79 U
cis-1 3-Dichloropropene	*	54 U	50 U	66 U
4-Methyl-2-pentanone (MIBK)	1,000	75 U	70 U	93 U
Toluene	1,500	32 U	30 U	40 U
trans-1 3-Dichloropropene	*	32 U	30 U	40 U
1 1 2-Trichloroethane	6,000	64 U	60 U	79 U
Tetrachloroethene	1,400	54 U	50 U	66 U
Dibromochloromethane	*	54 U	50 U	66 U
Chlorobenzene	1,700	43 U	40 U	53 U
1 1 1 2-Tetrachloroethane	600	75 U	70 U	93 U
Ethylbenzene	5,500	110 U	100 U	130 U
Styrene	*	54 U	50 U	66 U
Bromoform	*	86 U	80 U	110 U
1 1 2 2-Tetrachloroethane	600	43 U	40 U	53 U
Xylenes (total)	1,200	110 U	100 U	130 U
1 3-Dichlorobenzene	1,600	64 U	60 U	79 U
1 4-Dichlorobenzene	8,500	54 U	50 U	66 U
1 2-Dichlorobenzene	7,900	64 U	60 U	79 U
1 2 4-Trichlorobenzene	3,400	96 U	91 U	120 U
Naphthalene	13,000	54 U	50 U	66 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements** **ug/Kg**	**B-39I(6.5-7)** **212414-016** **1** **3/21/2006** **ug/Kg**	**B-39I(14.5-15)** **212414-017** **1** **3/21/2006** **ug/Kg**	**B-39I(17.5-18)** **212414-018** **1** **3/21/2006** **ug/Kg**
Chloromethane	*	60 U	56 U	54 U
Vinyl chloride	200	96 U	89 U	86 U
Bromomethane	*	140 U	130 U	130 U
Chloroethane	1,900	96 U	89 U	86 U
Acrolein	NS	940 U	870 U	840 U
1 1-Dichloroethene	400	84 U	78 U	76 U
Acetone	200	170 J	**220** J	150 U
Methylene chloride	100	85 JB	86 JB	**150** JB
trans-1 2-Dichloroethene	300	60 U	56 U	54 U
Acrylonitrile	NS	190 U	180 U	170 U
1 1-Dichloroethane	200	72 U	67 U	65 U
cis-1 2-Dichloroethene	*	72 U	67 U	65 U
2-Butanone (MEK)	*	140 U	130 U	130 U
Chloroform	300	84 U	78 U	76 U
1 1 1-Trichloroethane	800	48 U	45 U	43 U
Carbon tetrachloride	600	120 U	110 U	110 U
Benzene	60	**170 J**	45 U	43 U
1 2-Dichloroethane	100	72 U	67 U	65 U
Trichloroethene	700	84 U	78 U	76 U
1 2-Dichloropropane	*	110 U	100 U	97 U
Bromodichloromethane	*	48 U	45 U	43 U
2-Chloroethylvinylether	NS	72 U	67 U	65 U
cis-1 3-Dichloropropene	*	60 U	56 U	54 U
4-Methyl-2-pentanone (MIBK)	1,000	84 U	78 U	76 U
Toluene	1,500	440 J	34 U	32 U
trans-1 3-Dichloropropene	*	36 U	34 U	32 U
1 1 2-Trichloroethane	6,000	72 U	67 U	65 U
Tetrachloroethene	1,400	60 U	56 U	54 U
Dibromochloromethane	*	60 U	56 U	54 U
Chlorobenzene	1,700	48 U	45 U	43 U
1 1 1 2-Tetrachloroethane	600	84 U	78 U	76 U
Ethylbenzene	5,500	120 U	110 U	110 U
Styrene	*	60 U	56 U	54 U
Bromoform	*	96 U	89 U	86 U
1 1 2 2-Tetrachloroethane	600	48 U	45 U	43 U
Xylenes (total)	1,200	580 J	110 U	110 U
1 3-Dichlorobenzene	1,600	72 U	67 U	65 U
1 4-Dichlorobenzene	8,500	60 U	56 U	54 U
1 2-Dichlorobenzene	7,900	72 U	67 U	65 U
1 2 4-Trichlorobenzene	3,400	110 U	100 U	97 U
Naphthalene	13,000	2300	56 U	54 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements** **ug/Kg**	**B-39I(22-22.5)** **212414-019** **1** **3/21/2006** **ug/Kg**	**B-48A(16-16.5)** **212358-012** **1** **3/14/2006** **ug/Kg**	**B-48A(21-21.5)** **212358-013** **1** **3/14/2006** **ug/Kg**
Chloromethane	*	45 U	52 U	62 U
Vinyl chloride	200	72 U	83 U	100 U
Bromomethane	*	110 U	130 U	150 U
Chloroethane	1,900	72 U	83 U	100 U
Acrolein	NS	710 U	810 U	970 U
1 1-Dichloroethene	400	63 U	73 U	87 U
Acetone	200	130 U	150 UB	**260** JB
Methylene chloride	100	74 JB	90 JB	50 UB
trans-1 2-Dichloroethene	300	45 U	52 U	62 U
Acrylonitrile	NS	140 U	170 U	200 U
1 1-Dichloroethane	200	54 U	63 U	75 U
cis-1 2-Dichloroethene	*	54 U	63 U	75 U
2-Butanone (MEK)	*	110 U	130 U	150 U
Chloroform	300	63 U	73 U	87 U
1 1 1-Trichloroethane	800	36 U	42 U	50 U
Carbon tetrachloride	600	91 U	100 U	120 U
Benzene	60	36 U	42 U	50 U
1 2-Dichloroethane	100	54 U	63 U	75 U
Trichloroethene	700	63 U	73 U	87 U
1 2-Dichloropropane	*	82 U	94 U	110 U
Bromodichloromethane	*	36 U	42 U	50 U
2-Chloroethylvinylether	NS	54 U	63 U	75 U
cis-1 3-Dichloropropene	*	45 U	52 U	62 U
4-Methyl-2-pentanone (MIBK)	1,000	63 U	73 U	87 U
Toluene	1,500	27 U	31 U	300 JH
trans-1 3-Dichloropropene	*	27 U	31 U	37 U
1 1 2-Trichloroethane	6,000	54 U	63 U	75 U
Tetrachloroethene	1,400	45 U	52 U	62 U
Dibromochloromethane	*	45 U	52 U	62 U
Chlorobenzene	1,700	36 U	42 U	50 U
1 1 1 2-Tetrachloroethane	600	63 U	73 U	87 U
Ethylbenzene	5,500	91 U	100 U	4100
Styrene	*	45 U	52 U	62 U
Bromoform	*	72 U	83 U	100 U
1 1 2 2-Tetrachloroethane	600	36 U	42 U	50 U
Xylenes (total)	1,200	91 U	100 U	**23000**
1 3-Dichlorobenzene	1,600	54 U	63 U	75 U
1 4-Dichlorobenzene	8,500	45 U	52 U	62 U
1 2-Dichlorobenzene	7,900	54 U	63 U	75 U
1 2 4-Trichlorobenzene	3,400	82 U	94 U	110 U
Naphthalene	13,000	45 U	420 J	2100

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements** **ug/Kg**	**B-48A(26-26.5)** **212358-014** **1** **3/14/2006** **ug/Kg**	**B-49A(13-13.5)** **212358-002** **1** **3/14/2006** **ug/Kg**	**B-49A(16.5-17)** **212358-003** **1** **3/14/2006** **ug/Kg**
Chloromethane	*	50 U	64 U	52 U
Vinyl chloride	200	80 U	100 U	83 U
Bromomethane	*	120 U	150 U	130 U
Chloroethane	1,900	80 U	100 U	83 U
Acrolein	NS	780 U	1000 U	810 U
1 1-Dichloroethene	400	70 U	90 U	73 U
Acetone	200	140 UB	**410 JB**	**280** JB
Methylene chloride	100	98 JB	**110 JB**	82 JB
trans-1 2-Dichloroethene	300	50 U	64 U	52 U
Acrylonitrile	NS	160 U	200 U	170 U
1 1-Dichloroethane	200	60 U	77 U	63 U
cis-1 2-Dichloroethene	*	60 U	77 U	63 U
2-Butanone (MEK)	*	120 U	150 U	130 U
Chloroform	300	70 U	90 U	73 U
1 1 1-Trichloroethane	800	40 U	51 U	42 U
Carbon tetrachloride	600	100 U	130 U	100 U
Benzene	60	40 U	51 U	42 U
1 2-Dichloroethane	100	60 U	77 U	63 U
Trichloroethene	700	70 U	90 U	73 U
1 2-Dichloropropane	*	90 U	120 U	94 U
Bromodichloromethane	*	40 U	51 U	42 U
2-Chloroethylvinylether	NS	60 U	77 U	63 U
cis-1 3-Dichloropropene	*	50 U	64 U	52 U
4-Methyl-2-pentanone (MIBK)	1,000	70 U	90 U	73 U
Toluene	1,500	30 U	38 U	31 U
trans-1 3-Dichloropropene	*	30 U	38 U	31 U
1 1 2-Trichloroethane	6,000	60 U	77 U	63 U
Tetrachloroethene	1,400	50 U	64 U	52 U
Dibromochloromethane	*	50 U	64 U	52 U
Chlorobenzene	1,700	40 U	51 U	42 U
1 1 1 2-Tetrachloroethane	600	70 U	90 U	73 U
Ethylbenzene	5,500	100 U	130 U	100 U
Styrene	*	50 U	64 U	52 U
Bromoform	*	80 U	100 U	83 U
1 1 2 2-Tetrachloroethane	600	40 U	51 U	42 U
Xylenes (total)	1,200	100 U	130 U	100 U
1 3-Dichlorobenzene	1,600	60 U	77 U	63 U
1 4-Dichlorobenzene	8,500	50 U	64 U	52 U
1 2-Dichlorobenzene	7,900	60 U	77 U	63 U
1 2 4-Trichlorobenzene	3,400	90 U	120 UB	94 UB
Naphthalene	13,000	50 U	64 U	52 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements** **ug/Kg**	**B47A(16-16.5)** **212388-004** **1** **3/17/2006** **ug/Kg**	**B47A(17.5-18)** **212388-005** **1** **3/17/2006** **ug/Kg**	**B47C(31-31.5)** **212388-009** **1** **3/17/2006** **ug/Kg**
Chloromethane	*	47 U	60 U	58 U
Vinyl chloride	200	76 U	96 U	93 U
Bromomethane	*	110 U	140 U	140 U
Chloroethane	1,900	76 U	96 U	93 U
Acrolein	NS	740 U	940 U	910 U
1 1-Dichloroethene	400	66 U	84 U	81 U
Acetone	200	130 UB	**230 JB**	**480 J**
Methylene chloride	100	76 JB	91 JB	**290 JB**
trans-1 2-Dichloroethene	300	47 U	60 U	58 U
Acrylonitrile	NS	150 U	190 U	190 U
1 1-Dichloroethane	200	57 U	72 U	70 U
cis-1 2-Dichloroethene	*	57 U	72 U	70 U
2-Butanone (MEK)	*	110 U	140 U	140 U
Chloroform	300	66 U	84 U	81 U
1 1 1-Trichloroethane	800	38 U	48 U	46 U
Carbon tetrachloride	600	95 U	120 U	120 U
Benzene	60	38 U	48 U	46 U
1 2-Dichloroethane	100	57 U	72 U	70 U
Trichloroethene	700	66 U	84 U	81 U
1 2-Dichloropropane	*	85 U	110 U	100 U
Bromodichloromethane	*	38 U	48 U	46 U
2-Chloroethylvinylether	NS	57 U	72 U	70 U
cis-1 3-Dichloropropene	*	47 U	60 U	58 U
4-Methyl-2-pentanone (MIBK)	1,000	66 U	84 U	81 U
Toluene	1,500	28 U	36 U	35 U
trans-1 3-Dichloropropene	*	28 U	36 U	35 U
1 1 2-Trichloroethane	6,000	57 U	72 U	70 U
Tetrachloroethene	1,400	47 U	60 U	58 U
Dibromochloromethane	*	47 U	60 U	58 U
Chlorobenzene	1,700	38 U	48 U	46 U
1 1 1 2-Tetrachloroethane	600	66 U	84 U	81 U
Ethylbenzene	5,500	95 U	120 U	120 U
Styrene	*	47 U	60 U	58 U
Bromoform	*	76 U	96 U	93 U
1 1 2 2-Tetrachloroethane	600	38 U	48 U	46 U
Xylenes (total)	1,200	95 U	120 U	120 U
1 3-Dichlorobenzene	1,600	57 U	72 U	70 U
1 4-Dichlorobenzene	8,500	47 U	60 U	58 U
1 2-Dichlorobenzene	7,900	57 U	72 U	70 U
1 2 4-Trichlorobenzene	3,400	85 U	110 U	100 U
Naphthalene	13,000	430 J	60 U	230 J

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID	**Clean Earth of Carteret Acceptance Requirements**	**B47C(33-33.5)**	**B47E(7.5-8)**	**B47E(15-15.5)**
Lab Sample ID		**212388-010**	**212388-008**	**212388-006**
Dilution		**1**	**1**	**1**
Date Sampled		**3/17/2006**	**3/17/2006**	**3/17/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound				
Chloromethane	*	62 U	68 U	60 U
Vinyl chloride	200	99 U	110 U	97 U
Bromomethane	*	150 U	160 U	140 U
Chloroethane	1,900	99 U	110 U	97 U
Acrolein	NS	960 U	1100 U	940 U
1 1-Dichloroethene	400	87 U	96 U	85 U
Acetone	200	170 U	**660 JB**	**250 JB**
Methylene chloride	100	90 JB	**330 JB**	81 JB
trans-1 2-Dichloroethene	300	62 U	68 U	60 U
Acrylonitrile	NS	200 U	220 U	190 U
1 1-Dichloroethane	200	74 U	82 U	72 U
cis-1 2-Dichloroethene	*	74 U	82 U	72 U
2-Butanone (MEK)	*	150 U	160 U	140 U
Chloroform	300	87 U	96 U	85 U
1 1 1-Trichloroethane	800	49 U	55 U	48 U
Carbon tetrachloride	600	120 U	140 U	120 U
Benzene	60	49 U	55 U	48 U
1 2-Dichloroethane	100	74 U	82 U	72 U
Trichloroethene	700	87 U	96 U	85 U
1 2-Dichloropropane	*	110 U	120 U	110 U
Bromodichloromethane	*	49 U	55 U	48 U
2-Chloroethylvinylether	NS	74 U	82 U	72 U
cis-1 3-Dichloropropene	*	62 U	68 U	60 U
4-Methyl-2-pentanone (MIBK)	1,000	87 U	96 U	85 U
Toluene	1,500	37 U	110 J	36 U
trans-1 3-Dichloropropene	*	37 U	41 U	36 U
1 1 2-Trichloroethane	6,000	74 U	82 U	72 U
Tetrachloroethene	1,400	62 U	68 U	60 U
Dibromochloromethane	*	62 U	68 U	60 U
Chlorobenzene	1,700	49 U	55 U	48 U
1 1 1 2-Tetrachloroethane	600	87 U	96 U	85 U
Ethylbenzene	5,500	120 U	140 U	120 U
Styrene	*	62 U	68 U	60 U
Bromoform	*	99 U	110 U	97 U
1 1 2 2-Tetrachloroethane	600	49 U	55 U	48 U
Xylenes (total)	1,200	120 U	140 U	120 U
1 3-Dichlorobenzene	1,600	74 U	82 U	72 U
1 4-Dichlorobenzene	8,500	62 U	68 U	60 U
1 2-Dichlorobenzene	7,900	74 U	82 U	72 U
1 2 4-Trichlorobenzene	3,400	110 U	120 U	110 U
Naphthalene	13,000	62 U	68 U	60 U

CLEAN

LAB CONTAMINANTS - Acetone and Methylene

CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID	**Clean Earth of Carteret Acceptance Requirements**	**B47E(18-18.5)**	**B-48C(15-15.5)**	**B48C(17-17.5)**
Lab Sample ID		**212388-007**	**212358-020**	**212388-001**
Dilution		**1**	**1**	**1**
Date Sampled		**3/17/2006**	**3/16/2006**	**3/16/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound				
Chloromethane	*	51 U	61 U	53 U
Vinyl chloride	200	81 U	97 U	84 U
Bromomethane	*	120 U	150 U	130 U
Chloroethane	1,900	81 U	97 U	84 U
Acrolein	NS	790 U	950 U	820 U
1 1-Dichloroethene	400	71 U	85 U	74 U
Acetone	200	140 UB	170 JB	150 UB
Methylene chloride	100	74 JB	75 JB	85 JB
trans-1 2-Dichloroethene	300	51 U	61 U	53 U
Acrylonitrile	NS	160 U	190 U	170 U
1 1-Dichloroethane	200	61 U	73 U	63 U
cis-1 2-Dichloroethene	*	61 U	73 U	63 U
2-Butanone (MEK)	*	120 U	150 U	130 U
Chloroform	300	71 U	85 U	74 U
1 1 1-Trichloroethane	800	41 U	49 U	42 U
Carbon tetrachloride	600	100 U	120 U	110 U
Benzene	60	41 U	49 U	42 U
1 2-Dichloroethane	100	61 U	73 U	63 U
Trichloroethene	700	71 U	85 U	74 U
1 2-Dichloropropane	*	91 U	110 U	95 U
Bromodichloromethane	*	41 U	49 U	42 U
2-Chloroethylvinylether	NS	61 U	73 U	63 U
cis-1 3-Dichloropropene	*	51 U	61 U	53 U
4-Methyl-2-pentanone (MIBK)	1,000	71 U	85 U	74 U
Toluene	1,500	30 U	36 U	32 U
trans-1 3-Dichloropropene	*	30 U	36 U	32 U
1 1 2-Trichloroethane	6,000	61 U	73 U	63 U
Tetrachloroethene	1,400	51 U	61 U	53 U
Dibromochloromethane	*	51 U	61 U	53 U
Chlorobenzene	1,700	41 U	49 U	42 U
1 1 1 2-Tetrachloroethane	600	71 U	85 U	74 U
Ethylbenzene	5,500	100 U	120 U	110 U
Styrene	*	51 U	61 U	53 U
Bromoform	*	81 U	97 U	84 U
1 1 2 2-Tetrachloroethane	600	41 U	49 U	42 U
Xylenes (total)	1,200	100 U	120 U	110 U
1 3-Dichlorobenzene	1,600	61 U	73 U	63 U
1 4-Dichlorobenzene	8,500	51 U	61 U	53 U
1 2-Dichlorobenzene	7,900	61 U	73 U	63 U
1 2 4-Trichlorobenzene	3,400	91 U	110 U	95 U
Naphthalene	13,000	51 U	61 U	53 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID	**Clean Earth of Carteret Acceptance Requirements**	**B48C(18.5-19)**	**B48C(25-25.5)**	**B-48E(15.5-16)**
Lab Sample ID		**212388-002**	**212388-003**	**212358-015**
Dilution		**2**	**1**	**1**
Date Sampled		**3/16/2006**	**3/16/2006**	**3/16/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound				
Chloromethane	*	130 U	53 U	70 U
Vinyl chloride	200	210 U	85 U	110 U
Bromomethane	*	310 U	130 U	170 U
Chloroethane	1,900	210 U	85 U	110 U
Acrolein	NS	2000 U	820 U	1100 U
1 1-Dichloroethene	400	180 U	74 U	98 U
Acetone	200	**570 JB**	150 UB	200 UB
Methylene chloride	100	100 UB	**110 JB**	**140 JB**
trans-1 2-Dichloroethene	300	130 U	53 U	70 U
Acrylonitrile	NS	420 U	170 U	220 U
1 1-Dichloroethane	200	160 U	63 U	84 U
cis-1 2-Dichloroethene	*	160 U	63 U	84 U
2-Butanone (MEK)	*	310 U	130 U	170 U
Chloroform	300	180 U	74 U	98 U
1 1 1-Trichloroethane	800	100 U	42 U	56 U
Carbon tetrachloride	600	260 U	110 U	140 U
Benzene	60	**11000**	42 U	56 U
1 2-Dichloroethane	100	160 U	63 U	84 U
Trichloroethene	700	180 U	74 U	98 U
1 2-Dichloropropane	*	240 U	95 U	130 U
Bromodichloromethane	*	100 U	42 U	56 U
2-Chloroethylvinylether	NS	160 U	63 U	84 U
cis-1 3-Dichloropropene	*	130 U	53 U	70 U
4-Methyl-2-pentanone (MIBK)	1,000	180 U	74 U	98 U
Toluene	1,500	1200 J	32 U	42 U
trans-1 3-Dichloropropene	*	78 U	32 U	42 U
1 1 2-Trichloroethane	6,000	160 U	63 U	84 U
Tetrachloroethene	1,400	130 U	53 U	70 U
Dibromochloromethane	*	130 U	53 U	70 U
Chlorobenzene	1,700	100 U	42 U	56 U
1 1 1 2-Tetrachloroethane	600	180 U	74 U	98 U
Ethylbenzene	5,500	**18000**	110 U	140 U
Styrene	*	130 U	53 U	70 U
Bromoform	*	210 U	85 U	110 U
1 1 2 2-Tetrachloroethane	600	100 U	42 U	56 U
Xylenes (total)	1,200	**58000**	130 J	140 U
1 3-Dichlorobenzene	1,600	160 U	63 U	84 U
1 4-Dichlorobenzene	8,500	130 U	53 U	70 U
1 2-Dichlorobenzene	7,900	160 U	63 U	84 U
1 2 4-Trichlorobenzene	3,400	240 U	95 U	130 U
Naphthalene	13,000	10000	870	70 U

CLEAN

LAB CONTAMINANTS - Acetone and Methylene

CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements** **ug/Kg**	**B-48E(21-21.5)** **212358-016** **1** **3/16/2006** **ug/Kg**	**B-48E(23-23.5)** **212358-017** **1** **3/16/2006** **ug/Kg**	**B-48F(19-19.5)** **212358-018** **1** **3/16/2006** **ug/Kg**
Chloromethane	*	61 U	67 U	64 U
Vinyl chloride	200	98 U	110 U	100 U
Bromomethane	*	150 U	160 U	150 U
Chloroethane	1,900	98 U	110 U	100 U
Acrolein	NS	950 U	1100 U	1000 U
1 1-Dichloroethene	400	85 U	94 U	90 U
Acetone	200	**270 JB**	**280 JB**	180 UB
Methylene chloride	100	**110 JB**	**240 JB**	98 JB
trans-1 2-Dichloroethene	300	61 U	67 U	64 U
Acrylonitrile	NS	200 U	220 U	200 U
1 1-Dichloroethane	200	73 U	81 U	77 U
cis-1 2-Dichloroethene	*	73 U	81 U	77 U
2-Butanone (MEK)	*	150 U	160 U	150 U
Chloroform	300	85 U	94 U	90 U
1 1 1-Trichloroethane	800	49 U	54 U	51 U
Carbon tetrachloride	600	120 U	130 U	130 U
Benzene	60	62 J	54 U	51 U
1 2-Dichloroethane	100	73 U	81 U	77 U
Trichloroethene	700	85 U	94 U	90 U
1 2-Dichloropropane	*	110 U	120 U	120 U
Bromodichloromethane	*	49 U	54 U	51 U
2-Chloroethylvinylether	NS	73 U	81 U	77 U
cis-1 3-Dichloropropene	*	61 U	67 U	64 U
4-Methyl-2-pentanone (MIBK)	1,000	85 U	94 U	90 U
Toluene	1,500	42 J	40 U	38 U
trans-1 3-Dichloropropene	*	37 U	40 U	38 U
1 1 2-Trichloroethane	6,000	73 U	81 U	77 U
Tetrachloroethene	1,400	61 U	67 U	64 U
Dibromochloromethane	*	61 U	67 U	64 U
Chlorobenzene	1,700	49 U	54 U	51 U
1 1 1 2-Tetrachloroethane	600	85 U	94 U	90 U
Ethylbenzene	5,500	120 U	130 U	130 U
Styrene	*	61 U	67 U	64 U
Bromoform	*	98 U	110 U	100 U
1 1 2 2-Tetrachloroethane	600	49 U	54 U	51 U
Xylenes (total)	1,200	120 U	130 U	130 U
1 3-Dichlorobenzene	1,600	73 U	81 U	77 U
1 4-Dichlorobenzene	8,500	61 U	67 U	64 U
1 2-Dichlorobenzene	7,900	73 U	81 U	77 U
1 2 4-Trichlorobenzene	3,400	110 U	120 U	120 U
Naphthalene	13,000	61 U	67 U	64 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID	**Clean Earth of Carteret Acceptance Requirements**	**B-48F(22-22.5)**	**B-49C(16-16.5)**	**B-49C(19-19.5)**
Lab Sample ID		**212358-019**	**212358-006**	**212358-007**
Dilution		**1**	**1**	**1**
Date Sampled		**3/16/2006**	**3/14/2006**	**3/14/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound				
Chloromethane	*	55 U	52 U	58 U
Vinyl chloride	200	88 U	84 U	93 U
Bromomethane	*	130 U	130 U	140 U
Chloroethane	1,900	88 U	84 U	93 U
Acrolein	NS	850 U	810 U	910 U
1 1-Dichloroethene	400	77 U	73 U	81 U
Acetone	200	180 JHB	150 UB	**490 JB**
Methylene chloride	100	89 JB	84 JB	46 UB
trans-1 2-Dichloroethene	300	55 U	52 U	58 U
Acrylonitrile	NS	180 U	170 U	190 U
1 1-Dichloroethane	200	66 U	63 U	70 U
cis-1 2-Dichloroethene	*	66 U	63 U	70 U
2-Butanone (MEK)	*	130 U	130 U	140 U
Chloroform	300	77 U	73 U	81 U
1 1 1-Trichloroethane	800	44 U	42 U	46 U
Carbon tetrachloride	600	110 U	100 U	120 U
Benzene	60	44 U	42 U	46 U
1 2-Dichloroethane	100	66 U	63 U	70 U
Trichloroethene	700	77 U	73 U	81 U
1 2-Dichloropropane	*	98 U	94 U	100 U
Bromodichloromethane	*	44 U	42 U	46 U
2-Chloroethylvinylether	NS	66 U	63 U	70 U
cis-1 3-Dichloropropene	*	55 U	52 U	58 U
4-Methyl-2-pentanone (MIBK)	1,000	77 U	73 U	81 U
Toluene	1,500	33 U	31 U	46 J
trans-1 3-Dichloropropene	*	33 U	31 U	35 U
1 1 2-Trichloroethane	6,000	66 U	63 U	70 U
Tetrachloroethene	1,400	55 U	52 U	58 U
Dibromochloromethane	*	55 U	52 U	58 U
Chlorobenzene	1,700	44 U	42 U	46 U
1 1 1 2-Tetrachloroethane	600	77 U	73 U	81 U
Ethylbenzene	5,500	110 U	100 U	190 J
Styrene	*	55 U	52 U	58 U
Bromoform	*	88 U	84 U	93 U
1 1 2 2-Tetrachloroethane	600	44 U	42 U	46 U
Xylenes (total)	1,200	110 U	100 U	550 J
1 3-Dichlorobenzene	1,600	66 U	63 U	70 U
1 4-Dichlorobenzene	8,500	55 U	52 U	58 U
1 2-Dichlorobenzene	7,900	66 U	63 U	70 U
1 2 4-Trichlorobenzene	3,400	98 U	94 U	100 U
Naphthalene	13,000	55 U	180 J	3700

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Clean Earth of Carteret Acceptance Requirements ug/Kg**	**B-49C(24.5-25) 212358-008 1 3/14/2006 ug/Kg**	**B-49D(14-14.5) 212358-009 1 3/14/2006 ug/Kg**	**B-49D(16.5-17) 212358-010 1 3/14/2006 ug/Kg**
Chloromethane	*	45 U	58 U	52 U
Vinyl chloride	200	72 U	93 U	83 U
Bromomethane	*	110 U	140 U	120 U
Chloroethane	1,900	72 U	93 U	83 U
Acrolein	NS	700 U	910 U	810 U
1 1-Dichloroethene	400	63 U	82 U	73 U
Acetone	200	**220 JB**	160 UB	**300 JB**
Methylene chloride	100	77 JB	82 JB	42 UB
trans-1 2-Dichloroethene	300	45 U	58 U	52 U
Acrylonitrile	NS	140 U	190 U	170 U
1 1-Dichloroethane	200	54 U	70 U	62 U
cis-1 2-Dichloroethene	*	54 U	70 U	62 U
2-Butanone (MEK)	*	110 U	140 U	120 U
Chloroform	300	63 U	82 U	73 U
1 1 1-Trichloroethane	800	36 U	47 U	42 U
Carbon tetrachloride	600	90 U	120 U	100 U
Benzene	60	36 U	47 U	42 U
1 2-Dichloroethane	100	54 U	70 U	62 U
Trichloroethene	700	63 U	82 U	73 U
1 2-Dichloropropane	*	81 U	100 U	94 U
Bromodichloromethane	*	36 U	47 U	42 U
2-Chloroethylvinylether	NS	54 U	70 U	62 U
cis-1 3-Dichloropropene	*	45 U	58 U	52 U
4-Methyl-2-pentanone (MIBK)	1,000	63 U	82 U	73 U
Toluene	1,500	27 U	35 U	31 U
trans-1 3-Dichloropropene	*	27 U	35 U	31 U
1 1 2-Trichloroethane	6,000	54 U	70 U	62 U
Tetrachloroethene	1,400	45 U	58 U	52 U
Dibromochloromethane	*	45 U	58 U	52 U
Chlorobenzene	1,700	36 U	47 U	42 U
1 1 1 2-Tetrachloroethane	600	63 U	82 U	73 U
Ethylbenzene	5,500	90 U	120 U	100 U
Styrene	*	45 U	58 U	52 U
Bromoform	*	72 U	93 U	83 U
1 1 2 2-Tetrachloroethane	600	36 U	47 U	42 U
Xylenes (total)	1,200	90 U	120 U	100 U
1 3-Dichlorobenzene	1,600	54 U	70 U	62 U
1 4-Dichlorobenzene	8,500	45 U	58 U	52 U
1 2-Dichlorobenzene	7,900	54 U	70 U	62 U
1 2 4-Trichlorobenzene	3,400	81 U	100 U	94 U
Naphthalene	13,000	45 U	58 U	52 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements** **ug/Kg**	**B-49D(22.5-23)** **212358-011** **1** **3/14/2006** **ug/Kg**	**B-49E(16.5-17)** **212358-004** **1** **3/14/2006** **ug/Kg**	**B-49E(19.0-19.5)** **212358-005** **1** **3/14/2006** **ug/Kg**
Chloromethane	*	53 U	57 U	49 U
Vinyl chloride	200	85 U	91 U	78 U
Bromomethane	*	130 U	140 U	120 U
Chloroethane	1,900	85 U	91 U	78 U
Acrolein	NS	830 U	890 U	760 U
1 1-Dichloroethene	400	75 U	80 U	68 U
Acetone	200	**250 JB**	**410 JB**	**290 JB**
Methylene chloride	100	83 JB	92 JB	**110 JB**
trans-1 2-Dichloroethene	300	53 U	57 U	49 U
Acrylonitrile	NS	170 U	180 U	160 U
1 1-Dichloroethane	200	64 U	68 U	58 U
cis-1 2-Dichloroethene	*	64 U	68 U	58 U
2-Butanone (MEK)	*	130 U	140 U	120 U
Chloroform	300	75 U	80 U	68 U
1 1 1-Trichloroethane	800	43 U	45 U	39 U
Carbon tetrachloride	600	110 U	110 U	97 U
Benzene	60	43 U	64 J	39 U
1 2-Dichloroethane	100	64 U	68 U	58 U
Trichloroethene	700	75 U	80 U	68 U
1 2-Dichloropropane	*	96 U	100 U	87 U
Bromodichloromethane	*	43 U	45 U	39 U
2-Chloroethylvinylether	NS	64 U	68 U	58 U
cis-1 3-Dichloropropene	*	53 U	57 U	49 U
4-Methyl-2-pentanone (MIBK)	1,000	75 U	80 U	68 U
Toluene	1,500	32 U	160 J	29 U
trans-1 3-Dichloropropene	*	32 U	34 U	29 U
1 1 2-Trichloroethane	6,000	64 U	68 U	58 U
Tetrachloroethene	1,400	53 U	57 U	49 U
Dibromochloromethane	*	53 U	57 U	49 U
Chlorobenzene	1,700	43 U	45 U	39 U
1 1 1 2-Tetrachloroethane	600	75 U	80 U	68 U
Ethylbenzene	5,500	110 U	110 U	97 U
Styrene	*	53 U	57 U	49 U
Bromoform	*	85 U	91 U	78 U
1 1 2 2-Tetrachloroethane	600	43 U	45 U	39 U
Xylenes (total)	1,200	110 U	110 U	97 U
1 3-Dichlorobenzene	1,600	64 U	68 U	58 U
1 4-Dichlorobenzene	8,500	53 U	57 U	49 U
1 2-Dichlorobenzene	7,900	64 U	68 U	58 U
1 2 4-Trichlorobenzene	3,400	96 U	100 UB	87 UB
Naphthalene	13,000	53 U	57 U	49 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID	**Clean Earth of Carteret Acceptance Requirements**	**B-51E(13.5-14)**	**B52A(12-14)**	**B52A(14-16)**
Lab Sample ID		**212358-001**	**212324-001**	**212324-002**
Dilution		**1**	**1**	**1**
Date Sampled		**3/14/2006**	**38785**	**38785**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound				
Chloromethane	*	54 U	54 U	56 U
Vinyl chloride	200	87 U	87 U	89 U
Bromomethane	*	130 U	130 U	130 U
Chloroethane	1,900	87 U	87 U	89 U
Acrolein	NS	850 U	850 U	870 U
1 1-Dichloroethene	400	76 U	76 U	78 U
Acetone	200	**250 JB**	**240 J**	160 U
Methylene chloride	100	77 JB	87 J	89 J
trans-1 2-Dichloroethene	300	54 U	54 U	56 U
Acrylonitrile	NS	170 U	170 U	180 U
1 1-Dichloroethane	200	65 U	65 U	67 U
cis-1 2-Dichloroethene	*	65 U	65 U	67 U
2-Butanone (MEK)	*	130 U	130 U	130 U
Chloroform	300	76 U	76 U	78 U
1 1 1-Trichloroethane	800	43 U	44 U	45 U
Carbon tetrachloride	600	110 U	110 U	110 U
Benzene	60	43 U	44 U	45 U
1 2-Dichloroethane	100	65 U	65 U	67 U
Trichloroethene	700	76 U	76 U	78 U
1 2-Dichloropropane	*	98 U	98 U	100 U
Bromodichloromethane	*	43 U	44 U	45 U
2-Chloroethylvinylether	NS	65 U	65 U	67 U
cis-1 3-Dichloropropene	*	54 U	54 U	56 U
4-Methyl-2-pentanone (MIBK)	1,000	76 U	76 U	78 U
Toluene	1,500	33 U	33 U	33 U
trans-1 3-Dichloropropene	*	33 U	33 U	33 U
1 1 2-Trichloroethane	6,000	65 U	65 U	67 U
Tetrachloroethene	1,400	54 U	54 U	56 U
Dibromochloromethane	*	54 U	54 U	56 U
Chlorobenzene	1,700	43 U	44 U	45 U
1 1 1 2-Tetrachloroethane	600	76 U	76 U	78 U
Ethylbenzene	5,500	110 U	110 U	110 U
Styrene	*	54 U	54 U	56 U
Bromoform	*	87 U	87 U	89 U
1 1 2 2-Tetrachloroethane	600	43 U	44 U	45 U
Xylenes (total)	1,200	110 U	110 U	110 U
1 3-Dichlorobenzene	1,600	65 U	65 U	67 U
1 4-Dichlorobenzene	8,500	54 U	54 U	56 U
1 2-Dichlorobenzene	7,900	65 U	65 U	67 U
1 2 4-Trichlorobenzene	3,400	98 UB	98 U	100 U
Naphthalene	13,000	54 U	1900	56 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Clean Earth of Carteret Acceptance Requirements ug/Kg**	**B52A(26-28) 212324-003 1 38785 ug/Kg**	**B52E(2-4) 212324-004 1 38785 ug/Kg**	**B52E(10-12) 212324-005 1 38785 ug/Kg**
Chloromethane	*	53 U	76 U	58 U
Vinyl chloride	200	85 U	120 U	93 U
Bromomethane	*	130 U	180 U	140 U
Chloroethane	1,900	85 U	120 U	93 U
Acrolein	NS	830 U	1200 U	910 U
1 1-Dichloroethene	400	74 U	110 U	82 U
Acetone	200	150 U	**460 J**	**310 J**
Methylene chloride	100	53 J	**130 J**	90 J
trans-1 2-Dichloroethene	300	53 U	76 U	58 U
Acrylonitrile	NS	170 U	240 U	190 U
1 1-Dichloroethane	200	64 U	91 U	70 U
cis-1 2-Dichloroethene	*	64 U	91 U	70 U
2-Butanone (MEK)	*	130 U	180 U	140 U
Chloroform	300	74 U	110 U	82 U
1 1 1-Trichloroethane	800	42 U	61 U	47 U
Carbon tetrachloride	600	110 U	150 U	120 U
Benzene	60	42 U	61 U	47 U
1 2-Dichloroethane	100	64 U	91 U	70 U
Trichloroethene	700	74 U	110 U	82 U
1 2-Dichloropropane	*	95 U	140 U	100 U
Bromodichloromethane	*	42 U	61 U	47 U
2-Chloroethylvinylether	NS	64 U	91 U	70 U
cis-1 3-Dichloropropene	*	53 U	76 U	58 U
4-Methyl-2-pentanone (MIBK)	1,000	74 U	110 U	82 U
Toluene	1,500	32 U	45 U	35 U
trans-1 3-Dichloropropene	*	32 U	45 U	35 U
1 1 2-Trichloroethane	6,000	64 U	91 U	70 U
Tetrachloroethene	1,400	53 U	260 J	58 U
Dibromochloromethane	*	53 U	76 U	58 U
Chlorobenzene	1,700	42 U	61 U	47 U
1 1 1 2-Tetrachloroethane	600	74 U	110 U	82 U
Ethylbenzene	5,500	110 U	150 U	120 U
Styrene	*	53 U	76 U	58 U
Bromoform	*	85 U	120 U	93 U
1 1 2 2-Tetrachloroethane	600	42 U	61 U	47 U
Xylenes (total)	1,200	110 U	150 U	120 U
1 3-Dichlorobenzene	1,600	64 U	91 U	70 U
1 4-Dichlorobenzene	8,500	53 U	76 U	58 U
1 2-Dichlorobenzene	7,900	64 U	91 U	70 U
1 2 4-Trichlorobenzene	3,400	95 U	140 U	100 U
Naphthalene	13,000	53 U	33000 A	58 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID	**Clean Earth of Carteret Acceptance Requirements**	**B52E(15.5-16)**		**B52E(24-26)**		**B52EN20(15.5-16)**	
Lab Sample ID		**212324-006**		**212324-007**		**212324-008**	
Dilution		**1**		**1**		**1**	
Date Sampled		**38785**		**38785**		**38786**	
Units	**ug/Kg**	**ug/Kg**		**ug/Kg**		**ug/Kg**	
Compound							
Chloromethane	*	51	U	47	U	53	U
Vinyl chloride	200	81	U	75	U	85	U
Bromomethane	*	120	U	110	U	130	U
Chloroethane	1,900	81	U	75	U	85	U
Acrolein	NS	790	U	740	U	830	U
1 1-Dichloroethene	400	71	U	66	U	74	U
Acetone	200	**310**	**J**	130	U	150	U
Methylene chloride	100	68	J	73	JB	57	JB
trans-1 2-Dichloroethene	300	51	U	47	U	53	U
Acrylonitrile	NS	160	U	150	U	170	U
1 1-Dichloroethane	200	61	U	57	U	64	U
cis-1 2-Dichloroethene	*	61	U	57	U	64	U
2-Butanone (MEK)	*	120	U	110	U	130	U
Chloroform	300	71	U	66	U	74	U
1 1 1-Trichloroethane	800	41	U	38	U	43	U
Carbon tetrachloride	600	100	U	94	U	110	U
Benzene	60	56	J	38	U	43	U
1 2-Dichloroethane	100	61	U	57	U	64	U
Trichloroethene	700	71	U	66	U	74	U
1 2-Dichloropropane	*	92	U	85	U	96	U
Bromodichloromethane	*	41	U	38	U	43	U
2-Chloroethylvinylether	NS	61	U	57	U	64	U
cis-1 3-Dichloropropene	*	51	U	47	U	53	U
4-Methyl-2-pentanone (MIBK)	1,000	71	U	66	U	74	U
Toluene	1,500	31	U	28	U	32	U
trans-1 3-Dichloropropene	*	31	U	28	U	32	U
1 1 2-Trichloroethane	6,000	61	U	57	U	64	U
Tetrachloroethene	1,400	51	U	47	U	53	U
Dibromochloromethane	*	51	U	47	U	53	U
Chlorobenzene	1,700	41	U	38	U	43	U
1 1 1 2-Tetrachloroethane	600	71	U	66	U	74	U
Ethylbenzene	5,500	100	U	94	U	110	U
Styrene	*	51	U	47	U	53	U
Bromoform	*	81	U	75	U	85	U
1 1 2 2-Tetrachloroethane	600	41	U	38	U	43	U
Xylenes (total)	1,200	100	U	94	U	110	U
1 3-Dichlorobenzene	1,600	61	U	57	U	64	U
1 4-Dichlorobenzene	8,500	51	U	47	U	53	U
1 2-Dichlorobenzene	7,900	61	U	57	U	64	U
1 2 4-Trichlorobenzene	3,400	92	U	85	U	96	U
Naphthalene	13,000	51	U	47	U	53	U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID	**Clean Earth of Carteret Acceptance Requirements**	**B52EN20(19.5-20)**	**B52EN20(28-28.5)**
Lab Sample ID		**212324-009**	**212324-010**
Dilution		**1**	**1**
Date Sampled		**38786**	**38786**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound			
Chloromethane	*	54 U	46 U
Vinyl chloride	200	87 U	73 U
Bromomethane	*	130 U	110 U
Chloroethane	1,900	87 U	73 U
Acrolein	NS	850 U	720 U
1 1-Dichloroethene	400	76 U	64 U
Acetone	200	150 U	160 JH
Methylene chloride	100	89 JB	55 JB
trans-1 2-Dichloroethene	300	54 U	46 U
Acrylonitrile	NS	170 U	150 U
1 1-Dichloroethane	200	65 U	55 U
cis-1 2-Dichloroethene	*	65 U	55 U
2-Butanone (MEK)	*	130 U	110 U
Chloroform	300	76 U	64 U
1 1 1-Trichloroethane	800	44 U	37 U
Carbon tetrachloride	600	110 U	92 U
Benzene	60	51 J	37 U
1 2-Dichloroethane	100	65 U	55 U
Trichloroethene	700	76 U	64 U
1 2-Dichloropropane	*	98 U	83 U
Bromodichloromethane	*	44 U	37 U
2-Chloroethylvinylether	NS	65 U	55 U
cis-1 3-Dichloropropene	*	54 U	46 U
4-Methyl-2-pentanone (MIBK)	1,000	76 U	64 U
Toluene	1,500	33 U	28 U
trans-1 3-Dichloropropene	*	33 U	28 U
1 1 2-Trichloroethane	6,000	65 U	55 U
Tetrachloroethene	1,400	54 U	46 U
Dibromochloromethane	*	54 U	46 U
Chlorobenzene	1,700	44 U	37 U
1 1 1 2-Tetrachloroethane	600	76 U	64 U
Ethylbenzene	5,500	110 U	92 U
Styrene	*	54 U	46 U
Bromoform	*	87 U	73 U
1 1 2 2-Tetrachloroethane	600	44 U	37 U
Xylenes (total)	1,200	180 J	92 U
1 3-Dichlorobenzene	1,600	65 U	55 U
1 4-Dichlorobenzene	8,500	54 U	46 U
1 2-Dichlorobenzene	7,900	65 U	55 U
1 2 4-Trichlorobenzene	3,400	98 U	83 U
Naphthalene	13,000	54 U	46 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements ug/Kg**	**B52EN30(10-10.5)** **212324-011** **1** **38786** **ug/Kg**		**B52EN30(13.5-14)** **212324-012** **1** **38786** **ug/Kg**	
Chloromethane	*	52	U	47	U
Vinyl chloride	200	83	U	75	U
Bromomethane	*	120	U	110	U
Chloroethane	1,900	83	U	75	U
Acrolein	NS	810	U	730	U
1 1-Dichloroethene	400	73	U	66	U
Acetone	200	190	J	130	U
Methylene chloride	100	59	JB	51	JB
trans-1 2-Dichloroethene	300	52	U	47	U
Acrylonitrile	NS	170	U	150	U
1 1-Dichloroethane	200	62	U	56	U
cis-1 2-Dichloroethene	*	62	U	56	U
2-Butanone (MEK)	*	120	U	110	U
Chloroform	300	73	U	66	U
1 1 1-Trichloroethane	800	41	U	38	U
Carbon tetrachloride	600	100	U	94	U
Benzene	60	41	U	38	U
1 2-Dichloroethane	100	62	U	56	U
Trichloroethene	700	73	U	66	U
1 2-Dichloropropane	*	93	U	84	U
Bromodichloromethane	*	41	U	38	U
2-Chloroethylvinylether	NS	62	U	56	U
cis-1 3-Dichloropropene	*	52	U	47	U
4-Methyl-2-pentanone (MIBK)	1,000	73	U	66	U
Toluene	1,500	31	U	28	U
trans-1 3-Dichloropropene	*	31	U	28	U
1 1 2-Trichloroethane	6,000	62	U	56	U
Tetrachloroethene	1,400	52	U	47	U
Dibromochloromethane	*	52	U	47	U
Chlorobenzene	1,700	41	U	38	U
1 1 1 2-Tetrachloroethane	600	73	U	66	U
Ethylbenzene	5,500	100	U	94	U
Styrene	*	52	U	47	U
Bromoform	*	83	U	75	U
1 1 2 2-Tetrachloroethane	600	41	U	38	U
Xylenes (total)	1,200	100	U	94	U
1 3-Dichlorobenzene	1,600	62	U	56	U
1 4-Dichlorobenzene	8,500	52	U	47	U
1 2-Dichlorobenzene	7,900	62	U	56	U
1 2 4-Trichlorobenzene	3,400	93	U	84	U
Naphthalene	13,000	52	U	47	U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements** **ug/Kg**	**B52EN30(20-20.5)** **212324-013** **1** **38786** **ug/Kg**	**B51A(8-8.5)** **212324-014** **1** **38786** **ug/Kg**	**B51A(11.5-12)** **212324-015** **1** **38786** **ug/Kg**
Chloromethane	*	57 U	55 U	51 U
Vinyl chloride	200	91 U	89 U	81 U
Bromomethane	*	140 U	130 U	120 U
Chloroethane	1,900	91 U	89 U	81 U
Acrolein	NS	890 U	860 U	790 U
1 1-Dichloroethene	400	80 U	78 U	71 U
Acetone	200	160 U	160 U	140 U
Methylene chloride	100	70 JB	71 JB	**120 JHB**
trans-1 2-Dichloroethene	300	57 U	55 U	51 U
Acrylonitrile	NS	180 U	180 U	160 U
1 1-Dichloroethane	200	69 U	66 U	61 U
cis-1 2-Dichloroethene	*	69 U	66 U	61 U
2-Butanone (MEK)	*	140 U	130 U	120 U
Chloroform	300	80 U	78 U	71 U
1 1 1-Trichloroethane	800	46 U	44 U	41 U
Carbon tetrachloride	600	110 U	110 U	100 U
Benzene	60	46 U	44 U	41 U
1 2-Dichloroethane	100	69 U	66 U	61 U
Trichloroethene	700	80 U	78 U	71 U
1 2-Dichloropropane	*	100 U	100 U	91 U
Bromodichloromethane	*	46 U	44 U	41 U
2-Chloroethylvinylether	NS	69 U	66 U	61 U
cis-1 3-Dichloropropene	*	57 U	55 U	51 U
4-Methyl-2-pentanone (MIBK)	1,000	80 U	78 U	71 U
Toluene	1,500	34 U	33 U	30 U
trans-1 3-Dichloropropene	*	34 U	33 U	30 U
1 1 2-Trichloroethane	6,000	69 U	66 U	61 U
Tetrachloroethene	1,400	57 U	55 U	51 U
Dibromochloromethane	*	57 U	55 U	51 U
Chlorobenzene	1,700	46 U	44 U	41 U
1 1 1 2-Tetrachloroethane	600	80 U	78 U	71 U
Ethylbenzene	5,500	110 U	110 U	100 U
Styrene	*	57 U	55 U	51 U
Bromoform	*	91 U	89 U	81 U
1 1 2 2-Tetrachloroethane	600	46 U	44 U	41 U
Xylenes (total)	1,200	110 U	110 U	100 U
1 3-Dichlorobenzene	1,600	69 U	66 U	61 U
1 4-Dichlorobenzene	8,500	57 U	55 U	51 U
1 2-Dichlorobenzene	7,900	69 U	66 U	61 U
1 2 4-Trichlorobenzene	3,400	100 U	100 U	91 U
Naphthalene	13,000	57 U	55 U	51 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptance Requirements** **ug/Kg**	**B-51-D(13.5-14)** **212324-016** **1** **38789** **ug/Kg**	**B-51-D(18-18.5)** **212324-017** **1** **38789** **ug/Kg**	**B-51-D(22.5-23)** **212324-018** **1** **38789** **ug/Kg**
Chloromethane	*	56 U	74 U	49 U
Vinyl chloride	200	89 U	120 U	79 U
Bromomethane	*	130 U	180 U	120 U
Chloroethane	1,900	89 U	120 U	79 U
Acrolein	NS	870 U	1200 U	770 U
1 1-Dichloroethene	400	78 U	100 U	69 U
Acetone	200	160 U	**310 JH**	140 U
Methylene chloride	100	81 JB	96 JB	66 JB
trans-1 2-Dichloroethene	300	56 U	74 U	49 U
Acrylonitrile	NS	180 U	240 U	160 U
1 1-Dichloroethane	200	67 U	89 U	59 U
cis-1 2-Dichloroethene	*	67 U	89 U	59 U
2-Butanone (MEK)	*	130 U	180 U	120 U
Chloroform	300	78 U	100 U	69 U
1 1 1-Trichloroethane	800	45 U	59 U	39 U
Carbon tetrachloride	600	110 U	150 U	98 U
Benzene	60	45 U	59 U	39 U
1 2-Dichloroethane	100	67 U	89 U	59 U
Trichloroethene	700	78 U	100 U	69 U
1 2-Dichloropropane	*	100 U	130 U	88 U
Bromodichloromethane	*	45 U	59 U	39 U
2-Chloroethylvinylether	NS	67 U	89 U	59 U
cis-1 3-Dichloropropene	*	56 U	74 U	49 U
4-Methyl-2-pentanone (MIBK)	1,000	78 U	100 U	69 U
Toluene	1,500	33 U	44 U	29 U
trans-1 3-Dichloropropene	*	33 U	44 U	29 U
1 1 2-Trichloroethane	6,000	67 U	89 U	59 U
Tetrachloroethene	1,400	56 U	74 U	49 U
Dibromochloromethane	*	56 U	74 U	49 U
Chlorobenzene	1,700	45 U	59 U	39 U
1 1 1 2-Tetrachloroethane	600	78 U	100 U	69 U
Ethylbenzene	5,500	110 U	150 U	98 U
Styrene	*	56 U	74 U	49 U
Bromoform	*	89 U	120 U	79 U
1 1 2 2-Tetrachloroethane	600	45 U	59 U	39 U
Xylenes (total)	1,200	110 U	150 U	98 U
1 3-Dichlorobenzene	1,600	67 U	89 U	59 U
1 4-Dichlorobenzene	8,500	56 U	74 U	49 U
1 2-Dichlorobenzene	7,900	67 U	89 U	59 U
1 2 4-Trichlorobenzene	3,400	100 U	130 U	88 U
Naphthalene	13,000	56 U	74 U	49 U

CLEAN
LAB CONTAMINANTS - Acetone and Methylene
CONTAMINATED - PETROLEUM

WEST 61st STREET SITE
ATTACHMENT E
PETROLEUM DELINEATION ANALYTICAL RESULTS

Client ID	**Clean Earth of Carteret Acceptance Requirements**	**B-51-F(17-17.5)**		**B-51-F(20-20.5)**	
Lab Sample ID		**212324-019**		**212324-020**	
Dilution		**1**		**1**	
Date Sampled		**38789**		**38789**	
Units	**ug/Kg**	**ug/Kg**		**ug/Kg**	
Compound					
Chloromethane	*	57	U	53	U
Vinyl chloride	200	92	U	86	U
Bromomethane	*	140	U	130	U
Chloroethane	1,900	92	U	86	U
Acrolein	NS	900	U	830	U
1 1-Dichloroethene	400	80	U	75	U
Acetone	200	**280**	**J**	150	U
Methylene chloride	100	76	JB	66	JB
trans-1 2-Dichloroethene	300	57	U	53	U
Acrylonitrile	NS	180	U	170	U
1 1-Dichloroethane	200	69	U	64	U
cis-1 2-Dichloroethene	*	69	U	64	U
2-Butanone (MEK)	*	140	U	130	U
Chloroform	300	80	U	75	U
1 1 1-Trichloroethane	800	46	U	43	U
Carbon tetrachloride	600	110	U	110	U
Benzene	60	46	U	43	U
1 2-Dichloroethane	100	69	U	64	U
Trichloroethene	700	80	U	75	U
1 2-Dichloropropane	*	100	U	96	U
Bromodichloromethane	*	46	U	43	U
2-Chloroethylvinylether	NS	69	U	64	U
cis-1 3-Dichloropropene	*	57	U	53	U
4-Methyl-2-pentanone (MIBK)	1,000	80	U	75	U
Toluene	1,500	34	U	32	U
trans-1 3-Dichloropropene	*	34	U	32	U
1 1 2-Trichloroethane	6,000	69	U	64	U
Tetrachloroethene	1,400	57	U	53	U
Dibromochloromethane	*	57	U	53	U
Chlorobenzene	1,700	46	U	43	U
1 1 1 2-Tetrachloroethane	600	80	U	75	U
Ethylbenzene	5,500	110	U	110	U
Styrene	*	57	U	53	U
Bromoform	*	92	U	86	U
1 1 2 2-Tetrachloroethane	600	46	U	43	U
Xylenes (total)	1,200	110	U	110	U
1 3-Dichlorobenzene	1,600	69	U	64	U
1 4-Dichlorobenzene	8,500	57	U	53	U
1 2-Dichlorobenzene	7,900	69	U	64	U
1 2 4-Trichlorobenzene	3,400	100	U	96	U
Naphthalene	13,000	57	U	53	U

CLEAN

LAB CONTAMINANTS - Acetone and Methylene

CONTAMINATED - PETROLEUM

ATTACHMENT F

ANALYTICAL RESULTS FOR BENEFICIAL USE DETERMINATION

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-20(3-3.5)**	**B-20(20-20.5)**	**B-21(1.5-2)**	**B-22(3.5-4)**	**B-23(2.5-3)**	**B-24(2.5-3)**	**B-24(9-9.5)**
Lab Sample ID		**212603-013**	**212429-002**	**212603-011**	**212603-009**	**212655-005**	**212655-007**	**212655-009**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**3/22/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**	**4/13/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
Chloromethane	10,000	54 U	59 U	59 U	63 U	60 U	55 U	59 U
Vinyl chloride	10,000	87 U	94 U	94 U	100 U	96 U	88 U	94 U
Bromomethane	1,000	130 U	140 U	140 U	150 U	140 U	130 U	140 U
Chloroethane	NS	87 U	94 U	94 U	100 U	96 U	88 U	94 U
Acrolein	NS	850 U	920 U	920 U	990 U	940 U	860 U	920 U
1 1-Dichloroethene	10,000	76 U	82 U	82 U	89 U	84 U	77 U	82 U
Acetone	100,000	230 JB	210 JB	230 JB	270 JB	200 JB	150 UB	170 JB
Methylene chloride	1,000	83 JB	130 JB	130 JB	140 JB	140 JB	150 JB	140 JB
trans-1 2-Dichloroethene	50,000	54 U	59 U	59 U	63 U	60 U	55 U	59 U
Acrylonitrile	1,000	170 U	190 U	190 U	200 U	190 U	180 U	190 U
1 1-Dichloroethane	10,000	65 U	71 U	71 U	76 U	72 U	66 U	71 U
cis-1 2-Dichloroethene	1,000	65 U	71 U	71 U	76 U	72 U	66 U	71 U
2-Butanone (MEK)	50,000	130 U	140 U	140 U	150 U	140 U	130 U	140 U
Chloroform	1,000	76 U	82 U	82 U	89 U	84 U	77 U	82 U
1 1 1-Trichloroethane	50,000	44 U	47 U	47 U	51 U	48 U	44 U	47 U
Carbon tetrachloride	1,000	110 U	120 U	120 U	130 U	120 U	110 U	120 U
Benzene	1,000	44 U	47 U	47 U	51 U	89 J	44 U	47 U
1 2-Dichloroethane	1,000	65 U	71 U	71 U	76 U	72 U	66 U	71 U
Trichloroethene	1,000	76 U	82 U	82 U	89 U	84 U	77 U	82 U
1 2-Dichloropropane	10,000	98 U	110 U	110 U	110 U	110 U	99 U	110 U
Bromodichloromethane	1,000	44 U	47 U	47 U	51 U	48 U	44 U	47 U
2-Chloroethylvinylether	NS	65 U	71 U	71 U	76 U	72 U	66 U	71 U
cis-1 3-Dichloropropene	1,000	54 U	59 U	59 U	63 U	60 U	55 U	59 U
4-Methyl-2-pentanone (MIBK)	50,000	76 U	82 U	82 U	89 U	84 U	77 U	82 U
Toluene	500,000	33 U	35 U	35 U	38 U	91 J	33 U	35 U
trans-1 3-Dichloropropene	1,000	33 U	35 U	35 U	38 U	36 U	33 U	35 U
1 1 2-Trichloroethane	1,000	65 U	71 U	71 U	76 U	72 U	66 U	71 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-20(3-3.5)**	**B-20(20-20.5)**	**B-21(1.5-2)**	**B-22(3.5-4)**	**B-23(2.5-3)**	**B-24(2.5-3)**	**B-24(9-9.5)**
Lab Sample ID		**212603-013**	**212429-002**	**212603-011**	**212603-009**	**212655-005**	**212655-007**	**212655-009**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**3/22/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**	**4/13/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
Tetrachloroethene	1,000	54 U	59 U	59 U	63 U	60 U	55 U	62 J
Dibromochloromethane	1,000	54 U	59 U	59 U	63 U	60 U	55 U	59 U
Chlorobenzene	1,000	44 U	47 U	47 U	51 U	48 U	44 U	47 U
1 1 1 2-Tetrachloroethane	1,000	76 U	82 U	82 U	89 U	84 U	77 U	82 U
Ethylbenzene	100,000	110 U	120 U	120 U	130 U	120 UH	110 U	120 U
Styrene	100,000	54 U	59 U	59 U	63 U	60 U	55 U	59 U
Bromoform	1,000	87 U	94 U	94 U	100 U	96 U	88 U	94 U
1 1 2 2-Tetrachloroethane	1,000	44 U	47 U	47 U	51 U	48 U	44 U	47 U
Xylenes (total)	67,000	110 U	120 U	120 U	130 U	130 J	110 U	120 U
1 3-Dichlorobenzene	10,000,000	65 U	71 U	71 U	76 U	72 U	66 U	71 U
1 4-Dichlorobenzene	10,000,000	54 U	59 U	59 U	63 U	60 U	55 U	59 U
1 2-Dichlorobenzene	10,000,000	65 U	71 U	71 U	76 U	72 U	66 U	71 U
1 2 4-Trichlorobenzene	100,000	98 U	110 U	110 U	110 U	110 U	99 U	110 U
Naphthalene	4,200,000	54 U	59 U	59 U	63 UH	130 JH	55 U	150 JH
Total VOCs	1,000,000	313	340	360	473	900	300	522

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-25(3-3.5)**	**B-25(10.5-11)**	**B-25(15.5-16)**	**B-26(13-13.5)**	**B-26(25-25.5)**
Lab Sample ID		**212603-015**	**212603-017**	**212603-019**	**212481-002**	**212481-005**
Dilution		**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/12/2006**	**4/12/2006**	**4/12/2006**	**3/28/2006**	**3/28/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound						
Chloromethane	10,000	50 U	57 U	56 U	57 U	49 U
Vinyl chloride	10,000	80 U	92 U	90 U	92 U	79 U
Bromomethane	1,000	120 U	140 U	130 U	140 U	120 U
Chloroethane	NS	80 U	92 U	90 U	92 U	79 U
Acrolein	NS	780 U	900 U	870 U	890 U	770 U
1 1-Dichloroethene	10,000	70 U	80 U	78 U	80 U	69 U
Acetone	100,000	200 JB	170 JB	160 JB	160 U	140 U
Methylene chloride	1,000	140 JB	130 JB	130 JB	110 JB	98 JB
trans-1 2-Dichloroethene	50,000	50 U	57 U	56 U	57 U	49 U
Acrylonitrile	1,000	160 U	180 U	180 U	180 U	160 U
1 1-Dichloroethane	10,000	60 U	69 U	67 U	69 U	59 U
cis-1 2-Dichloroethene	1,000	60 U	69 U	67 U	69 U	59 U
2-Butanone (MEK)	50,000	120 U	140 U	130 U	140 U	120 U
Chloroform	1,000	70 U	80 U	78 U	80 U	69 U
1 1 1-Trichloroethane	50,000	40 U	46 U	45 U	46 U	39 U
Carbon tetrachloride	1,000	100 U	110 U	110 U	110 U	98 U
Benzene	1,000	40 U	46 U	45 U	46 U	39 U
1 2-Dichloroethane	1,000	60 U	69 U	67 U	69 U	59 U
Trichloroethene	1,000	70 U	80 U	78 U	80 U	69 U
1 2-Dichloropropane	10,000	90 U	100 U	100 U	100 U	88 U
Bromodichloromethane	1,000	40 U	46 U	45 U	46 U	39 U
2-Chloroethylvinylether	NS	60 U	69 U	67 U	69 U	59 U
cis-1 3-Dichloropropene	1,000	50 U	57 U	56 U	57 U	49 U
4-Methyl-2-pentanone (MIBK)	50,000	70 U	80 U	78 U	80 U	69 U
Toluene	500,000	30 U	34 U	34 U	34 U	29 U
trans-1 3-Dichloropropene	1,000	30 U	34 U	34 U	34 U	29 U
1 1 2-Trichloroethane	1,000	60 U	69 U	67 U	69 U	59 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-25(3-3.5)**	**B-25(10.5-11)**	**B-25(15.5-16)**	**B-26(13-13.5)**	**B-26(25-25.5)**
Lab Sample ID		**212603-015**	**212603-017**	**212603-019**	**212481-002**	**212481-005**
Dilution		**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/12/2006**	**4/12/2006**	**4/12/2006**	**3/28/2006**	**3/28/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound						
Tetrachloroethene	1,000	50 U	57 U	56 U	57 U	49 U
Dibromochloromethane	1,000	50 U	57 U	56 U	57 U	49 U
Chlorobenzene	1,000	40 U	46 U	45 U	46 U	39 U
1 1 1 2-Tetrachloroethane	1,000	70 U	80 U	78 U	80 U	69 U
Ethylbenzene	100,000	100 U	110 U	110 U	110 U	98 U
Styrene	100,000	50 U	57 U	56 U	57 U	49 U
Bromoform	1,000	80 U	92 U	90 U	92 U	79 U
1 1 2 2-Tetrachloroethane	1,000	40 U	46 U	45 U	46 U	39 U
Xylenes (total)	67,000	100 U	110 U	110 U	110 U	98 U
1 3-Dichlorobenzene	10,000,000	60 U	69 U	67 U	69 U	59 U
1 4-Dichlorobenzene	10,000,000	50 U	57 U	56 U	57 U	49 U
1 2-Dichlorobenzene	10,000,000	60 U	69 U	67 U	69 U	59 U
1 2 4-Trichlorobenzene	100,000	90 U	100 U	100 U	100 U	88 U
Naphthalene	4,200,000	52 JH	62 JH	56 U	57 U	49 U
Total VOCs	1,000,000	392	362	290	110	98

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-27(5-5.5)**	**B-27(15-15.5)**	**B-27(27-27.5)**	**B-28(3.5-4)**	**B-28(20-20.5)**	**B-29(11-11.5)**	**B-29(21-21.5)**
Lab Sample ID		**212429-015**	**212429-017**	**212429-019**	**212429-003**	**212429-002**	**212481-010**	**212481-012**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/23/2006**	**3/23/2006**	**3/23/2006**	**3/22/2006**	**3/22/2006**	**3/28/2006**	**3/28/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
Chloromethane	10,000	52 U	48 U	48 U	72 U	59 U	52 U	64 U
Vinyl chloride	10,000	84 U	77 U	77 U	120 U	94 U	83 U	100 U
Bromomethane	1,000	130 U	120 U	120 U	170 U	140 U	120 U	150 U
Chloroethane	NS	84 U	77 U	77 U	120 U	94 U	83 U	100 U
Acrolein	NS	810 U	750 U	750 U	1100 U	920 U	810 U	1000 U
1 1-Dichloroethene	10,000	73 U	68 U	67 U	100 U	82 U	73 U	90 U
Acetone	100,000	250 JB	190 JB	130 UB	300 JB	210 JB	150 U	180 UB
Methylene chloride	1,000	96 JB	83 JB	71 JB	130 JB	130 JB	100 JB	100 JB
trans-1 2-Dichloroethene	50,000	52 U	48 U	48 U	72 U	59 U	52 U	64 U
Acrylonitrile	1,000	170 U	150 U	150 U	230 U	190 U	170 U	210 U
1 1-Dichloroethane	10,000	63 U	58 U	58 U	87 U	71 U	62 U	77 U
cis-1 2-Dichloroethene	1,000	63 U	58 U	58 U	87 U	71 U	62 U	77 U
2-Butanone (MEK)	50,000	130 U	120 U	120 U	170 U	140 U	120 U	150 U
Chloroform	1,000	73 U	68 U	67 U	100 U	82 U	73 U	90 U
1 1 1-Trichloroethane	50,000	42 U	39 U	39 U	58 U	47 U	42 U	51 U
Carbon tetrachloride	1,000	100 U	97 U	96 U	140 U	120 U	100 U	130 U
Benzene	1,000	42 U	39 U	39 U	58 U	47 U	42 U	51 U
1 2-Dichloroethane	1,000	63 U	58 U	58 U	87 U	71 U	62 U	77 U
Trichloroethene	1,000	73 U	68 U	67 U	140 J	82 U	73 U	90 U
1 2-Dichloropropane	10,000	94 U	87 U	87 U	130 U	110 U	94 U	120 U
Bromodichloromethane	1,000	42 U	39 U	39 U	58 U	47 U	42 U	51 U
2-Chloroethylvinylether	NS	63 U	58 U	58 U	87 U	71 U	62 U	77 U
cis-1 3-Dichloropropene	1,000	52 U	48 U	48 U	72 U	59 U	52 U	64 U
4-Methyl-2-pentanone (MIBK)	50,000	73 U	68 U	67 U	100 U	82 U	73 U	90 U
Toluene	500,000	31 U	29 U	29 U	43 U	35 U	31 U	39 U
trans-1 3-Dichloropropene	1,000	31 U	29 U	29 U	43 U	35 U	31 U	39 U
1 1 2-Trichloroethane	1,000	63 U	58 U	58 U	87 U	71 U	62 U	77 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-27(5-5.5)	B-27(15-15.5)	B-27(27-27.5)	B-28(3.5-4)	B-28(20-20.5)	B-29(11-11.5)	B-29(21-21.5)
Lab Sample ID		212429-015	212429-017	212429-019	212429-003	212429-002	212481-010	212481-012
Dilution		1	1	1	1	1	1	1
Date Sampled		3/23/2006	3/23/2006	3/23/2006	3/22/2006	3/22/2006	3/28/2006	3/28/2006
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
Tetrachloroethene	1,000	130 J	48 U	48 U	230 J	59 U	52 U	64 U
Dibromochloromethane	1,000	52 U	48 U	48 U	72 U	59 U	52 U	64 U
Chlorobenzene	1,000	42 U	39 U	39 U	58 U	47 U	42 U	51 U
1 1 1 2-Tetrachloroethane	1,000	73 U	68 U	67 U	100 U	82 U	73 U	90 U
Ethylbenzene	100,000	100 U	97 U	96 U	140 U	120 U	100 U	130 U
Styrene	100,000	52 U	48 U	48 U	72 U	59 U	52 U	64 U
Bromoform	1,000	84 U	77 U	77 U	120 U	94 U	83 U	100 U
1 1 2 2-Tetrachloroethane	1,000	42 U	39 U	39 U	58 U	47 U	42 U	51 U
Xylenes (total)	67,000	100 U	97 U	96 U	240 J	120 U	100 U	130 U
1 3-Dichlorobenzene	10,000,000	63 U	58 U	58 U	87 U	71 U	62 U	77 U
1 4-Dichlorobenzene	10,000,000	52 U	48 U	48 U	72 U	59 U	52 U	64 U
1 2-Dichlorobenzene	10,000,000	63 U	58 U	58 U	87 U	71 U	62 U	77 U
1 2 4-Trichlorobenzene	100,000	94 U	87 U	87 U	130 U	110 U	94 U	120 U
Naphthalene	4,200,000	52 U	48 U	48 U	72 U	59 U	52 U	64 U
Total VOCs	1,000,000	476	273	201	1040	340	100	280

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1] (μg/Kg)	B-30(5-5.5)	B-30(15-15.5)	B-30(18-18.5)	B-31(7.5-8)	B-31(21-21.5)	B-32(7.5-8)	B-32(17.5-18)
Lab Sample ID		212454-001	212454-003	212454-005	212429-005	212429-007	212429-009	212429-011
Dilution		1	1	1	1	1	1	1
Date Sampled		3/24/2006	3/24/2006	3/24/2006	3/22/2006	3/22/2006	3/23/2006	3/23/2006
Units		μg/Kg	μg/Kg	μg/Kg	μg/Kg	μg/Kg	μg/Kg	μg/Kg
Compound								
Chloromethane	10,000	51 U	58 U	59 U	57 U	55 U	50 U	62 U
Vinyl chloride	10,000	81 U	93 U	94 U	92 U	88 U	80 U	99 U
Bromomethane	1,000	120 U	140 U	140 U	140 U	130 U	120 U	150 U
Chloroethane	NS	81 U	93 U	94 U	92 U	88 U	80 U	99 U
Acrolein	NS	790 U	900 U	920 U	900 U	850 U	780 U	970 U
1 1-Dichloroethene	10,000	71 U	81 U	83 U	80 U	77 U	70 U	87 U
Acetone	100,000	140 U	160 U	170 U	160 UB	210 JB	230 JB	310 JB
Methylene chloride	1,000	62 JB	85 JB	64 JB	71 JB	67 JB	68 JB	81 JB
trans-1 2-Dichloroethene	50,000	51 U	58 U	59 U	57 U	55 U	50 U	62 U
Acrylonitrile	1,000	160 U	190 U	190 U	180 U	180 U	160 U	200 U
1 1-Dichloroethane	10,000	61 U	69 U	71 U	69 U	66 U	60 U	74 U
cis-1 2-Dichloroethene	1,000	61 U	69 U	71 U	69 U	66 U	60 U	74 U
2-Butanone (MEK)	50,000	120 U	140 U	140 U	140 U	130 U	120 U	150 U
Chloroform	1,000	71 U	81 U	83 U	80 U	77 U	70 U	87 U
1 1 1-Trichloroethane	50,000	41 U	46 U	47 U	46 U	44 U	40 U	50 U
Carbon tetrachloride	1,000	100 U	120 U	120 U	110 U	110 U	100 U	120 U
Benzene	1,000	41 U	46 U	47 U	46 U	44 U	40 U	50 U
1 2-Dichloroethane	1,000	61 U	69 U	71 U	69 U	66 U	60 U	74 U
Trichloroethene	1,000	71 U	81 U	83 U	80 U	77 U	70 U	87 U
1 2-Dichloropropane	10,000	92 U	100 U	110 U	100 U	99 U	90 U	110 U
Bromodichloromethane	1,000	41 U	46 U	47 U	46 U	44 U	40 U	50 U
2-Chloroethylvinylether	NS	61 U	69 U	71 U	69 U	66 U	60 U	74 U
cis-1 3-Dichloropropene	1,000	51 U	58 U	59 U	57 U	55 U	50 U	62 U
4-Methyl-2-pentanone (MIBK)	50,000	71 U	81 U	83 U	80 U	77 U	70 U	87 U
Toluene	500,000	31 U	35 U	35 U	34 U	33 U	30 U	37 U
trans-1 3-Dichloropropene	1,000	31 U	35 U	35 U	34 U	33 U	30 U	37 U
1 1 2-Trichloroethane	1,000	61 U	69 U	71 U	69 U	66 U	60 U	74 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-30(5-5.5)**	**B-30(15-15.5)**	**B-30(18-18.5)**	**B-31(7.5-8)**	**B-31(21-21.5)**	**B-32(7.5-8)**	**B-32(17.5-18)**
Lab Sample ID		**212454-001**	**212454-003**	**212454-005**	**212429-005**	**212429-007**	**212429-009**	**212429-011**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/22/2006**	**3/22/2006**	**3/23/2006**	**3/23/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
Tetrachloroethene	1,000	51 U	58 U	59 U	57 U	55 U	50 U	62 U
Dibromochloromethane	1,000	51 U	58 U	59 U	57 U	55 U	50 U	62 U
Chlorobenzene	1,000	41 U	46 U	47 U	46 U	44 U	40 U	50 U
1 1 1 2-Tetrachloroethane	1,000	71 U	81 U	83 U	80 U	77 U	70 U	87 U
Ethylbenzene	100,000	100 U	120 U	120 U	110 U	110 U	100 U	120 U
Styrene	100,000	51 U	58 U	59 U	57 U	55 U	50 U	62 U
Bromoform	1,000	81 U	93 U	94 U	92 U	88 U	80 U	99 U
1 1 2 2-Tetrachloroethane	1,000	41 U	46 U	47 U	46 U	44 U	40 U	50 U
Xylenes (total)	67,000	100 U	120 U	120 U	110 U	110 U	100 U	120 U
1 3-Dichlorobenzene	10,000,000	61 U	69 U	71 U	69 U	66 U	60 U	74 U
1 4-Dichlorobenzene	10,000,000	51 U	58 U	59 U	57 U	55 U	50 U	62 U
1 2-Dichlorobenzene	10,000,000	61 U	69 U	71 U	69 U	66 U	60 U	74 U
1 2 4-Trichlorobenzene	100,000	92 U	100 U	110 U	100 U	99 U	90 U	110 U
Naphthalene	4,200,000	51 U	58 U	59 U	57 U	55 U	50 U	62 U
Total VOCs	1,000,000	62	85	64	231	277	298	391

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-32(23-23.5)	B-33(6-6.5)	B-33(18-18.5)	B-34(5-5.5)	B-34(13.5-14)
Lab Sample ID		212429-013	212481-014	212481-016	212454-006	212454-008
Dilution		1	1	1	1	1
Date Sampled		3/23/2006	3/29/2006	3/29/2006	3/24/2006	3/24/2006
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound						
Chloromethane	10,000	58 U	54 U	62 U	60 U	55 U
Vinyl chloride	10,000	93 U	86 U	99 U	95 U	88 U
Bromomethane	1,000	140 U	130 U	150 U	140 U	130 U
Chloroethane	NS	93 U	86 U	99 U	95 U	88 U
Acrolein	NS	900 U	840 U	970 U	930 U	860 U
1 1-Dichloroethene	10,000	81 U	75 U	87 U	83 U	77 U
Acetone	100,000	250 JB	190 JB	170 UB	170 U	150 U
Methylene chloride	1,000	77 JB	130 JB	220 JB	65 JB	68 JB
trans-1 2-Dichloroethene	50,000	58 U	54 U	62 U	60 U	55 U
Acrylonitrile	1,000	190 U	170 U	200 U	190 U	180 U
1 1-Dichloroethane	10,000	69 U	64 U	74 U	71 U	66 U
cis-1 2-Dichloroethene	1,000	69 U	64 U	74 U	71 U	66 U
2-Butanone (MEK)	50,000	140 U	130 U	150 U	140 U	130 U
Chloroform	1,000	81 U	75 U	87 U	83 U	77 U
1 1 1-Trichloroethane	50,000	46 U	43 U	50 U	48 U	44 U
Carbon tetrachloride	1,000	120 U	110 U	120 U	120 U	110 U
Benzene	1,000	46 U	43 U	50 U	48 U	44 U
1 2-Dichloroethane	1,000	69 U	64 U	74 U	71 U	66 U
Trichloroethene	1,000	81 U	75 U	87 U	83 U	77 U
1 2-Dichloropropane	10,000	100 U	97 U	110 U	110 U	99 U
Bromodichloromethane	1,000	46 U	43 U	50 U	48 U	44 U
2-Chloroethylvinylether	NS	69 U	64 U	74 U	71 U	66 U
cis-1 3-Dichloropropene	1,000	58 U	54 U	62 U	60 U	55 U
4-Methyl-2-pentanone (MIBK)	50,000	81 U	75 U	87 U	83 U	77 U
Toluene	500,000	35 U	32 U	37 U	36 U	33 U
trans-1 3-Dichloropropene	1,000	35 U	32 U	37 U	36 U	33 U
1 1 2-Trichloroethane	1,000	69 U	64 U	74 U	71 U	66 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-32(23-23.5)** **212429-013** **1** **3/23/2006** **µg/Kg**	**B-33(6-6.5)** **212481-014** **1** **3/29/2006** **µg/Kg**	**B-33(18-18.5)** **212481-016** **1** **3/29/2006** **µg/Kg**	**B-34(5-5.5)** **212454-006** **1** **3/24/2006** **µg/Kg**	**B-34(13.5-14)** **212454-008** **1** **3/24/2006** **µg/Kg**
Tetrachloroethene	1,000	58 U	54 U	62 U	60 U	55 U
Dibromochloromethane	1,000	58 U	54 U	62 U	60 U	55 U
Chlorobenzene	1,000	46 U	43 U	50 U	48 U	44 U
1 1 1 2-Tetrachloroethane	1,000	81 U	75 U	87 U	83 U	77 U
Ethylbenzene	100,000	120 U	110 U	120 U	120 U	110 U
Styrene	100,000	58 U	54 U	62 U	60 U	55 U
Bromoform	1,000	93 U	86 U	99 U	95 U	88 U
1 1 2 2-Tetrachloroethane	1,000	46 U	43 U	50 U	48 U	44 U
Xylenes (total)	67,000	120 U	110 U	120 U	120 U	110 U
1 3-Dichlorobenzene	10,000,000	69 U	64 U	74 U	71 U	66 U
1 4-Dichlorobenzene	10,000,000	58 U	54 U	62 U	60 U	55 U
1 2-Dichlorobenzene	10,000,000	69 U	64 U	74 U	71 U	66 U
1 2 4-Trichlorobenzene	100,000	100 U	97 U	110 U	110 U	99 U
Naphthalene	4,200,000	58 U	1300	62 U	60 U	55 U
Total VOCs	1,000,000	327	1620	390	65	68

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-35(5-5.5)**	**B-35(15-15.5)**	**B-35(25-25.5)**	**B-36(3.5-4)**	**B-36(16-16.5)**	**B-36(24-24.5)**
Lab Sample ID		**212454-010**	**212454-012**	**212454-014**	**212454-016**	**212454-018**	**212454-020**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
Chloromethane	10,000	48 U	60 U	60 U	70 U	52 U	48 U
Vinyl chloride	10,000	77 U	96 U	95 U	110 U	83 U	77 U
Bromomethane	1,000	120 U	140 U	140 U	170 U	120 U	120 U
Chloroethane	NS	77 U	96 U	95 U	110 U	83 U	77 U
Acrolein	NS	750 U	940 U	930 U	1100 U	810 U	750 U
1 1-Dichloroethene	10,000	67 U	84 U	83 U	99 U	72 U	67 U
Acetone	100,000	130 U	170 UB	170 UB	300 J	140 U	130 U
Methylene chloride	1,000	61 JB	120 JB	92 JB	72 JB	58 JB	52 JB
trans-1 2-Dichloroethene	50,000	48 U	60 U	60 U	70 U	52 U	48 U
Acrylonitrile	1,000	150 U	190 U	190 U	230 U	170 U	150 U
1 1-Dichloroethane	10,000	58 U	72 U	71 U	85 U	62 U	58 U
cis-1 2-Dichloroethene	1,000	58 U	72 U	71 U	85 U	62 U	58 U
2-Butanone (MEK)	50,000	120 U	140 U	140 U	170 U	120 U	120 U
Chloroform	1,000	67 U	84 U	83 U	99 U	72 U	67 U
1 1 1-Trichloroethane	50,000	38 U	48 U	48 U	56 U	41 U	38 U
Carbon tetrachloride	1,000	96 U	120 U	120 U	140 U	100 U	96 U
Benzene	1,000	38 U	48 U	48 U	56 U	41 U	38 U
1 2-Dichloroethane	1,000	58 U	72 U	71 U	85 U	62 U	58 U
Trichloroethene	1,000	67 U	84 U	83 U	99 U	72 U	67 U
1 2-Dichloropropane	10,000	87 U	110 U	110 U	130 U	93 U	86 U
Bromodichloromethane	1,000	38 U	48 U	48 U	56 U	41 U	38 U
2-Chloroethylvinylether	NS	58 U	72 U	71 U	85 U	62 U	58 U
cis-1 3-Dichloropropene	1,000	48 U	60 U	60 U	70 U	52 U	48 U
4-Methyl-2-pentanone (MIBK)	50,000	67 U	84 U	83 U	99 U	72 U	67 U
Toluene	500,000	29 U	36 U	36 U	140 J	31 U	29 U
trans-1 3-Dichloropropene	1,000	29 U	36 U	36 U	42 U	31 U	29 U
1 1 2-Trichloroethane	1,000	58 U	72 U	71 U	85 U	62 U	58 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-35(5-5.5)**	**B-35(15-15.5)**	**B-35(25-25.5)**	**B-36(3.5-4)**	**B-36(16-16.5)**	**B-36(24-24.5)**
Lab Sample ID		**212454-010**	**212454-012**	**212454-014**	**212454-016**	**212454-018**	**212454-020**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
Tetrachloroethene	1,000	48 U	60 U	60 U	70 U	52 U	48 U
Dibromochloromethane	1,000	48 U	60 U	60 U	70 U	52 U	48 U
Chlorobenzene	1,000	38 U	48 U	48 U	56 U	41 U	38 U
1 1 1 2-Tetrachloroethane	1,000	67 U	84 U	83 U	99 U	72 U	67 U
Ethylbenzene	100,000	96 U	120 U	120 U	140 U	100 U	96 U
Styrene	100,000	48 U	60 U	60 U	70 U	52 U	48 U
Bromoform	1,000	77 U	96 U	95 U	110 U	83 U	77 U
1 1 2 2-Tetrachloroethane	1,000	38 U	48 U	48 U	56 U	41 U	38 U
Xylenes (total)	67,000	96 U	120 U	120 U	140 U	100 U	96 U
1 3-Dichlorobenzene	10,000,000	58 U	72 U	71 U	85 U	62 U	58 U
1 4-Dichlorobenzene	10,000,000	48 U	60 U	60 U	70 U	52 U	48 U
1 2-Dichlorobenzene	10,000,000	58 U	72 U	71 U	85 U	62 U	58 U
1 2 4-Trichlorobenzene	100,000	87 U	110 U	110 U	130 U	93 U	86 U
Naphthalene	4,200,000	48 U	60 U	60 U	70 U	52 U	48 U
Total VOCs	1,000,000	61	290	262	512	58	52

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-37(6-6.5)	B-37(18-18.5)	B-38(4.5-5)	B-38(12-12.5)	B-39(5.5-6)	B-39(15.5-16)
Lab Sample ID		212481-018	212481-020	212481-006	212481-008	212571-012	212655-011
Dilution		1	1	1	1	1	1
Date Sampled		3/29/2006	3/29/2006	3/27/2006	3/27/2006	4/5/2006	4/13/2006
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound							
Chloromethane	10,000	65 U	60 U	53 U	49 U	79 U	56 U
Vinyl chloride	10,000	100 U	96 U	84 U	78 U	130 U	89 U
Bromomethane	1,000	160 U	140 U	130 U	120 U	190 U	130 U
Chloroethane	NS	100 U	96 U	84 U	78 U	130 U	89 U
Acrolein	NS	1000 U	930 U	820 U	760 U	1200 U	870 U
1 1-Dichloroethene	10,000	90 U	84 U	74 U	68 U	110 U	78 U
Acetone	100,000	180 UB	170 UB	150 U	140 U	250 JB	610 JB
Methylene chloride	1,000	140 JB	89 JB	94 JB	180 JB	150 JB	730 B
trans-1 2-Dichloroethene	50,000	65 U	60 U	53 U	49 U	79 U	56 U
Acrylonitrile	1,000	210 U	190 U	170 U	160 U	250 U	180 U
1 1-Dichloroethane	10,000	78 U	72 U	63 U	59 U	95 U	67 U
cis-1 2-Dichloroethene	1,000	78 U	72 U	63 U	59 U	95 U	67 U
2-Butanone (MEK)	50,000	160 U	140 U	130 U	120 U	190 U	130 U
Chloroform	1,000	90 U	84 U	74 U	68 U	110 U	78 U
1 1 1-Trichloroethane	50,000	52 U	48 U	42 U	39 U	64 U	45 U
Carbon tetrachloride	1,000	130 U	120 U	110 U	98 U	160 U	110 U
Benzene	1,000	52 U	48 U	73 J	39 U	64 U	45 U
1 2-Dichloroethane	1,000	78 U	72 U	63 U	59 U	95 U	67 U
Trichloroethene	1,000	90 U	84 U	74 U	68 U	110 U	78 U
1 2-Dichloropropane	10,000	120 U	110 U	95 U	88 U	140 U	100 U
Bromodichloromethane	1,000	52 U	48 U	42 U	39 U	64 U	45 U
2-Chloroethylvinylether	NS	78 U	72 U	63 U	59 U	95 U	67 U
cis-1 3-Dichloropropene	1,000	65 U	60 U	53 U	49 U	79 U	56 U
4-Methyl-2-pentanone (MIBK)	50,000	90 U	84 U	74 U	68 U	110 U	78 U
Toluene	500,000	39 U	36 U	32 U	29 U	48 U	33 U
trans-1 3-Dichloropropene	1,000	39 U	36 U	32 U	29 U	48 U	33 U
1 1 2-Trichloroethane	1,000	78 U	72 U	63 U	59 U	95 U	67 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-37(6-6.5)** **212481-018** **1** **3/29/2006** **µg/Kg**	**B-37(18-18.5)** **212481-020** **1** **3/29/2006** **µg/Kg**	**B-38(4.5-5)** **212481-006** **1** **3/27/2006** **µg/Kg**	**B-38(12-12.5)** **212481-008** **1** **3/27/2006** **µg/Kg**	**B-39(5.5-6)** **212571-012** **1** **4/5/2006** **µg/Kg**	**B-39(15.5-16)** **212655-011** **1** **4/13/2006** **µg/Kg**
Tetrachloroethene	1,000	65 U	60 U	53 U	49 U	79 U	56 U
Dibromochloromethane	1,000	65 U	60 U	53 U	49 U	79 U	56 U
Chlorobenzene	1,000	52 U	48 U	42 U	39 U	64 U	45 U
1 1 1 2-Tetrachloroethane	1,000	90 U	84 U	74 U	68 U	110 U	78 U
Ethylbenzene	100,000	130 U	120 U	110 U	98 U	160 U	110 U
Styrene	100,000	65 U	60 U	53 U	49 U	79 U	56 U
Bromoform	1,000	100 U	96 U	84 U	78 U	130 U	89 U
1 1 2 2-Tetrachloroethane	1,000	52 U	48 U	42 U	39 U	64 U	45 U
Xylenes (total)	67,000	130 U	120 U	110 U	98 U	160 U	110 U
1 3-Dichlorobenzene	10,000,000	78 U	72 U	63 U	59 U	95 U	67 U
1 4-Dichlorobenzene	10,000,000	65 U	60 U	53 U	49 U	79 U	56 U
1 2-Dichlorobenzene	10,000,000	78 U	72 U	63 U	59 U	95 U	67 U
1 2 4-Trichlorobenzene	100,000	120 U	110 U	95 U	88 U	140 U	100 U
Naphthalene	4,200,000	65 U	60 U	53 U	49 U	91 J	56 U
Total VOCs	1,000,000	320	259	167	180	491	1340

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-40(5-5.5) 212499-011 1 3/30/2006 µg/Kg	B-40(15-15.5) 212499-013 1 3/30/2006 µg/Kg	B-40(26-26.5) 212499-015 1 3/30/2006 µg/Kg	B-41(5-5.5) 212499-006 5 3/30/2006 µg/Kg	B-41(15-15.5) 212499-009 1 3/30/2006 µg/Kg
Chloromethane	10,000	57 U	55 U	61 U	280 U	58 U
Vinyl chloride	10,000	91 U	88 U	97 U	450 U	92 U
Bromomethane	1,000	140 U	130 U	150 U	670 U	140 U
Chloroethane	NS	91 U	88 U	97 U	450 U	92 U
Acrolein	NS	880 U	860 U	950 U	4400 U	900 U
1 1-Dichloroethene	10,000	79 U	77 U	85 U	390 U	81 U
Acetone	100,000	500 JB	370 JB	480 JB	780 U	910 JB
Methylene chloride	1,000	310 JB	270 JB	330 JB	470 JB	440 JB
trans-1 2-Dichloroethene	50,000	57 U	55 U	61 U	280 U	58 U
Acrylonitrile	1,000	180 U	180 U	190 U	890 U	180 U
1 1-Dichloroethane	10,000	68 U	66 U	73 U	340 U	69 U
cis-1 2-Dichloroethene	1,000	68 U	66 U	73 U	340 U	69 U
2-Butanone (MEK)	50,000	140 U	130 U	150 U	670 U	140 U
Chloroform	1,000	79 U	77 U	85 U	390 U	81 U
1 1 1-Trichloroethane	50,000	45 U	44 U	48 U	220 U	46 U
Carbon tetrachloride	1,000	110 U	110 U	120 U	560 U	120 U
Benzene	1,000	45 U	44 U	48 U	220 U	46 U
1 2-Dichloroethane	1,000	68 U	66 U	73 U	340 U	69 U
Trichloroethene	1,000	79 U	77 U	85 U	390 U	81 U
1 2-Dichloropropane	10,000	100 U	99 U	110 U	500 U	100 U
Bromodichloromethane	1,000	45 U	44 U	48 U	220 U	46 U
2-Chloroethylvinylether	NS	68 U	66 U	73 U	340 U	69 U
cis-1 3-Dichloropropene	1,000	57 U	55 U	61 U	280 U	58 U
4-Methyl-2-pentanone (MIBK)	50,000	79 U	77 U	85 U	390 U	81 U
Toluene	500,000	74 J	33 U	36 U	350 J	35 U
trans-1 3-Dichloropropene	1,000	34 U	33 U	36 U	170 U	35 U
1 1 2-Trichloroethane	1,000	68 U	66 U	73 U	340 U	69 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-40(5-5.5)** **212499-011** **1** **3/30/2006** **µg/Kg**	**B-40(15-15.5)** **212499-013** **1** **3/30/2006** **µg/Kg**	**B-40(26-26.5)** **212499-015** **1** **3/30/2006** **µg/Kg**	**B-41(5-5.5)** **212499-006** **5** **3/30/2006** **µg/Kg**	**B-41(15-15.5)** **212499-009** **1** **3/30/2006** **µg/Kg**
Tetrachloroethene	1,000	57 U	55 U	61 U	280 U	58 U
Dibromochloromethane	1,000	57 U	55 U	61 U	280 U	58 U
Chlorobenzene	1,000	45 U	44 U	48 U	220 U	46 U
1 1 1 2-Tetrachloroethane	1,000	79 U	77 U	85 U	390 U	81 U
Ethylbenzene	100,000	110 U	110 U	120 U	560 U	120 U
Styrene	100,000	57 U	55 U	61 U	280 U	58 U
Bromoform	1,000	91 U	88 U	97 U	450 U	92 U
1 1 2 2-Tetrachloroethane	1,000	45 U	44 U	48 U	220 U	46 U
Xylenes (total)	67,000	110 U	110 U	120 U	560 U	120 U
1 3-Dichlorobenzene	10,000,000	68 U	66 U	73 U	340 U	69 U
1 4-Dichlorobenzene	10,000,000	57 U	55 U	61 U	280 U	58 U
1 2-Dichlorobenzene	10,000,000	68 U	66 U	73 U	340 U	69 U
1 2 4-Trichlorobenzene	100,000	100 U	99 U	110 U	500 U	100 U
Naphthalene	4,200,000	57 U	420 J	61 U	280 U	58 U
Total VOCs	1,000,000	884	1060	810	820	1350

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-41(25-25.5)**	**B-42(6-6.5)**	**B-42(18-18.5)**	**B-44(17.5-18)**	**B-43(19-19.5)**	**B-45(12-12.5)**	**B-46(13-13.5)**
Lab Sample ID		**212499-010**	**212499-002**	**212499-004**	**212550-001**	**212499-018**	**212571-001**	**212571-003**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/30/2006**	**3/29/2006**	**3/29/2006**	**4/3/2006**	**4/3/2006**	**4/3/2006**	**4/4/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
Chloromethane	10,000	61 U	57 U	56 U	55 U	53 U	52 U	48 U
Vinyl chloride	10,000	97 U	92 U	89 U	88 U	86 U	83 U	76 U
Bromomethane	1,000	150 U	140 U	130 U	130 U	130 U	120 U	110 U
Chloroethane	NS	97 U	92 U	89 U	88 U	86 U	83 U	76 U
Acrolein	NS	950 U	900 U	870 U	N/A	830 U	810 U	750 U
1 1-Dichloroethene	10,000	85 U	80 U	78 U	N/A	75 U	73 U	67 U
Acetone	100,000	480 JB	1000 JB	910 JB	290 JB	150 U	150 UB	160 JB
Methylene chloride	1,000	320 JB	510 JB	1000 B	90 JB	120 JB	93 JB	200 JB
trans-1 2-Dichloroethene	50,000	61 U	57 U	56 U	55 U	53 U	52 U	48 U
Acrylonitrile	1,000	190 U	180 U	180 U	N/A	170 U	170 U	150 U
1 1-Dichloroethane	10,000	73 U	69 U	67 U	66 U	64 U	62 U	57 U
cis-1 2-Dichloroethene	1,000	73 U	69 U	67 U	66 U	64 U	62 U	57 U
2-Butanone (MEK)	50,000	150 U	140 U	130 U	130 U	130 U	120 U	110 U
Chloroform	1,000	85 U	80 U	78 U	77 U	75 U	73 U	67 U
1 1 1-Trichloroethane	50,000	49 U	46 U	45 U	44 U	43 U	41 U	38 U
Carbon tetrachloride	1,000	120 U	110 U	110 U	110 U	110 U	100 U	96 U
Benzene	1,000	49 U	46 U	45 U	90 J	43 U	41 U	38 U
1 2-Dichloroethane	1,000	73 U	69 U	67 U	66 U	64 U	62 U	57 U
Trichloroethene	1,000	85 U	80 U	78 U	77 U	75 U	73 U	67 U
1 2-Dichloropropane	10,000	110 U	100 U	100 U	99 U	96 U	93 U	86 U
Bromodichloromethane	1,000	49 U	46 U	45 U	44 U	43 U	41 U	38 U
2-Chloroethylvinylether	NS	73 U	69 U	67 U	N/A	64 U	62 U	57 U
cis-1 3-Dichloropropene	1,000	61 U	57 U	56 U	55 U	53 U	52 U	48 U
4-Methyl-2-pentanone (MIBK)	50,000	85 U	80 U	78 U	77 U	75 U	73 U	67 U
Toluene	500,000	36 U	34 U	33 U	33 U	32 U	31 U	29 U
trans-1 3-Dichloropropene	1,000	36 U	34 U	33 U	33 U	32 U	31 U	29 U
1 1 2-Trichloroethane	1,000	73 U	69 U	67 U	66 U	64 U	62 U	57 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-41(25-25.5)**	**B-42(6-6.5)**	**B-42(18-18.5)**	**B-44(17.5-18)**	**B-43(19-19.5)**	**B-45(12-12.5)**	**B-46(13-13.5)**
Lab Sample ID		**212499-010**	**212499-002**	**212499-004**	**212550-001**	**212499-018**	**212571-001**	**212571-003**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/30/2006**	**3/29/2006**	**3/29/2006**	**4/3/2006**	**4/3/2006**	**4/3/2006**	**4/4/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
Tetrachloroethene	1,000	61 U	57 U	56 U	55 U	53 U	52 U	48 U
Dibromochloromethane	1,000	61 U	57 U	56 U	55 U	53 U	52 U	48 U
Chlorobenzene	1,000	49 U	46 U	45 U	44 U	43 U	41 U	38 U
1 1 1 2-Tetrachloroethane	1,000	85 U	80 U	78 U	N/A	75 U	73 U	67 U
Ethylbenzene	100,000	120 U	110 U	110 U	160 J	110 U	100 U	96 U
Styrene	100,000	61 U	57 U	56 U	55 U	53 U	52 U	48 U
Bromoform	1,000	97 U	92 U	89 U	88 U	86 U	83 U	76 U
1 1 2 2-Tetrachloroethane	1,000	49 U	46 U	45 U	44 U	43 U	41 U	38 U
Xylenes (total)	67,000	120 U	130 J	110 U	560	110 U	100 U	96 U
1 3-Dichlorobenzene	10,000,000	73 U	69 U	67 U	N/A	64 U	62 U	57 U
1 4-Dichlorobenzene	10,000,000	61 U	57 U	56 U	N/A	53 U	52 U	48 U
1 2-Dichlorobenzene	10,000,000	73 U	69 U	67 U	N/A	64 U	62 U	57 U
1 2 4-Trichlorobenzene	100,000	110 U	100 U	100 U	N/A	96 U	93 U	86 U
Naphthalene	4,200,000	61 U	600	56 U	N/A	53 U	150 J	48 U
Total VOCs	1,000,000	800	2240	1910	1190	120	393	360

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-47(3.5-4) 212603-007 1 4/10/2006 µg/Kg	B-48(5-5.5) 212571-016 1 4/6/2006 µg/Kg	B-49(5-5.5) 212571-010 1 4/5/2006 µg/Kg	B-50(3.5-4) 212571-017 1 4/6/2006 µg/Kg	B-51(6.5-7) 212571-006 1 4/4/2006 µg/Kg	B-51(17-17.5) 212571-009 1 4/4/2006 µg/Kg	B-52 (6-18) Missing data for this interval however it is being sent out as petroleum waste.
Chloromethane	10,000	54 U	65 U	56 U	63 U	80 U	57 U	
Vinyl chloride	10,000	86 U	100 U	90 U	100 U	130 U	92 U	
Bromomethane	1,000	130 U	160 U	130 U	150 U	190 U	140 U	
Chloroethane	NS	86 U	100 U	90 U	100 U	130 U	92 U	
Acrolein	NS	840 U	1000 U	870 U	990 U	1200 U	900 U	
1 1-Dichloroethene	10,000	75 U	91 U	79 U	89 U	110 U	80 U	
Acetone	100,000	220 JB	310 JB	320 JB	200 JB	460 JB	200 JB	
Methylene chloride	1,000	120 JB	130 JB	110 JB	120 JB	180 JB	110 JB	
trans-1 2-Dichloroethene	50,000	54 U	65 U	56 U	63 U	80 U	57 U	
Acrylonitrile	1,000	170 U	210 U	180 U	200 U	260 U	180 U	
1 1-Dichloroethane	10,000	64 U	78 U	67 U	76 U	96 U	69 U	
cis-1 2-Dichloroethene	1,000	64 U	78 U	67 U	76 U	96 U	69 U	
2-Butanone (MEK)	50,000	130 U	160 U	130 U	150 U	190 U	140 U	
Chloroform	1,000	75 U	91 U	79 U	89 U	110 U	80 U	
1 1 1-Trichloroethane	50,000	43 U	52 U	45 U	51 U	64 U	46 U	
Carbon tetrachloride	1,000	110 U	130 U	110 U	130 U	160 U	110 U	
Benzene	1,000	43 U	52 U	45 U	51 U	64 U	46 U	
1 2-Dichloroethane	1,000	64 U	78 U	67 U	76 U	96 U	69 U	
Trichloroethene	1,000	75 U	91 U	79 U	89 U	110 U	80 U	
1 2-Dichloropropane	10,000	97 U	120 U	100 U	110 U	140 U	100 U	
Bromodichloromethane	1,000	43 U	52 U	45 U	51 U	64 U	46 U	
2-Chloroethylvinylether	NS	64 U	78 U	67 U	76 U	96 U	69 U	
cis-1 3-Dichloropropene	1,000	54 U	65 U	56 U	63 U	80 U	57 U	
4-Methyl-2-pentanone (MIBK)	50,000	75 U	91 U	79 U	89 U	110 U	80 U	
Toluene	500,000	32 U	730	210 JH	87 J	310 J	51 J	
trans-1 3-Dichloropropene	1,000	32 U	39 U	34 U	38 U	48 U	34 U	
1 1 2-Trichloroethane	1,000	64 U	78 U	67 U	76 U	96 U	69 U	

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-47(3.5-4)**	**B-48(5-5.5)**	**B-49(5-5.5)**	**B-50(3.5-4)**	**B-51(6.5-7)**	**B-51(17-17.5)**	**B-52 (6-18)**
Lab Sample ID		**212603-007**	**212571-016**	**212571-010**	**212571-017**	**212571-006**	**212571-009**	
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**Missing data for this interval however it is being sent out as petroleum waste.**
Date Sampled		**4/10/2006**	**4/6/2006**	**4/5/2006**	**4/6/2006**	**4/4/2006**	**4/4/2006**	
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	
Compound								
Tetrachloroethene	1,000	54 U	65 U	56 U	63 U	80 U	57 U	
Dibromochloromethane	1,000	54 U	65 U	56 U	63 U	80 U	57 U	
Chlorobenzene	1,000	43 U	52 U	45 U	51 U	64 U	46 U	
1 1 1 2-Tetrachloroethane	1,000	75 U	91 U	79 U	89 U	110 U	80 U	
Ethylbenzene	100,000	110 U	130 U	110 U	130 U	160 U	110 U	
Styrene	100,000	54 U	65 U	56 U	63 U	80 U	57 U	
Bromoform	1,000	86 U	100 U	90 U	100 U	130 U	92 U	
1 1 2 2-Tetrachloroethane	1,000	43 U	52 U	45 U	51 U	64 U	46 U	
Xylenes (total)	67,000	110 U	220 J	110 U	130 U	160 U	110 U	
1 3-Dichlorobenzene	10,000,000	64 U	78 U	67 U	76 U	96 U	69 U	
1 4-Dichlorobenzene	10,000,000	54 U	65 U	56 U	63 U	320 J	57 U	
1 2-Dichlorobenzene	10,000,000	64 U	78 U	67 U	76 U	96 U	69 U	
1 2 4-Trichlorobenzene	100,000	97 U	120 U	100 U	110 U	140 U	100 U	
Naphthalene	4,200,000	54 U	260 J	480 J	480 J	4500	140 J	
Total VOCs	1,000,000	340	1650	1120	887	5770	501	

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-53(3-3.5)**	**B-54(3-3.5)**	**B-55(6-6.5)**	**B-55(18-18.5)**
Lab Sample ID		**212655-001**	**212655-003**	**212571-019**	**212603-001**
Dilution		**1**	**1**	**1**	**1**
Date Sampled		**4/12/2006**	**4/13/2006**	**4/7/2006**	**4/7/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound					
Chloromethane	10,000	67 U	54 U	60 U	49 U
Vinyl chloride	10,000	110 U	86 U	97 U	78 U
Bromomethane	1,000	160 U	130 U	140 U	120 U
Chloroethane	NS	110 U	86 U	97 U	78 U
Acrolein	NS	1000 U	840 U	940 U	760 U
1 1-Dichloroethene	10,000	93 U	75 U	85 U	68 U
Acetone	100,000	230 JB	150 JB	180 JB	360 JB
Methylene chloride	1,000	150 JB	140 JB	180 JB	200 JB
trans-1 2-Dichloroethene	50,000	67 U	54 U	60 U	49 U
Acrylonitrile	1,000	210 U	170 U	190 U	160 U
1 1-Dichloroethane	10,000	80 U	64 U	72 U	59 U
cis-1 2-Dichloroethene	1,000	80 U	64 U	72 U	59 U
2-Butanone (MEK)	50,000	160 U	130 U	140 U	120 U
Chloroform	1,000	93 U	75 U	85 U	68 U
1 1 1-Trichloroethane	50,000	53 U	43 U	48 U	39 U
Carbon tetrachloride	1,000	130 U	110 U	120 U	98 U
Benzene	1,000	53 U	43 U	48 U	39 U
1 2-Dichloroethane	1,000	80 U	64 U	72 U	59 U
Trichloroethene	1,000	270 J	75 U	85 U	68 U
1 2-Dichloropropane	10,000	120 U	97 U	110 U	88 U
Bromodichloromethane	1,000	53 U	43 U	48 U	39 U
2-Chloroethylvinylether	NS	80 U	64 U	72 U	59 U
cis-1 3-Dichloropropene	1,000	67 U	54 U	60 U	49 U
4-Methyl-2-pentanone (MIBK)	50,000	93 U	75 U	85 U	68 U
Toluene	500,000	40 U	32 U	36 U	29 U
trans-1 3-Dichloropropene	1,000	40 U	32 U	36 U	29 U
1 1 2-Trichloroethane	1,000	80 U	64 U	72 U	59 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61^ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-53(3-3.5)** **212655-001** **1** **4/12/2006** **µg/Kg**	**B-54(3-3.5)** **212655-003** **1** **4/13/2006** **µg/Kg**	**B-55(6-6.5)** **212571-019** **1** **4/7/2006** **µg/Kg**	**B-55(18-18.5)** **212603-001** **1** **4/7/2006** **µg/Kg**
Tetrachloroethene	1,000	67 U	54 U	60 U	49 U
Dibromochloromethane	1,000	67 U	54 U	60 U	49 U
Chlorobenzene	1,000	53 U	43 U	48 U	39 U
1 1 1 2-Tetrachloroethane	1,000	93 U	75 U	85 U	68 U
Ethylbenzene	100,000	130 U	110 U	120 U	98 U
Styrene	100,000	67 U	54 U	60 U	49 U
Bromoform	1,000	110 U	86 U	97 U	78 U
1 1 2 2-Tetrachloroethane	1,000	53 U	43 U	48 U	39 U
Xylenes (total)	67,000	130 U	110 U	120 U	98 U
1 3-Dichlorobenzene	10,000,000	80 U	64 U	72 U	59 U
1 4-Dichlorobenzene	10,000,000	67 U	54 U	60 U	49 U
1 2-Dichlorobenzene	10,000,000	80 U	64 U	72 U	59 U
1 2 4-Trichlorobenzene	100,000	120 U	97 U	110 U	88 U
Naphthalene	4,200,000	67 U	54 U	60 U	49 U
Total VOCs	1,000,000	650	290	360	560

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-56(6-6.5)** **212603-004** **1** **4/7/2006** **µg/Kg**	**B-56(18-18.5)** **212603-005** **1** **4/7/2006** **µg/Kg**
Chloromethane	10,000	47 U	52 U
Vinyl chloride	10,000	75 U	83 U
Bromomethane	1,000	110 U	130 U
Chloroethane	NS	75 U	83 U
Acrolein	NS	730 U	810 U
1 1-Dichloroethene	10,000	66 U	73 U
Acetone	100,000	170 JB	200 JB
Methylene chloride	1,000	160 JB	150 JB
trans-1 2-Dichloroethene	50,000	47 U	52 U
Acrylonitrile	1,000	150 U	170 U
1 1-Dichloroethane	10,000	56 U	63 U
cis-1 2-Dichloroethene	1,000	56 U	63 U
2-Butanone (MEK)	50,000	110 U	130 U
Chloroform	1,000	66 U	73 U
1 1 1-Trichloroethane	50,000	38 U	42 U
Carbon tetrachloride	1,000	94 U	100 U
Benzene	1,000	38 U	42 U
1 2-Dichloroethane	1,000	56 U	63 U
Trichloroethene	1,000	66 U	73 U
1 2-Dichloropropane	10,000	85 U	94 U
Bromodichloromethane	1,000	38 U	42 U
2-Chloroethylvinylether	NS	56 U	63 U
cis-1 3-Dichloropropene	1,000	47 U	52 U
4-Methyl-2-pentanone (MIBK)	50,000	66 U	73 U
Toluene	500,000	28 U	31 U
trans-1 3-Dichloropropene	1,000	28 U	31 U
1 1 2-Trichloroethane	1,000	56 U	63 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-56(6-6.5)** **212603-004** **1** **4/7/2006** **µg/Kg**	**B-56(18-18.5)** **212603-005** **1** **4/7/2006** **µg/Kg**
Tetrachloroethene	1,000	47 U	52 U
Dibromochloromethane	1,000	47 U	52 U
Chlorobenzene	1,000	38 U	42 U
1 1 1 2-Tetrachloroethane	1,000	66 U	73 U
Ethylbenzene	100,000	94 U	100 U
Styrene	100,000	47 U	52 U
Bromoform	1,000	75 U	83 U
1 1 2 2-Tetrachloroethane	1,000	38 U	42 U
Xylenes (total)	67,000	94 U	100 U
1 3-Dichlorobenzene	10,000,000	56 U	63 U
1 4-Dichlorobenzene	10,000,000	47 U	52 U
1 2-Dichlorobenzene	10,000,000	56 U	63 U
1 2 4-Trichlorobenzene	100,000	85 U	94 U
Naphthalene	4,200,000	47 U	52 U
Total VOCs	1,000,000	330	350

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1 - The Beneficial Use Acceptance Criteria, based on the analytical criteria provided by the Former Allied Signal Site, Elizabeth, NJ.

µg/Kg - micrograms per kilogram = parts per billion (ppb)

U - Analyte was not detected at or above the reporting limit.

H - concentration was calculated using manual alternate peak selection.

J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).

NS - No standard

N/A - Not Analyzed

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-20(0-6)**	**B-21(0-6)**	**B-22(0-6)**	**B-23(0-6)**	**B-24(0-6)**	**B-24(6-12)**	**B-25(0-6)**
Lab Sample ID		**212603-014**	**212603-012**	**212603-010**	**212655-006**	**212655-008**	**212655-010**	**212603-016**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**	**4/13/2006**	**4/12/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
n-Nitrosodimethylamine	NS	54 U	55 U	55 U	55 U	55 U	57 U	54 U
Phenol	10,000,000	110 U	110 U	110 U	110 U	110 U	110 U	110 U
Bis(2-chloroethyl)ether	3,000	50 U	50 U	50 U	50 U	50 U	52 U	50 U
1 3-Dichlorobenzene	10,000,000	57 U	57 U	57 U	57 U	57 U	59 U	57 U
1 4-Dichlorobenzene	10,000,000	59 U	59 U	59 U	59 U	59 U	61 U	59 U
1 2-Dichlorobenzene	10,000,000	62 U	63 U	63 U	63 U	63 U	65 U	62 U
Benzyl alcohol	50,000	70 U	71 U	71 U	70 U	71 U	73 U	70 U
2 2-oxybis (1-chloropropane)	NS	52 U	53 U	53 U	53 U	53 U	54 U	52 U
n-Nitroso-di-n-propylamine	1,000	50 U	50 U	50 U	50 U	50 U	52 U	50 U
Hexachloroethane	100,000	65 U	66 U	66 U	66 U	66 U	68 U	65 U
4-Methylphenol	10,000,000	200 U	200 U	200 U	200 U	200 U	210 U	200 U
2-Chlorophenol	5,200,000	95 U	96 U	96 U	96 U	96 U	100 U	95 U
Nitrobenzene	520,000	44 U	45 U	45 U	45 U	45 U	46 U	44 U
Bis(2-chloroethoxy)methane	NS	63 U	64 U	64 U	64 U	64 U	66 U	63 U
1 2 4-Trichlorobenzene	100,000	62 U	63 U	63 U	63 U	63 U	65 U	62 U
Isophorone	10,000,000	67 U	67 U	67 U	67 U	67 U	70 U	66 U
2 4-Dimethylphenol	10,000,000	190 U	190 U	190 U	190 U	190 U	200 U	190 U
Hexachlorobutadiene	21,000	75 U	76 U	76 U	76 U	76 U	79 U	75 U
Naphthalene	4,200,000	63 U	64 U	120 J	97 J	220 J	110 J	140 J
2 4-Dichlorophenol	3,100,000	120 U	120 U	120 U	120 U	120 U	130 U	120 U
4-Chloroaniline	4,200,000	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2 4 6-Trichlorophenol	270,000	94 U	95 U	95 U	95 U	95 U	98 U	94 U
2 4 5-Trichlorophenol	10,000,000	130 U	140 U	140 U	140 U	140 U	140 U	130 U
Hexachlorocyclopentadiene	7,300,000	280 U	280 U	280 U	280 U	280 U	290 U	270 U
2-Chloronaphthalene	NS	54 U	55 U	55 U	55 U	55 U	57 U	54 U
4-Chloro-3-methylphenol	10,000,000	130 U	130 U	130 U	130 U	130 U	130 U	130 U
2 6-Dinitrotoluene	4,000	68 U	68 U	68 U	68 U	68 U	71 U	68 U
2-Nitrophenol	NS	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Dimethyl phthalate	10,000,000	57 U	57 U	430	57 U	57 U	59 U	57 U
2 4-Dinitrophenol	2,100,000	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Acenaphthylene	10,000,000	140 J	120 J	160 J	140 J	130 J	180 J	260 J

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria^1**	**B-20(0-6)**	**B-21(0-6)**	**B-22(0-6)**	**B-23(0-6)**	**B-24(0-6)**	**B-24(6-12)**	**B-25(0-6)**
Lab Sample ID		**212603-014**	**212603-012**	**212603-010**	**212655-006**	**212655-008**	**212655-010**	**212603-016**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**	**4/13/2006**	**4/12/2006**
Units	**(µg/Kg)**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
2 4-Dinitrotoluene	4,000	67 U	67 U	67 U	67 U	67 U	70 U	66 U
Acenaphthene	10,000,000	66 J	62 U	100 J	62 U	210 J	130 J	75 J
4-Nitrophenol	NS	160 U	160 U	160 U	160 U	160 U	160 U	160 U
Fluorene	10,000,000	65 J	52 J	110 J	48 U	190 J	150 J	57 J
1 2-Diphenylhydrazine	NS	37 U	37 U	37 U	37 U	37 U	38 U	37 U
4-Bromophenyl phenyl ether	NS	57 U	57 U	57 U	57 U	57 U	59 U	57 U
Hexachlorobenzene	100,000	54 U	55 U	55 U	55 U	55 U	57 U	54 U
Diethyl phthalate	10,000,000	54 U	55 U	55 U	55 U	55 U	57 U	54 U
4-Chlorophenyl phenyl ether	NS	51 U	52 U	52 U	51 U	52 U	53 U	51 U
Pentachlorophenol	24,000	320 U	320 U	320 U	320 U	320 U	330 U	320 U
n-Nitrosodiphenylamine	600,000	55 U	56 U	56 U	56 U	56 U	58 U	55 U
4 6-Dinitro-2-methylphenol	NS	270 U	270 U	270 U	270 U	270 U	280 U	260 U
Phenanthrene	NS	1100	780	1500	840	2500	1800	1200
Anthracene	10,000,000	230 J	180 J	390	210 J	550	430	340 J
Di-n-butyl phthalate	10,000,000	49 U	49 U	1100	49 U	190 J	51 U	470
Benzidine	NS	43 U	43 U	43 U	43 U	43 U	45 U	43 U
Fluoranthene	10,000,000	1500	1300	2300	1400	2900	1900	2300
Pyrene	10,000,000	1400	1200	2000	1200	2500	1700	1800
Butyl benzyl phthalate	10,000,000	48 U	48 U	810	48 U	48 U	50 U	48 U
Benzo(a)anthracene	13,000	910	810	1400	820	1600	980	1400
Chrysene	40,000	970	860	1600	920	1700	1100	1700
3 3-Dichlorobenzidine	6,000	99 U	100 U	100 U	100 U	100 U	100 U	99 U
Bis(2-ethylhexyl)phthalate	210,000	49 U	49 U	1000	96 J	56 J	51 U	59 J
Di-n-octyl phthalate	10,000,000	39 U	39 U	39 U	39 U	39 U	41 U	39 U
Benzo(b)fluoranthene	14,000	670	730	1400	710	1300	730	1300
Benzo(k)fluoranthene	6,000	690	570	1000 H	590	1200	690	1200 H
Benzo(a)pyrene	8,000	840	810	1400	720	1400	860	1300
Indeno(1 2 3-cd)pyrene	4,000	460	460	840	370	750	610	720
Dibenzo(a h)anthracene	1,000	180 J	170 J	320 J	160 J	290 J	200 J	270 J
Benzo(ghi)perylene	NS	490	550	900	410	810	720	780
Total SVOCs		9711	8592	18880	8683	18496	12290	15371

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1]** **(µg/Kg)**	**B-25(6-12)** **212603-018** **1** **4/12/2006** **µg/Kg**	**B-25(12-18)** **212603-020** **1** **4/12/2006** **µg/Kg**	**B-26(6-20)** **212481-003** **1** **3/28/2006** **µg/Kg**	**B-26(20-26)** **212481-004** **1** **3/28/2006** **µg/Kg**	**B-27(0-10)** **212429-016** **1** **3/23/2006** **µg/Kg**	**B-27(10-20)** **212429-018** **1** **3/23/2006** **µg/Kg**
n-Nitrosodimethylamine	NS	55 U	51 U	57 U	55 U	55 U	58 U
Phenol	10,000,000	110 U	100 U	110 U	110 U	110 U	110 U
Bis(2-chloroethyl)ether	3,000	51 U	47 U	52 U	51 U	50 U	53 U
1 3-Dichlorobenzene	10,000,000	58 U	53 U	59 U	58 U	57 U	60 U
1 4-Dichlorobenzene	10,000,000	60 U	56 U	62 U	60 U	59 U	62 U
1 2-Dichlorobenzene	10,000,000	63 U	59 U	65 U	63 U	62 U	66 U
Benzyl alcohol	50,000	71 U	66 U	73 U*	71 U*	70 U	74 U
2 2-oxybis (1-chloropropane)	NS	53 U	49 U	55 U	53 U	52 U	55 U
n-Nitroso-di-n-propylamine	1,000	51 U	47 U	52 U	51 U	50 U	53 U
Hexachloroethane	100,000	67 U	62 U	69 U	67 U	66 U	70 U
4-Methylphenol	10,000,000	200 U	190 U	210 U	200 U	200 U	210 U
2-Chlorophenol	5,200,000	97 U	90 U	100 U	97 U	96 U	100 U
Nitrobenzene	520,000	45 U	42 U	46 U	45 U	45 U	47 U
Bis(2-chloroethoxy)methane	NS	64 U	60 U	66 U	64 U	64 U	67 U
1 2 4-Trichlorobenzene	100,000	63 U	59 U	65 U	63 U	62 U	66 U
Isophorone	10,000,000	68 U	63 U	70 U	68 U	67 U	71 U
2 4-Dimethylphenol	10,000,000	190 U	180 U	200 U	190 U	190 U	200 U
Hexachlorobutadiene	21,000	77 U	71 U	79 U	77 U	76 U	80 U
Naphthalene	4,200,000	100 J	60 U	66 U	64 U	1000	67 U
2 4-Dichlorophenol	3,100,000	120 U	110 U	130 U	120 U	120 U	130 U
4-Chloroaniline	4,200,000	120 U	110 U	120 U	120 U	120 U	130 U
2 4 6-Trichlorophenol	270,000	96 U	89 U	99 U	96 U	95 U	100 U
2 4 5-Trichlorophenol	10,000,000	140 U	130 U	140 U	140 U	130 U	140 U
Hexachlorocyclopentadiene	7,300,000	280 U	260 U	290 U	280 U	280 U	290 U
2-Chloronaphthalene	NS	55 U	51 U	57 U	55 U	55 U	58 U
4-Chloro-3-methylphenol	10,000,000	130 U	120 U	130 U	130 U	130 U	130 U
2 6-Dinitrotoluene	4,000	69 U	64 U	71 U	69 U	68 U	72 U
2-Nitrophenol	NS	130 U	120 U	130 U	130 U	130 U	140 U
Dimethyl phthalate	10,000,000	58 U	53 U	59 U	58 U	57 U	60 U
2 4-Dinitrophenol	2,100,000	130 U	120 U	130 U*	130 U*	130 U	140 U
Acenaphthylene	10,000,000	120 J	43 U	48 U	46 U	1700	69 J

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1]	B-25(6-12)	B-25(12-18)	B-26(6-20)	B-26(20-26)	B-27(0-10)	B-27(10-20)
Lab Sample ID		212603-018	212603-020	212481-003	212481-004	212429-016	212429-018
Dilution		1	1	1	1	1	1
Date Sampled		4/12/2006	4/12/2006	3/28/2006	3/28/2006	3/23/2006	3/23/2006
Units	(μg/Kg)	μg/Kg	μg/Kg	μg/Kg	μg/Kg	μg/Kg	μg/Kg
Compound							
2 4-Dinitrotoluene	4,000	68 U	63 U	70 U	68 U	67 U	71 U
Acenaphthene	10,000,000	130 J	58 U	64 U	62 U	95 J	65 U
4-Nitrophenol	NS	160 U	150 U	160 U	160 U	160 U	170 U
Fluorene	10,000,000	110 J	45 U	50 U	49 U	190 J	51 U
1 2-Diphenylhydrazine	NS	37 U	35 U	38 U	37 U	37 U	39 U
4-Bromophenyl phenyl ether	NS	58 U	53 U	59 U	58 U	57 U	60 U
Hexachlorobenzene	100,000	55 U	51 U	57 U	55 U	55 U	58 U
Diethyl phthalate	10,000,000	55 U	51 U	57 U	55 U	55 U	58 U
4-Chlorophenyl phenyl ether	NS	52 U	48 U	53 U	52 U	51 U	54 U
Pentachlorophenol	24,000	330 U	300 U	330 U	330 U	320 U	340 U
n-Nitrosodiphenylamine	600,000	57 U	52 U	58 U	56 U	56 U	59 U
4 6-Dinitro-2-methylphenol	NS	270 U	250 U	280 U	270 U	270 U	280 U
Phenanthrene	NS	1500	320 J	130 J	44 U	1100	240 J
Anthracene	10,000,000	290 J	58 U	64 U	62 U	390	67 J
Di-n-butyl phthalate	10,000,000	50 U	46 U	51 U	50 U	880	52 U
Benzidine	NS	44 U	40 U	45 U	43 U	43 U	45 U
Fluoranthene	10,000,000	1900	300 J	120 J	47 U	1600	470
Pyrene	10,000,000	1400	320 J	150 J	52 U	1000	200 J
Butyl benzyl phthalate	10,000,000	82 J	45 U	50 U	49 U	48 U	51 U
Benzo(a)anthracene	13,000	940	130 J	70 J	51 U	860	200 J
Chrysene	40,000	990	150 J	65 J	47 U	1300	210 J
3 3-Dichlorobenzidine	6,000	100 U	93 U	100 U	100 U	99 U	100 U
Bis(2-ethylhexyl)phthalate	210,000	50 U	46 U	51 U	50 U	150 J	52 U
Di-n-octyl phthalate	10,000,000	40 U	37 U	41 U	40 U	54 J	41 U
Benzo(b)fluoranthene	14,000	940	170 J	110 U	110 U	1500 M	250 J
Benzo(k)fluoranthene	6,000	690	65 J	43 U	42 U	560 M	44 U
Benzo(a)pyrene	8,000	880	130 J	50 J	46 U	1100	150 J
Indeno(1 2 3-cd)pyrene	4,000	500	100 J	39 U	38 U	760	78 J
Dibenzo(a h)anthracene	1,000	180 J	39 U	43 U	42 U	220 J	44 U
Benzo(ghi)perylene	NS	520	93 J	55 J	42 U	710	69 J
Total SVOCs		11272	1778	843	201	15169	2003

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1]** **(µg/Kg)**	**B-27(20-30)** **212429-020** **1** **3/23/2006** **µg/Kg**	**B-28(0-15)** **212429-004** **1** **3/22/2006** **µg/Kg**	**B-28(15-30)** **212429-001** **1** **3/22/2006** **µg/Kg**	**B-29(6-16)** **212481-011** **1** **3/28/2006** **µg/Kg**	**B-29(16-24)** **212481-013** **1** **3/28/2006** **µg/Kg**	**B-30(0-10)** **212454-002** **1** **3/24/2006** **µg/Kg**
n-Nitrosodimethylamine	NS	58 U	56 U	55 U	58 U	61 U	110 U
Phenol	10,000,000	110 U	110 U	110 U	120 U	120 U	210 U
Bis(2-chloroethyl)ether	3,000	53 U	51 U	51 U	53 U	56 U	97 U
1 3-Dichlorobenzene	10,000,000	60 U	58 U	57 U	61 U	63 U	110 U
1 4-Dichlorobenzene	10,000,000	62 U	60 U	60 U	63 U	66 U	110 U
1 2-Dichlorobenzene	10,000,000	66 U	63 U	63 U	67 U	69 U	120 U
Benzyl alcohol	50,000	74 U	71 U	71 U	75 U*	78 U*	140 U
2 2-oxybis (1-chloropropane)	NS	55 U	53 U	53 U	56 U	58 U	100 U
n-Nitroso-di-n-propylamine	1,000	53 U	51 U	51 U	53 U	56 U	97 U
Hexachloroethane	100,000	69 U	67 U	66 U	70 U	73 U	130 U
4-Methylphenol	10,000,000	210 U	200 U	200 U	210 U	220 U	390 U
2-Chlorophenol	5,200,000	100 U	98 U	97 U	100 U	110 U	190 U
Nitrobenzene	520,000	47 U	45 U	45 U	48 U	50 U	86 U
Bis(2-chloroethoxy)methane	NS	67 U	65 U	64 U	68 U	71 U	120 U
1 2 4-Trichlorobenzene	100,000	66 U	63 U	63 U	67 U	69 U	120 U
Isophorone	10,000,000	71 U	68 U	68 U	71 U	74 U	130 U
2 4-Dimethylphenol	10,000,000	200 U	200 U	190 U	200 U	210 U	370 U
Hexachlorobutadiene	21,000	80 U	77 U	77 U	81 U	84 U	150 U
Naphthalene	4,200,000	67 U	65 U	64 U	68 U	71 U	300 J
2 4-Dichlorophenol	3,100,000	130 U	120 U	120 U	130 U	140 U	240 U
4-Chloroaniline	4,200,000	130 U	120 U	120 U	130 U	130 U	230 U
2 4 6-Trichlorophenol	270,000	100 U	96 U	96 U	100 U	110 U	180 U
2 4 5-Trichlorophenol	10,000,000	140 U	140 U	140 U	140 U	150 U	260 U
Hexachlorocyclopentadiene	7,300,000	290 U	280 U	280 U	290 U	310 U	540 U
2-Chloronaphthalene	NS	58 U	56 U	55 U	58 U	61 U	110 U
4-Chloro-3-methylphenol	10,000,000	130 U	130 U	130 U	130 U	140 U	240 U
2 6-Dinitrotoluene	4,000	72 U	69 U	69 U	72 U	76 U	130 U
2-Nitrophenol	NS	140 U	130 U	130 U	140 U	140 U	250 U
Dimethyl phthalate	10,000,000	60 U	58 U	57 U	61 U	63 U	110 U
2 4-Dinitrophenol	2,100,000	140 U	130 U	130 U	140 U*	140 U*	250 U
Acenaphthylene	10,000,000	48 U	46 U	46 U	52 J	51 U	320 J

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1]**	**B-27(20-30)**	**B-28(0-15)**	**B-28(15-30)**	**B-29(6-16)**	**B-29(16-24)**	**B-30(0-10)**
Lab Sample ID		**212429-020**	**212429-004**	**212429-001**	**212481-011**	**212481-013**	**212454-002**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/23/2006**	**3/22/2006**	**3/22/2006**	**3/28/2006**	**3/28/2006**	**3/24/2006**
Units	**(µg/Kg)**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
2 4-Dinitrotoluene	4,000	71 U	68 U	68 U	71 U	74 U	130 U
Acenaphthene	10,000,000	65 U	62 U	62 U	65 U	68 U	360 J
4-Nitrophenol	NS	170 U	160 U	160 U	170 U	180 U	310 U
Fluorene	10,000,000	51 U	57 JH	48 U	51 U	53 U	410 J
1 2-Diphenylhydrazine	NS	39 U	37 U	37 U	39 U	41 U	71 U
4-Bromophenyl phenyl ether	NS	60 U	58 U	57 U	61 U	63 U	110 U
Hexachlorobenzene	100,000	58 U	56 U	55 U	58 U	61 U	110 U
Diethyl phthalate	10,000,000	77 J	56 U	55 U	58 U	61 U	110 U
4-Chlorophenyl phenyl ether	NS	54 U	52 U	52 U	55 U	57 U	99 U
Pentachlorophenol	24,000	340 U	330 U	320 U	340 U	360 U	620 U
n-Nitrosodiphenylamine	600,000	59 U	57 U	56 U	59 U	62 U	110 U
4 6-Dinitro-2-methylphenol	NS	280 U	270 U	270 U	280 U	300 U	520 U
Phenanthrene	NS	46 U	650	44 U	600 H	48 U	4700
Anthracene	10,000,000	65 U	130 J	62 U	140 J	68 U	810
Di-n-butyl phthalate	10,000,000	52 U	50 U	50 U	52 U	55 U	98 J
Benzidine	NS	45 U	44 U	43 U	46 U	48 U	83 U
Fluoranthene	10,000,000	49 U	780	48 J	1300	52 U	4500
Pyrene	10,000,000	54 U	830	52 U	2000	57 U	4600
Butyl benzyl phthalate	10,000,000	51 U	49 U	48 U	51 U	53 U	93 U
Benzo(a)anthracene	13,000	53 U	400	51 U	1100	56 U	2200
Chrysene	40,000	49 U	470	47 U	1300	52 U	2500
3 3-Dichlorobenzidine	6,000	100 U	100 U	100 U	110 U	110 U	190 U
Bis(2-ethylhexyl)phthalate	210,000	52 U	50 U	50 U	52 U	55 U	95 U
Di-n-octyl phthalate	10,000,000	41 U	40 U	39 U	42 U	43 U	76 U
Benzo(b)fluoranthene	14,000	110 U	380	100 U	1000 M	120 U	2000
Benzo(k)fluoranthene	6,000	44 U	170 J	42 U	440 M	46 U	660 J
Benzo(a)pyrene	8,000	48 U	330 J	46 U	1000	51 U	1700
Indeno(1 2 3-cd)pyrene	4,000	40 U	220 J	38 U	570	42 U	1400
Dibenzo(a h)anthracene	1,000	44 U	47 J	42 U	190 J	46 U	370 J
Benzo(ghi)perylene	NS	44 U	240 J	42 U	620	46 U	1300
Total SVOCs		77	4704	48	10527	218	28228

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-30(10-18)	B-31(0-16)	B-31(16-25)	B-32(0-14)	B-32(14-20)	B-32(20-30)
Lab Sample ID		212454-004	212429-006	212429-008	212429-010	212429-012	212429-016
Dilution		1	1	1	1	1	1
Date Sampled		3/24/2006	3/22/2006	3/22/2006	3/23/2006	3/23/2006	3/23/2006
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound							
n-Nitrosodimethylamine	NS	59 U	54 U	58 U	55 U	56 U	59 U
Phenol	10,000,000	120 U	110 U	120 U	110 U	110 U	120 U
Bis(2-chloroethyl)ether	3,000	55 U	50 U	54 U	50 U	52 U	54 U
1 3-Dichlorobenzene	10,000,000	62 U	56 U	61 U	57 U	59 U	61 U
1 4-Dichlorobenzene	10,000,000	64 U	58 U	63 U	59 U	61 U	64 U
1 2-Dichlorobenzene	10,000,000	68 U	62 U	67 U	63 U	64 U	67 U
Benzyl alcohol	50,000	76 U	69 U	75 U	70 U	72 U	76 U
2 2-oxybis (1-chloropropane)	NS	57 U	52 U	56 U	53 U	54 U	56 U
n-Nitroso-di-n-propylamine	1,000	55 U	50 U	54 U	50 U	52 U	54 U
Hexachloroethane	100,000	72 U	65 U	70 U	66 U	68 U	71 U
4-Methylphenol	10,000,000	220 U	200 U	210 U	200 U	210 U	210 U
2-Chlorophenol	5,200,000	100 U	95 U	100 U	96 U	99 U	100 U
Nitrobenzene	520,000	49 U	44 U	48 U	45 U	46 U	48 U
Bis(2-chloroethoxy)methane	NS	69 U	63 U	68 U	64 U	66 U	68 U
1 2 4-Trichlorobenzene	100,000	68 U	62 U	67 U	63 U	64 U	67 U
Isophorone	10,000,000	73 U	66 U	71 U	67 U	69 U	72 U
2 4-Dimethylphenol	10,000,000	210 U	190 U	200 U	190 U	200 U	210 U
Hexachlorobutadiene	21,000	83 U	75 U	81 U	76 U	78 U	82 U
Naphthalene	4,200,000	69 U	63 U	68 U	64 U	66 U	68 U
2 4-Dichlorophenol	3,100,000	130 U	120 U	130 U	120 U	130 U	130 U
4-Chloroaniline	4,200,000	130 U	120 U	130 U	120 U	120 U	130 U
2 4 6-Trichlorophenol	270,000	100 U	94 U	100 U	95 U	98 U	100 U
2 4 5-Trichlorophenol	10,000,000	150 U	130 U	140 U	140 U	140 U	150 U
Hexachlorocyclopentadiene	7,300,000	300 U	270 U	300 U	280 U	290 U	300 U
2-Chloronaphthalene	NS	59 U	54 U	58 U	55 U	56 U	59 U
4-Chloro-3-methylphenol	10,000,000	140 U	120 U	130 U	130 U	130 U	140 U
2 6-Dinitrotoluene	4,000	74 U	67 U	73 U	68 U	70 U	73 U
2-Nitrophenol	NS	140 U	130 U	140 U	130 U	130 U	140 U
Dimethyl phthalate	10,000,000	62 U	56 U	61 U	57 U	59 U	61 U
2 4-Dinitrophenol	2,100,000	140 U	130 U	140 U	130 U	130 U	140 U
Acenaphthylene	10,000,000	52 J	45 U	49 U	67 J	47 U	49 U

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-30(10-18)** **212454-004** **1** **3/24/2006** **µg/Kg**	**B-31(0-16)** **212429-006** **1** **3/22/2006** **µg/Kg**	**B-31(16-25)** **212429-008** **1** **3/22/2006** **µg/Kg**	**B-32(0-14)** **212429-010** **1** **3/23/2006** **µg/Kg**	**B-32(14-20)** **212429-012** **1** **3/23/2006** **µg/Kg**	**B-32(20-30)** **212429-016** **1** **3/23/2006** **µg/Kg**
2 4-Dinitrotoluene	4,000	73 U	66 U	71 U	67 U	69 U	72 U
Acenaphthene	10,000,000	67 U	61 U	65 U	61 U	63 U	66 U
4-Nitrophenol	NS	170 U	160 U	170 U	160 U	160 U	170 U
Fluorene	10,000,000	52 U	47 U	51 U	64 J	49 U	52 U
1 2-Diphenylhydrazine	NS	40 U	36 U	39 U	37 U	38 U	40 U
4-Bromophenyl phenyl ether	NS	62 U	56 U	61 U	57 U	59 U	61 U
Hexachlorobenzene	100,000	59 U	54 U	58 U	55 U	56 U	59 U
Diethyl phthalate	10,000,000	59 U	54 U	58 U	55 U	56 U	59 U
4-Chlorophenyl phenyl ether	NS	56 U	51 U	55 U	51 U	53 U	55 U
Pentachlorophenol	24,000	350 U	320 U	340 U	320 U	330 U	350 U
n-Nitrosodiphenylamine	600,000	61 U	55 U	60 U	56 U	58 U	60 U
4 6-Dinitro-2-methylphenol	NS	290 U	260 U	280 U	270 U	270 U	290 U
Phenanthrene	NS	310 J	220 J	46 U	1100	120 J	47 U
Anthracene	10,000,000	78 J	61 U	65 U	170 J	63 U	66 U
Di-n-butyl phthalate	10,000,000	53 U	67 J	52 U	49 U	51 U	53 U
Benzidine	NS	47 U	42 U	46 U	43 U	44 U	46 U
Fluoranthene	10,000,000	530	290 J	50 U	1200	150 J	50 U
Pyrene	10,000,000	630	280 J	55 U	1100	120 J	55 U
Butyl benzyl phthalate	10,000,000	52 U	47 U	51 U	48 U	49 U	52 U
Benzo(a)anthracene	13,000	350 J	140 J	54 U	550	68 J	54 U
Chrysene	40,000	360 J	170 J	50 U	590	62 J	50 U
3 3-Dichlorobenzidine	6,000	110 U	98 U	110 U	99 U	100 U	110 U
Bis(2-ethylhexyl)phthalate	210,000	53 U	48 U	52 U	49 U	51 U	53 U
Di-n-octyl phthalate	10,000,000	42 U	39 U	42 U	39 U	40 U	42 U
Benzo(b)fluoranthene	14,000	320 J	170 J	110 U	580	110 U	110 U
Benzo(k)fluoranthene	6,000	130 J	64 J	44 U	230 J	43 U	44 U
Benzo(a)pyrene	8,000	320 J	130 J	49 U	470	50 J	49 U
Indeno(1 2 3-cd)pyrene	4,000	300 J	130 J	40 U	300 J	39 U	41 U
Dibenzo(a h)anthracene	1,000	76 J	41 U	44 U	66 J	43 U	44 U
Benzo(ghi)perylene	NS	270 J	150 J	44 U	320 J	43 U	44 U
Total SVOCs		3726	1811	0	6807	570	0

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-33(0-12)**	**B-33(12-14)****	**B-34(0-10)**	**B-34(10-24)**	**B-35(0-10)**	**B-35(10-20)**
Lab Sample ID		**212481-015**	**212481-017**	**212454-007**	**212454-009**	**212454-011**	**212454-013**
Dilution		**2**	**1**	**2**	**1**	**1**	**2**
Date Sampled		**3/29/2006**	**3/29/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
n-Nitrosodimethylamine	NS	110 U	57 U	120 U	57 U	110 U	110 U
Phenol	10,000,000	210 U	110 U	240 U	110 U	230 U	220 U
Bis(2-chloroethyl)ether	3,000	99 U	52 U	110 U	52 U	110 U	100 U
1 3-Dichlorobenzene	10,000,000	110 U	59 U	120 U	59 U	120 U	120 U
1 4-Dichlorobenzene	10,000,000	120 U	61 U	130 U	62 U	120 U	120 U
1 2-Dichlorobenzene	10,000,000	120 U	65 U	140 U	65 U	130 U	130 U
Benzyl alcohol	50,000	140 U*	73 U	150 U	73 U	150 U	150 U
2 2-oxybis (1-chloropropane)	NS	100 U	54 U	110 U	55 U	110 U	110 U
n-Nitroso-di-n-propylamine	1,000	99 U	52 U	110 U	52 U	110 U	100 U
Hexachloroethane	100,000	130 U	68 U	140 U	69 U	140 U	140 U
4-Methylphenol	10,000,000	390 U	210 U	440 U	210 U	420 U	420 U
2-Chlorophenol	5,200,000	190 U	100 U	210 U	100 U	200 U	200 U
Nitrobenzene	520,000	88 U	46 U	98 U	46 U	93 U	93 U
Bis(2-chloroethoxy)methane	NS	120 U	66 U	140 U	66 U	130 U	130 U
1 2 4-Trichlorobenzene	100,000	120 U	65 U	140 U	65 U	130 U	130 U
Isophorone	10,000,000	130 U	69 U	150 U	70 U	140 U	140 U
2 4-Dimethylphenol	10,000,000	380 U	200 U	420 U	200 U	400 U	400 U
Hexachlorobutadiene	21,000	150 U	79 U	170 U	79 U	160 U	160 U
Naphthalene	4,200,000	170 J	66 U	250 J	150 J	270 J	590 J
2 4-Dichlorophenol	3,100,000	240 U	130 U	270 U	130 U	250 U	250 U
4-Chloroaniline	4,200,000	230 U	120 U	260 U	120 U	250 U	250 U
2 4 6-Trichlorophenol	270,000	190 U	98 U	210 U	99 U	200 U	200 U
2 4 5-Trichlorophenol	10,000,000	270 U	140 U	300 U	140 U	280 U	280 U
Hexachlorocyclopentadiene	7,300,000	540 U	290 U	610 U	290 U	580 U	580 U
2-Chloronaphthalene	NS	110 U	57 U	120 U	57 U	110 U	110 U
4-Chloro-3-methylphenol	10,000,000	250 U	130 U	280 U	130 U	260 U	260 U
2 6-Dinitrotoluene	4,000	130 U	71 U	150 U	71 U	140 U	140 U
2-Nitrophenol	NS	250 U	130 U	280 U	130 U	270 U	270 U
Dimethyl phthalate	10,000,000	110 U	59 U	120 U	59 U	120 U	120 U
2 4-Dinitrophenol	2,100,000	250 U*	130 U	280 U	130 U	270 U	270 U
Acenaphthylene	10,000,000	1100	47 U	1,000	590	440 J	690 J

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use**	**B-33(0-12)**	**B-33(12-14)****	**B-34(0-10)**	**B-34(10-24)**	**B-35(0-10)**	**B-35(10-20)**
Lab Sample ID	**Acceptance**	**212481-015**	**212481-017**	**212454-007**	**212454-009**	**212454-011**	**212454-013**
Dilution	**Criteria[1]**	**2**	**1**	**2**	**1**	**1**	**2**
Date Sampled		**3/29/2006**	**3/29/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**
Units	**(µg/Kg)**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
2 4-Dinitrotoluene	4,000	130 U	69 U	150 U	70 U	140 U	140 U
Acenaphthene	10,000,000	220 J	64 U	340 J	64 U	210 J	330 J
4-Nitrophenol	NS	310 U	160 U	350 U	160 U	330 U	330 U
Fluorene	10,000,000	560 J	50 U	320 J	97 J	200 J	620 J
1 2-Diphenylhydrazine	NS	72 U	38 U	81 U	38 U	77 U	77 U
4-Bromophenyl phenyl ether	NS	110 U	59 U	120 U	59 U	120 U	120 U
Hexachlorobenzene	100,000	110 U	57 U	120 U	57 U	110 U	110 U
Diethyl phthalate	10,000,000	110 U	57 U	120 U	57 U	110 U	110 U
4-Chlorophenyl phenyl ether	NS	100 U	53 U	110 U	53 U	110 U	110 U
Pentachlorophenol	24,000	630 U	330 U	700 U	330 U	670 U	670 U
n-Nitrosodiphenylamine	600,000	110 U	58 U	120 U	58 U	120 U	120 U
4 6-Dinitro-2-methylphenol	NS	520 U	280 U	580 U	280 U	560 U	550 U
Phenanthrene	NS	6400	45 U	4,600	1,500	2,800	8,400
Anthracene	10,000,000	1200	64 U	1,200	600	570 J	930
Di-n-butyl phthalate	10,000,000	96 U	51 U	110 U	51 U	100 U	100 U
Benzidine	NS	84 U	45 U	94 U	45 U	90 U	89 U
Fluoranthene	10,000,000	8800	49 U	6,700	5,300	3,700	7,800
Pyrene	10,000,000	8500	53 U	4,300	4,400	3,100	6,600
Butyl benzyl phthalate	10,000,000	94 U	50 U	320 J	50 U	220 J	100 U
Benzo(a)anthracene	13,000	4100	52 U	2,900	3,500	2,000	3,000
Chrysene	40,000	4100	49 U	3,200	3,200	2,300	3,700
3 3-Dichlorobenzidine	6,000	200 U	100 U	220 U	100 U	210 U	210 U
Bis(2-ethylhexyl)phthalate	210,000	96 U	51 U	120 J	51 U	140 J	100 U
Di-n-octyl phthalate	10,000,000	77 U	41 U	86 U	41 U	82 U	81 U
Benzo(b)fluoranthene	14,000	4100 M	110 U	3,800	3,500	2,400	3,400
Benzo(k)fluoranthene	6,000	1600 M	43 U	1,600	1,400	930	1,100
Benzo(a)pyrene	8,000	3200	47 U	3,200	3,300	2,000	2,900
Indeno(1 2 3-cd)pyrene	4,000	3600	39 U	2,200	1,800	1,500	1,800
Dibenzo(a h)anthracene	1,000	640 JM	43 U	530 J	480	370 J	440 J
Benzo(ghi)perylene	NS	3500	43 U	2,000	1,500	1,400	1,500
Total SVOCs		52180	0	38580	31317	24550	43800

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1]	B-35(20-28)	B-36(0-10)	B-36(10-18)	B-36(18-30)	B-37(0-12)	B-37(12-24)
Lab Sample ID		212454-015	212454-017	212454-019	212481-001	212481-019	212499-001
Dilution		1	5	1	1	1	1
Date Sampled		3/24/2006	3/27/2006	3/27/2006	3/27/2006	3/29/2006	3/29/2006
Units	(µg/Kg)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound							
n-Nitrosodimethylamine	NS	58 U	540 U	55 U	58 U	53 U	55 U
Phenol	10,000,000	110 U	1,100 U	110 U	120 U	110 U	110 U
Bis(2-chloroethyl)ether	3,000	53 U	500 U	51 U	54 U	49 U	51 U
1 3-Dichlorobenzene	10,000,000	60 U	560 U	58 U	61 U	56 U	58 U
1 4-Dichlorobenzene	10,000,000	63 U	580 U	60 U	63 U	58 U	60 U
1 2-Dichlorobenzene	10,000,000	66 U	620 U	63 U	67 U	61 U	63 U
Benzyl alcohol	50,000	74 U	690 U	71 U	75 U*	69 U	71 U
2 2-oxybis (1-chloropropane)	NS	55 U	520 U	53 U	56 U	51 U	53 U
n-Nitroso-di-n-propylamine	1,000	53 U	500 U	51 U	54 U	49 U	51 U
Hexachloroethane	100,000	70 U	650 U	67 U	70 U	64 U	67 U
4-Methylphenol	10,000,000	210 U	2,000 U	200 U	210 U	200 U	200 U
2-Chlorophenol	5,200,000	100 U	950 U	97 U	100 U	94 U	97 U
Nitrobenzene	520,000	47 U	440 U	45 U	48 U	44 U	45 U
Bis(2-chloroethoxy)methane	NS	67 U	630 U	64 U	68 U	62 U	65 U
1 2 4-Trichlorobenzene	100,000	66 U	620 U	63 U	67 U	61 U	63 U
Isophorone	10,000,000	71 U	660 U	68 U	72 U	65 U	68 U
2 4-Dimethylphenol	10,000,000	200 U	1,900 U	190 U	210 U	190 U	190 U
Hexachlorobutadiene	21,000	80 U	750 U	77 U	81 U	74 U	77 U
Naphthalene	4,200,000	94 J	2,900 J	64 U	72 J	62 U	65 U
2 4-Dichlorophenol	3,100,000	130 U	1,200 U	120 U	130 U	120 U	120 U
4-Chloroaniline	4,200,000	130 U	1,200 U	120 U	130 U	120 U	120 U
2 4 6-Trichlorophenol	270,000	100 U	940 U	96 U	100 U	93 U	96 U
2 4 5-Trichlorophenol	10,000,000	140 U	1,300 U	140 U	140 U	130 U	140 U
Hexachlorocyclopentadiene	7,300,000	290 U	2,700 U	280 U	300 U	270 U	280 U
2-Chloronaphthalene	NS	58 U	540 U	55 U	58 U	53 U	55 U
4-Chloro-3-methylphenol	10,000,000	130 U	1,200 U	130 U	130 U	120 U	130 U
2 6-Dinitrotoluene	4,000	72 U	670 U	69 U	73 U	67 U	69 U
2-Nitrophenol	NS	140 U	1,300 U	130 U	140 U	130 U	130 U
Dimethyl phthalate	10,000,000	60 U	560 U	58 U	61 U	56 U	58 U
2 4-Dinitrophenol	2,100,000	140 U	1,300 U	130 U	140 U*	130 U	130 U
Acenaphthylene	10,000,000	48 U	800 J	46 U	49 U	110 J	46 U

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-35(20-28)**	**B-36(0-10)**	**B-36(10-18)**	**B-36(18-30)**	**B-37(0-12)**	**B-37(12-24)**
Lab Sample ID		**212454-015**	**212454-017**	**212454-019**	**212481-001**	**212481-019**	**212499-001**
Dilution		**1**	**5**	**1**	**1**	**1**	**1**
Date Sampled		**3/24/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**	**3/29/2006**	**3/29/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
2 4-Dinitrotoluene	4,000	71 U	660 U	68 U	72 U	65 U	68 U
Acenaphthene	10,000,000	65 U	2,100 J	62 U	66 U	60 U	62 U
4-Nitrophenol	NS	170 U	1,600 U	160 U	170 U	150 U	160 U
Fluorene	10,000,000	78 J	3,100 J	49 U	51 U	47 U	49 U
1 2-Diphenylhydrazine	NS	39 U	360 U	37 U	39 U	36 U	37 U
4-Bromophenyl phenyl ether	NS	60 U	560 U	58 U	61 U	56 U	58 U
Hexachlorobenzene	100,000	58 U	540 U	55 U	58 U	53 U	55 U
Diethyl phthalate	10,000,000	58 U	540 U	55 U	58 U	53 U	55 U
4-Chlorophenyl phenyl ether	NS	54 U	510 U	52 U	55 U	50 U	52 U
Pentachlorophenol	24,000	340 U	3,200 U	330 U	340 U	310 U	330 U
n-Nitrosodiphenylamine	600,000	59 U	550 U	56 U	60 U	55 U	57 U
4 6-Dinitro-2-methylphenol	NS	280 U	2,600 U	270 U	280 U	260 U	270 U
Phenanthrene	NS	700	20,000	44 U	230 J	410	44 U
Anthracene	10,000,000	100 J	4,700	62 U	66 U	140 J	62 U
Di-n-butyl phthalate	10,000,000	52 U	1,100 J	50 U	150 J	48 U	50 U
Benzidine	NS	45 U	420 U	43 U	46 U	42 U	44 U
Fluoranthene	10,000,000	510	16,000	47 U	290 J	1300	48 U
Pyrene	10,000,000	580	12,000	52 U	310 J	840	52 U
Butyl benzyl phthalate	10,000,000	51 U	1,000 J	49 U	310 J	170 J	49 U
Benzo(a)anthracene	13,000	250 J	7,100	51 U	140 J	780	51 U
Chrysene	40,000	250 J	7,100	47 U	180 J	780	48 U
3 3-Dichlorobenzidine	6,000	110 U	980 U	100 U	110 U	97 U	100 U
Bis(2-ethylhexyl)phthalate	210,000	52 U	1,100 J	50 U	140 J	120 J	50 U
Di-n-octyl phthalate	10,000,000	41 U	390 U	40 U	42 U	38 U	40 U
Benzo(b)fluoranthene	14,000	200 J	6,300	110 U	140 JM	880 M	110 U
Benzo(k)fluoranthene	6,000	72 JM	2,200 J	42 U	54 JM	350 JM	42 U
Benzo(a)pyrene	8,000	180 J	5,700	46 U	130 J	630	46 U
Indeno(1 2 3-cd)pyrene	4,000	170 J	3,800	38 U	120 J	340 JH	38 U
Dibenzo(a h)anthracene	1,000	44 U	1,000 J	42 U	45 J	86 JM	42 U
Benzo(ghi)perylene	NS	160 J	3,200 J	42 U	140 J	440 H	42 U
Total SVOCs		3344	101200	0	2666	7376	0

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-38(0-10)	B-38(10-18)	B-39(0-12)	DUPLICATE	B-39(12-24)	B-40(0-10)	B-40(10-20)
Lab Sample ID		212481-007	212481-009	212571-013	212571-014	212655-012	212499-012	212499-014
Dilution		1	1	1	1	1	2	1
Date Sampled		3/27/2006	3/27/2006	4/5/2006	4/5/2006	4/13/2006	3/30/2006	3/30/2006
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
n-Nitrosodimethylamine	NS	98 U	56 U	56 U	55 U	58 U	100 U	57 U
Phenol	10,000,000	190 U	110 U	110 U	110 U	120 U	210 U	110 U
Bis(2-chloroethyl)ether	3,000	90 U	51 U	52 U	51 U	54 U	96 U	52 U
1 3-Dichlorobenzene	10,000,000	100 U	58 U	58 U	58 U	61 U	110 U	59 U
1 4-Dichlorobenzene	10,000,000	110 U	60 U	61 U	60 U	63 U	110 U	61 U
1 2-Dichlorobenzene	10,000,000	110 U	64 U	64 U	63 U	67 U	120 U	65 U
Benzyl alcohol	50,000	130 U*	72 U*	72 U	71 U	75 U	130 U	73 U
2 2-oxybis (1-chloropropane)	NS	94 U	53 U	54 U	53 U	56 U	100 U	54 U
n-Nitroso-di-n-propylamine	1,000	90 U	51 U	52 U	51 U	54 U	96 U	52 U
Hexachloroethane	100,000	120 U	67 U	68 U	67 U	70 U	130 U	68 U
4-Methylphenol	10,000,000	360 U	200 U	210 U	200 U	210 U	380 U	210 U
2-Chlorophenol	5,200,000	170 U	98 U	99 U	97 U	100 U	180 U	99 U
Nitrobenzene	520,000	80 U	46 U	46 U	45 U	48 U	85 U	46 U
Bis(2-chloroethoxy)methane	NS	110 U	65 U	65 U	64 U	68 U	120 U	66 U
1 2 4-Trichlorobenzene	100,000	110 U	64 U	64 U	63 U	67 U	120 U	65 U
Isophorone	10,000,000	120 U	68 U	69 U	68 U	71 U	130 U	69 U
2 4-Dimethylphenol	10,000,000	340 U	200 U	200 U	190 U	200 U	370 U	200 U
Hexachlorobutadiene	21,000	140 U	77 U	78 U	77 U	81 U	140 U	79 U
Naphthalene	4,200,000	110 U	65 U	90 J	140 J	68 U	410 J	130 J
2 4-Dichlorophenol	3,100,000	220 U	120 U	120 U	120 U	130 U	230 U	130 U
4-Chloroaniline	4,200,000	210 U	120 U	120 U	120 U	130 U	230 U	120 U
2 4 6-Trichlorophenol	270,000	170 U	97 U	97 U	96 U	100 U	180 U	98 U
2 4 5-Trichlorophenol	10,000,000	240 U	140 U	140 U	140 U	140 U	260 U	140 U
Hexachlorocyclopentadiene	7,300,000	490 U	280 U	280 U	280 U	300 U	530 U	290 U
2-Chloronaphthalene	NS	98 U	56 U	56 U	55 U	58 U	100 U	57 U
4-Chloro-3-methylphenol	10,000,000	230 U	130 U	130 U	130 U	130 U	240 U	130 U
2 6-Dinitrotoluene	4,000	120 U	69 U	70 U	69 U	73 U	130 U	70 U
2-Nitrophenol	NS	230 U	130 U	130 U	130 U	140 U	250 U	130 U
Dimethyl phthalate	10,000,000	100 U	58 U	58 U	58 U	61 U	110 U	59 U
2 4-Dinitrophenol	2,100,000	230 U*	130 U*	130 U	130 U	140 U	240 U	130 U
Acenaphthylene	10,000,000	110 J	47 U	130 J	200 J	49 J	470 J	55 J

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance**	**B-38(0-10)**	**B-38(10-18)**	**B-39(0-12)**	**DUPLICATE**	**B-39(12-24)**	**B-40(0-10)**	**B-40(10-20)**
Lab Sample ID		**212481-007**	**212481-009**	**212571-013**	**212571-014**	**212655-012**	**212499-012**	**212499-014**
Dilution	**Criteria[1]**	**1**	**1**	**1**	**1**	**1**	**2**	**1**
Date Sampled		**3/27/2006**	**3/27/2006**	**4/5/2006**	**4/5/2006**	**4/13/2006**	**3/30/2006**	**3/30/2006**
Units	**(µg/Kg)**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
2 4-Dinitrotoluene	4,000	120 U	68 U	69 U	68 U	71 U	130 U	69 U
Acenaphthene	10,000,000	110 U	63 U	81 J	110 J	65 U	360 J	63 U
4-Nitrophenol	NS	280 U	160 U	160 U	160 U	170 U	300 U	160 U
Fluorene	10,000,000	120 J	49 U	77 J	120 J	51 U	470 J	77 J
1 2-Diphenylhydrazine	NS	66 U	38 U	38 U	37 U	39 U	70 U	38 U
4-Bromophenyl phenyl ether	NS	100 U	58 U	58 U	58 U	61 U	110 U	59 U
Hexachlorobenzene	100,000	98 U	56 U	56 U	55 U	58 U	100 U	57 U
Diethyl phthalate	10,000,000	98 U	56 U	56 U	55 U	58 U	100 U	57 U
4-Chlorophenyl phenyl ether	NS	92 U	52 U	53 U	52 U	55 U	98 U	53 U
Pentachlorophenol	24,000	570 U	330 U	330 U	330 U	340 U	610 U	330 U
n-Nitrosodiphenylamine	600,000	100 U	57 U	57 U	57 U	60 U	110 U	58 U
4 6-Dinitro-2-methylphenol	NS	480 U	270 U	270 U	270 U	280 U	510 U	280 U
Phenanthrene	NS	790	44 U	1400	2500	310 J	4800	720
Anthracene	10,000,000	160 J	63 U	250 J	410	100 J	860	140 J
Di-n-butyl phthalate	10,000,000	88 U	50 U	50 U	50 U	52 U	94 U	51 U
Benzidine	NS	77 U	44 U	44 U	44 U	46 U	82 U	44 U
Fluoranthene	10,000,000	790	57 J	1700	2500	520	4900	820
Pyrene	10,000,000	1000	59 J	2400	2900	500	3100	840
Butyl benzyl phthalate	10,000,000	86 U	49 U	260 J	280 J	51 U	400 J	50 U
Benzo(a)anthracene	13,000	530 J	51 U	1000	1300	320 J	1900	390
Chrysene	40,000	660 J	48 U	1100	1400	330 J	2200	410
3 3-Dichlorobenzidine	6,000	180 U	100 U	100 U	100 U	110 U	190 U	100 U
Bis(2-ethylhexyl)phthalate	210,000	200 J	50 U	330 J	200 J	59 J	210 J	51 U
Di-n-octyl phthalate	10,000,000	70 U	40 U	40 U	40 U	42 U	75 U	40 U
Benzo(b)fluoranthene	14,000	540 JM	110 U	1000	1100	320 J	2200	340 JH
Benzo(k)fluoranthene	6,000	180 JM	42 U	340 J	800	250 J	720	290 J
Benzo(a)pyrene	8,000	540 J	47 U	870	1200	360 J	1800	340 J
Indeno(1 2 3-cd)pyrene	4,000	410 J	39 U	990	1100	260 J	1100	200 J
Dibenzo(a h)anthracene	1,000	75 JM	42 U	250 J	350 J	95 J	300 J	58 J
Benzo(ghi)perylene	NS	470 J	42 U	1100	1400	280 J	1100	200 J
Total SVOCs		6935	318	13368	18010	3753	27300	5010

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1]**	**B-40(20-32)**	**B-41(0-10)**	**B-41(10-20)**	**B-41(20-30)**	**B-42(0-12)**	**B-42(12-22)**	**B-43(14-24)**
Lab Sample ID		**212499-016**	**212499-007**	**212499-008**	**212499-017**	**212499-003**	**212499-005**	**212499-019**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/30/2006**	**3/30/2006**	**3/30/2006**	**3/30/2006**	**3/29/2006**	**3/29/2006**	**4/3/2006**
Units	**(µg/Kg)**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
n-Nitrosodimethylamine	NS	53 U	110 U	57 U	57 U	54 U	57 U	59 U
Phenol	10,000,000	100 U	220 U	110 U	110 U	110 U	110 U	120 U
Bis(2-chloroethyl)ether	3,000	48 U	100 U	52 U	52 U	50 U	52 U	54 U
1 3-Dichlorobenzene	10,000,000	55 U	120 U	60 U	59 U	56 U	59 U	62 U
1 4-Dichlorobenzene	10,000,000	57 U	810	62 U	62 U	59 U	62 U	64 U
1 2-Dichlorobenzene	10,000,000	60 U	130 U	65 U	65 U	62 U	65 U	68 U
Benzyl alcohol	50,000	68 U	140 U	74 U	73 U	70 U	73 U	76 U
2 2-oxybis (1-chloropropane)	NS	51 U	110 U	55 U	55 U	52 U	55 U	57 U
n-Nitroso-di-n-propylamine	1,000	48 U	100 U	52 U	52 U	50 U	52 U	54 U
Hexachloroethane	100,000	63 U	130 U	69 U	69 U	65 U	69 U	71 U
4-Methylphenol	10,000,000	190 U	410 U	210 U	210 U	200 U	210 U	220 U
2-Chlorophenol	5,200,000	93 U	200 U	100 U	100 U	95 U	100 U	100 U
Nitrobenzene	520,000	43 U	91 U	47 U	47 U	44 U	46 U	48 U
Bis(2-chloroethoxy)methane	NS	61 U	130 U	66 U	66 U	63 U	66 U	69 U
1 2 4-Trichlorobenzene	100,000	60 U	130 U	65 U	65 U	62 U	65 U	68 U
Isophorone	10,000,000	65 U	140 U	70 U	70 U	66 U	70 U	73 U
2 4-Dimethylphenol	10,000,000	190 U	390 U	200 U	200 U	190 U	200 U	210 U
Hexachlorobutadiene	21,000	73 U	150 U	79 U	79 U	75 U	79 U	82 U
Naphthalene	4,200,000	61 U	710 J	83 J	66 U	140 J	200 J	69 U
2 4-Dichlorophenol	3,100,000	120 U	250 U	130 U	130 U	120 U	130 U	130 U
4-Chloroaniline	4,200,000	120 U	240 U	120 U	120 U	120 U	120 U	130 U
2 4 6-Trichlorophenol	270,000	91 U	190 U	99 U	99 U	94 U	99 U	100 U
2 4 5-Trichlorophenol	10,000,000	130 U	280 U	140 U	140 U	130 U	140 U	150 U
Hexachlorocyclopentadiene	7,300,000	270 U	570 U	290 U	290 U	270 U	290 U	300 U
2-Chloronaphthalene	NS	53 U	110 U	57 U	57 U	54 U	57 U	59 U
4-Chloro-3-methylphenol	10,000,000	120 U	260 U	130 U	130 U	120 U	130 U	140 U
2 6-Dinitrotoluene	4,000	66 U	140 U	71 U	71 U	67 U	71 U	74 U
2-Nitrophenol	NS	120 U	260 U	140 U	130 U	130 U	130 U	140 U
Dimethyl phthalate	10,000,000	55 U	120 U	60 U	59 U	56 U	59 U	62 U
2 4-Dinitrophenol	2,100,000	120 U	260 U	130 U	130 U	130 U	130 U	140 U
Acenaphthylene	10,000,000	44 U	380 J	48 U	48 U	120 J	48 U	50 U

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1]	B-40(20-32)	B-41(0-10)	B-41(10-20)	B-41(20-30)	B-42(0-12)	B-42(12-22)	B-43(14-24)
Lab Sample ID		212499-016	212499-007	212499-008	212499-017	212499-003	212499-005	212499-019
Dilution		1	1	1	1	1	1	1
Date Sampled		3/30/2006	3/30/2006	3/30/2006	3/30/2006	3/29/2006	3/29/2006	4/3/2006
Units	(µg/Kg)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
2 4-Dinitrotoluene	4,000	65 U	140 U	70 U	70 U	66 U	70 U	73 U
Acenaphthene	10,000,000	59 U	200 J	64 U	64 U	72 J	95 J	67 U
4-Nitrophenol	NS	150 U	320 U	170 U	170 U	160 U	160 U	170 U
Fluorene	10,000,000	46 U	270 J	50 U	50 U	69 J	50 U	52 U
1 2-Diphenylhydrazine	NS	35 U	75 U	38 U	38 U	36 U	38 U	40 U
4-Bromophenyl phenyl ether	NS	55 U	120 U	60 U	59 U	56 U	59 U	62 U
Hexachlorobenzene	100,000	53 U	110 U	57 U	57 U	54 U	57 U	59 U
Diethyl phthalate	10,000,000	53 U	110 U	57 U	57 U	54 U	57 U	59 U
4-Chlorophenyl phenyl ether	NS	49 U	100 U	54 U	54 U	51 U	53 U	56 U
Pentachlorophenol	24,000	310 U	660 U	340 U	340 U	320 U	330 U	350 U
n-Nitrosodiphenylamine	600,000	54 U	110 U	58 U	58 U	55 U	58 U	61 U
4 6-Dinitro-2-methylphenol	NS	260 U	540 U	280 U	280 U	260 U	280 U	290 U
Phenanthrene	NS	42 U	2600	350 J	45 U	1100	1200	47 U
Anthracene	10,000,000	59 U	660 J	78 J	64 U	240 J	290 J	67 U
Di-n-butyl phthalate	10,000,000	47 U	500 J	51 U	51 U	76 J	51 U	53 U
Benzidine	NS	41 U	88 U	45 U	45 U	43 U	45 U	47 U
Fluoranthene	10,000,000	45 U	3900	310 J	49 U	1300	1300	51 U
Pyrene	10,000,000	49 U	3800	340 J	54 U	790	1400	56 U
Butyl benzyl phthalate	10,000,000	46 U	890	50 U	50 U	280 J	50 U	52 U
Benzo(a)anthracene	13,000	48 U	1700	140 J	52 U	650	710	54 U
Chrysene	40,000	45 U	2100	150 J	49 U	690	830	51 U
3 3-Dichlorobenzidine	6,000	96 U	200 U	100 U	100 U	98 U	100 U	110 U
Bis(2-ethylhexyl)phthalate	210,000	47 U	920	100 J	51 U	120 J	51 U	53 U
Di-n-octyl phthalate	10,000,000	38 U	80 U	41 U	41 U	39 U	41 U	42 U
Benzo(b)fluoranthene	14,000	100 U	1900 H	110 J	110 U	720	490 H	110 U
Benzo(k)fluoranthene	6,000	40 U	1400	100 J	43 U	250 J	540	45 U
Benzo(a)pyrene	8,000	44 U	1800	120 J	48 U	540	600	50 U
Indeno(1 2 3-cd)pyrene	4,000	37 U	1400	82 J	40 U	290 J	330 J	41 U
Dibenzo(a h)anthracene	1,000	40 U	370 J	43 U	43 U	77 J	110 J	45 U
Benzo(ghi)perylene	NS	40 U	1300	69 J	43 U	260 J	280 J	45 U
Total SVOCs		0	27610	2032	0	7784	8375	0

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1]	B-44(14-24)	B-45(6-18)	B-46(6-14)	B-47(0-10)	B-48(0-10)	B-49(0-10)	B-50(0-14)
Lab Sample ID		212499-020	212571-002	212571-004	212603-008	212571-015	212571-011	212571-018
Dilution		1	1	1	20	1	1	1
Date Sampled		4/3/2006	4/3/2006	4/4/2006	4/10/2006	4/6/2006	4/5/2006	4/6/2006
Units	(µg/Kg)	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
n-Nitrosodimethylamine	NS	58 U	50 U	52 U	1100 U	54 U	63 U	55 U
Phenol	10,000,000	110 U	99 U	100 U	2100 U	110 U	120 U	110 U
Bis(2-chloroethyl)ether	3,000	53 U	46 U	48 U	970 U	50 U	58 U	50 U
1 3-Dichlorobenzene	10,000,000	60 U	52 U	54 U	1100 U	56 U	66 U	57 U
1 4-Dichlorobenzene	10,000,000	62 U	54 U	56 U	1100 U	59 U	68 U	62 JH
1 2-Dichlorobenzene	10,000,000	66 U	57 U	59 U	1200 U	62 U	72 U	62 U
Benzyl alcohol	50,000	74 U	64 U	67 U	1400 U	70 U	81 U	70 U
2 2-oxybis (1-chloropropane)	NS	55 U	48 U	50 U	1000 U	52 U	60 U	52 U
n-Nitroso-di-n-propylamine	1,000	53 U	46 U	48 U	970 U	50 U	58 U	50 U
Hexachloroethane	100,000	69 U	60 U	63 U	1300 U	65 U	76 U	66 U
4-Methylphenol	10,000,000	210 U	180 U	190 U	3900 U	200 U	230 U	200 U
2-Chlorophenol	5,200,000	100 U	88 U	91 U	1900 U	95 U	110 U	96 U
Nitrobenzene	520,000	47 U	41 U	42 U	860 U	44 U	51 U	45 U
Bis(2-chloroethoxy)methane	NS	67 U	58 U	61 U	1200 U	63 U	73 U	63 U
1 2 4-Trichlorobenzene	100,000	66 U	57 U	59 U	1200 U	62 U	72 U	62 U
Isophorone	10,000,000	71 U	61 U	64 U	1300 U	66 U	77 U	67 U
2 4-Dimethylphenol	10,000,000	200 U	180 U	180 U	3700 U	190 U	220 U	190 U
Hexachlorobutadiene	21,000	80 U	70 U	72 U	1500 U	75 U	88 U	76 U
Naphthalene	4,200,000	67 U	120 J	61 U	9000	670	4400	420
2 4-Dichlorophenol	3,100,000	130 U	110 U	120 U	2400 U	120 U	140 U	120 U
4-Chloroaniline	4,200,000	130 U	110 U	110 U	2300 U	120 U	140 U	120 U
2 4 6-Trichlorophenol	270,000	100 U	87 U	90 U	1800 U	94 U	110 U	95 U
2 4 5-Trichlorophenol	10,000,000	140 U	120 U	130 U	2600 U	130 U	160 U	130 U
Hexachlorocyclopentadiene	7,300,000	290 U	250 U	260 U	5400 U	270 U	320 U	280 U
2-Chloronaphthalene	NS	58 U	50 U	52 U	1100 U	54 U	63 U	55 U
4-Chloro-3-methylphenol	10,000,000	130 U	120 U	120 U	2400 U	130 U	150 U	130 U
2 6-Dinitrotoluene	4,000	72 U	62 U	65 U	1300 U	68 U	78 U	68 U
2-Nitrophenol	NS	140 U	120 U	120 U	2500 U	130 U	150 U	130 U
Dimethyl phthalate	10,000,000	60 U	52 U	54 U	1100 U	56 U	66 U	57 U
2 4-Dinitrophenol	2,100,000	140 U	120 U	120 U	2500 U	130 U	150 U	130 U
Acenaphthylene	10,000,000	48 U	72 J	44 U	1500 J	170 J	53 U	48 J

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1]** **(µg/Kg)**	**B-44(14-24)** **212499-020** **1** **4/3/2006** **µg/Kg**	**B-45(6-18)** **212571-002** **1** **4/3/2006** **µg/Kg**	**B-46(6-14)** **212571-004** **1** **4/4/2006** **µg/Kg**	**B-47(0-10)** **212603-008** **20** **4/10/2006** **µg/Kg**	**B-48(0-10)** **212571-015** **1** **4/6/2006** **µg/Kg**	**B-49(0-10)** **212571-011** **1** **4/5/2006** **µg/Kg**	**B-50(0-14)** **212571-018** **1** **4/6/2006** **µg/Kg**
2 4-Dinitrotoluene	4,000	71 U	61 U	64 U	1300 U	66 U	77 U	67 U
Acenaphthene	10,000,000	65 U	110 J	58 U	5600 J	590	71 U	61 U
4-Nitrophenol	NS	170 U	150 U	150 U	3100 U	160 U	180 U	160 U
Fluorene	10,000,000	51 U	110 J	46 U	5200 J	730	55 U	48 U
1 2-Diphenylhydrazine	NS	39 U	34 U	35 U	710 U	37 U	42 U	37 U
4-Bromophenyl phenyl ether	NS	60 U	52 U	54 U	1100 U	56 U	66 U	57 U
Hexachlorobenzene	100,000	58 U	50 U	52 U	1100 U	54 U	63 U	55 U
Diethyl phthalate	10,000,000	58 U	50 U	52 U	1100 U	54 U	63 U	55 U
4-Chlorophenyl phenyl ether	NS	54 U	47 U	49 U	990 U	51 U	59 U	51 U
Pentachlorophenol	24,000	340 U	290 U	310 U	6200 U	320 U	370 U	320 U
n-Nitrosodiphenylamine	600,000	59 U	51 U	53 U	1100 U	55 U	64 U	56 U
4 6-Dinitro-2-methylphenol	NS	280 U	240 U	250 U	5200 U	260 U	310 U	270 U
Phenanthrene	NS	46 U	1600	450	38000	5600	130 J	550
Anthracene	10,000,000	65 U	350	87 J	10000	1400	71 U	100 J
Di-n-butyl phthalate	10,000,000	52 U	45 U	47 U	950 U	100 J	57 U	49 U
Benzidine	NS	45 U	39 U	41 U	830 U	43 U	50 U	43 U
Fluoranthene	10,000,000	49 U	2100	620	31000	5000	140 J	530
Pyrene	10,000,000	54 U	1800	660	27000	4400	170 J	670
Butyl benzyl phthalate	10,000,000	51 U	44 U	46 U	930 U	450	55 U	110 J
Benzo(a)anthracene	13,000	53 U	1200	320 J	**14000**	2400	77 J	300 J
Chrysene	40,000	49 U	1200	310 J	11000	2100	94 J	330 J
3 3-Dichlorobenzidine	6,000	100 U	91 U	95 U	1900 U	99 U	110 U	99 U
Bis(2-ethylhexyl)phthalate	210,000	52 U	52 J	47 U	950 U	410	57 U	170 J
Di-n-octyl phthalate	10,000,000	41 U	36 U	37 U	760 U	39 U	45 U	39 U
Benzo(b)fluoranthene	14,000	110 U	1200	380	10000	1900	130 J	360 J
Benzo(k)fluoranthene	6,000	44 U	420 H	130 J	**6900** J	1200	48 U	110 J
Benzo(a)pyrene	8,000	48 U	1200	260 J	**13000**	2000	81 J	260 J
Indeno(1 2 3-cd)pyrene	4,000	40 U	760	180 J	**8000**	1800	91 J	280 J
Dibenzo(a h)anthracene	1,000	44 U	190 J	39 U	**2500** J	690	48 U	41 U
Benzo(ghi)perylene	NS	44 U	820	160 J	8100	1900	84 J	310 J
Total SVOCs		0	13304	3557	200800	33510	5397	4610

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-51(0-12)	B-51(12-18)	B-52(6-18)	B-53(0-6)	B-54(0-6)	B-55(0-12)	B-55(12-20)
Lab Sample ID		212571-007	212571-008	212571-005	212655-002	212655-004	212571-020	212603-002
Dilution		1	1	1	1	1	1	1
Date Sampled		4/4/2006	4/4/2006	4/4/2006	4/12/2006	4/13/2006	4/7/2006	4/7/2006
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
n-Nitrosodimethylamine	NS	55 U	53 U	55 U	56 U	54 U	56 U	57 U
Phenol	10,000,000	110 U	100 U	110 U	110 U	110 U	110 U	110 U
Bis(2-chloroethyl)ether	3,000	50 U	49 U	51 U	52 U	49 U	51 U	53 U
1 3-Dichlorobenzene	10,000,000	57 U	55 U	58 U	59 U	56 U	58 U	60 U
1 4-Dichlorobenzene	10,000,000	59 U	57 U	60 U	61 U	58 U	60 U	62 U
1 2-Dichlorobenzene	10,000,000	63 U	61 U	63 U	64 U	61 U	64 U	66 U
Benzyl alcohol	50,000	70 U	68 U	71 U	72 U	69 U	72 U	74 U
2 2-oxybis (1-chloropropane)	NS	53 U	51 U	53 U	54 U	51 U	53 U	55 U
n-Nitroso-di-n-propylamine	1,000	50 U	49 U	51 U	52 U	49 U	51 U	53 U
Hexachloroethane	100,000	66 U	64 U	67 U	68 U	65 U	67 U	69 U
4-Methylphenol	10,000,000	200 U	190 U	200 U	210 U	200 U	200 U	210 U
2-Chlorophenol	5,200,000	96 U	93 U	97 U	99 U	94 U	98 U	100 U
Nitrobenzene	520,000	45 U	43 U	45 U	46 U	44 U	45 U	47 U
Bis(2-chloroethoxy)methane	NS	64 U	62 U	64 U	65 U	62 U	65 U	67 U
1 2 4-Trichlorobenzene	100,000	63 U	61 U	63 U	64 U	61 U	64 U	66 U
Isophorone	10,000,000	67 U	65 U	68 U	69 U	66 U	68 U	70 U
2 4-Dimethylphenol	10,000,000	190 U	190 U	190 U	200 U	190 U	200 U	200 U
Hexachlorobutadiene	21,000	76 U	74 U	77 U	78 U	74 U	77 U	80 U
Naphthalene	4,200,000	560	100 J	100 J	200 J	82 J	65 U	67 U
2 4-Dichlorophenol	3,100,000	120 U	120 U	120 U	130 U	120 U	120 U	130 U
4-Chloroaniline	4,200,000	120 U	120 U	120 U	120 U	120 U	120 U	130 U
2 4 6-Trichlorophenol	270,000	95 U	92 U	96 U	98 U	93 U	97 U	100 U
2 4 5-Trichlorophenol	10,000,000	140 U	130 U	140 U	140 U	130 U	140 U	140 U
Hexachlorocyclopentadiene	7,300,000	280 U	270 U	280 U	280 U	270 U	280 U	290 U
2-Chloronaphthalene	NS	55 U	53 U	55 U	56 U	54 U	56 U	57 U
4-Chloro-3-methylphenol	10,000,000	130 U	120 U	130 U	130 U	120 U	130 U	130 U
2 6-Dinitrotoluene	4,000	68 U	66 U	69 U	70 U	67 U	69 U	71 U
2-Nitrophenol	NS	130 U	130 U	130 U	130 U	130 U	130 U	140 U
Dimethyl phthalate	10,000,000	57 U	55 U	58 U	59 U	56 U	58 U	60 U
2 4-Dinitrophenol	2,100,000	130 U	120 U	130 U	130 U	130 U	130 U	130 U
Acenaphthylene	10,000,000	62 J	44 U	340 J	420	130 J	47 U	48 U

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-51(0-12)**	**B-51(12-18)**	**B-52(6-18)**	**B-53(0-6)**	**B-54(0-6)**	**B-55(0-12)**	**B-55(12-20)**
Lab Sample ID		**212571-007**	**212571-008**	**212571-005**	**212655-002**	**212655-004**	**212571-020**	**212603-002**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/4/2006**	**4/4/2006**	**4/4/2006**	**4/12/2006**	**4/13/2006**	**4/7/2006**	**4/7/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
2 4-Dinitrotoluene	4,000	67 U	65 U	68 U	69 U	66 U	68 U	70 U
Acenaphthene	10,000,000	100 J	59 U	64 J	200 J	220 J	62 U	64 U
4-Nitrophenol	NS	160 U	150 U	160 U	160 U	160 U	160 U	170 U
Fluorene	10,000,000	140 J	58 J	90 J	270 J	170 J	49 U	50 U
1 2-Diphenylhydrazine	NS	37 U	36 U	37 U	38 U	36 U	37 U	39 U
4-Bromophenyl phenyl ether	NS	57 U	55 U	58 U	59 U	56 U	58 U	60 U
Hexachlorobenzene	100,000	55 U	53 U	55 U	56 U	54 U	56 U	57 U
Diethyl phthalate	10,000,000	130 J	53 U	55 U	56 U	54 U	56 U	57 U
4-Chlorophenyl phenyl ether	NS	51 U	50 U	52 U	53 U	50 U	52 U	54 U
Pentachlorophenol	24,000	320 U	310 U	330 U	330 U	320 U	330 U	340 U
n-Nitrosodiphenylamine	600,000	56 U	54 U	57 U	57 U	55 U	57 U	59 U
4 6-Dinitro-2-methylphenol	NS	270 U	260 U	270 U	270 U	260 U	270 U	280 U
Phenanthrene	NS	1300	700	1500	3400	2800	340 J	46 U
Anthracene	10,000,000	260 J	150 J	320 J	770	540	72 J	64 U
Di-n-butyl phthalate	10,000,000	600	190 J	50 U	81 J	48 U	76 J	52 U
Benzidine	NS	43 U	42 U	44 U	44 U	42 U	44 U	45 U
Fluoranthene	10,000,000	1000	670	2100	4400	3900	370 J	49 U
Pyrene	10,000,000	1100	760	1300	4200	4000	290 J	54 U
Butyl benzyl phthalate	10,000,000	420	290 J	49 U	49 U	47 U	49 U	50 U
Benzo(a)anthracene	13,000	490	390	1000	2500	2100	200 J	53 U
Chrysene	40,000	420	310 J	1100	2500	2100	220 J	49 U
3 3-Dichlorobenzidine	6,000	100 U	96 U	100 U	100 U	97 U	100 U	100 U
Bis(2-ethylhexyl)phthalate	210,000	220 J	160 J	50 U	50 U	48 U	150 J	52 U
Di-n-octyl phthalate	10,000,000	39 U	38 U	40 U	40 U	38 U	40 U	41 U
Benzo(b)fluoranthene	14,000	510	360	1300	1900	1500	200 J	110 U
Benzo(k)fluoranthene	6,000	170 J	140 J	420	1800	1500	150 J	43 U
Benzo(a)pyrene	8,000	350 J	280 J	1000	2200	1900	200 J	48 U
Indeno(1 2 3-cd)pyrene	4,000	280 J	260 J	820	1900	1600	120 J	40 U
Dibenzo(a h)anthracene	1,000	73 J	66 J	200 J	700	580	46 J	43 U
Benzo(ghi)perylene	NS	280 J	270 J	890	2300	1900	140 J	43 U
Total SVOCs		8465	5154	12544	29741	25022	2574	0

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-56(0-12) 212603-003 1 4/7/2006 µg/Kg	B-56(12-24) 212603-006 1 4/7/2006 µg/Kg
n-Nitrosodimethylamine	NS	57 U	60 U
Phenol	10,000,000	110 U	120 U
Bis(2-chloroethyl)ether	3,000	52 U	55 U
1 3-Dichlorobenzene	10,000,000	60 U	62 U
1 4-Dichlorobenzene	10,000,000	62 U	64 U
1 2-Dichlorobenzene	10,000,000	65 U	68 U
Benzyl alcohol	50,000	74 U	77 U
2 2-oxybis (1-chloropropane)	NS	55 U	57 U
n-Nitroso-di-n-propylamine	1,000	52 U	55 U
Hexachloroethane	100,000	69 U	72 U
4-Methylphenol	10,000,000	210 U	220 U
2-Chlorophenol	5,200,000	100 U	100 U
Nitrobenzene	520,000	47 U	49 U
Bis(2-chloroethoxy)methane	NS	66 U	69 U
1 2 4-Trichlorobenzene	100,000	65 U	68 U
Isophorone	10,000,000	70 U	73 U
2 4-Dimethylphenol	10,000,000	200 U	210 U
Hexachlorobutadiene	21,000	79 U	83 U
Naphthalene	4,200,000	66 U	69 U
2 4-Dichlorophenol	3,100,000	130 U	130 U
4-Chloroaniline	4,200,000	120 U	130 U
2 4 6-Trichlorophenol	270,000	99 U	100 U
2 4 5-Trichlorophenol	10,000,000	140 U	150 U
Hexachlorocyclopentadiene	7,300,000	290 U	300 U
2-Chloronaphthalene	NS	57 U	60 U
4-Chloro-3-methylphenol	10,000,000	130 U	140 U
2 6-Dinitrotoluene	4,000	71 U	74 U
2-Nitrophenol	NS	140 U	140 U
Dimethyl phthalate	10,000,000	60 U	62 U
2 4-Dinitrophenol	2,100,000	130 U	140 U
Acenaphthylene	10,000,000	71 J	50 U

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION, WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1]** **(µg/Kg)**	**B-56(0-12)** **212603-003** **1** **4/7/2006** **µg/Kg**	**B-56(12-24)** **212603-006** **1** **4/7/2006** **µg/Kg**
2 4-Dinitrotoluene	4,000	70 U	73 U
Acenaphthene	10,000,000	64 U	67 U
4-Nitrophenol	NS	170 U	170 U
Fluorene	10,000,000	50 U	52 U
1 2-Diphenylhydrazine	NS	38 U	40 U
4-Bromophenyl phenyl ether	NS	60 U	62 U
Hexachlorobenzene	100,000	57 U	60 U
Diethyl phthalate	10,000,000	57 U	60 U
4-Chlorophenyl phenyl ether	NS	54 U	56 U
Pentachlorophenol	24,000	340 U	350 U
n-Nitrosodiphenylamine	600,000	58 U	61 U
4 6-Dinitro-2-methylphenol	NS	280 U	290 U
Phenanthrene	NS	260 J	180 J
Anthracene	10,000,000	97 J	67 U
Di-n-butyl phthalate	10,000,000	130 J	53 U
Benzidine	NS	45 U	47 U
Fluoranthene	10,000,000	510	200 J
Pyrene	10,000,000	520	240 J
Butyl benzyl phthalate	10,000,000	3100	52 U
Benzo(a)anthracene	13,000	320 J	120 J
Chrysene	40,000	310 J	92 J
3 3-Dichlorobenzidine	6,000	100 U	110 U
Bis(2-ethylhexyl)phthalate	210,000	540	53 U
Di-n-octyl phthalate	10,000,000	41 U	43 U
Benzo(b)fluoranthene	14,000	300 J	130 J
Benzo(k)fluoranthene	6,000	210 J	51 J
Benzo(a)pyrene	8,000	340 J	99 J
Indeno(1 2 3-cd)pyrene	4,000	270 J	76 J
Dibenzo(a h)anthracene	1,000	95 J	45 U
Benzo(ghi)perylene	NS	300 J	69 J
Total SVOCs		7373	1257

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
1 - The Beneficial Use Acceptance Criteria, based on the analytical criteria provided by the Former Allied Signal Site, Elizabeth, NJ.
µg/Kg - micrograms per kilogram = parts per billion (ppb)
U - Analyte was not detected at or above the reporting limit.
J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
M - concentration calculated using manual integration.
H - concentration was calculated using manual alternate peak selection.
NS - No standard
* - Batch quality control sample exceeds the upper or lower control limits.
** - This interval represents 12-24' below grade. There was a typo during labeling, therefore the lab mis-labeled the sample as 12-14'.

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-20(0-6)**	**B-21(0-6)**	**B-22(0-6)**	**B-23(0-6)**	**B-24(0-6)**	**B-24(6-12)**	**B-25(0-6)**
Lab Sample ID		**212603-014**	**212603-012**	**212603-010**	**212655-006**	**212655-008**	**212655-010**	**212603-016**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**	**4/13/2006**	**4/12/2006**
Units		**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**
Compound								
Antimony	1,660	1.1 UN	1.5 UN	1.1 UN	1.6 UN	1.4 UN	1.7 BN	2.1 BN
Arsenic	50	7 BN	3.3 BN	5.4 BN	9.8 BN	4 BN	15 N	9.3 N
Barium	47,000	927 N	1900 N	392 N	558 *N	192 *N	976 *N	707 N
Beryllium	5	0.48 U	0.64 U	0.48 U	0.69 UN	0.63 UN	0.5 UN	0.57 U
Cadmium	100	0.97 U	1.3 U	6	2.1 BN	3.3 BN	1.7 BN	6.9
Chromium	NS	11.4	7.9	30	44.4 *N	10.6 *N	12.2 *N	31.5
Chromium III	120,000	10.6	7.67	28.7	42.5	9.65	11.1	30.9
Chromium VI	60	0.79 B	0.24 B	1.3	1.8	1.1	1.2	0.65 B
Copper	600	40.4 *	16 *	123 *	63.9 *N	69.6 *N	36.4 *N	135 *
Lead	613	**721**	467	535	**1000** *	297 *	**877** *	**1130**
Mercury	270	0.48 N	0.4 N	0.79 N	0.65	0.32	0.52	0.92
Nickel	2,400	12.1 *N	7.3 *N	94.3 *N	30.8 *N	17.5 *N	18 *N	17.4 *N
Selenium	3,100	1.5 UN	2.1 UN	1.5 UN	2.2 U	2 U	1.6 U	1.8 UN
Silver	4,100	0.31 U*	0.41 U*	0.56 B*	0.44 UN	0.4 UN	0.55 BN	0.53 B*
Thallium	2	4 UN	5.4 UN	4 UN	5.7 UN	5.2 UN	4.2 UN	4.7 UN
Vanadium	7,100	14.1	11.8	28.7	29.4 *N	18.5 *N	20.7 *N	27
Zinc	1,500	479 *	519 *	606 *	606 *	425 *	922 *	768 *

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-25(6-12)** **212603-018** **1** **4/12/2006** **mg/Kg**	**B-25(12-18)** **212603-020** **1** **4/12/2006** **mg/Kg**	**B-26(6-20)** **212481-003** **1** **3/28/2006** **mg/Kg**	**B-26(20-26)** **212481-004** **1** **3/28/2006** **mg/Kg**	**B-27(0-10)** **212429-016** **1** **3/23/2006** **mg/Kg**	**B-27(10-20)** **212429-018** **1** **3/23/2006** **mg/Kg**	**B-27(20-30)** **212429-020** **1** **3/23/2006** **mg/Kg**	**B-28(0-15)** **212429-004** **1** **3/22/2006** **mg/Kg**	**B-28(15-30)** **212429-001** **1** **3/22/2006** **mg/Kg**
Antimony	1,660	1 UN	1.2 UN	1.2 UN	1.3 UN	1.8 BN	1.5 UN	1.1 UN	1.3 UN	1.2 UN
Arsenic	50	5.4 BN	1.3 UN	4.7 BN	1.4 BN	12.6 N	2 BN	2.1 BN	2.7 B	3.7 B
Barium	47,000	469 N	88.8 N	25.3 *N	173 *N	512 *N	100 *N	32.6 *N	233	52.2
Beryllium	5	0.44 U	0.53 U	0.53 UN	0.57 UN	0.51 U	0.68 U	0.46 U	0.57 UN	0.51 UN
Cadmium	100	2.1 B	1.1 U	1.1 U	1.1 U	1.6 B	1.4 U	0.93 U	1.1 U	1 U
Chromium	NS	16.7	21.8	12.9	28.2	14 *N	16.7 *N	12.7 *N	15.7	16.3
Chromium III	120,000	16.3	21.8	0.45 B	0.41 B	14	16.7	12.7	15.1	16
Chromium VI	60	0.48 B	0.22 U	12.5	27.8	0.46 B	0.36 B	0.23 U	0.62 B	0.27 B
Copper	600	35.8 *	94.3 *	34 *N	30.9 *N	157 *	20.6 *	20.1 *	23	14.6
Lead	613	**697**	29	11.2 *	8.5 B*	601 *N	87.2 *N	9.3 *N	287	10
Mercury	270	0.67	0.14	0.18	0.014 U	0.46	0.44	0.024 B	0.84	0.026 B
Nickel	2,400	14.9 *N	26.9 *N	18.3	21.4	98.3 *	20 *	16 *	16.3	15
Selenium	3,100	1.4 UN	1.7 UN	1.7 U	1.8 U	1.6 U	2.2 U	1.5 U	1.8 U	1.6 U
Silver	4,100	0.28 U*	0.34 U*	0.34 U	0.36 U	0.93 B	0.43 U	0.3 U	0.37 U	0.33 U
Thallium	2	3.6 UN	4.4 UN	4.4 UN	4.8 UN	4.2 UN	5.6 UN	3.9 UN	4.8 UN	4.3 UN
Vanadium	7,100	22.9	26.6	16.6	40	16.1	20	15.1	21	21.8
Zinc	1,500	378 *	80.5 *	49.6 *	64.4 *	396	65.5	44.9	177 N	44 N

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Beneficial Use Acceptance Criteria (mg/Kg)	B-29(6-16) 212481-011 1 3/28/2006 mg/Kg	B-29(16-24) 212481-013 1 3/28/2006 mg/Kg	B-30(0-10) 212454-002 1 3/24/2006 mg/Kg	B-30(10-18) 212454-004 1 3/24/2006 mg/Kg	B-31(0-16) 212429-006 1 3/22/2006 mg/Kg	B-31(16-25) 212429-008 1 3/22/2006 mg/Kg	B-32(0-14) 212429-010 1 3/23/2006 mg/Kg	B-32(14-20) 212429-012 1 3/23/2006 mg/Kg	B-32(20-30) 212429-014 1 3/23/2006 mg/Kg	B-33(0-12 212481-01 1 3/29/200 mg/Kg
Antimony	1,660	1.4 UN	1.2 UN	1.3 UN	1.2 UN	1.4 UN	1.5 UN	1.4 UN	1.6 UN	1.1 UN	1.2
Arsenic	50	5.6 BN	1.9 BN	9 B	3.1 B	4 B	1.6 U	3.8 B	2.9 B	1.2 U	4.8
Barium	47,000	489 *N	19.7 *N	189 N	80.8 N	316	38.5	745	51.4	34.3	1550
Beryllium	5	0.63 UN	0.53 UN	0.86 BN	0.52 UN	0.59 UN	0.65 UN	0.61 UN	0.7 UN	0.49 UN	0.5
Cadmium	100	1.3 U	1.1 U	2 BN	1 UN	1.2 U	1.3 U	1.2 U	1.4 U	0.98 U	1.1
Chromium	NS	17.5	10.1	9.7 *	16.4 *	16.7	13.2	15.3	15.3	14.7	16.9
Chromium III	120,000	0.46 B	0.26 B	7.73	15.6	15.7	12.5	14.9	15.3	13.4	0.25
Chromium VI	60	17	9.84	2.1	0.8 B	1	0.67 B	0.44 B	0.23 U	1.2	16.9
Copper	600	28.4 *N	12 *N	75.3 N	18.4 N	27.3	17.2	24.5	20.4	17.3	25.3
Lead	613	300 *	6.7 B*	152	98.6	295	15.3	**2870**	35.4	10.1	**730**
Mercury	270	0.12	0.018 U	0.36	0.52	0.45	0.31	0.45	0.062	0.029 B	0.38
Nickel	2,400	18.1	11.4	22.9 N	16.1 N	17.1	15.3	14.1	17.7	13.7	15.7
Selenium	3,100	2 U	1.7 U	1.8 U	1.7 U	1.9 U	2.1 U	2 U	2.2 U	1.6 U	1.6
Silver	4,100	0.4 U	0.34 U	0.36 UN	0.33 UN	0.38 U	0.42 U	0.39 U	0.45 U	0.31 U	0.32
Thallium	2	5.3 UN	4.4 UN	4.7 UN	4.4 UN	5 UN	5.5 UN	5.1 UN	5.9 UN	4.1 UN	4.2
Vanadium	7,100	24.8	13.4	16.1 N	24.2 N	20	15.3	21.1	18.4	18.5	19.3
Zinc	1,500	235 *	31.6 *	227 *N	73.2 *N	166 N	42.9 N	261 N	54.2 N	39.5 N	529

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Beneficial Use Acceptance Criteria (mg/Kg)	) 5 6
Antimony	1,660	UN
Arsenic	50	BN
Barium	47,000	*N
Beryllium	5	UN
Cadmium	100	B
Chromium	NS	
Chromium III	120,000	U
Chromium VI	60	
Copper	600	*N
Lead	613	*
Mercury	270	
Nickel	2,400	
Selenium	3,100	U
Silver	4,100	U
Thallium	2	UN
Vanadium	7,100	
Zinc	1,500	*

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-33(12-14)**** **212481-017** **1** **3/29/2006** **mg/Kg**		**B-34(0-10)** **212454-007** **1** **3/24/2006** **mg/Kg**	
Antimony	1,660	1.1	UN	1.5	UN
Arsenic	50	4.3	BN	15.8	
Barium	47,000	24.4	*N	337	N
Beryllium	5	0.5	BN	0.67	UN
Cadmium	100	0.99	U	1.3	UN
Chromium	NS	14.5		31	*
Chromium III	120,000	1.2		25.8	
Chromium VI	60	13.3		5.5	
Copper	600	22.9	*N	63.5	N
Lead	613	11.3	*	**917**	
Mercury	270	0.016	U	1.4	
Nickel	2,400	17.2		18	N
Selenium	3,100	1.6	U	2.2	U
Silver	4,100	0.32	U	0.43	UN
Thallium	2	4.1	UN	5.6	UN
Vanadium	7,100	20.9		36.9	N
Zinc	1,500	51	*	165	*N

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-34(10-24)**	**B-35(0-10)**	**B-35(10-20)**	**B-35(20-28)**	**B-36(0-10)**	**B-36(10-18)**	**B-36(18-30)**	**B-37(0-12)**	**B-37(12-24)**
Lab Sample ID		**212454-009**	**212454-011**	**212454-013**	**212454-015**	**212454-017**	**212454-019**	**212481-001**	**212481-019**	**212499-001**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**	**3/29/2006**	**3/29/2006**
Units		**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**
Compound										
Antimony	1,660	1.3 UN	1.1 UN	1.3 UN	1.2 UN	1.1 UN	1.3 UN	1.5 UN	1.4 UN	1.1 UN
Arsenic	50	1.4 U	9.3	3.1 B	1.8 B	5.5 BN	3.2 BN	2.3 BN	3.9 BN	1.3 BN
Barium	47,000	65.5 N	292 N	116 N	62.2 N	207 *N	70.1 *N	64.8 *N	199 *N	75.9 *N
Beryllium	5	0.58 UN	0.48 UN	0.58 UN	0.53 UN	0.5 UN	0.56 UN	0.66 UN	0.61 UN	0.49 UN
Cadmium	100	1.2 UN	3.9 N	1.2 UN	1.1 UN	1.2 B	1.1 U	1.3 U	1.2 U	0.98 U
Chromium	NS	25.3 *	28.3 *	19.1 *	18.6 *	14.5	21.9	17.8	18.2	22.8
Chromium III	120,000	24.6	24.7	18.3	17.9	11.6	21.6	0.23 U	0.86 B	22.8
Chromium VI	60	0.67 B	3.6	0.83 B	0.69 B	2.9	0.33 B	18.2	16.9	0.23 U
Copper	600	28.2 N	40.1 N	29.6 N	21.1 N	20.5 *N	17.5 *N	16.3 *N	31.9 *N	20 *N
Lead	613	48.9	399	120	9.5 B	163 *	11.3 *	7.1 B*	172 *	11.2 *
Mercury	270	0.75	0.74	0.68	0.032 B	0.51	0.032 B	0.061	0.67	0.012 U
Nickel	2,400	26.4 N	16.7 N	17.1 N	18.5 N	11.3	21	15.3	20.6	20
Selenium	3,100	1.8 U	1.5 U	1.8 U	1.7 U	1.6 U	1.8 U	2.1 U	2 U	1.6 U
Silver	4,100	0.37 UN	0.31 UN	0.37 UN	0.34 UN	0.32 U	0.36 U	0.42 U	0.39 U	0.31 U
Thallium	2	4.8 UN	4 UN	4.8 UN	4.4 UN	4.2 UN	4.7 UN	5.5 UN	5.1 UN	4.1 UN
Vanadium	7,100	23.9 N	26.8 N	25.5 N	21.7 N	20.8	26.1	26.9	26.3	25.7
Zinc	1,500	96.7 *N	655 *N	64.1 *N	36.1 *N	166 *	55.2 *	34.1 *	135 *	43.3 *

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-38(0-10)**	**B-38(10-18)**	**B-39(0-12)**	**DUPLICATE**
Lab Sample ID		**212481-007**	**212481-009**	**212571-013**	**212571-014**
Dilution		**1**	**1**	**1**	**1**
Date Sampled		**3/27/2006**	**3/27/2006**	**4/5/2006**	**4/5/2006**
Units		**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**
Compound					
Antimony	1,660	1.2 UN	1.3 UN	3.2 BN	1.6 UN
Arsenic	50	2.1 BN	5 BN	5 B	5.3 B
Barium	47,000	51.8 *N	74.3 *N	*261* *	*524* *
Beryllium	5	0.53 UN	0.59 UN	0.58 UN	0.69 UN
Cadmium	100	1.1 U	1.2 U	1.2 U	1.4 U
Chromium	NS	14.5	19	9.9 N	9 N
Chromium III	120,000	1	0.71 B	8.94	7.49
Chromium VI	60	13.5	18.3	0.97	1.6
Copper	600	29.2 *N	21.4 *N	10.7 *	44.5 *
Lead	613	36.4 *	81.9 *	293 *	232 *
Mercury	270	0.093	0.61	0.31 *N	0.35 *N
Nickel	2,400	9.7	16.6	7.9 *N	10.1 *N
Selenium	3,100	1.7 U	1.9 U	1.8 U	2.2 U
Silver	4,100	0.34 U	0.38 U	0.37 UN	0.44 UN
Thallium	2	4.4 UN	4.9 UN	4.8 U	5.7 U
Vanadium	7,100	20.4	24.6	*17.5* N	*16.1* N
Zinc	1,500	76.5 *	96.4 *	227	335

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61^{ST} STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Beneficial Use Acceptance Criteria (mg/Kg)	B-39(12-24) 212655-012 1 4/13/2006 mg/Kg	B-40(0-10) 212499-012 1 3/30/2006 mg/Kg	B-40(10-20) 212499-014 1 3/30/2006 mg/Kg	B-40(20-32) 212499-016 1 3/30/2006 mg/Kg	B-41(0-10) 212499-007 1 3/30/2006 mg/Kg	B-41(10-20) 212499-008 1 3/30/2006 mg/Kg
Antimony	1,660	1.4 UN	1.5 UN	1.4 UN	1.2 UN	1.4 UN	1.1 UN
Arsenic	50	1.5 UN	6.4 BN	3.6 BN	1.8 BN	3.3 BN	3.8 BN
Barium	47,000	58.9 *N	145 *N	179 *N	51.4 *N	143 *N	63.8 *N
Beryllium	5	0.62 UN	0.64 U	0.62 U	1.3 B	0.62 U	0.48 U
Cadmium	100	1.2 UN	1.3 U	1.2 U	1 U	1.2 U	0.96 U
Chromium	NS	16.3 *N	13.5 N	24.2 N	19.9 N	10.5 N	22.3 N
Chromium III	120,000	16.3	13.5	24	19.9	10.1	22.3
Chromium VI	60	0.25 U	0.23 U	0.24 B	0.23 U	0.47 B	0.23 U
Copper	600	18.2 *N	23.2 N	48.5 N	21.7 N	18.3 N	21.7 N
Lead	613	37.8 *	**1160**	188	14.8	110	52.8
Mercury	270	0.23	0.22	0.73	0.013 U	0.32	0.097
Nickel	2,400	14.2 *N	11.7 N	50.5 N	25.2 N	9.7 N	20 N
Selenium	3,100	2 U	2.1 U	2 U	1.7 U	2 U	1.5 U
Silver	4,100	0.4 UN	0.41 U	0.4 U	0.33 U	0.4 U	0.31 U
Thallium	2	5.2 UN	5.3 UN	5.2 UN	4.3 UN	5.2 UN	4 UN
Vanadium	7,100	15.6 *N	18	31.8	21.1	18.7	20.6
Zinc	1,500	65.8 *	106	117	45.5	136	63.2

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-41(20-30)**	**B-42(0-12)**	**B-42(12-22)**	**B-43(14-24)**	**B-44(14-24)**	**B-45(6-18)**
Lab Sample ID		**212499-017**	**212499-003**	**212499-005**	**212499-019**	**212499-020**	**212571-002**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/30/2006**	**3/29/2006**	**3/29/2006**	**4/3/2006**	**4/3/2006**	**4/3/2006**
Units		**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**
Compound							
Antimony	1,660	1.7 UN	1.1 UN	1.3 UN	1.2 UN	1.3 UN	1 UN
Arsenic	50	1.8 BN	2.4 BN	2.8 BN	4.7 B	1.5 B	1.1 U
Barium	47,000	70.7 *N	137 *N	123 *N	53.2	157	*156* *
Beryllium	5	0.74 U	0.5 UN	0.57 UN	0.53 U	0.59 U	0.44 UN
Cadmium	100	1.5 U	1 U	1.1 U	1.1 U	1.2 U	0.89 U
Chromium	NS	20.8 N	17.8	24.2	16.6	34.2	37.5 N
Chromium III	120,000	20.8	17.8	23.7	16.2	33.8	37.5
Chromium VI	60	0.24 U	0.24 U	0.52 B	0.41 B	0.34 B	0.21 U
Copper	600	10.1 N	38.4 *N	58.3 *N	20.4	29.2	24.7 *
Lead	613	9.4 B	47 *	54.5 *	13.9	25.3	117 *
Mercury	270	0.027 B	0.085	0.11	0.018 U	0.088	1.4 *N
Nickel	2,400	12.9 N	26	38.2	17.4 *	22.9 *	32 *N
Selenium	3,100	2.4 U	1.6 U	1.8 U	1.9 B	1.9 U	1.4 U
Silver	4,100	0.47 U	0.32 U	0.36 U	0.34 U	0.38 U	0.28 UN
Thallium	2	6.1 UN	4.2 UN	4.7 UN	4.4 U	4.9 U	3.7 U
Vanadium	7,100	21.5	21.3	32.4	21.1 *	42.8 *	*45.5* N
Zinc	1,500	31.9	213 *	668 *	47.6	66.1	89

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-46(6-14)**	**B-47(0-10)**	**B-48(0-10)**	**B-49(0-10)**	**B-50(0-14)**	**B-51(0-12)**
Lab Sample ID		**212571-004**	**212603-008**	**212571-015**	**212571-011**	**212571-018**	**212571-007**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/4/2006**	**4/10/2006**	**4/6/2006**	**4/5/2006**	**4/6/2006**	**4/4/2006**
Units		**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**
Compound							
Antimony	1,660	1.1 UN	1.5 UN	1.2 UN	1.2 UN	1.2 UN	1.1 UN
Arsenic	50	4.7 B	2.3 BN	2.6 B	2.1 B	4.3 B	1.2 U
Barium	47,000	*1050* *	81 N	*428* *	*109* *	*91.3* *	*108* *
Beryllium	5	0.49 UN	0.66 U	0.51 UN	0.52 UN	0.53 UN	0.48 UN
Cadmium	100	1.6 B	1.3 U	1 U	1 U	1.1 U	0.96 U
Chromium	NS	40.7 N	12	9.4 N	15.1 N	10.5 N	12 N
Chromium III	120,000	40.4	11	8.35	15.1	8.93	9.8
Chromium VI	60	0.3 B	0.96	1.1	0.24 U	1.6	2.3
Copper	600	66 *	13.5 *	12.9 *	42.4 *	10.7 *	12.7 *
Lead	613	464 *	58.4	114 *	186 *	159 *	88.4 *
Mercury	270	0.21 *N	0.16 N	0.12 *N	0.9 *N	0.1 *N	0.27 *N
Nickel	2,400	39.9 *N	9 *N	7.8 *N	17.9 *N	7 *N	7.1 *N
Selenium	3,100	1.6 U	2.1 UN	1.6 U	1.7 U	1.7 U	1.5 U
Silver	4,100	0.31 UN	0.42 U*	0.33 UN	0.33 UN	0.34 UN	0.31 UN
Thallium	2	4.1 U	5.5 UN	4.3 U	4.4 U	4.4 U	4 U
Vanadium	7,100	*50.9* N	13.2	*16.3* N	*19.2* N	*22.3* N	*13.2* N
Zinc	1,500	1150	57.6 *	177	111	54.8	113

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-51(12-18)**	**B-52(6-18)**	**B-53(0-6)**	**B-54(0-6)**	**B-55(0-12)**	**B-55(12-20)**
Lab Sample ID		**212571-008**	**212571-005**	**212655-002**	**212655-004**	**212571-020**	**212603-002**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/4/2006**	**4/4/2006**	**4/12/2006**	**4/13/2006**	**4/7/2006**	**4/7/2006**
Units		**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**
Compound							
Antimony	1,660	1.1 UN	1.3 UN	18 N	1.4 UN	1.3 UN	1.4 UN
Arsenic	50	1.6 B	4.2 B	13.9 N	7.4 BN	2.6 BN	1.9 BN
Barium	47,000	*90.2* *	*990* *	1340 *N	298 *N	*150* *N	73.7 *N
Beryllium	5	0.47 UN	0.59 UN	0.55 UN	0.61 UN	0.56 U	0.63 U
Cadmium	100	0.93 U	1.2 U	1.1 BN	1.2 UN	1.1 U	1.3 U
Chromium	NS	23.8 N	17.4 N	19 *N	13.7 *N	17.8 *N	14 *N
Chromium III	120,000	23.8	17.4	17.6	13.2	17	14
Chromium VI	60	0.23 U	0.23 U	1.6	0.54 B	0.74 B	0.22 U
Copper	600	33.6 *	19.2 *	84.5 *N	62.5 *N	22.7 *	16.7 *
Lead	613	47.8 *	237 *	**4360** *	275 *	110 *N	30.4 *N
Mercury	270	0.35 *N	0.98 *N	0.64	0.87	0.92 *N	0.044
Nickel	2,400	20.1 *N	15 *N	18.8 *N	52 *N	22.4 *	16.2 *
Selenium	3,100	1.5 U	1.9 U	1.8 U	1.9 U	1.8 U	2 U
Silver	4,100	0.3 UN	0.38 UN	1.2 BN	0.41 BN	0.36 U	0.4 U
Thallium	2	3.9 U	4.9 U	4.6 UN	5.1 UN	4.7 UN	5.3 UN
Vanadium	7,100	*23.4* N	*15.7* N	23.7 *N	21.1 *N	*19.7*	17.6
Zinc	1,500	77.3	397	1300 *	265 *	145	44.5

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-56(0-12)**	**B-56(12-24)**
Lab Sample ID		**212603-003**	**212603-006**
Dilution		**1**	**1**
Date Sampled		**4/7/2006**	**4/7/2006**
Units		**mg/Kg**	**mg/Kg**
Compound			
Antimony	1,660	1.3 UN	1.6 UN
Arsenic	50	2.5 BN	1.7 UN
Barium	47,000	70.7 *N	36.5 *N
Beryllium	5	0.59 U	0.68 U
Cadmium	100	1.2 U	1.4 U
Chromium	NS	17.4 *N	13.4 *N
Chromium III	120,000	17.4	13.4
Chromium VI	60	0.22 U	0.23 U
Copper	600	28.7 *	17.6 *
Lead	613	49.8 *N	4.7 B*N
Mercury	270	0.11	0.059
Nickel	2,400	16.3 *	20.4 *
Selenium	3,100	1.9 U	2.2 U
Silver	4,100	0.38 U	0.44 U
Thallium	2	4.9 UN	5.7 UN
Vanadium	7,100	21.1	13.7
Zinc	1,500	60.1	46.8

TABLE 3
METALS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
1 - The Beneficial Use Acceptance Criteria, based on the analytical criteria provided by the Former Allied Signal Site, Elizabeth, NJ.
mg/Kg - milligrams per kilogram = parts per million (ppm)
U - Analyte was not detected at or above the reporting limit.
B - Value obtained from a reading that was less than the Contract Required Detection Limit (CRDL).
N - MS/MSD spike recovery exceeds control limits.
* - Batch quality control sample exceeds the upper or lower control limits.
** - This interval represents 12-24' below grade. There was a typo during labeling, therefore the lab mis-labeled the sample as 12-14'.

REMEDIAL INVESTIGATION REPORT
ANALYTICAL RESULTS FOR THALLIUM

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC RSCO**[1]	**Eastern US Background**[2]	MW-1(0-2)	MW-1(15-17)	MW-2(0-2)	MW-2(12-14)	B/MW-3(0-2)	B/MW-3(7-9)	MW-4(0-2)
Lab Sample ID			210785-013	210785-014	210785-001	210785-002	210723-004	210723-005	210785-015
Dilution			1	1	5	1	1	1	1
Date Sampled			9/14/2005	9/14/2005	9/12/2005	9/12/2005	9/8/2005	9/8/2005	9/15/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	3,810 **J**	9,290 **J**	4,380 **J**	11,200 **J**	3,430 **J**	6,760 **J**	1,000 **J**
Antimony	SB	N/A	1.2 **UJ**	1.3 **UJ**	1.4 **UJ**	1.3 **UJ**	1.7 **UJ**	1.4 **UJ**	1.3 **R**
Arsenic	7.5 or SB	3-12	7.4 **J**	4.1 **J**	**16.8**	2.3 **J**	11.3 **J**	2.7 **J**	2.5 **J**
Barium	300 or SB	15-600	**864 J**	19.6 **J**	244 **J**	96.5 **J**	**2,930**	114	96.4 **R**
Beryllium	0.16 or SB	0-1.75	0.51 U	0.56 U	0.61 U	0.61 **J**	0.75 U	0.63 U	0.56 **UJ**
Cadmium	1 or SB	0.1-1	**2** B	1.1 U	**4.2**	1.2 U	**1.8 J**	1.3 U	1.1 U
Calcium	SB	130-35,000	**44,300**	565	5,510	1,610	**91,400**	13,100	**125,000** *
Chromium	10 or SB	1.5-40	15.8	13	17.2	16.3	18.4	15.3	3.8 **J**
Cobalt	30 or SB	2.5-60	2.6	7.5	2.4	7.4	2.9 **J**	10.1	1.9 **J**
Copper	25 or SB	1-50	30.2	15.2	**166**	15.6	16.8	29.4	11.5
Iron	2,000 or SB	2,000-550,000	10,800	20,500	23,000	19,300	7,310	17,600	4,940
Lead	SB[3]	200-500[3]	**803**	7.7 **J**	475	18.3	**2,980**	427	89.2
Magnesium	SB	100-5,000	**9,900**	3,070	651	3,540	4,690	3,190	**82,100**
Manganese	SB	50-5,000	187	291	111	314	146	110	135
Mercury	0.1 or SB	0.001-0.2	**0.87**	0.039 B	**0.3**	0.058	**2.5**	0.16	0.013 U
Nickel	13 or SB	0.5-25	18.2	14.7	13.4	17.8	11.4	23.5	9.6 **J**
Potassium	SB	8,500-43,000	677	386	329	1,220	1,060 **J**	3,940 **J**	426 **J**
Selenium	2 or SB	0.1-3.9	1.6 U	1.8 U	1.9 U	1.9 U	2.4 U	2 U	1.8 U
Silver	SB	N/A	0.32 U	0.36 U	0.53 **J**	0.37 U	0.48 U	0.4 U	0.36 **UJ**
Sodium	SB	6,000-8,000	346 **J**	202 **J**	352 **J**	91.6 **J**	234 **J**	252 **J**	210 **J**
Thallium	150	1-300	1.3 **UJ**	1.5 **UJ**	1.6 **UJ**	1.5 **UJ**	2 U	1.7 U	1.5 **R**
Vanadium	SB	N/A	22	15.3	19.7	22.4	11	15.7	24.3 **J**
Zinc	20 or SB	9-50	**565 J**	35.3 **J**	**435 J**	**51.4 J**	2,060	**469**	**70.4**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	MW-4(12-14)	B/MW-5(0-2)	B/MW-5(5-7)	MW-6(2-4)	MW-6(15-17)	MW-7(0-2)	MW-7(6-8)
Lab Sample ID	**RSCO**[1]	**Background**[2]	210785-016	210723-008	210723-009	210941-007	210941-008	210941-005	210941-006
Dilution			1	1	1	1	1	5	10
Date Sampled			9/15/2005	9/9/2005	9/9/2005	9/22/2005	9/22/2005	9/21/2005	9/21/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	8,440 **J**	5,960 **J**	6,760 **J**	15,800	10,800	3,840	5,180
Antimony	SB	N/A	1.5 **R**	1.3 **UJ**	1.3 **UJ**	1.5 **UJ**	1.3 **UJ**	1.6 **UJ**	1.3 **UJ**
Arsenic	7.5 or SB	3-12	3.4 **J**	3.3 **J**	1.3 U	5 **J**	1.8 **J**	3.7 B	6.3 **J**
Barium	300 or SB	15-600	96.6 **R**	93.3	143	214 **J**	91.9 **J**	193 **J**	**922 J**
Beryllium	0.16 or SB	0-1.75	0.66 **UJ**	0.57 U	0.55 U	0.64 U	0.58 U	0.69 U	0.57 U
Cadmium	1 or SB	0.1-1	1.3 U	1.1 U	1.1 U	1.3 U	1.2 U	1.4 U	1.1 U
Calcium	SB	130-35,000	2,850	**47,200**	2,240	**68,400**	1,280	**100,000**	**67,500**
Chromium	10 or SB	1.5-40	13.1 **J**	11.3	14	105 **R**	25.2 **R**	19 **R**	21 **R**
Cobalt	30 or SB	2.5-60	5.7	4.6	6.8	12.9 **J**	11 **J**	5 **J**	5 **J**
Copper	25 or SB	1-50	18.6	17.4	16	39.8 **J**	34.8 **J**	11.9 **J**	15 **J**
Iron	2,000 or SB	2,000-550,000	15,600	10,200	15,900	34,500	18,400	16,400	12,300
Lead	SB [3]	200-500[3]	70.6	56.9	48.3	90.5 **J**	32.4 **J**	417 **J**	292 **J**
Magnesium	SB	100-5,000	2,670	**6,920**	3,710	**13,900**	4,220	**5,180**	**5,030**
Manganese	SB	50-5,000	260	306	77.8	511	193	167	158
Mercury	0.1 or SB	0.001-0.2	0.15	0.19	0.072	**0.59 J**	0.083 **J**	0.17 **J**	**0.36 J**
Nickel	13 or SB	0.5-25	14 **J**	10.3	17.9	48.6 **J**	**25.2 J**	7.4 **J**	14.6 **J**
Potassium	SB	8,500-43,000	694 **J**	2,570 **J**	4,350 **J**	7,290 **J**	2,850 **J**	984 **J**	1,800 **J**
Selenium	2 or SB	0.1-3.9	2.1 U	1.8 U	1.8 U	2.1 U	1.9 U	2.2 U	1.8 U
Silver	SB	N/A	0.42 **UJ**	0.36 U	0.35 U	0.41 **UJ**	0.37 **UJ**	0.44 **UJ**	0.36 **UJ**
Sodium	SB	6,000-8,000	105 **J**	335 **J**	139 **J**	676 **J**	104 **J**	2,380 **J**	356 **J**
Thallium	150	1-300	1.7 **UJ**	1.5 U	2.8 **J**	1.7 U	1.5 U	1.8 U	1.5 U
Vanadium	SB	N/A	16.2 **J**	16.4	14	39.9 **J**	30.5 **J**	11.4 **J**	18.3 **J**
Zinc	20 or SB	9-50	**53.5**	**84.6**	**98.5**	**195 J**	**58.1 J**	**210 J**	**878 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	MW-8(0-2)	MW-8(13-15)	MW-9(0-2)	MW-9(12-14)	B-10(0.5-2.5)	B-10(15-15.5)	B-11(0-2)
Lab Sample ID	**RSCO**[1]	**Background**[2]	210941-001	210941-002	210785-006	210785-007	210785-017	210785-018	210810-004
Dilution			1	1	1	1	1	1	1
Date Sampled			9/19/2005	9/19/2005	9/13/2005	9/13/2005	9/15/2005	9/15/2005	9/16/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	8,500	15,100	5,990 J	6,770 J	5,400 J	8,810 J	2,680 J
Antimony	SB	N/A	1.3 UJ	1.1 UJ	1.6 UJ	1.4 UJ	1.4 R	1.5 R	1.5 UJ
Arsenic	7.5 or SB	3-12	4.4 J	2.5 J	3.2 J	2.7 J	3 J	1.6 U	**14.6**
Barium	300 or SB	15-600	184 *N	165 J	58.5 J	18.7 J	263 R	109 R	261 J
Beryllium	0.16 or SB	0-1.75	0.57 U	0.46 U	0.68 U	0.63 U	0.59 UJ	0.67 UJ	0.65 U
Cadmium	1 or SB	0.1-1	1.1 U	0.93 U	1.4 U	1.3 U	1.2 U	1.3 U	**7.7**
Calcium	SB	130-35,000	**42,500**	5,730	**86,600**	1,100	**56,200**	2,530	9,240
Chromium	10 or SB	1.5-40	27.6 R	107 R	17.1	9	10.4 J	13.1 J	11.2
Cobalt	30 or SB	2.5-60	3.9 J	12.5 J	3.8	6.5	2.6	5.9	26.3
Copper	25 or SB	1-50	13.9 J	33.8 J	17	27.4	11.1	17.1	**116**
Iron	2,000 or SB	2,000-550,000	12,800	34,900	15,900	14,300	6,590	15,400	8,770
Lead	SB [3]	200-500[3]	**510 J**	133 J	6 J	6 J	277	85.1	364
Magnesium	SB	100-5,000	3,320	**7,500**	**5,210**	2,960	3,800	2,540	632
Manganese	SB	50-5,000	200	402	209	340	179	278	117
Mercury	0.1 or SB	0.001-0.2	1.5 J	0.099 J	0.015 U	0.018 J	0.14	**0.46**	0.12
Nickel	13 or SB	0.5-25	10.4 J	**30.9 J**	7.9	15.8	8.6 J	12.5 J	**34.4**
Potassium	SB	8,500-43,000	932 J	7,560 J	681	369	753 J	470 J	248 J
Selenium	2 or SB	0.1-3.9	1.8 U	1.7 J	2.2 U	2 U	1.9 U	2.1 U	2.1 U
Silver	SB	N/A	0.36 UJ	0.3 UJ	0.44 U	0.41 U	0.38 UJ	0.43 U	0.41 U
Sodium	SB	6,000-8,000	900 J	308 J	823 J	35.5 J	679 J	182 J	274 J
Thallium	150	1-300	1.5 U	2.2 J	1.8 UJ	1.7 UJ	1.6 UJ	1.8 UJ	1.7 UJ
Vanadium	SB	N/A	17.4 J	48 J	17.4	10.9	12.1 J	14.9 J	13.7
Zinc	20 or SB	9-50	**155 J**	**1,440 J**	48 J	30.6 J	**276**	47.3	**812 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units**	**NYSDEC** **RSCO**[1] **mg/Kg**	**Eastern US** **Background**[2] **mg/Kg**	B-11(12-14) 210810-005 1 9/16/2005 mg/Kg	B-11(25-27) 210810-006 1 9/16/2005 mg/Kg	B-12(0-2) 210723-001 5 9/8/2005 mg/Kg	B-12(2-4) 210723-002 2 9/8/2005 mg/Kg	B-12(11-13) 210723-003 1 9/8/2005 mg/kg	B-13(0-2) 210723-010 10 9/9/2005 mg/Kg	B-13(6-8) 210723-011 1 9/9/2005 mg/Kg	B-14(0-2) 210941-011 10 9/23/2005 mg/Kg
Aluminum	SB	33,000	10,900 **J**	9,160 **J**	6,030 **J**	**5,340 J**	8,620 **J**	4,080 **J**	6,210 **J**	7,940
Antimony	SB	N/A	1.2 **UJ**	1.5 **UJ**	5.2 **J**	1.3 **UJ**	3.3 **J**	1.6 **UJ**	1.5 **UJ**	1.5 **UJ**
Arsenic	7.5 or SB	3-12	4.6 **J**	4.7 **J**	**16.6**	10.1	4.2 **J**	**12.9**	5 **J**	5.5 **J**
Barium	300 or SB	15-600	130 **J**	285 **J**	**817**	387	**4,100**	**1,450**	**982**	314 **J**
Beryllium	0.16 or SB	0-1.75	0.54 U	0.66 U	0.71 U	0.55 U	0.56 U	0.71 U	0.64 U	0.64 U
Cadmium	1 or SB	0.1-1	1.1 U	1.3 U	**14.5**	1.1 U	**6.1**	1.4 U	1.3 U	1.3 U
Calcium	SB	130-35,000	24,000	8,490	**44,300**	20,000	27,800	**45,700**	**64,700**	**78,600**
Chromium	10 or SB	1.5-40	19.1	26.9	32.9	17.7	22.3	12.2	12.9	**53.6 R**
Cobalt	30 or SB	2.5-60	8.7	10.9	3.8	5.5	9	4.1	5.9	6.5 **J**
Copper	25 or SB	1-50	**54.3**	33.8	**297**	128	**69.6**	24.5	29.9	44.3 **J**
Iron	2,000 or SB	2,000-550,000	19,400	23,000	13,000	34,500	20100	15,800	13,200	14,200
Lead	SB [3]	200-500[3]	**672**	153	**1,500**	**1,760**	**786**	**821**	498	423 **J**
Magnesium	SB	100-5,000	4,520	3,920	4690	**5,400**	**5,960**	3,130	**7,270**	**5,770**
Manganese	SB	50-5,000	418	281	167	393	275	302	319	197
Mercury	0.1 or SB	0.001-0.2	**0.43**	0.02 **J**	**0.27**	0.34	0.18	**0.54**	**0.33**	0.11 **J**
Nickel	13 or SB	0.5-25	19.5	21.7	18.2	15.4	22.3	24.2	14	12.5 **J**
Potassium	SB	8,500-43,000	2,250	1,910	604 **J**	1,210 **J**	6,820 **J**	1,000 **J**	2,310 **J**	1,680 **J**
Selenium	2 or SB	0.1-3.9	1.7 U	2.1 U	2.4 **J**	1.8 U	1.8 U	2.3 U	2 U	2.1 U
Silver	SB	N/A	0.34 U	0.42 U	1.1 **J**	0.61 **J**	0.36 U	0.46 U	0.41 U	0.41 **UJ**
Sodium	SB	6,000-8,000	212 **J**	152 **J**	465 **J**	294 **J**	310 **J**	353 **J**	364 **J**	1,230 **J**
Thallium	150	1-300	1.4 **UJ**	1.7 **UJ**	1.9 U	1.5 U	1.5 U	1.9 U	1.7 U	1.7 U
Vanadium	SB	N/A	25.6	18.6	24.1	17.1	26.2	22.8	16.2	21.2 **J**
Zinc	20 or SB	9-50	**87.7 J**	**183 J**	**1,100**	**284**	**1,740**	**809**	**1,070**	**442 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	B-14(15-17)	B-14(20-22)	B-15(0-2)	B-15(13-13.5)	B-16(0-2)	B-16(10-12)	B-16(24-26)
Lab Sample ID	**RSCO**[1]	**Background**[2]	210941-012	210941-013	210941-003	210941-004	210785-008	210785-011	210785-012
Dilution			1	1	1	1	1	1	1
Date Sampled			9/23/2005	9/23/2005	9/19/2005	9/19/2005	9/14/2005	9/14/2005	9/14/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	8,340	9,110	8,050	11,400	6,140 **J**	7,960 **J**	12,900 **J**
Antimony	SB	N/A	1.3 **UJ**	1.3 **UJ**	1.3 **UJ**	1.2 **UJ**	1.3 **UJ**	1.1 **UJ**	1.4 **UJ**
Arsenic	7.5 or SB	3-12	1.4 U	3.1 **J**	5.5 **J**	4.6 **J**	9.6	3.7 **J**	2.4 **J**
Barium	300 or SB	15-600	103	87.4	166 **J**	102 **J**	139 **J**	99.9 **J**	75.7 **J**
Beryllium	0.16 or SB	0-1.75	0.57 U	0.73 **J**	0.57 U	0.53 U	0.57 U	0.49 U	0.61 U
Cadmium	1 or SB	0.1-1	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	0.97 U	1.2 U
Calcium	SB	130-35,000	4,970 **J**	2,830	**62,300**	11,700	**52,200**	9,350	1,750
Chromium	10 or SB	1.5-40	**179**	14.2	27 **R**	17.3 **R**	20.4	17.5	25.2
Cobalt	30 or SB	2.5-60	10	9	6 **J**	8.6 **J**	3.5	6.2	12.6
Copper	25 or SB	1-50	**67.8**	12.8	22.1 **J**	14.4 **J**	21.5	27.1	20.1
Iron	2,000 or SB	2,000-550,000	37,300	13,800	17,400	28,800	13,700	15,900	28,400
Lead	SB [3]	200-500[3]	20.6	31.8	232 **J**	7.7 **J**	84.2	134	27
Magnesium	SB	100-5,000	4,410	1,640	3,970	3,320	4,790	3,250	**5,240**
Manganese	SB	50-5,000	301	293	193	1,020	178	240	314
Mercury	0.1 or SB	0.001-0.2	0.064 **J**	0.11 **J**	0.13 **J**	0.021 **J**	0.087	**0.7**	0.051
Nickel	13 or SB	0.5-25	21.2	18.2	11.6 **J**	17 **J**	14.1	13.7	22
Potassium	SB	8,500-43,000	5,550 **J**	360 **J**	1,140 **J**	726 **J**	1,260	1,530	2,240
Selenium	2 or SB	0.1-3.9	1.8 **UJ**	1.9 **UJ**	1.8 U	1.7 U	1.8 U	1.6 U	1.9 U
Silver	SB	N/A	0.37 U	0.38 U	0.37 **UJ**	0.34 **U**	0.36 U	0.31 U	0.39 U
Sodium	SB	6,000-8,000	169 **J**	108 **J**	809 **J**	224 **J**	1,000 **J**	221 **J**	216 **J**
Thallium	150	1-300	1.5 **R**	1.6 **R**	1.5 U	2.2 **J**	1.5 **UJ**	1.3 **UJ**	1.6 **UJ**
Vanadium	SB	N/A	25	16	35.4 **J**	21.1 **J**	20.6	20.1	30.2
Zinc	20 or SB	9-50	**90.9 J**	**49.9 J**	**127 J**	35.9 **J**	**103 J**	**118 J**	**56 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	B-17(0-2)	B-17(14-16)	B-17(18-20)	B-18(0-2)	B-18(14.5-16.5)	B-18(28-30)
Lab Sample ID	**RSCO**[1]	**Background**[2]	210810-001	210810-002	210810-003	210785-003	210785-004	210785-005
Dilution			1	1	1	5	1	1
Date Sampled			9/16/2005	9/16/2005	9/16/2005	9/12/2005	9/12/2005	9/12/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	3,070 **J**	2,950 **J**	**46,600 J**	7,240 **J**	7,390 **J**	7,170 **J**
Antimony	SB	N/A	1 **UJ**	1.2 **UJ**	1.3 **UJ**	1.3 **UJ**	1.6 **UJ**	1.1 **UJ**
Arsenic	7.5 or SB	3-12	1.8 **J**	7.7 **J**	3.5 **J**	3.8 **J**	1.7 U	1.6 **J**
Barium	300 or SB	15-600	27.7 **J**	**936 J**	278 **J**	119 **J**	62.5 **J**	36.2 **J**
Beryllium	0.16 or SB	0-1.75	0.46 U	0.54 U	0.58 U	0.56 U	0.69 U	0.69 **J**
Cadmium	1 or SB	0.1-1	0.92 U	**1.2 J**	**3.2 J**	1.1 U	1.4 U	0.96 U
Calcium	SB	130-35,000	27,200	**66,100**	5,180	**55,400**	1,170	870
Chromium	10 or SB	1.5-40	7.6	15.1	**278**	15.1	12.1	13.9
Cobalt	30 or SB	2.5-60	2.9	2.8	38	4.5	6	11.7
Copper	25 or SB	1-50	15.2	17	28.5	26.8	14.2	22.2
Iron	2,000 or SB	2,000-550,000	6,480	6,380	70,600	11,800	13,100	22,800
Lead	SB [3]	200-500[3]	27.9	**2,580**	18.9	88.2	25.6	6.8 **J**
Magnesium	SB	100-5,000	**6,560**	1,970	**38,700**	4,980	2,440	3,390
Manganese	SB	50-5,000	196	147	1,420	177	150	402
Mercury	0.1 or SB	0.001-0.2	0.077	**0.81**	0.029 **J**	0.096	**0.21**	0.013 U
Nickel	13 or SB	0.5-25	6.9	14.1	**135**	12.9	19.6	**25.3**
Potassium	SB	8,500-43,000	499	726	20,200	1,660	564	1,480
Selenium	2 or SB	0.1-3.9	1.5 U	1.7 U	1.9 U	1.8 U	2.2 U	1.5 U
Silver	SB	N/A	0.29 U	0.35 U	0.37 U	0.36 U	0.44 U	0.31 U
Sodium	SB	6,000-8,000	132 **J**	560 **J**	1,580 **J**	582 **J**	72.9 **J**	98.1 **J**
Thallium	150	1-300	1.2 **UJ**	1.4 **UJ**	1.5 UN	1.5 **UJ**	1.8 **UJ**	1.3 **UJ**
Vanadium	SB	N/A	13.7	10	165 **R**	21.7	13.3	12.8
Zinc	20 or SB	9-50	43.9 **J**	**461 J**	**125 J**	**310 J**	38.2 **J**	**68.6 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:

1 - Recommended Soil Clean-up Objectives listed in NYSDEC Technical and Adminstrative Guidance Memorandum (TAGM) #4046

2 - From TAGM #4046 (exceendances indicated in bold).

3 - Background levels for lead vary widely. Average background levels in metropolitan or suburban areas or near highways typically range from 200-500 ppm.

SB - Site Background

mg/kg - milligrams per kilogram = parts per million (ppm)

U - Compound not detected.

B - Value obtained from a reading that was less than the Contract Required Detection Limit (CRDL).

N - MS/MSD spike recovery exceeds control limits.

N/A - Not Available.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the samle and meet quality control criteria. The presence or absence of the analyte cannot be verified.

(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-20(0-6) 212603-014 1 4/10/2006 µg/Kg	B-21(0-6) 212603-012 1 4/10/2006 µg/Kg	B-22(0-6) 212603-010 1 4/10/2006 µg/Kg	B-23(0-6) 212655-006 1 4/13/2006 µg/Kg	B-24(0-6) 212655-008 1 4/13/2006 µg/Kg	B-24(6-12) 212655-010 1 4/13/2006 µg/Kg
alpha-BHC	NS	0.32 U	0.32 U	0.31 U	3.6 J	0.75 J	0.32 U
beta-BHC	NS	0.31 U	0.32 U	0.31 U	0.31 U	0.31 U	2.6 M
delta-BHC	NS	0.12 U	0.12 U	0.12 U	3.6 J	0.12 U	0.48 JM
gamma-BHC (Lindane)	2,200	0.18 U	0.18 U	0.17 U	1.7 U	0.17 U	0.18 U
Heptachlor	650	0.17 U	0.18 U	0.17 U	0.87 J	2	0.17 U
Aldrin	170	0.41 U	0.42 U	0.41 U	0.41 U	1.1 J	0.99 JM
Heptachlor epoxide	NS	0.85 J	1.2 J	0.27 JM	3.2 J	0.13 U	0.13 U
Endosulfan I	6,200,000*	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Dieldrin	180	0.37 U	0.38 U	0.37 U	3.6 U	0.37 U	0.37 U
4 4'-DDE	9,000	14	16	4.8 M	1.9 J	0.49 U	0.5 U
Endrin	310,000	1 U	1 U	1 U	1 U	1 U	1.7 JM
Endosulfan II	6,200,000*	6.2	0.2 U	0.19 U	1.9 U	1.7 J	1.1 JM
4 4'-DDD	12,000	0.44 U	0.45 U	2.1 JM	2.5 JM	1.6 J	4.3 M
Endosulfan sulfate	NS	7.1	9.1	1.8 J	2 U	0.2 U	0.2 U
4 4'-DDT	9,000	3.2 J	0.36 U	8.6 M	2.1 J	5.4 M	3.4 JM
Methoxychlor	5,200,000	22	45 M	6.8 J	24 U	2.4 U	2.4 U
Toxaphene	200	5.6 U	5.7 U	5.5 U	55 U	5.5 U	5.6 U
Endrin aldehyde	NS	0.37 U	0.38 U	0.37 U	0.37 U	3.6 JM	0.37 U
Chlordane	NS	0.81 U	0.82 U	0.8 U	0.8 U	0.8 U	0.81 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-25(0-6)** **212603-016** **1** **4/12/2006** **µg/Kg**	**B-25(6-12)** **212603-018** **1** **4/12/2006** **µg/Kg**	**B-25(12-18)** **212603-020** **1** **4/12/2006** **µg/Kg**	**B-26(6-20)** **212481-003** **1** **3/28/2006** **µg/Kg**	**B-26(20-26)** **212481-004** **1** **3/28/2006** **µg/Kg**	**B-27(0-10)** **212429-016** **1** **3/23/2006** **µg/Kg**	**B-27(10-20)** **212429-018** **1** **3/23/2006** **µg/Kg**
alpha-BHC	NS	0.32 U	0.31 U	0.29 U	0.33 U	0.31 U	0.31 U	0.33 U
beta-BHC	NS	0.32 U	0.3 U	0.28 U	0.32 U	0.31 U	0.31 U	0.32 U
delta-BHC	NS	0.12 U	0.11 U	0.11 U	0.12 U	0.12 JM	0.12 U	0.12 U
gamma-BHC (Lindane)	2,200	0.18 U	0.17 U	0.16 U	0.18 U	0.17 U	0.17 U	0.18 U
Heptachlor	650	0.18 U	0.17 U	0.16 U	0.18 U	0.17 U	0.77 J	0.18 U
Aldrin	170	0.42 U	0.4 U	0.37 U	0.43 U	0.41 U	0.4 U	0.43 U
Heptachlor epoxide	NS	0.13 U	1.2 JM	0.12 U	0.14 U	0.13 U	0.13 U	0.14 U
Endosulfan I	6,200,000*	0.17 U	0.16 U	0.15 U	0.18 U	0.17 U	0.58 J	0.18 U
Dieldrin	180	0.38 U	0.36 U	0.34 U	0.39 U	0.37 U	0.37 U	0.39 U
4 4'-DDE	9,000	6.6 M	23	1.4 J	0.52 U	0.5 U	0.49 U	0.52 U
Endrin	310,000	1 U	0.99 U	0.94 U	1.1 U	1 U	1 U	1.1 U
Endosulfan II	6,200,000*	0.2 U	10	0.18 U	0.57 J	0.19 U	0.19 U	0.21 U
4 4'-DDD	12,000	0.45 U	0.42 U	0.4 U	0.46 U	0.44 U	0.43 U	0.46 U
Endosulfan sulfate	NS	2.4 J	17	0.57 J	0.21 U	0.2 U	9.5	0.21 U
4 4'-DDT	9,000	4.3 M	0.34 U	0.33 U	0.37 U	0.58 J	0.35 U	0.37 U
Methoxychlor	5,200,000	7.6 J	78 M	2.2 U	2.6 U	2.4 U	40	2.6 U
Toxaphene	200	5.7 U	5.4 U	5.1 U	5.8 U	5.5 U	5.5 U	5.8 U
Endrin aldehyde	NS	0.38 U	0.36 U	0.34 U	0.39 U	0.37 U	0.37 U	0.39 U
Chlordane	NS	0.82 U	0.78 U	0.74 U	0.85 U	0.8 U	0.8 U	0.85 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-27(20-30)**	**B-28(0-15)**	**B-28(15-30)**	**B-29(6-16)**	**B-29(16-24)**	**B-30(0-10)**	**B-30(10-18)**
Lab Sample ID		**212429-020**	**212429-004**	**212429-001**	**212481-011**	**212481-013**	**212454-002**	**212454-004**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/23/2006**	**3/22/2006**	**3/22/2006**	**3/28/2006**	**3/28/2006**	**3/24/2006**	**3/24/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
alpha-BHC	NS	0.32 U	0.31 U	0.32 U	0.32 U	0.34 U	0.3 U	0.33 U
beta-BHC	NS	0.32 U	0.31 U	0.31 U	1.1 J	0.33 U	0.31 J	0.32 U
delta-BHC	NS	0.12 U	0.12 U	0.12 U	0.12 U	0.13 U	0.26 J	0.16 J
gamma-BHC (Lindane)	2,200	0.18 U	0.17 U	0.18 U	0.18 U	0.19 U	0.17 U	0.18 U
Heptachlor	650	0.18 U	0.17 U	0.18 U	0.18 U	0.19 U	0.35 J	0.18 U
Aldrin	170	0.42 U	0.4 U	0.42 U	0.42 U	0.44 U	0.84 J	0.42 U
Heptachlor epoxide	NS	0.13 U	0.13 U	0.13 U	0.13 U	0.14 U	0.68 J	0.14 U
Endosulfan I	6,200,000*	0.17 U	0.17 U	0.17 U	0.17 U	0.18 U	0.16 U	0.21 J
Dieldrin	180	0.38 U	0.37 U	0.37 U	0.38 U	0.4 U	1.2 J	0.38 U
4 4'-DDE	9,000	0.51 U	0.49 U	0.51 U	0.51 U	0.54 U	0.63 J	0.52 U
Endrin	310,000	1 U	1 U	1 U	1.1 U	1.1 U	0.98 U	1.1 U
Endosulfan II	6,200,000*	0.2 U	0.29 J	0.2 U	0.66 J	0.21 U	0.53 J	0.45 J
4 4'-DDD	12,000	0.45 U	0.43 U	0.44 U	0.45 U	0.47 U	2.7 J	1.6 J
Endosulfan sulfate	NS	0.2 U	0.2 U	0.2 U	2.3 JM	0.21 U	0.19 U	0.21 U
4 4'-DDT	9,000	0.36 U	13	0.36 U	0.36 U	0.38 U	1.4 J	0.88 J
Methoxychlor	5,200,000	2.5 U	17 J	2.5 U	22 M	2.6 U	2.3 U	2.5 U
Toxaphene	200	5.7 U	5.5 U	5.6 U	5.7 U	6 U	5.3 U	5.7 U
Endrin aldehyde	NS	0.38 U	12	0.38 U	0.38 U	0.4 U	2 J	1.3 J
Chlordane	NS	0.82 U	0.8 U	0.82 U	0.83 U	0.87 U	0.77 U	0.83 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1] (μg/Kg)	B-31(0-16)	B-31(16-25)	B-32(0-14)	B-32(14-20)	B-32(20-30)	B-33(0-12)	B-33(12-14)**
Lab Sample ID		212429-006	212429-008	212429-010	212429-012	212429-014	212481-015	212481-017
Dilution		5	1	1	1	1	1	1
Date Sampled		3/22/2006	3/22/2006	3/23/2006	3/23/2006	3/23/2006	3/29/2006	3/29/2006
Units		μg/Kg	μg/Kg	μg/Kg	μg/Kg	μg/Kg	μg/Kg	μg/Kg
Compound								
alpha-BHC	NS	1.6 U	0.34 U	0.32 U	0.33 U	0.34 U	1.1 J	0.33 U
beta-BHC	NS	1.5 U	0.33 U	0.31 U	0.32 U	0.33 U	0.3 U	0.32 U
delta-BHC	NS	0.59 U	0.13 U	0.12 U	0.12 U	0.13 U	0.11 U	0.12 U
gamma-BHC (Lindane)	2,200	0.86 U	0.19 U	0.17 U	0.18 U	0.19 U	0.17 U	0.18 U
Heptachlor	650	0.85 U	0.18 U	0.17 U	0.18 U	0.18 U	0.74 JM	0.18 U
Aldrin	170	2 U	0.44 U	0.41 U	0.42 U	0.43 U	2.6 M	0.43 U
Heptachlor epoxide	NS	0.65 U	0.14 U	0.13 U	0.13 U	0.14 U	2.3	0.14 U
Endosulfan I	6,200,000*	0.84 U	0.18 U	0.17 U	0.17 U	0.18 U	1.2 J	0.18 U
Dieldrin	180	1.8 U	0.39 U	0.37 U	0.38 U	0.39 U	7.3	0.38 U
4 4'-DDE	9,000	2.5 U	0.53 U	0.5 U	0.51 U	0.53 U	5.4 M	0.52 U
Endrin	310,000	5.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U
Endosulfan II	6,200,000*	0.97 U	0.21 U	0.51 J	0.2 U	0.21 U	1 J	0.2 U
4 4'-DDD	12,000	2.2 U	0.47 U	0.44 U	0.45 U	0.47 U	20	0.46 U
Endosulfan sulfate	NS	1.7 J	0.21 U	0.2 U	0.2 U	0.21 U	1.2 JM	0.21 U
4 4'-DDT	9,000	1.8 U	0.38 U	1.5 J	1 J	0.38 U	3.1 JM	0.37 U
Methoxychlor	5,200,000	12 U	2.6 U	2.4 U	2.5 U	2.6 U	2.4 U	2.5 U
Toxaphene	200	27 U	5.9 U	5.5 U	5.7 U	5.9 U	5.4 U	5.8 U
Endrin aldehyde	NS	1.8 U	0.39 U	2.3 J	0.38 U	0.39 U	5.1	0.39 U
Chlordane	NS	4 U	0.86 U	0.8 U	0.83 U	0.86 U	0.78 U	0.84 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-34(0-10)**	**B-34(10-24)**	**B-35(0-10)**	**B-35(10-20)**	**B-35(20-28)**	**B-36(0-10)**	**B-36(10-18)**	**B-36(18-30)**
Lab Sample ID		**212454-007**	**212454-009**	**212454-011**	**212454-013**	**212454-015**	**212454-017**	**212454-019**	**212481-001**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound									
alpha-BHC	NS	5.3	0.33 U	1.2 J	0.33 U	0.32 U	10	0.62 J	0.33 U
beta-BHC	NS	1.4 J	0.42 J	0.31 U	1.3 J	0.45 J	0.3 U	0.32 U	0.32 U
delta-BHC	NS	1.5 J	0.2 J	0.38 J	0.31 J	0.12 J	2.3	0.12 U	0.12 U
gamma-BHC (Lindane)	2,200	0.19 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.18 U	0.18 U
Heptachlor	650	0.87 J	0.18 U	0.49 J	0.76 J	0.36 J	1.2 J	0.18 U	0.18 U
Aldrin	170	2.2 J	0.42 U	0.41 U	0.42 U	0.6 J	1.6 J	0.42 U	0.42 U
Heptachlor epoxide	NS	4.4	0.21 J	3.2	2.1	0.15 J	0.42 J	0.13 U	0.14 U
Endosulfan I	6,200,000*	1.6 J	0.17 U	0.17 U	0.39 J	0.17 U	0.61 J	0.17 U	0.17 U
Dieldrin	180	5.5	1.8 J	18	7.2	0.62 J	2.8 J	0.38 U	0.38 U
4 4'-DDE	9,000	29	0.67 J	2.5 J	1.4 J	0.51 U	3.6 J	0.51 U	0.52 U
Endrin	310,000	1.1 U	1.1 U	5.3 J	4.7 J	1 U	0.99 U	1 U	1.1 U
Endosulfan II	6,200,000*	2 J	0.63 J	1.3 J	2.1 J	0.86 J	0.23 J	0.2 U	0.2 U
4 4'-DDD	12,000	25	1.1 J	8.9	13	0.96 J	3.8	0.45 U	0.45 U
Endosulfan sulfate	NS	0.21 U	0.79 J	0.2 U	1.6 J	0.2 U	0.44 J	0.2 U	0.21 U
4 4'-DDT	9,000	25	3.2 J	77	12	0.95 J	8.2	0.36 U	1.4 J
Methoxychlor	5,200,000	2.6 U	2.5 U	2.5 U	2.5 U	2.5 U	2.4 U	2.5 U	2.5 U
Toxaphene	200	6 U	5.7 U	5.6 U	5.7 U	5.6 U	5.4 U	5.7 U	5.7 U
Endrin aldehyde	NS	2.7 J	3.4 J	2.8 J	26	0.89 J	0.36 U	0.38 U	0.38 U
Chlordane	NS	0.87 U	0.83 U	0.81 U	0.83 U	0.82 U	0.78 U	0.82 U	0.83 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-37(0-12)	B-37(12-24)	B-38(0-10)	B-38(10-18)	B-39(12-24)	B-40(0-10)
Lab Sample ID		212481-019	212499-001	212481-007	212481-009	212655-012	212499-012
Dilution		1	1	1	1	1	1
Date Sampled		3/29/2006	3/29/2006	3/27/2006	3/27/2006	4/13/2006	3/30/2006
Units		µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound							
alpha-BHC	NS	3	0.32 U	1.1 JM	0.32 U	0.35 J	0.82 JM
beta-BHC	NS	0.3 U	0.31 U	1.2 J	0.32 J	0.59 JM	0.72 JM
delta-BHC	NS	0.11 U	0.12 U	0.11 U	0.12 U	0.12 U	0.3 JM
gamma-BHC (Lindane)	2,200	0.17 U	0.18 U	0.16 U	0.18 U	0.18 U	0.16 U
Heptachlor	650	0.17 U	0.17 U	0.16 U	0.18 U	0.18 U	0.16 U
Aldrin	170	0.39 U	0.41 U	0.53 J	0.42 U	0.42 U	0.38 U
Heptachlor epoxide	NS	0.13 U	0.13 U	0.45 J	0.16 J	0.13 U	0.5 J
Endosulfan I	6,200,000*	0.16 U	0.17 U	0.15 U	0.17 U	0.17 U	0.16 U
Dieldrin	180	0.37 JM	0.37 U	2 J	0.87 J	0.88 J	0.35 U
4 4'-DDE	9,000	0.48 U	0.5 U	0.45 U	0.51 U	0.51 U	2.1 JM
Endrin	310,000	0.99 U	1 U	0.92 U	1 U	1.1 U	0.96 U
Endosulfan II	6,200,000*	0.78 JM	0.2 U	0.96 J	0.2 U	0.88 J	0.18 U
4 4'-DDD	12,000	0.42 U	0.44 U	1 JM	0.9 J	1 J	1.2 JM
Endosulfan sulfate	NS	1.3 JM	0.2 U	0.18 U	0.2 U	0.2 U	3.8 M
4 4'-DDT	9,000	0.34 U	0.36 U	4.7	1.3 J	1.6 J	8.9
Methoxychlor	5,200,000	4.4 JM	2.5 U	2.2 U	2.5 U	2.5 U	13 J
Toxaphene	200	5.4 U	5.6 U	5 U	5.7 U	5.7 U	5.2 U
Endrin aldehyde	NS	0.36 U	0.38 U	1.4 J	0.38 U	2.4 J	1.9 JM
Chlordane	NS	0.78 U	0.81 U	0.73 U	0.82 U	0.83 U	0.76 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-40(10-20)**	**B-40(20-32)**	**B-41(0-10)**	**B-41(10-20)**	**B-41(20-30)**	**B-42(0-12)**
Lab Sample ID		**212499-014**	**212499-016**	**212499-007**	**212499-008**	**212499-017**	**212499-003**
Dilution		**1**	**1**	**2**	**1**	**1**	**5**
Date Sampled		**3/30/2006**	**3/30/2006**	**3/30/2006**	**3/30/2006**	**3/30/2006**	**3/29/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
alpha-BHC	NS	0.33 U	0.3 U	11 M	0.7 JM	0.33 U	1.6 U
beta-BHC	NS	0.32 U	0.29 U	1.3 JM	0.31 U	0.32 U	3.7 J
delta-BHC	NS	0.12 U	0.11 U	0.51 JM	0.13 J	0.12 U	0.58 U
gamma-BHC (Lindane)	2,200	0.18 U	0.17 U	0.35 U	0.17 U	0.18 U	0.86 U
Heptachlor	650	0.18 U	0.16 U	0.77 JM	0.17 U	0.18 U	0.85 U
Aldrin	170	0.43 U	0.39 U	0.83 U	0.41 U	0.42 U	2 U
Heptachlor epoxide	NS	0.14 U	0.12 U	0.26 U	0.13 U	0.14 U	0.65 U
Endosulfan I	6,200,000*	0.18 U	0.16 U	0.34 U	0.17 U	0.17 U	0.83 U
Dieldrin	180	0.39 U	0.35 U	0.75 U	0.37 U	0.38 U	7.6 J
4 4'-DDE	9,000	0.52 U	0.47 U	1 U	1.1 J	0.52 U	2.5 U
Endrin	310,000	1.1 U	0.97 U	2.1 U	1 U	1.1 U	5.1 U
Endosulfan II	6,200,000*	0.2 U	0.19 U	0.39 U	0.2 U	0.2 U	0.96 U
4 4'-DDD	12,000	0.46 U	0.42 U	2.7 JM	0.44 U	0.45 U	2.2 U
Endosulfan sulfate	NS	0.21 U	0.19 U	1.8 JM	0.2 U	0.21 U	2.6 JM
4 4'-DDT	9,000	0.37 U	0.34 U	0.72 U	0.36 U	0.37 U	1.8 U
Methoxychlor	5,200,000	2.5 U	2.3 U	4.9 U	2.4 U	2.5 U	12 U
Toxaphene	200	5.8 U	5.3 U	11 U	5.6 U	5.8 U	27 U
Endrin aldehyde	NS	0.39 U	0.35 U	1.9 JM	0.37 U	0.38 U	43 M
Chlordane	NS	0.84 U	0.77 U	1.6 U	0.81 U	0.83 U	4 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-42(12-22)** **212499-005** **1** **3/29/2006** **µg/Kg**	**B-43(14-24)** **212499-019** **1** **4/3/2006** **µg/Kg**	**B-44(14-24)** **212499-020** **1** **4/3/2006** **µg/Kg**	**B-47(0-10)** **212603-008** **1** **4/10/2006** **µg/Kg**	**B-39(0-12)** **212571-013** **1** **4/5/2006** **µg/Kg**	**DUPLICATE** **212571-014** **1** **4/5/2006** **µg/Kg**
alpha-BHC	NS	0.32 U	0.34 U	0.32 U	0.31 U	0.32 U	0.32 U
beta-BHC	NS	0.31 U	0.33 U	0.32 U	0.3 U	0.31 U	0.31 U
delta-BHC	NS	0.12 U	0.13 JM	0.12 U	0.11 U	0.12 U	0.12 U
gamma-BHC (Lindane)	2,200	0.18 U	0.19 U	0.18 U	0.17 U	0.18 U	0.18 U
Heptachlor	650	0.17 U	0.18 U	0.18 U	0.17 U	0.17 U	0.17 U
Aldrin	170	0.41 U	0.44 U	0.42 U	0.4 U	0.41 U	0.41 U
Heptachlor epoxide	NS	0.13 U	0.14 U	0.13 U	7	0.79 JM	0.78 J
Endosulfan I	6,200,000*	0.17 U	0.18 U	0.17 U	0.16 U	0.17 U	0.17 U
Dieldrin	180	0.37 U	0.39 U	0.38 U	0.36 U	0.37 U	0.37 U
4 4'-DDE	9,000	0.5 U	0.53 U	0.51 U	56 M	17	21 M
Endrin	310,000	1 U	1.1 U	1 U	3.9 J	2.4 JM	1 U
Endosulfan II	6,200,000*	0.2 U	0.21 U	0.2 U	5.7 M	6.4	9.6
4 4'-DDD	12,000	0.44 U	0.47 U	0.45 U	0.43 U	0.44 U	0.44 U
Endosulfan sulfate	NS	0.2 U	0.21 U	0.2 U	45 M	9.2	12
4 4'-DDT	9,000	0.36 U	0.38 U	0.36 U	0.34 U	14	16
Methoxychlor	5,200,000	2.5 U	2.6 U	2.5 U	2.4 U	2.5 U	2.4 U
Toxaphene	200	5.6 U	5.9 U	5.7 U	5.4 U	5.6 U	5.6 U
Endrin aldehyde	NS	0.38 U	0.4 U	0.38 U	0.36 U	0.37 U	0.37 U
Chlordane	NS	0.81 U	0.86 U	0.82 U	0.78 U	0.81 U	0.81 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-45(6-18)**	**B-46(6-14)**	**B-48(0-10)**	**B-49(0-10)**	**B-50(0-14)**	**B-51(0-12)**
Lab Sample ID		**212571-002**	**212571-004**	**212571-015**	**212571-011**	**212571-018**	**212571-007**
Dilution		**1**	**1**	**2**	**1**	**2**	**1**
Date Sampled		**4/3/2006**	**4/4/2006**	**4/6/2006**	**4/5/2006**	**4/6/2006**	**4/4/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
alpha-BHC	NS	0.28 U	0.3 U	0.63 U	0.36 U	0.62 U	0.32 U
beta-BHC	NS	0.28 U	0.29 U	0.62 U	0.35 U	0.61 U	0.31 U
delta-BHC	NS	0.11 U	0.11 U	0.24 U	1 JM	0.23 U	0.12 U
gamma-BHC (Lindane)	2,200	0.16 U	0.16 U	0.35 U	0.2 U	0.34 U	0.17 U
Heptachlor	650	0.16 U	0.16 U	0.34 U	0.19 U	11 M	0.17 U
Aldrin	170	0.37 U	0.39 U	0.82 U	0.46 U	3.7 JM	0.41 U
Heptachlor epoxide	NS	1.1 JM	0.57 J	1.8 JM	0.15 U	0.26 U	0.13 U
Endosulfan I	6,200,000*	0.15 U	0.16 U	0.34 U	0.19 U	0.33 U	0.17 U
Dieldrin	180	0.33 U	0.35 U	0.74 U	0.42 U	0.73 U	0.37 U
4 4'-DDE	9,000	12	6.6	27	0.56 U	13	9.1 M
Endrin	310,000	0.92 U	0.96 U	2 U	1.2 U	2 U	1 U
Endosulfan II	6,200,000*	0.18 U	0.18 U	0.39 U	0.22 U	3.5 J	0.2 U
4 4'-DDD	12,000	0.39 U	0.41 U	8.5	0.5 U	5.4 J	2.8 J
Endosulfan sulfate	NS	11	5.7	5 J	0.22 U	2.4 J	3.1 J
4 4'-DDT	9,000	0.32 U	0.33 U	77	0.4 U	26	11
Methoxychlor	5,200,000	30	26	4.9 U	2.7 U	4.8 U	2.4 U
Toxaphene	200	5 U	5.2 U	11 U	6.3 U	11 U	5.6 U
Endrin aldehyde	NS	0.33 U	0.35 U	0.74 U	0.42 U	0.73 U	0.37 U
Chlordane	NS	0.73 U	0.76 U	1.6 U	0.91 U	1.6 U	0.81 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-51(12-18)**	**B-52(6-18)**	**B-53(0-6)**	**B-54(0-6)**	**B-55(0-12)**	**B-55(12-20)**	**B-56(0-12)**
Lab Sample ID		**212571-008**	**212571-005**	**212655-002**	**212655-004**	**212571-020**	**212603-002**	**212603-003**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/4/2006**	**4/4/2006**	**4/12/2006**	**4/13/2006**	**4/7/2006**	**4/7/2006**	**4/7/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
alpha-BHC	NS	0.3 U	0.32 U	0.33 U	0.31 U	0.31 U	0.33 U	0.32 U
beta-BHC	NS	0.29 U	0.31 U	0.32 U	0.6 J	0.31 U	0.32 U	0.31 U
delta-BHC	NS	0.11 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
gamma-BHC (Lindane)	2,200	0.17 U	0.18 U	0.18 U	0.17 U	0.17 U	0.18 U	0.17 U
Heptachlor	650	0.16 U	0.18 U	0.18 U	0.17 U	0.17 J	0.18 U	0.17 U
Aldrin	170	0.39 U	0.42 U	0.43 U	1 JM	0.41 U	0.43 U	1.3 J
Heptachlor epoxide	NS	0.12 U	0.98 J	0.14 U	0.13 U	0.22 J	0.14 U	0.13 U
Endosulfan I	6,200,000*	0.16 U	0.17 U	0.18 U	0.17 U	0.17 U	0.18 U	0.17 U
Dieldrin	180	0.35 U	0.37 U	0.39 U	0.94 JM	0.6 J	0.38 U	0.78 J
4 4'-DDE	9,000	4.2	9.3	0.52 U	0.49 U	3.7 J	0.52 U	7.4
Endrin	310,000	0.97 U	1 U	1.1 U	1 U	1 U	1.1 U	1 U
Endosulfan II	6,200,000*	0.18 U	2.4 J	0.2 U	0.19 U	0.68 J	0.2 U	0.2 U
4 4'-DDD	12,000	0.64 J	0.44 U	4.7 M	2.6 J	0.43 U	0.46 U	0.44 U
Endosulfan sulfate	NS	1.1 J	8.5	0.21 U	0.19 U	3.8	0.21 U	0.2 U
4 4'-DDT	9,000	6.2	0.36 U	3 JM	5.1 M	3 J	0.37 U	0.35 U
Methoxychlor	5,200,000	2.3 U	14 J	2.5 U	2.4 U	2.4 U	2.5 U	3.1 J
Toxaphene	200	5.3 U	5.6 U	5.8 U	5.4 U	5.5 U	5.8 U	5.5 U
Endrin aldehyde	NS	0.35 U	2.5 J	0.39 U	5.6 M	0.37 U	0.39 U	0.37 U
Chlordane	NS	0.76 U	0.82 U	0.84 U	0.79 U	0.8 U	0.84 U	0.8 U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-56(12-24)** **212603-006** **1** **4/7/2006** **µg/Kg**	
alpha-BHC	NS	0.33	U
beta-BHC	NS	0.33	U
delta-BHC	NS	0.12	U
gamma-BHC (Lindane)	2,200	0.18	U
Heptachlor	650	0.18	U
Aldrin	170	0.43	U
Heptachlor epoxide	NS	0.14	U
Endosulfan I	6,200,000*	0.18	U
Dieldrin	180	0.39	U
4 4'-DDE	9,000	0.81	J
Endrin	310,000	1.1	U
Endosulfan II	6,200,000*	0.21	U
4 4'-DDD	12,000	0.46	U
Endosulfan sulfate	NS	0.3	J
4 4'-DDT	9,000	0.87	J
Methoxychlor	5,200,000	2.6	U
Toxaphene	200	5.9	U
Endrin aldehyde	NS	0.39	U
Chlordane	NS	0.85	U

TABLE 4
PESTICIDES IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1 - The Beneficial Use Acceptance Criteria, based on the analytical criteria provided by the Former Allied Signal Site, Elizabeth, NJ.
µg/Kg - micrograms per kilogram = parts per billion (ppb)
U - Analyte was not detected at or above the reporting limit.
J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
M - concentration calculated using manual integration.
NS - No standard.
* - Beneficial use standard is for combined Endosulfan I and Endosulfan II.
** - This interval represents 12-24' below grade. There was a typo during labeling, therefore the lab mis-labeled the sample as 12-14'.

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria**[1] **(µg/Kg)**	**B-20(0-6)** **212603-014** **1** **4/10/2006** **µg/Kg**	**B-21(0-6)** **212603-012** **1** **4/10/2006** **µg/Kg**	**B-22(0-6)** **212603-010** **1** **4/10/2006** **µg/Kg**	**B-25(0-6)** **212603-016** **1** **4/12/2006** **µg/Kg**	**B-23(0-6)** **212655-006** **1** **4/13/2006** **µg/Kg**	**B-24(0-6)** **212655-008** **1** **4/13/2006** **µg/Kg**	**B-24(6-12)** **212655-010** **1** **4/13/2006** **µg/Kg**
Aroclor 1016	NS	3.2 U	3.3 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U
Aroclor 1221	NS	1.8 U	1.8 U	1.7 U	1.8 U	1.7 U	1.7 U	1.8 U
Aroclor 1232	NS	2.1 U	2.2 U	2.1 U	2.2 U	2.1 U	2.1 U	2.1 U
Aroclor 1242	NS	3.4 U	3.5 U	3.4 U	3.5 U	3.4 U	3.4 U	3.5 U
Aroclor 1248	NS	3.1 U	3.2 U	3.1 U	3.2 U	3.1 U	3.1 U	3.1 U
Aroclor 1254	NS	1.4 U	1.4 U	18 JM	1.4 U	1.4 U	1.4 U	1.4 U
Aroclor 1260	NS	5.8 JM	4.7 U	30	55 M	9.2 JM	21 M	15 JM
Total PCBs	5,000	5.8	ND	48	55	9.2	21	15

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-25(6-12)** **212603-018** **1** **4/12/2006** **µg/Kg**	**B-25(12-18)** **212603-020** **1** **4/12/2006** **µg/Kg**	**B-26(6-20)** **212481-003** **1** **3/28/2006** **µg/Kg**	**B-26(20-26)** **212481-004** **1** **3/28/2006** **µg/Kg**	**B-27(0-10)** **212429-016** **1** **3/23/2006** **µg/Kg**	**B-27(10-20)** **212429-018** **1** **3/23/2006** **µg/Kg**	**B-27(20-30)** **212429-020** **1** **3/23/2006** **µg/Kg**
Aroclor 1016	NS	3.1 U	3 U	3.4 U	3.2 U	3.2 U	3.4 U	3.3 U
Aroclor 1221	NS	1.7 U	1.6 U	1.8 U	1.7 U	1.7 U	1.8 U	1.8 U
Aroclor 1232	NS	2.1 U	2 U	2.2 U	2.1 U	2.1 U	2.2 U	2.2 U
Aroclor 1242	NS	3.3 U	3.1 U	3.6 U	3.4 U	3.4 U	3.6 U	3.5 U
Aroclor 1248	NS	3 U	2.8 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U
Aroclor 1254	NS	1.3 U	1.3 U	1.5 U	1.4 U	1.4 U	1.5 U	1.4 U
Aroclor 1260	NS	8.3 JM	4.2 U	4.8 U	4.6 U	28	4.8 U	4.7 U
Total PCBs	5,000	8.3	ND	ND	ND	28	ND	ND

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-28(0-15)**	**B-28(15-30)**	**B-29(6-16)**	**B-29(16-24)**	**B-30(0-10)**	**B-30(10-18)**	**B-31(0-16)**
Lab Sample ID		**212429-004**	**212429-001**	**212481-011**	**212481-013**	**212454-002**	**212454-004**	**212429-006**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/22/2006**	**3/22/2006**	**3/28/2006**	**3/28/2006**	**3/24/2006**	**3/24/2006**	**3/22/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
Aroclor 1016	NS	3.2 U	3.3 U	3.3 U	3.5 U	3.1 U	3.3 U	3.2 U
Aroclor 1221	NS	1.7 U	1.8 U	1.8 U	1.9 U	1.7 U	1.8 U	1.7 U
Aroclor 1232	NS	2.1 U	2.2 U	2.2 U	2.3 U	2 U	2.2 U	2.1 U
Aroclor 1242	NS	3.4 U	3.5 U	3.5 U	3.7 U	3.3 U	3.6 U	3.4 U
Aroclor 1248	NS	3.1 U	3.1 U	3.2 U	3.3 U	3 U	3.2 U	3.1 U
Aroclor 1254	NS	1.4 U	1.4 U	1.4 U	1.5 U	1.3 U	1.4 U	1.4 U
Aroclor 1260	NS	4.5 U	4.7 U	4.7 U	4.9 U	28	4.7 U	11 J
Total PCBs	5,000	ND	ND	ND	ND	28	ND	11

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-31(16-25)** **212429-008** **1** **3/22/2006** **µg/Kg**	**B-32(0-14)** **212429-010** **1** **3/23/2006** **µg/Kg**	**B-32(14-20)** **212429-012** **1** **3/23/2006** **µg/Kg**	**B-32(20-30)** **212429-014** **1** **3/23/2006** **µg/Kg**	**B-33(0-12)** **212481-015** **5** **3/29/2006** **µg/Kg**	**B-33(12-14)**** **212481-017** **1** **3/29/2006** **µg/Kg**	**B-34(0-10)** **212454-007** **1** **3/24/2006** **µg/Kg**
Aroclor 1016	NS	3.4 U	3.2 U	3.3 U	3.4 U	16 U	3.4 U	3.5 U
Aroclor 1221	NS	1.9 U	1.8 U	1.8 U	1.9 U	8.5 U	1.8 U	1.9 U
Aroclor 1232	NS	2.3 U	2.1 U	2.2 U	2.3 U	10 U	2.2 U	2.3 U
Aroclor 1242	NS	3.7 U	3.4 U	3.5 U	3.7 U	17 U	3.6 U	3.7 U
Aroclor 1248	NS	3.3 U	3.1 U	3.2 U	3.3 U	15 U	3.2 U	3.3 U
Aroclor 1254	NS	1.5 U	1.4 U	1.4 U	1.5 U	340	1.4 U	1.5 U
Aroclor 1260	NS	4.9 U	4.6 U	4.7 U	4.9 U	100	4.8 U	26
Total PCBs	5,000	ND	ND	ND	ND	440	ND	26

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-34(10-24)**	**B-35(0-10)**	**B-35(10-20)**	**B-35(20-28)**	**B-36(0-10)**	**B-36(10-18)**	**B-36(18-30)**
Lab Sample ID		**212454-009**	**212454-011**	**212454-013**	**212454-015**	**212454-017**	**212454-019**	**212481-001**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
Aroclor 1016	NS	3.3 U	3.2 U	3.3 U	3.3 U	3.1 U	3.3 U	3.3 U
Aroclor 1221	NS	1.8 U	1.8 U	1.8 U	1.8 U	1.7 U	1.8 U	1.8 U
Aroclor 1232	NS	2.2 U	2.1 U	2.2 U	2.2 U	2.1 U	2.2 U	2.2 U
Aroclor 1242	NS	3.5 U	3.4 U	3.5 U	3.5 U	9.9 JM	3.5 U	3.6 U
Aroclor 1248	NS	3.2 U	3.1 U	3.2 U	3.1 U	3 U	3.2 U	3.2 U
Aroclor 1254	NS	1.4 U	1.4 U	1.4 U	1.4 U	1.3 U	1.4 U	1.4 U
Aroclor 1260	NS	57	150	210	8 J	12 J	4.7 U	4.7 U
Total PCBs	5,000	57	150	210	8	21.9	ND	ND

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-37(0-12)**	**B-37(12-24)**	**B-38(0-10)**	**B-38(10-18)**	**B-39(0-12)**	**DUPLICATE**	**B-39(12-24)**
Lab Sample ID		**212481-019**	**212499-001**	**212481-007**	**212481-009**	**212571-013**	**212571-014**	**212655-012**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**3/29/2006**	**3/29/2006**	**3/27/2006**	**3/27/2006**	**4/5/2006**	**4/5/2006**	**4/13/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound								
Aroclor 1016	NS	3.1 U	3.3 U	2.9 U	3.3 U	3.3 U	3.2 U	3.3 U
Aroclor 1221	NS	1.7 U	1.8 U	1.6 U	1.8 U	1.8 U	1.8 U	1.8 U
Aroclor 1232	NS	2.1 U	2.2 U	1.9 U	2.2 U	2.2 U	2.1 U	2.2 U
Aroclor 1242	NS	3.3 U	3.5 U	3.1 U	3.5 U	3.5 U	3.4 U	3.5 U
Aroclor 1248	NS	3 U	3.1 U	2.8 U	3.2 U	3.1 U	3.1 U	3.2 U
Aroclor 1254	NS	21 M	1.4 U	1.3 U	1.4 U	16 JM	14 J	1.4 U
Aroclor 1260	NS	9.4 JM	4.6 U	15 J	33	16 J	6.3 J	4.7 U
Total PCBs	5,000	30.4	ND	15	33	32	20.3	ND

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria**[1] **(µg/Kg)**	**B-40(0-10)** **212499-012** **1** **3/30/2006** **µg/Kg**	**B-40(10-20)** **212499-014** **1** **3/30/2006** **µg/Kg**	**B-40(20-32)** **212499-016** **1** **3/30/2006** **µg/Kg**	**B-41(0-10)** **212499-007** **1** **3/30/2006** **µg/Kg**	**B-41(10-20)** **212499-008** **1** **3/30/2006** **µg/Kg**	**B-41(20-30)** **212499-017** **1** **3/30/2006** **µg/Kg**	**B-42(0-12)** **212499-003** **1** **3/29/2006** **µg/Kg**
Aroclor 1016	NS	3 U	3.4 U	3.1 U	3.3 U	3.2 U	3.3 U	3.2 U
Aroclor 1221	NS	1.7 U	1.8 U	1.7 U	1.8 U	1.8 U	1.8 U	1.7 U
Aroclor 1232	NS	2 U	2.2 U	2 U	2.2 U	2.1 U	2.2 U	2.1 U
Aroclor 1242	NS	28	3.6 U	3.3 U	3.5 U	3.4 U	3.6 U	3.4 U
Aroclor 1248	NS	2.9 U	3.2 U	2.9 U	3.1 U	3.1 U	3.2 U	3.1 U
Aroclor 1254	NS	130 M	1.5 U	1.3 U	18 JM	22 M	1.4 U	59 M
Aroclor 1260	NS	150	4.8 U	4.4 U	22 M	4.8 JM	4.7 U	19 J
Total PCBs	5,000	308	ND	ND	40	26.8	ND	78

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Beneficial Use Acceptance Criteria[1] (µg/Kg)	B-42(12-22) 212499-005 1 3/29/2006 µg/Kg	B-43(14-24) 212499-019 1 4/3/2006 µg/Kg	B-44(14-24) 212499-020 1 4/3/2006 µg/Kg	B-45(6-18) 212571-002 1 4/3/2006 µg/Kg	B-46(6-14) 212571-004 1 4/4/2006 µg/Kg	B-47(0-10) 212603-008 1 4/10/2006 µg/Kg	B-48(0-10) 212571-015 1 4/6/2006 µg/Kg
Aroclor 1016	NS	3.3 U	3.4 U	3.3 U	2.9 U	3 U	3.1 U	3.2 U
Aroclor 1221	NS	1.8 U	1.9 U	1.8 U	1.6 U	1.7 U	1.7 U	1.8 U
Aroclor 1232	NS	2.2 U	2.3 U	2.2 U	1.9 U	2 U	2.1 U	2.1 U
Aroclor 1242	NS	3.5 U	3.7 U	3.5 U	3.1 U	3.2 U	3.3 U	3.4 U
Aroclor 1248	NS	3.1 U	3.3 U	3.2 U	2.8 U	2.9 U	3 U	3.1 U
Aroclor 1254	NS	1.4 U	1.5 U	1.4 U	1.3 U	21 M	1.4 U	1.4 U
Aroclor 1260	NS	4.6 U	4.9 U	4.7 U	9.6 JM	13 J	4.5 U	4.6 U
Total PCBs	5,000	ND	ND	ND	9.6	34	ND	ND

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-49(0-10)** **212571-011** **1** **4/5/2006** **µg/Kg**	**B-50(0-14)** **212571-018** **1** **4/6/2006** **µg/Kg**	**B-51(0-12)** **212571-007** **1** **4/4/2006** **µg/Kg**	**B-51(12-18)** **212571-008** **1** **4/4/2006** **µg/Kg**	**B-52(6-18)** **212571-005** **1** **4/4/2006** **µg/Kg**	**B-53(0-6)** **212655-002** **1** **4/12/2006** **µg/Kg**	**B-54(0-6)** **212655-004** **1** **4/13/2006** **µg/Kg**
Aroclor 1016	NS	3.7 U	3.2 U	3.2 U	3.1 U	3.3 U	3.4 U	3.2 U
Aroclor 1221	NS	2 U	1.7 U	1.8 U	1.7 U	1.8 U	1.8 U	1.7 U
Aroclor 1232	NS	2.4 U	2.1 U	2.1 U	2 U	2.2 U	2.2 U	2.1 U
Aroclor 1242	NS	3.9 U	3.4 U	3.4 U	3.3 U	3.5 U	3.6 U	3.4 U
Aroclor 1248	NS	3.5 U	3 U	3.1 U	2.9 U	3.1 U	3.2 U	3 U
Aroclor 1254	NS	1.6 U	150 M	190	26	1.4 U	14 JM	17 JM
Aroclor 1260	NS	5.2 U	68	29	5.6 J	4.7 U	16 JM	19 JM
Total PCBs	5,000	ND	218	219	31.6	ND	30	36

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-55(0-12)** **212571-020** **1** **4/7/2006** **µg/Kg**	**B-55(12-20)** **212603-002** **1** **4/7/2006** **µg/Kg**	**B-56(0-12)** **212603-003** **1** **4/7/2006** **µg/Kg**	**B-56(12-24)** **212603-006** **1** **4/7/2006** **µg/Kg**
Aroclor 1016	NS	3.2 U	3.4 U	3.2 U	3.4 U
Aroclor 1221	NS	1.7 U	1.8 U	1.8 U	1.9 U
Aroclor 1232	NS	2.1 U	2.2 U	2.1 U	2.3 U
Aroclor 1242	NS	3.4 U	3.6 U	3.4 U	3.6 U
Aroclor 1248	NS	3.1 U	3.2 U	3.1 U	3.3 U
Aroclor 1254	NS	18 JM	1.4 U	1.4 U	1.5 U
Aroclor 1260	NS	6.8 J	4.8 U	8.4 J	4.8 U
Total PCBs	5,000	24.8	ND	8.4	ND

TABLE 5
POLYCHLORINATED BIPHENYLS IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1 - The Beneficial Use Acceptance Criteria, based on the analytical criteria provided by the Former Allied Signal Site, Elizabeth, NJ.
µg/Kg - micrograms per kilogram = parts per billion (ppb)
U - Analyte was not detected at or above the reporting limit.
J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
M - concentration calculated using manual integration.
NS - No standard
ND - Not detected
** - This interval represents 12-24' below grade. There was a typo during labeling, therefore the lab mis-labeled the sample as 12-14'.

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Beneficial Use Acceptance Criteria[1] (µg/Kg)**	**B-20(0-6) 212603-014 1 4/10/2006 µg/Kg**	**B-21(0-6) 212603-012 1 4/10/2006 µg/Kg**	**B-22(0-6) 212603-010 1 4/10/2006 µg/Kg**	**B-23(0-6) 212655-006 1 4/13/2006 µg/Kg**	**B-24(0-6) 212655-008 1 4/13/2006 µg/Kg**	**B-24(6-12) 212655-010 1 4/13/2006 µg/Kg**
Cyanide Total	21,000,000	1210	1280	430 B	373 B	414 B	824

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Beneficial Use Acceptance Criteria (mg/Kg)**	**B-20(0-6) 212603-014 1 4/10/2006 mg/Kg**	**B-21(0-6) 212603-012 1 4/10/2006 mg/Kg**	**B-22(0-6) 212603-010 1 4/10/2006 mg/Kg**	**B-23(0-6) 212655-006 1 4/13/2006 mg/Kg**	**B-24(0-6) 212655-008 1 4/13/2006 mg/Kg**	**B-24(6-12) 212655-010 1 4/13/2006 mg/Kg**
Phenolics Total Recoverable	10,000	0.35 B	0.33 U	1.1	0.33 U	2.4	3.2

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-25(0-6)** **212603-016** **1** **4/12/2006** **µg/Kg**	**B-25(6-12)** **212603-018** **1** **4/12/2006** **µg/Kg**	**B-25(12-18)** **212603-020** **1** **4/12/2006** **µg/Kg**	**B-26(6-20)** **212481-003** **1** **3/28/2006** **µg/Kg**	**B-26(20-26)** **212481-004** **1** **3/28/2006** **µg/Kg**	**B-27(0-10)** **212429-016** **1** **3/23/2006** **µg/Kg**	**B-27(10-20)** **212429-018** **1** **3/23/2006** **µg/Kg**
Cyanide Total	856	481 B	56.3 U	63.8 U	61.2 U	8000	64.2 U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-25(0-6)** **212603-016** **1** **4/12/2006** **mg/Kg**	**B-25(6-12)** **212603-018** **1** **4/12/2006** **mg/Kg**	**B-25(12-18)** **212603-020** **1** **4/12/2006** **mg/Kg**	**B-26(6-20)** **212481-003** **1** **3/28/2006** **mg/Kg**	**B-26(20-26)** **212481-004** **1** **3/28/2006** **mg/Kg**	**B-27(0-10)** **212429-016** **1** **3/23/2006** **mg/Kg**	**B-27(10-20)** **212429-018** **1** **3/23/2006** **mg/Kg**
Phenolics Total Recoverable	0.34 U	0.91	0.31 U	0.35 U	0.33 U	0.32 U	0.34 U

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-27(20-30)**	**B-28(15-30)**	**B-28(0-15)**	**B-29(6-16)**	**B-29(16-24)**	**B-30(0-10)**	**B-30(10-18)**
Lab Sample ID	**212429-020**	**212429-001**	**212429-004**	**212481-011**	**212481-013**	**212454-002**	**212454-004**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**3/23/2006**	**3/22/2006**	**3/22/2006**	**3/28/2006**	**3/28/2006**	**3/24/2006**	**3/24/2006**
Units	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
Cyanide Total	64 U	63.3 U	181 B	634	63.2 U	12200	62.4 U

Client ID	**B-27(20-30)**	**B-28(15-30)**	**B-28(0-15)**	**B-29(6-16)**	**B-29(16-24)**	**B-30(0-10)**	**B-30(10-18)**
Lab Sample ID	**212429-020**	**212429-001**	**212429-004**	**212481-011**	**212481-013**	**212454-002**	**212454-004**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**3/23/2006**	**3/22/2006**	**3/22/2006**	**3/28/2006**	**3/28/2006**	**3/24/2006**	**3/24/2006**
Units	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**
Compound							
Phenolics Total Recoverable	0.35 U	0.33 U	0.34 U	0.38 B	0.96	0.31 U	0.63

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-31(0-16)** **212429-006** **1** **3/22/2006** **µg/Kg**	**B-31(16-25)** **212429-008** **1** **3/22/2006** **µg/Kg**	**B-32(0-14)** **212429-010** **1** **3/23/2006** **µg/Kg**	**B-32(14-20)** **212429-012** **1** **3/23/2006** **µg/Kg**	**B-32(20-30)** **212429-014** **1** **3/23/2006** **µg/Kg**	**B-33(0-12)** **212481-015** **1** **3/29/2006** **µg/Kg**	**B-33(12-14)**** **212481-017** **1** **3/29/2006** **µg/Kg**
Cyanide Total	365 B	66.5 U	222 B	63.8 U	70.8 B	811	60.4 U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-31(0-16)** **212429-006** **1** **3/22/2006** **mg/Kg**	**B-31(16-25)** **212429-008** **1** **3/22/2006** **mg/Kg**	**B-32(0-14)** **212429-010** **1** **3/23/2006** **mg/Kg**	**B-32(14-20)** **212429-012** **1** **3/23/2006** **mg/Kg**	**B-32(20-30)** **212429-014** **1** **3/23/2006** **mg/Kg**	**B-33(0-12)** **212481-015** **1** **3/29/2006** **mg/Kg**	**B-33(12-14)**** **212481-017** **1** **3/29/2006** **mg/Kg**
Phenolics Total Recoverable	0.32 U	0.35 U	0.33 U	0.35 U	0.35 U	0.32 U	0.35 U

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-34(0-10)** **212454-007** **2** **3/24/2006** **µg/Kg**	**B-34(10-24)** **212454-009** **1** **3/24/2006** **µg/Kg**	**B-35(0-10)** **212454-011** **2** **3/24/2006** **µg/Kg**	**B-35(10-20)** **212454-013** **1** **3/24/2006** **µg/Kg**	**B-35(20-28)** **212454-015** **1** **3/24/2006** **µg/Kg**	**B-36(0-10)** **212454-017** **1** **3/27/2006** **µg/Kg**	**B-36(10-18)** **212454-019** **1** **3/27/2006** **µg/Kg**
Cyanide Total	26800	472 B	24400	5560	456 B	59.9 U	61.3 U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-34(0-10)** **212454-007** **1** **3/24/2006** **mg/Kg**	**B-34(10-24)** **212454-009** **1** **3/24/2006** **mg/Kg**	**B-35(0-10)** **212454-011** **1** **3/24/2006** **mg/Kg**	**B-35(10-20)** **212454-013** **1** **3/24/2006** **mg/Kg**	**B-35(20-28)** **212454-015** **1** **3/24/2006** **mg/Kg**	**B-36(0-10)** **212454-017** **1** **3/27/2006** **mg/Kg**	**B-36(10-18)** **212454-019** **1** **3/27/2006** **mg/Kg**
Phenolics Total Recoverable	3	0.35 U	0.47 B	0.34 U	0.56 B	1.3	0.97

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-36(18-30)** **212481-001** **1** **3/27/2006** **µg/Kg**	**B-37(0-12)** **212481-019** **1** **3/29/2006** **µg/Kg**	**B-37(12-24)** **212499-001** **1** **3/29/2006** **µg/Kg**	**B-38(0-10)** **212481-007** **1** **3/27/2006** **µg/Kg**	**B-38(10-18)** **212481-009** **1** **3/27/2006** **µg/Kg**	**B-39(12-24)** **212655-012** **1** **4/13/2006** **µg/Kg**	**B-42(0-12)** **212499-003** **1** **3/29/2006** **µg/Kg**
Cyanide Total	63.4 U	351 B	59.6 U	391 B	63.1 U	63.5 U	56.2 U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-36(18-30)** **212481-001** **1** **3/27/2006** **mg/Kg**	**B-37(0-12)** **212481-019** **1** **3/29/2006** **mg/Kg**	**B-37(12-24)** **212499-001** **1** **3/29/2006** **mg/Kg**	**B-38(0-10)** **212481-007** **1** **3/27/2006** **mg/Kg**	**B-38(10-18)** **212481-009** **1** **3/27/2006** **mg/Kg**	**B-39(12-24)** **212655-012** **1** **4/13/2006** **mg/Kg**	**B-42(0-12)** **212499-003** **1** **3/29/2006** **mg/Kg**
Phenolics Total Recoverable	0.35 U	0.33 U	0.33 U	0.34 B	0.34 U	1.3	0.32 U

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-42(12-22)** **212499-005** **1** **3/29/2006** **µg/Kg**	**B-41(0-10)** **212499-007** **1** **3/30/2006** **µg/Kg**	**B-41(10-20)** **212499-008** **1** **3/30/2006** **µg/Kg**	**B-40(0-10)** **212499-012** **1** **3/30/2006** **µg/Kg**	**B-40(10-20)** **212499-014** **1** **3/30/2006** **µg/Kg**	**B-40(20-32)** **212499-016** **1** **3/30/2006** **µg/Kg**	**B-41(20-30)** **212499-017** **1** **3/30/2006** **µg/Kg**
Cyanide Total	61.6 U	362 B	60.8 U	156 B	85.5 B	56.5 U	63.7 U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-42(12-22)** **212499-005** **1** **3/29/2006** **mg/Kg**	**B-41(0-10)** **212499-007** **1** **3/30/2006** **mg/Kg**	**B-41(10-20)** **212499-008** **1** **3/30/2006** **mg/Kg**	**B-40(0-10)** **212499-012** **1** **3/30/2006** **mg/Kg**	**B-40(10-20)** **212499-014** **1** **3/30/2006** **mg/Kg**	**B-40(20-32)** **212499-016** **1** **3/30/2006** **mg/Kg**	**B-41(20-30)** **212499-017** **1** **3/30/2006** **mg/Kg**
Phenolics Total Recoverable	0.34 U	0.42 B	0.34 U	0.31 U	0.34 U	0.32 U	0.34 U

TABLE 6
PHENOLS AND CYANIDE IN SOIL FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-43(14-24)** **212499-019** **1** **4/3/2006** **µg/Kg**	**B-44(14-24)** **212499-020** **1** **4/3/2006** **µg/Kg**	**B-47(0-10)** **212603-008** **1** **4/10/2006** **µg/Kg**	**B-55(12-20)** **212603-002** **1** **4/7/2006** **µg/Kg**	**B-56(0-12)** **212603-003** **1** **4/7/2006** **µg/Kg**	**B-56(12-24)** **212603-006** **1** **4/7/2006** **µg/Kg**	**B-39(0-12)** **212571-013** **1** **4/5/2006** **µg/Kg**
Cyanide Total	89.3 B	62.8 U	101 B	62.1 U	59.1 U	60.1 U	215 B

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-43(14-24)** **212499-019** **1** **4/3/2006** **mg/Kg**	**B-44(14-24)** **212499-020** **1** **4/3/2006** **mg/Kg**	**B-47(0-10)** **212603-008** **1** **4/10/2006** **mg/Kg**	**B-55(12-20)** **212603-002** **1** **4/7/2006** **mg/Kg**	**B-56(0-12)** **212603-003** **1** **4/7/2006** **mg/Kg**	**B-56(12-24)** **212603-006** **1** **4/7/2006** **mg/Kg**	**B-39(0-12)** **212571-013** **1** **4/5/2006** **mg/Kg**
Phenolics Total Recoverable	0.35 U	0.34 U	2.3	0.62	0.54 B	0.35 U	0.34 U

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**DUPLICATE** **212571-014** **1** **4/5/2006** **µg/Kg**	**B-45(6-18)** **212571-002** **1** **4/3/2006** **µg/Kg**	**B-46(6-14)** **212571-004** **1** **4/4/2006** **µg/Kg**	**B-48(0-10)** **212571-015** **1** **4/6/2006** **µg/Kg**	**B-49(0-10)** **212571-011** **1** **4/5/2006** **µg/Kg**	**B-50(0-14)** **212571-018** **1** **4/6/2006** **µg/Kg**	**B-51(0-12)** **212571-007** **1** **4/4/2006** **µg/Kg**
Cyanide Total	1050	57 B	57.9 U	333 B	67.7 U	772	287 B

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**DUPLICATE** **212571-014** **1** **4/5/2006** **mg/Kg**	**B-45(6-18)** **212571-002** **1** **4/3/2006** **mg/Kg**	**B-46(6-14)** **212571-004** **1** **4/4/2006** **mg/Kg**	**B-48(0-10)** **212571-015** **1** **4/6/2006** **mg/Kg**	**B-49(0-10)** **212571-011** **1** **4/5/2006** **mg/Kg**	**B-50(0-14)** **212571-018** **1** **4/6/2006** **mg/Kg**	**B-51(0-12)** **212571-007** **1** **4/4/2006** **mg/Kg**
Phenolics Total Recoverable	0.33 U	0.3 U	0.31 U	1.6	5.5	0.33 U	0.6

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-51(12-18)**	**B-52(6-18)**	**B-53(0-6)**	**B-54(0-6)**	**B-55(0-12)**
Lab Sample ID	**212571-008**	**212571-005**	**212655-002**	**212655-004**	**212571-020**
Dilution	**1**	**1**	**1**	**1**	**1**
Date Sampled	**4/4/2006**	**4/4/2006**	**4/12/2006**	**4/13/2006**	**4/7/2006**
Units	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound					
Cyanide Total	57.7 U	553 B	1040	195 B	1400

Client ID	**B-51(12-18)**	**B-52(6-18)**	**B-53(0-6)**	**B-54(0-6)**	**B-55(0-12)**
Lab Sample ID	**212571-008**	**212571-005**	**212655-002**	**212655-004**	**212571-020**
Dilution	**1**	**1**	**1**	**1**	**1**
Date Sampled	**4/4/2006**	**4/4/2006**	**4/12/2006**	**4/13/2006**	**4/7/2006**
Units	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**	**mg/Kg**
Compound					
Phenolics Total Recoverable	0.32 U	0.34 U	1.4	0.32 U	0.32 U

TABLE 6
PHENOLS AND CYANIDE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes
1 - The Beneficial Use Acceptance Criteria, based on the analytical criteria provided by the Former Allied Signal Site, Elizabeth, NJ.
µg/Kg - micrograms per kilogram = parts per billion (ppb)
mg/Kg - milligrams per kilogram = parts per million (ppm)
U - Analyte was not detected at or above the reporting limit.
B - Compound was found in the blank and sample.
** - This interval represents 12-24' below grade. There was a typo during labeling, therefore the lab mis-labeled the sample as 12-14'.

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-20(3-3.5)**	**B-20(0-6)**	**B-21(1.5-2)**	**B-21(0-6)**	**B-22(3.5-4)**	**B-22(0-6)**	**B-23(2.5-3)**	**B-23(0-6)**
Lab Sample ID	**212603-013**	**212603-014**	**212603-011**	**212603-012**	**212603-009**	**212603-010**	**212655-005**	**212655-006**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	90.5	86.7	83.7	85.3	89	86.3	84.4	86
% Moisture	9.5	13.3	16.3	14.7	11	13.7	15.6	14

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-24(2.5-3)** **212655-007** **1** **4/13/2006** **%**	**B-24(0-6)** **212655-008** **1** **4/13/2006** **%**	**B-24(9-9.5)** **212655-009** **1** **4/13/2006** **%**	**B-24(6-12)** **212655-010** **1** **4/13/2006** **%**	**B-25(0-6)** **212603-016** **1** **4/12/2006** **%**	**B-25(3-3.5)** **212603-015** **1** **4/12/2006** **%**	**B-25(10.5-11)** **212603-017** **1** **4/12/2006** **%**	**B-25(6-12)** **212603-018** **1** **4/12/2006** **%**
% Solids	84.6	85.9	84.1	85.2	85.1	81.7	86.8	87.8
% Moisture	15.4	14.1	15.9	14.8	14.9	18.3	13.2	12.2

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-25(15.5-16)**	**B-25(12-18)**	**B-26(13-13.5)**	**B-26(6-20)**	**B-26(20-26)**	**B-26(25-25.5)**	**B-27(0-10)**	**B-27(0-10)**
Lab Sample ID	**212603-019**	**212603-020**	**212481-002**	**212481-003**	**212481-004**	**212481-005**	**A6C250195008**	**212429-016**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**4/12/2006**	**4/12/2006**	**3/28/2006**	**3/28/2006**	**3/28/2006**	**3/28/2006**	**3/23/2006**	**3/23/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	95.3	94.1	79.9	82.3	85.7	85.2	86.6	87.3
% Moisture	4.7	5.9	20.1	17.7	14.3	14.8	13.4	12.7

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-27(5-5.5)**	**B-27(10-20)**	**B-27(15-15.5)**	**B-27(20-30)**	**B-27(27-27.5)**	**B-28(0-15)**	**B-28(3.5-4)**	**B-28(15-30)**
Lab Sample ID	**212429-015**	**212429-018**	**212429-017**	**212429-020**	**212429-019**	**212429-004**	**212429-003**	**212429-001**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**3/23/2006**	**3/23/2006**	**3/23/2006**	**3/23/2006**	**3/23/2006**	**3/22/2006**	**3/22/2006**	**3/22/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	86.6	82.6	84.4	82.8	87.9	85.9	80.2	83.7
% Moisture	13.4	17.4	15.6	17.2	12.1	14.1	19.8	16.3

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-28(20-20.5)**	**B-29(11-11.5)**	**B-29(6-16)**	**B-29(21-21.5)**	**B-29(16-24)**	**B-30(5-5.5)**	**B-30(0-10)**	**B-30(15-15.5)**
Lab Sample ID	**212429-002**	**212481-010**	**212481-011**	**212481-012**	**212481-013**	**212454-001**	**212454-002**	**212454-003**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**3/22/2006**	**3/28/2006**	**3/28/2006**	**3/28/2006**	**3/28/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	81.2	87.8	82.5	77.7	80.6	82.1	90.1	80
% Moisture	18.8	12.2	17.5	22.3	19.4	17.9	9.9	20

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-30(10-18)**	**B-30(18-18.5)**	**B-31(0-16)**	**B-31(7.5-8)**	**B-31(16-25)**	**B-31(21-21.5)**	**B-32(0-14)**	**B-32(7.5-8)**
Lab Sample ID	**212454-004**	**212454-005**	**212429-006**	**212429-005**	**212429-008**	**212429-007**	**212429-010**	**212429-009**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**3/24/2006**	**3/24/2006**	**3/22/2006**	**3/22/2006**	**3/22/2006**	**3/22/2006**	**3/23/2006**	**3/23/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	82.4	78.3	86.2	84	79.7	82.1	86.1	85.1
% Moisture	17.6	21.7	13.8	16	20.3	17.9	13.9	14.9

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-32(14-20)**	**B-32(20-30)**	**B-32(23-23.5)**	**B-33(6-6.5)**	**B-33(0-12)**	**B-33(12-14)****	**B-33(18-18.5)**	**B-34(5-5.5)**
Lab Sample ID	**212429-012**	**212429-014**	**212429-013**	**212481-014**	**212481-015**	**212481-017**	**212481-016**	**212454-006**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**3/23/2006**	**3/23/2006**	**3/23/2006**	**3/29/2006**	**3/29/2006**	**3/29/2006**	**3/29/2006**	**3/24/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	83.1	80.6	79.1	93.2	87.8	82	80.8	73.8
% Moisture	16.9	19.4	20.9	6.8	12.2	18	19.2	26.2

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-34(0-10)**	**B-34(13.5-14)**	**B-34(10-24)**	**B-35(5-5.5)**	**B-35(0-10)**	**B-35(15-15.5)**	**B-35(10-20)**	**B-35(25-25.5)**
Lab Sample ID	**212454-007**	**212454-008**	**212454-009**	**212454-010**	**212454-011**	**212454-012**	**212454-013**	**212454-014**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**	**3/24/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	80.7	79.6	82.8	83.5	85.1	83	83.5	84
% Moisture	19.3	20.4	17.2	16.5	14.9	17	16.5	16

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-35(20-28)**	**B-36(3.5-4)**	**B-36(0-10)**	**B-36(16-16.5)**	**B-36(10-18)**	**B-36(24-24.5)**	**B-36(0-10)**	**B-36(10-18)**
Lab Sample ID	**212454-015**	**212454-016**	**212454-017**	**212454-018**	**212454-019**	**212454-020**	**212454-017**	**212454-019**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**3/24/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**	**3/27/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	84.7	87	88.5	89.9	84	87.3	88.5	84
% Moisture	15.3	13	11.5	10.1	16	12.7	11.5	16

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	B-36(18-30) 212481-001 1 3/27/2006 %	B-37 (0-12) 212481-019 1 3/29/2006 %	B-37(6-6.5) 212481-018 1 3/29/2006 %	B-37(0-12) 212481-019 1 3/29/2006 %	B-37(18-18.5) 212481-020 1 3/29/2006 %	B-38(4.5-5) 212481-006 1 3/27/2006 %	B-38(0-10) 212481-007 1 3/27/2006 %	B-38(12-12.5) 212481-008 1 3/27/2006 %
% Solids	82.8	88.2	77.4	88.2	83.6	94.6	94.6	85.1
% Moisture	17.2	11.8	22.6	11.8	16.4	5.4	5.4	14.9

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-38(10-18)**	**B-39(5.5-6)**	**B-39(0-12)**	**DUPLICATE**	**B-39(15.5-16)**	**B-39(12-24)**	**B-43(14-24)**	**B-44(14-24)**
Lab Sample ID	**212481-009**	**212571-012**	**212571-013**	**212571-014**	**212655-011**	**212655-012**	**A6D050165001**	**A6D050165002**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**3/27/2006**	**4/5/2006**	**4/5/2006**	**4/5/2006**	**4/13/2006**	**4/13/2006**	**4/3/2006**	**4/3/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	84	88.9	84.5	85.1	78.9	83.4	81.5	84.4
% Moisture	16	11.1	15.5	14.9	21.1	16.6	18.5	15.6

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	B-45(12-12.5)	B-45(6-18)	B-46(13-13.5)	B-46(6-14)	B-47(3.5-4)	B-47(0-10)	B-48(0-10)	B-48(5-5.5)
Lab Sample ID	212571-001	212571-002	212571-003	212571-004	212603-007	212603-008	212571-015	212571-016
Dilution	1	1	1	1	1	1	1	1
Date Sampled	4/3/2006	4/3/2006	4/4/2006	4/4/2006	4/10/2006	4/10/2006	4/6/2006	4/6/2006
Units	%	%	%	%	%	%	%	%
Compound								
% Solids	89.2	94.6	92.9	90.6	93	89	86.9	79.4
% Moisture	10.8	5.4	7.1	9.4	7	11	13.1	20.6

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-49(5-5.5)**	**B-49(0-10)**	**B-50(3.5-4)**	**B-50(0-14)**	**B-51(6.5-7)**	**B-51(0-12)**	**B-51(12-18)**	**B-51(17-17.5)**
Lab Sample ID	**212571-010**	**212571-011**	**212571-017**	**212571-018**	**212571-006**	**212571-007**	**212571-008**	**212571-009**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**4/5/2006**	**4/5/2006**	**4/6/2006**	**4/6/2006**	**4/4/2006**	**4/4/2006**	**4/4/2006**	**4/4/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	88.1	76.7	85.8	86.9	80.9	86	90.1	95.3
% Moisture	11.9	23.3	14.2	13.1	19.1	14	9.9	4.7

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**B-52(6-18)**	**B-53(3-3.5)**	**B-53(0-6)**	**B-54(3-3.5)**	**B-54(0-6)**	**B-55(18-18.5)**	**B-55(12-20)**	**B-55(6-6.5)**
Lab Sample ID	**212571-005**	**212655-001**	**212655-002**	**212655-003**	**212655-004**	**212603-001**	**212603-002**	**212571-019**
Dilution	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**4/4/2006**	**4/12/2006**	**4/12/2006**	**4/13/2006**	**4/13/2006**	**4/7/2006**	**4/7/2006**	**4/7/2006**
Units	**%**	**%**	**%**	**%**	**%**	**%**	**%**	**%**
Compound								
% Solids	85.1	84.9	82.2	88.3	87.9	86.6	83.7	76.8
% Moisture	14.9	15.1	17.8	11.7	12.1	13.4	16.3	23.2

TABLE 7
PERCENT MOISTURE IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	B-55(0-12)	B-56(0-12)	B-56(6-6.5)	B-56(18-18.5)	B-56(12-24)
Lab Sample ID	**212571-020**	**212603-003**	**212603-004**	**212603-005**	**212603-006**
Dilution	**1**	**1**	**1**	**1**	**1**
Date Sampled	**4/7/2006**	**4/7/2006**	**4/7/2006**	**4/7/2006**	**4/7/2006**
Units	**%**	**%**	**%**	**%**	**%**
Compound					
% Solids	86.3	84.6	87.7	80.9	81.7
% Moisture	13.7	15.4	12.3	19.1	18.3

ATTACHMENT G
ANALYTICAL RESULTS FOR PETROLEUM WASTE CLASSIFICATION

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria[1] µg/kg**	**B-30(18-20)** **212469-001** **1** **3/24/2006** **µg/Kg**	**B-30(20-22)** **212469-002** **1** **3/24/2006** **µg/Kg**	**B-30(22-24)** **212469-003** **1** **3/24/2006** **µg/Kg**	**B-44(17.5-18)** **212550-001** **1** **4/3/2006** **µg/Kg**	**B-45(4.5-5)** **212550-007** **1** **4/3/2006** **µg/Kg**	**B-46(17-17.5)** **212550-014** **1** **4/4/2006** **µg/Kg**
Chloromethane	NS	1.1 U	1.1 U	1.1 U	55 U	100 U	58 U
Vinyl chloride	NS	1.1 U	1 U	1.1 U	88 U	160 U	92 U
Bromomethane	NS	1 U	0.96 U	0.99 U	130 U	240 U	140 U
Chloroethane	NS	2.3 U	2.2 U	2.3 U	88 U	160 U	92 U
1 1-Dichloroethene	NS	1.3 U	1.3 U	1.3 U	77 U	140 U	81 U
Carbon disulfide	NS	1.5 J	0.71 U	0.82 J	NA	NA	NA
Acetone	NS	3.9 U	3.7 U	3.8 U	290 JB	290 JB	340 JB
Methylene chloride	NS	9.2 JB	7.9 JB	8.7 JB	90 JB	250 JB	210 JB
trans-1 2-Dichloroethene	NS	0.71 U	0.68 U	0.7 U	55 U	100 U	58 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1.1 U	1.1 U	NA	NA	NA
1 1-Dichloroethane	NS	0.99 U	0.95 U	0.98 U	66 U	120 U	69 U
cis-1 2-Dichloroethene	NS	1.3 U	1.2 U	1.3 U	66 U	120 U	69 U
2-Butanone (MEK)	NS	2.2 U	2.1 U	2.2 U	130 U	370 J	140 U
Chloroform	NS	0.65 U	0.62 U	0.64 U	77 U	140 U	81 U
1 1 1-Trichloroethane	NS	1 U	0.98 U	1 U	44 U	81 U	46 U
Carbon tetrachloride	NS	0.95 U	0.91 U	0.95 U	110 U	200 U	120 U
Benzene	NS	1.1 U	1 U	1 U	90 J	81 U	46 U
1 2-Dichloroethane	NS	1.2 U	1.2 U	1.2 U	66 U	120 U	69 U
Trichloroethene	NS	0.83 U	0.8 U	0.82 U	77 U	140 U	81 U
1 2-Dichloropropane	NS	1.3 U	1.2 U	1.3 U	99 U	180 U	100 U
Bromodichloromethane	NS	1 U	0.98 U	1 U	44 U	81 U	46 U
cis-1 3-Dichloropropene	NS	0.95 U	0.91 U	0.95 U	55 U	100 U	58 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.4 U	1.4 U	77 U	140 U	81 U
Toluene	NS	1 UB	0.98 UB	1 UB	33 U	86 J	55 J
trans-1 3-Dichloropropene	NS	1.1 U	1.1 U	1.1 U	33 U	61 U	35 U
1 1 2-Trichloroethane	NS	1.3 U	1.2 U	1.3 U	66 U	120 U	69 U
Tetrachloroethene	NS	0.86 U	0.82 U	0.85 U	55 U	130 J	58 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria[1] µg/kg**	**B-30(18-20)** **212469-001** **1** **3/24/2006** **µg/Kg**	**B-30(20-22)** **212469-002** **1** **3/24/2006** **µg/Kg**	**B-30(22-24)** **212469-003** **1** **3/24/2006** **µg/Kg**	**B-44(17.5-18)** **212550-001** **1** **4/3/2006** **µg/Kg**	**B-45(4.5-5)** **212550-007** **1** **4/3/2006** **µg/Kg**	**B-46(17-17.5)** **212550-014** **1** **4/4/2006** **µg/Kg**
2-Hexanone	NS	3.1 U	3 U	3.1 U	NA	NA	NA
Dibromochloromethane	NS	0.5 U	0.48 U	0.5 U	55 U	100 U	58 U
Chlorobenzene	NS	0.97 U	0.92 U	0.96 U	44 U	81 U	46 U
Ethylbenzene	NS	0.97 U	0.92 U	0.96 U	160 J	200 U	120 U
Styrene	NS	1.3 U	1.2 U	1.3 U	55 U	100 U	58 U
Bromoform	NS	1.2 U	1.2 U	1.2 U	88 U	160 U	92 U
1 1 2 2-Tetrachloroethane	NS	1.5 U	1.4 U	1.5 U	44 U	81 U	46 U
Xylenes (total)	NS	2.4 U	2.3 U	2.4 U	560	310 J	120 U
Total BTEX	**30,000,000**	ND	ND	ND	810	396	55

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth of Carteret Acceptence Criteria[1]**	**B-47(18-18.5)**	**B-48(20-20.5)**	**B-48(26-26.5)**	**B-49(15.5-16)**	**B-49(25-25.5)**	**B-50(16-16.5)**
Lab Sample ID		**212602-006**	**212582-009**	**212582-012**	**212570-013**	**212570-020**	**212582-016**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**4/6/2006**	**4/6/2006**	**4/5/2006**	**4/5/2006**	**4/6/2006**
Units	**µg/kg**	**µg/Kg**	**ug/Kg**	**ug/Kg**	**µg/Kg**	**µg/Kg**	**ug/Kg**
Compound							
Chloromethane	NS	53 U	51 U	51 U	48 U	45 U	60 U
Vinyl chloride	NS	84 U	82 U	81 U	78 U	72 U	95 U
Bromomethane	NS	130 U	120 U	120 U	120 U	110 U	140 U
Chloroethane	NS	84 U	82 U	81 U	78 U	72 U	95 U
1 1-Dichloroethene	NS	74 U	71 U	71 U	68 U	63 U	83 U
Carbon disulfide	NS	NA	N/A	N/A	NA	NA	N/A
Acetone	NS	N/A	300 J	320 J	180 JB	130 UB	330 J
Methylene chloride	NS	100 JB	130 JB	140 JB	92 JB	87 JB	150 JB
trans-1 2-Dichloroethene	NS	53 U	51 U	51 U	48 U	45 U	60 U
Methyl-tert-butyl-ether (MTBE)	NS	NA	N/A	N/A	NA	NA	N/A
1 1-Dichloroethane	NS	63 U	61 U	61 U	58 U	54 U	72 U
cis-1 2-Dichloroethene	NS	63 U	61 U	61 U	58 U	54 U	72 U
2-Butanone (MEK)	NS	N/A	120 U	120 U	120 U	110 U	140 U
Chloroform	NS	74 U	71 U	71 U	68 U	63 U	83 U
1 1 1-Trichloroethane	NS	42 U	41 U	40 U	39 U	36 U	48 U
Carbon tetrachloride	NS	110 U	100 U	100 U	97 U	90 U	120 U
Benzene	NS	42 U	41 U	40 U	39 U	36 U	48 U
1 2-Dichloroethane	NS	63 U	61 U	61 U	58 U	54 U	72 U
Trichloroethene	NS	74 U	71 U	71 U	68 U	63 U	83 U
1 2-Dichloropropane	NS	95 U	92 U	91 U	87 U	81 U	110 U
Bromodichloromethane	NS	42 U	41 U	40 U	39 U	36 U	48 U
cis-1 3-Dichloropropene	NS	53 U	51 U	51 U	48 U	45 U	60 U
4-Methyl-2-pentanone (MIBK)	NS	NA	71 U	71 U	68 U	63 U	83 U
Toluene	NS	32 U	31 U	30 U	29 U	27 U	36 U
trans-1 3-Dichloropropene	NS	32 U	31 U	30 U	29 U	27 U	36 U
1 1 2-Trichloroethane	NS	63 U	61 U	61 U	58 U	54 U	72 U
Tetrachloroethene	NS	53 U	51 U	51 U	48 U	45 U	60 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria[1] µg/kg**	**B-47(18-18.5)** **212602-006** **1** **4/10/2006** **µg/Kg**	**B-48(20-20.5)** **212582-009** **1** **4/6/2006** **ug/Kg**	**B-48(26-26.5)** **212582-012** **1** **4/6/2006** **ug/Kg**	**B-49(15.5-16)** **212570-013** **1** **4/5/2006** **µg/Kg**	**B-49(25-25.5)** **212570-020** **1** **4/5/2006** **µg/Kg**	**B-50(16-16.5)** **212582-016** **1** **4/6/2006** **ug/Kg**
2-Hexanone	NS	NA	N/A	N/A	NA	NA	N/A
Dibromochloromethane	NS	53 U	51 U	51 U	48 U	45 U	60 U
Chlorobenzene	NS	42 U	41 U	40 U	39 U	36 U	48 U
Ethylbenzene	NS	110 U	100 U	100 U	97 U	90 U	120 U
Styrene	NS	NA	51 U	51 U	48 U	45 U	60 U
Bromoform	NS	84 U	82 U	81 U	78 U	72 U	95 U
1 1 2 2-Tetrachloroethane	NS	42 U	41 U	40 U	39 U	36 U	48 U
Xylenes (total)	NS	110 U	430 J	100 U	97 U	90 U	120 U
Total BTEX	**30,000,000**	ND	430	ND	ND	ND	ND

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria[1] µg/kg**	**B-50(25-25.5)** **212582-017** **1** **4/6/2006** **ug/Kg**	**B-51(21-21.5)** **212570-007** **1** **4/4/2006** **µg/Kg**	**B-52(15.5-16)** **212570-003** **1** **4/4/2006** **µg/Kg**
Chloromethane	NS	55 U	50 U	69 U
Vinyl chloride	NS	88 U	80 U	110 U
Bromomethane	NS	130 U	120 U	170 U
Chloroethane	NS	88 U	80 U	110 U
1 1-Dichloroethene	NS	77 U	70 U	96 U
Carbon disulfide	NS	N/A	NA	NA
Acetone	NS	260 J	180 JB	340 JB
Methylene chloride	NS	130 JB	110 JB	250 JB
trans-1 2-Dichloroethene	NS	55 U	50 U	69 U
Methyl-tert-butyl-ether (MTBE)	NS	N/A	NA	NA
1 1-Dichloroethane	NS	66 U	60 U	83 U
cis-1 2-Dichloroethene	NS	66 U	60 U	83 U
2-Butanone (MEK)	NS	130 U	120 U	170 U
Chloroform	NS	77 U	70 U	96 U
1 1 1-Trichloroethane	NS	44 U	40 U	55 U
Carbon tetrachloride	NS	110 U	100 U	140 U
Benzene	NS	44 U	40 U	55 U
1 2-Dichloroethane	NS	66 U	60 U	83 U
Trichloroethene	NS	77 U	70 U	96 U
1 2-Dichloropropane	NS	99 U	90 U	120 U
Bromodichloromethane	NS	44 U	40 U	55 U
cis-1 3-Dichloropropene	NS	55 U	50 U	69 U
4-Methyl-2-pentanone (MIBK)	NS	77 U	70 U	96 U
Toluene	NS	33 U	73 J	41 U
trans-1 3-Dichloropropene	NS	33 U	30 U	41 U
1 1 2-Trichloroethane	NS	66 U	60 U	83 U
Tetrachloroethene	NS	55 U	50 U	69 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth of Carteret Acceptence Criteria[1] µg/kg**	**B-50(25-25.5)**	**B-51(21-21.5)**	**B-52(15.5-16)**
Lab Sample ID		**212582-017**	**212570-007**	**212570-003**
Dilution		**1**	**1**	**1**
Date Sampled		**4/6/2006**	**4/4/2006**	**4/4/2006**
Units		**ug/Kg**	**µg/Kg**	**µg/Kg**
Compound				
2-Hexanone	NS	N/A	NA	NA
Dibromochloromethane	NS	55 U	50 U	69 U
Chlorobenzene	NS	44 U	40 U	55 U
Ethylbenzene	NS	110 U	100 UH	140 U
Styrene	NS	55 U	50 U	69 U
Bromoform	NS	88 U	80 U	110 U
1 1 2 2-Tetrachloroethane	NS	44 U	40 U	55 U
Xylenes (total)	NS	110 U	100 U	140 U
Total BTEX	**30,000,000**	ND	73	ND

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61^{ST} STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1 - Petroleum waste criteria provided by Clean Earth of Carteret, NJ.
µg/Kg - micrograms per kilogram = parts per billion (ppb)
U - Analyte was not detected at or above the reporting limit.
B - Compound was found in the blank and sample.
J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
NS - No Standard
NA - Not analyzed

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria[1]** **µg/Kg**	**B-30(18-20)** **212469-001** **1** **3/24/2006** **µg/Kg**	**B-30(20-22)** **212469-002** **1** **3/24/2006** **µg/Kg**	**B-30(22-24)** **212469-003** **1** **3/24/2006** **µg/Kg**	**B-44(16-18)** **212550-002** **1** **4/3/2006** **µg/Kg**	**B-44(20-22)** **212550-004** **1** **4/3/2006** **µg/Kg**	**B-44(14-24)** **212550-006** **1** **4/3/2006** **µg/Kg**
Naphthalene		68 U	66 U	67 U	66 U	66 U	63 U
2-Methylnaphthalene	No standards	63 U	61 U	62 U	62 U	61 U	58 U
Acenaphthylene	analyzed on	72 J	47 U	48 U	48 U	47 U	45 U
Acenaphthene	case by	66 U	63 U	65 U	64 U	64 U	60 U
Fluorene	case	52 J	50 U	50 U	50 U	50 U	47 U
Phenanthrene	basis	510	45 U	46 U	45 U	45 U	43 U
Anthracene		150 J	63 U	65 U	64 U	64 U	60 U
Fluoranthene		770	48 U	49 U	49 U	49 U	46 U
Pyrene		840	53 U	54 U	53 U	53 U	51 U
Benzo(a)anthracene		470	52 U	53 U	52 U	52 U	49 U
Chrysene		460	48 U	49 U	49 U	49 U	46 U
Benzo(b)fluoranthene		390 J	110 U	110 U	110 U	110 U	100 U
Benzo(k)fluoranthene		170 J	43 U	43 U	43 U	43 U	41 U
Benzo(a)pyrene		410	47 U	48 U	48 U	47 U	45 U
Indeno(1 2 3-cd)pyrene		350 J	39 U	40 U	39 U	39 U	37 U
Dibenzo(a h)anthracene		86 J	43 U	43 U	43 U	43 U	41 U
Benzo(ghi)perylene		310 J	43 U	43 U	43 U	43 U	41 U
Total PAHs		5,040	ND	ND	ND	ND	ND

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth of Carteret Acceptence Criteria[1] µg/Kg**	**B-45(0-6)**	**B-46(14-20)**	**B-47(18-22)**	**B-48(10-16)**	**B-48(16-24)**	**B-48(24-30)**
Lab Sample ID		**212550-012**	**212550-017**	**212602-010**	**212582-004**	**212582-013**	**212582-015**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/3/2006**	**4/4/2006**	**4/10/2006**	**4/6/2006**	**4/6/2006**	**4/6/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
Naphthalene		86 J	63 U	58 U	63 U	2800	4200
2-Methylnaphthalene	No standards analyzed on case by case basis	73 J	59 U	140 J	59 U	2700	4000
Acenaphthylene		39 U	45 U	63 J	45 U	48 U	48 U
Acenaphthene		52 U	61 U	160 J	61 U	64 U	65 U
Fluorene		41 U	48 U	150 J	48 U	50 U	51 U
Phenanthrene		220 J	43 U	1100	220 J	50 J	52 J
Anthracene		52 U	61 U	280 J	61 U	64 U	65 U
Fluoranthene		260 J	90 J	930	230 J	49 U	49 U
Pyrene		210 J	120 J	970	220 J	54 U	54 U
Benzo(a)anthracene		120 J	50 U	420	130 J	53 U	53 U
Chrysene		140 J	77 J	380	110 J	49 U	49 U
Benzo(b)fluoranthene		100 J	100 U	420	140 J	110 U	110 U
Benzo(k)fluoranthene		59 J	41 U	170 J	61 J	43 U	43 U
Benzo(a)pyrene		73 J	94 J	390	110 J	48 U	48 U
Indeno(1 2 3-cd)pyrene		32 U	38 U	340	74 J	40 U	40 U
Dibenzo(a h)anthracene		35 U	41 U	67 J	41 U	43 U	43 U
Benzo(ghi)perylene		35 U	95 J	380	86 J	43 U	43 U
Total PAHs		1,341	476	6,360	1,381	5,550	8,252

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth of Carteret Acceptence Criteria[1] µg/Kg**	**B-49(20-28)**	**B-49(10-20)**	**B-50(14-20)**	**B-50(20-26)**	**B-51(18-24)**	**B-52(10-12)**
Lab Sample ID		**212582-003**	**212570-017**	**212602-001**	**212602-005**	**212570-010**	**212550-020**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/5/2006**	**4/5/2006**	**4/6/2006**	**4/6/2006**	**4/4/2006**	**4/4/2006**
Units		**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**	**µg/Kg**
Compound							
Naphthalene		180 J	990	120 U	180 J	66 U	120 U
2-Methylnaphthalene	No standards analyzed on case by case basis	160 J	380	120 U	120 J	61 U	110 U
Acenaphthylene		47 U	210 J	90 U	70 J	47 U	83 U
Acenaphthene		63 U	470	120 U	69 U	63 U	110 U
Fluorene		50 U	600	94 U	54 U	50 U	87 U
Phenanthrene		45 U	5200	85 U	110 J	99 J	410 J
Anthracene		63 U	970	120 U	69 U	63 U	110 U
Fluoranthene		48 U	3600	110 J	210 J	87 J	480 J
Pyrene		53 U	3800	140 J	260 J	86 J	320 J
Benzo(a)anthracene		52 U	1800	100 J	140 J	52 U	230 JM
Chrysene		48 U	1800	92 U	120 J	48 U	230 JM
Benzo(b)fluoranthene		110 U	1700	200 U	170 J	110 U	230 J
Benzo(k)fluoranthene		43 U	540	81 U	55 J	43 U	75 U
Benzo(a)pyrene		47 U	1500	100 J	130 J	47 U	210 JM
Indeno(1 2 3-cd)pyrene		39 U	1500	74 U	130 J	39 U	220 J
Dibenzo(a h)anthracene		43 U	390	81 U	46 U	43 U	75 U
Benzo(ghi)perylene		43 U	1500	81 U	200 J	43 U	280 J
Total PAHs		340	26,950	450	1,895	272	2,610

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria[1] µg/Kg**	**B-52(6-18)** **not enough sample volume for analysis**
Naphthalene		
2-Methylnaphthalene	No standards	
Acenaphthylene	analyzed on	
Acenaphthene	case by	
Fluorene	case	
Phenanthrene	basis	
Anthracene		
Fluoranthene		
Pyrene		
Benzo(a)anthracene		
Chrysene		
Benzo(b)fluoranthene		
Benzo(k)fluoranthene		
Benzo(a)pyrene		
Indeno(1 2 3-cd)pyrene		
Dibenzo(a h)anthracene		
Benzo(ghi)perylene		
Total PAHs		

TABLE 2
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:

1 - Petroleum waste criteria provided by Clean Earth of Carteret, NJ.

µg/Kg - micrograms per kilogram = parts per billion (ppb)

U - Analyte was not detected at or above the reporting limit.

J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).

M - Concentration calculated using manual integration.

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria µg/kg**	**B-30(18-20)** **212469-001** **1** **3/24/2006** **µg/Kg**	**B-30(20-22)** **212469-002** **1** **3/24/2006** **µg/Kg**	**B-30(22-24)** **212469-003** **1** **3/24/2006** **µg/Kg**	**B-44(16-18)** **212550-002** **1** **4/3/2006** **µg/Kg**	**B-44(18-20)** **212550-003** **1** **4/3/2006** **µg/Kg**	**B-44(20-22)** **212550-004** **1** **4/3/2006** **µg/Kg**
TPH - Diesel Range Organics (DRO)	10,000,000	11,000 U	11,000 U	11,000 U	13,000 J	11,000 J	14,000 J

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria µg/kg**	**B-44(22-24)** **212550-005** **1** **4/3/2006** **µg/Kg**	**B-44(14-24)** **212550-006** **1** **4/3/2006** **µg/Kg**	**B-45(0-6)TPH-1** **212550-008** **5** **4/3/2006** **µg/Kg**	**B-45(0-6)TPH-** **212550-009** **5** **4/3/2006** **µg/Kg**	**B-45(0-6)TPH-3** **212550-010** **5** **4/3/2006** **µg/Kg**	**B-45(0-6)TPH-4** **212550-011** **5** **4/3/2006** **µg/Kg**
TPH - Diesel Range Organics (DRO)	10,000,000	11,000 U	11,000 U	620,000	500,000	550,000	560,000

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria µg/kg**	**B-46(16-18)** **212550-013** **5** **4/4/2006** **µg/Kg**	**B-46(18-19)** **212550-015** **5** **4/4/2006** **µg/Kg**	**B-46(19-20)** **212550-016** **1** **4/4/2006** **µg/Kg**	**B-46(14-20)A** **212701-011** **1** **4/4/2006** **µg/Kg**	**B-46(14-20)B** **212701-012** **1** **4/4/2006** **µg/Kg**	**B-47(18-20)** **212602-007** **1** **4/10/2006** **µg/Kg**
TPH - Diesel Range Organics (DRO)	10,000,000	170,000	250,000	11,000 U	75,000	160,000	87,000

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth of Carteret Acceptence Criteria µg/kg	B-47(20-22) 212602-008 1 4/10/2006 µg/Kg	B-47(22-24) 212602-009 1 4/10/2006 µg/Kg	B-48(16-18) 212582-005 1 4/6/2006 µg/Kg	B-48(18-20) 212582-006 1 4/6/2006 µg/Kg	B-48(20-22) 212582-007 1 4/6/2006 µg/Kg	B-48(22-24) 212582-008 1 4/6/2006 µg/Kg
TPH - Diesel Range Organics (DRO)	10,000,000	9,400 U	9,400 U	14,000 J	69,000	20,000 J	16,000 J

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth of Carteret Acceptence Criteria µg/kg	B-48(24-26) 212582-010 1 4/6/2006 µg/Kg	B-48(26-28) 212582-011 1 4/6/2006 µg/Kg	B-48(28-30) 212582-014 1 4/6/2006 µg/Kg	B-48(16-24)A 212701-005 1 4/6/2006 µg/Kg	B-48(16-24)B 212701-006 1 4/6/2006 µg/Kg	B-48(24-30)A 212701-007 1 4/6/2006 µg/Kg
TPH - Diesel Range Organics (DRO)	10,000,000	11,000 U	11,000 U	11,000 U	110,000	150,000	160,000

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth of Carteret Acceptence Criteria µg/kg	B-48(24-30)B 212701-008 1 4/6/2006 µg/Kg	B-49(10-12) 212570-011 1 4/5/2006 µg/Kg	B-49(12-14) 212570-012 1 4/5/2006 µg/Kg	B-49(14-16) 212570-014 1 4/5/2006 µg/Kg	B-49(16-18) 212570-015 10 4/5/2006 µg/Kg	B-49(18-20) 212570-016 1 4/5/2006 µg/Kg
TPH - Diesel Range Organics (DRO)	10,000,000	120,000	110,000	52,000	21,000	1,000,000	230,000

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria µg/kg**	**B-49(20-22)** **212570-018** **1** **4/5/2006** **µg/Kg**	**B-49(22-24)** **212570-019** **1** **4/5/2006** **µg/Kg**	**B-49(24-26)** **212582-001** **1** **4/5/2006** **µg/Kg**	**B-49(26-28)** **212582-002** **1** **4/5/2006** **µg/Kg**	**B-49(20-28)A** **212701-003** **1** **4/5/2006** **µg/Kg**	**B-49(20-28)B** **212701-004** **1** **4/5/2006** **µg/Kg**
TPH - Diesel Range Organics (DRO)	10,000,000	30,000	11,000 U	11,000 U	11,000 U	16,000 J	21,000

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria µg/kg**	**B-50(14-16)** **212582-018** **1** **4/6/2006** **µg/Kg**	**B-50(16-18)** **212582-019** **1** **4/6/2006** **µg/Kg**	**B-50(18-20)** **212582-020** **1** **4/6/2006** **µg/Kg**	**B-50(20-22)** **212602-002** **1** **4/6/2006** **µg/Kg**	**B-50(22-24)** **212602-003** **5** **4/6/2006** **µg/Kg**	**B-50(24-26)** **212602-004** **2** **4/6/2006** **µg/Kg**
TPH - Diesel Range Organics (DRO)	10,000,000	52,000	35,000	180,000	160,000	400,000	210,000

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria µg/kg**	**B-50(20-26)A** **212701-001** **1** **4/6/2006** **µg/Kg**	**B-50(20-26)B** **212701-002** **1** **4/6/2006** **µg/Kg**	**B-51(18-20)** **212570-006** **5** **4/4/2006** **µg/Kg**	**B-51(20-22)** **212570-008** **1** **4/4/2006** **µg/Kg**	**B-51(22-24)** **212570-009** **1** **4/4/2006** **µg/Kg**	**B-51(18-24)A** **212701-009** **1** **4/4/2006** **µg/Kg**
TPH - Diesel Range Organics (DRO)	10,000,000	190,000	190,000	380,000	11,000 U	11,000 U	21,000

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth of Carteret Acceptence Criteria µg/kg	B-51(18-24)B 212701-010 1 4/4/2006 µg/Kg	B-52(6-8) 212550-018 1 4/4/2006 µg/Kg	B-52(8-10) 212550-019 10 4/4/2006 µg/Kg	B-52(10-12) 212550-020 1 4/4/2006 µg/Kg	B-52(12-14) 212570-001 1 4/4/2006 µg/Kg	B-52(14-16) 212570-002 1 4/4/2006 µg/Kg
TPH - Diesel Range Organics (DRO)	10,000,000	18,000 J	49,000	930,000	110,000	11,000 U	11,000 U

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth of Carteret Acceptence Criteria µg/kg	B-52(16-18) 212570-004 1 4/4/2006 µg/Kg
TPH - Diesel Range Organics (DRO)	10,000,000	11,000 U

TABLE 3
TOTAL PETROLEUM HYDROCARBONS (TPH) IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
U - Analyte was not detected at or above the reporting limit.
J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).

TABLE 4
POLYCHLORINATED BIPHENYLS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria[1] µg/kg**	**B-30(18-20)** **212469-001** **1** **3/24/2006** **µg/Kg**	**B-30(20-22)** **212469-002** **1** **3/24/2006** **µg/Kg**	**B-30(22-24)** **212469-003** **1** **3/24/2006** **µg/Kg**	**B-44(16-18)** **212550-002** **1** **4/3/2006** **µg/Kg**	**B-44(18-20)** **212550-003** **1** **4/3/2006** **µg/Kg**	**B-44(20-22)** **212550-004** **1** **4/3/2006** **µg/Kg**	**B-44(22-24)** **212550-005** **1** **4/3/2006** **µg/Kg**
Aroclor 1016	NS	3.4 U	3.3 U	3.4 U	3.3 U	3.3 U	3.2 U	3.2 U
Aroclor 1221	NS	1.9 U	1.8 U	1.9 U	1.8 U	1.8 U	1.7 U	1.7 U
Aroclor 1232	NS	2.3 U	2.2 U	2.3 U	2.2 U	2.2 U	2.1 U	2.1 U
Aroclor 1242	NS	3.7 U	3.5 U	3.6 U	3.5 U	3.5 U	3.4 U	3.4 U
Aroclor 1248	NS	3.3 U	3.1 U	3.3 U	3.2 U	3.1 U	3 U	3.1 U
Aroclor 1254	NS	1.5 U	1.4 U	1.5 U	1.4 U	1.4 U	1.4 U	1.4 U
Aroclor 1260	NS	4.9 U	4.7 U	4.8 U	4.7 U	4.6 U	4.5 U	4.6 U
Total PCBs	**50,000**	ND	ND	ND	ND	ND	ND	ND

TABLE 4
POLYCHLORINATED BIPHENYLS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Clean Earth of Carteret Acceptence Criteria[1] µg/kg**	**B-44(14-24) 212550-006 1 4/3/2006 µg/Kg**	**B-45(0-6) 212550-012 1 4/3/2006 µg/Kg**	**B-46(14-20) 212550-017 1 4/4/2006 µg/Kg**	**B-47(18-22) 212602-010 1 4/10/2006 µg/Kg**	**B-48(10-16) 212582-004 1 4/6/2006 µg/Kg**	**B-48(16-24) 212582-013 1 4/6/2006 µg/Kg**	**B-48(24-30) 212582-015 1 4/6/2006 µg/Kg**
Aroclor 1016	NS	3.1 U	2.7 U	3.1 U	2.9 U	3.2 U	3.4 U	3.3 U
Aroclor 1221	NS	1.7 U	1.5 U	1.7 U	1.6 U	1.7 U	1.8 U	1.8 U
Aroclor 1232	NS	2.1 U	1.8 U	2 U	1.9 U	2.1 U	2.2 U	2.2 U
Aroclor 1242	NS	3.3 U	2.9 U	3.3 U	3.1 U	3.4 U	3.6 U	3.5 U
Aroclor 1248	NS	3 U	29	3 U	2.8 U	3.1 U	3.2 U	3.1 U
Aroclor 1254	NS	1.3 U	98 M	1.3 U	1.2 U	1.4 U	1.4 U	1.4 U
Aroclor 1260	NS	4.4 U	33 M	4.4 U	5.4 J	4.5 U	4.8 U	4.7 U
Total PCBs	**50,000**	ND	160	ND	5	ND	ND	ND

TABLE 4
POLYCHLORINATED BIPHENYLS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Clean Earth of Carteret Acceptence Criteria[1] µg/kg**	**B-49(10-20) 212570-017 2 4/5/2006 µg/Kg**	**B-49(20-28) 212582-003 1 4/5/2006 µg/Kg**	**B-50(14-20) 212602-001 1 4/6/2006 µg/Kg**	**B-50(20-26) 212602-005 1 4/6/2006 µg/Kg**	**B-51(18-24) 212570-010 1 4/4/2006 µg/Kg**	**B-52(6-18) not enough sample volume for analysis**
Aroclor 1016	NS	6.2 U	3.2 U	3.1 U	3.6 U	11 JM	
Aroclor 1221	NS	3.4 U	1.7 U	1.7 U	2 U	14 J	
Aroclor 1232	NS	4.1 U	2.1 U	2.1 U	2.4 U	2.1 U	
Aroclor 1242	NS	6.6 U	3.4 U	3.3 U	3.8 U	3.4 U	
Aroclor 1248	NS	6 U	3.1 U	3 U	3.4 U	3 U	
Aroclor 1254	NS	2.7 U	1.4 U	1.3 U	1.6 U	1.4 U	
Aroclor 1260	NS	250	4.6 U	4.4 U	5.1 U	4.5 U	
Total PCBs	**50,000**	250	ND	ND	ND	25	

TABLE 4
POLYCHLORINATED BIPHENYLS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:

1 - The Petroleum waste criteria provided by Clean Earth of Carteret, NJ.
µg/Kg - micrograms per kilogram = parts per billion (ppb)
U - Analyte was not detected at or above the reporting limit.
J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
M - Concentration calculated using manual integration.
NS - No Standard

TABLE 5
TCLP METALS
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Maximum Contamination for RCRA Toxicity [1] (mg/L)**	**B-30(18-20)** **212469-001** **1** **3/24/2006** **mg/L**	**B-30(20-22)** **212469-002** **1** **3/24/2006** **mg/L**	**B-30(22-24)** **212469-003** **1** **3/24/2006** **mg/L**	**B-44(16-18)** **212550-002** **1** **4/3/2006** **mg/L**	**B-44(18-20)** **212550-003** **1** **4/3/2006** **mg/L**	**B-44(20-22)** **212550-004** **1** **4/3/2006** **mg/L**	**B-44(22-24)** **212550-005** **1** **4/3/2006** **mg/L**
Arsenic-TCLP	5.0	0.0195 U	0.0279 B	0.0371 B	0.0195 U	0.0195 U	0.0195 U	0.0195 U
Barium-TCLP	100	1	1.54	1.18	0.583	0.596	0.688	0.559
Cadmium-TCLP	1.0	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Chromium-TCLP	5.0	0.0074 B	0.0091 B	0.0099 B	0.0065 U	0.0065 U	0.0087 B	0.0099 B
Lead-TCLP	5.0	0.0313 B	0.105	0.429	0.0488 B	0.0242 B	0.123	0.021 B
Mercury- TCLP	0.2	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U
Selenium-TCLP	1.0	0.025 UN	0.025 UN	0.025 UN	0.025 U	0.025 U	0.025 U	0.025 U
Silver-TCLP	5.0	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U

TABLE 5
TCLP METALS
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Maximum Contamination for RCRA Toxicity [1] (mg/L)**	**B-44(14-24)**	**B-45(0-6)**	**B-46(14-20)**	**B-47(18-22)**	**B-48(10-16)**	**B-48(16-24)**	**B-48(24-30)**
Lab Sample ID		**212550-006**	**212550-012**	**212550-017**	**212602-010**	**212582-004**	**212582-013**	**212582-015**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/3/2006**	**4/3/2006**	**4/4/2006**	**4/10/2006**	**4/6/2006**	**4/6/2006**	**4/6/2006**
Units		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound								
Arsenic-TCLP	5.0	0.0195 U	0.0195 U	0.0195 U	0.0195 U	0.0227 B	0.0221 B	0.0195 U
Barium-TCLP	100	0.501	0.232	0.483	0.72	0.487	0.454	0.348
Cadmium-TCLP	1.0	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Chromium-TCLP	5.0	0.0065 U	0.0085 B	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U
Lead-TCLP	5.0	0.015 U	0.015 U	0.0858	1.28	0.107	0.0851	0.022 B
Mercury- TCLP	0.2	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U
Selenium-TCLP	1.0	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Silver-TCLP	5.0	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U

TABLE 5
TCLP METALS
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Maximum Contamination for RCRA Toxicity [1] (mg/L)	B-49(10-20)	B-49(20-28)	B-50(14-20)	B-50(20-26)	B-51(18-24)	B-52(6-18)
Lab Sample ID		212570-017	212582-003	212602-001	212602-005	212570-010	212570-005
Dilution		1	1	1	1	1	1
Date Sampled		4/5/2006	4/5/2006	4/6/2006	4/6/2006	4/4/2006	4/4/2006
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound							
Arsenic-TCLP	5.0	0.0195 U	0.0195 U	0.0346 B	0.0366 B	0.0195 U	0.0195 U
Barium-TCLP	100	0.233	0.36	0.169	0.559	0.535	0.212
Cadmium-TCLP	1.0	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U
Chromium-TCLP	5.0	0.0104 B	0.0065 U	0.0065 U	0.0065 U	0.0118 B	0.0065 U
Lead-TCLP	5.0	0.015 U	0.015 U	0.015 U	0.261	0.0292 B	0.0759
Mercury- TCLP	0.2	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U
Selenium-TCLP	1.0	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Silver-TCLP	5.0	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U

TABLE 5
TCLP METALS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
1 - RCRA Toxicity Characteristic Leaching Potential (TCLP) maximum contaminant concentrations.
mg/L - milligrams per liter = parts per million (ppm)
U - Analyte was not detected at or above the reporting limit.
B - Value obtained from a reading that was less than the Contract Required Detection Limit (CRDL).
N - MS/MSD spike recovery exceeds control limits.

TABLE 6
pH AND CORROSIVITY IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth of Carteret Acceptence Criteria pH	B-30(18-20) 212469-001 1 3/24/2006 pH Units	B-30(20-22) 212469-002 1 3/24/2006 pH Units	B-30(22-24) 212469-003 1 3/24/2006 pH Units	B-44(16-18) 212550-002 1 4/3/2006 pH Units	B-44(18-20) 212550-003 1 4/3/2006 pH Units	B-44(20-22) 212550-004 1 4/3/2006 pH Units	B-44(22-24) 212550-005 1 4/3/2006 pH Units	B-44(14-24) 212550-006 1 4/3/2006 pH Units
pH	12.5 > pH >2	8.05	7.69	7.7	7.32	7.42	7.41	7.43	7.46
Corrosivity (pH Solid)	NO	NO	NO	NO	NO	NO	NO	NO	NO

TABLE 6
pH AND CORROSIVITY IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria pH**	**B-45(0-6)** **212550-012** **1** **4/3/2006** **pH Units**	**B-46(14-20)** **212550-017** **1** **4/4/2006** **pH Units**	**B-47(18-22)** **212602-010** **1** **4/10/2006** **pH Units**	**B-48(10-16)** **212582-004** **1** **4/6/2006** **pH Units**	**B-48(16-24)** **212582-013** **1** **4/6/2006** **pH Units**	**B-48(24-30)** **212582-015** **1** **4/6/2006** **pH Units**	**B-49(10-20)** **212570-017** **1** **4/5/2006** **pH Units**	**B-49(20-28)** **212582-003** **1** **4/5/2006** **pH Units**
pH	12.5 > pH >2	11.87	8.06	11.29	8.07	7.49	7.58	10.8	8.28
Corrosivity (pH Solid)	NO	NO	NO	NO	NO	NO	NO	NO	NO

TABLE 6
pH AND CORROSIVITY IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61^{ST} STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth of Carteret Acceptence Criteria pH**	**B-50(14-20)**	**B-50(20-26)**	**B-51(18-24)**	**B-52(6-18)**
Lab Sample ID		**212602-001**	**212602-005**	**212570-010**	**212570-005**
Dilution		**1**	**1**	**1**	**1**
Date Sampled		**4/6/2006**	**4/6/2006**	**4/4/2006**	**4/4/2006**
Units		**pH Units**	**pH Units**	**pH Units**	**pH Units**
Compound					
pH	12.5 > pH >2	12.32	7.72	8.03	9.38
Corrosivity (pH Solid)	NO	NO	NO	NO	NO

TABLE 7
CYANIDE AND SULFIDE IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61^{ST} STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Clean Earth of Carteret Acceptence Criteria µg/Kg**	**B-30(18-20) 212469-001 1 3/24/2006 µg/Kg**	**B-30(20-22) 212469-002 1 3/24/2006 µg/Kg**	**B-30(22-24) 212469-003 1 3/24/2006 µg/Kg**	**B-44(16-18) 212550-002 1 4/3/2006 µg/Kg**	**B-44(18-20) 212550-003 1 4/3/2006 µg/Kg**	**B-44(20-22) 212550-004 1 4/3/2006 µg/Kg**	**B-44(22-24) 212550-005 1 4/3/2006 µg/Kg**
Reactivity Cyanide	ND	ND U	ND U	ND U	ND U	ND U	ND U	ND U

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Clean Earth of Carteret Acceptence Criteria mg/Kg**	**B-30(18-20) 212469-001 1 3/24/2006 mg/Kg**	**B-30(20-22) 212469-002 1 3/24/2006 mg/Kg**	**B-30(22-24) 212469-003 1 3/24/2006 mg/Kg**	**B-44(16-18) 212550-002 1 4/3/2006 mg/Kg**	**B-44(18-20) 212550-003 1 4/3/2006 mg/Kg**	**B-44(20-22) 212550-004 1 4/3/2006 mg/Kg**	**B-44(22-24) 212550-005 1 4/3/2006 mg/Kg**
Reactivity Sulfide	ND	12 U	12 U	12 U	12 U	12 U	12 U	12 U

TABLE 7
CYANIDE AND SULFIDE IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria µg/Kg**	**B-44(14-24)** **212550-006** **1** **4/3/2006** **µg/Kg**	**B-45(0-6)** **212550-012** **1** **4/3/2006** **µg/Kg**	**B-46(14-20)** **212550-017** **1** **4/4/2006** **µg/Kg**	**B-49(20-28)** **212582-003** **1** **4/5/2006** **ug/Kg**	**B-48(10-16)** **212582-004** **1** **4/6/2006** **ug/Kg**	**B-48(16-24)** **212582-013** **5** **4/6/2006** **ug/Kg**	**B-47(18-22)** **212602-010** **1** **4/10/2006** **µg/Kg**
Reactivity Cyanide	ND	ND U	ND U	ND U	ND U	ND U	ND U	ND U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria mg/Kg**	**B-44(14-24)** **212550-006** **1** **4/3/2006** **mg/Kg**	**B-45(0-6)** **212550-012** **1** **4/3/2006** **mg/Kg**	**B-46(14-20)** **212550-017** **1** **4/4/2006** **mg/Kg**	**B-48(10-16)** **212582-004** **1** **4/6/2006** **mg/Kg**	**B-48(16-24)** **212582-013** **1** **4/6/2006** **mg/Kg**	**B-48(24-30)** **212582-015** **1** **4/6/2006** **mg/Kg**	**B-47(18-22)** **212602-010** **1** **4/10/2006** **mg/Kg**
Reactivity Sulfide	ND	12 U	12 U	12 U	12 U	**26**	**150**	12 U

TABLE 7
CYANIDE AND SULFIDE IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria µg/Kg**	**B-49(10-20)** **212570-017** **1** **4/5/2006** **µg/Kg**	**B-48(24-30)** **212582-015** **1** **4/6/2006** **ug/Kg**	**B-50(14-20)** **212602-001** **1** **4/6/2006** **µg/Kg**	**B-50(20-26)** **212602-005** **1** **4/6/2006** **µg/Kg**	**B-51(18-24)** **212570-010** **1** **4/4/2006** **µg/Kg**
Reactivity Cyanide	ND	ND U	ND U	ND U	ND U	ND U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth of Carteret Acceptence Criteria mg/Kg**	**B-49(10-20)** **212570-017** **1** **4/5/2006** **mg/Kg**	**B-49(20-28)** **212582-003** **1** **4/5/2006** **mg/Kg**	**B-50(14-20)** **212602-001** **1** **4/6/2006** **mg/Kg**	**B-50(20-26)** **212602-005** **1** **4/6/2006** **mg/Kg**	**B-51(18-24)** **212570-010** **1** **4/4/2006** **mg/Kg**
Reactivity Sulfide	ND	12 U	12 U	12 U	**130**	12 U

TABLE 7
CYANIDE AND SULFIDE IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
µg/Kg - micrograms per kilogram = parts per billion (ppb)
U - Analyte was not detected at or above the reporting limit.
ND - Not detected

TABLE 8
PAINT FILTER TEST AND IGNITABILITY IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth** **Carteret** **Acceptance** **Criteria** **Yes/No**	**B-30(18-20)** **212469-001** **1** **3/24/2006** **mg/L**	**B-30(20-22)** **212469-002** **1** **3/24/2006** **mg/L**	**B-30(22-24)** **212469-003** **1** **3/24/2006** **mg/L**	**B-44(16-18)** **212550-002** **1** **4/3/2006** **yes/no**	**B-45(0-6)** **212550-012** **1** **4/3/2006** **yes/no**	**B-46(14-20)** **212550-017** **1** **4/4/2006** **yes/no**	**B-47(18-22)** **212602-010** **1** **4/10/2006** **yes/no**	**B-48(10-16)** **212582-004** **1** **4/6/2006** **yes/no**
Paint Filter Test	No				no	no	no	no	no

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth** **Carteret** **Acceptance** **Criteria** **Pos/Neg**	**B-30(18-20)** **212469-001** **1** **3/24/2006** **Pos/Neg**	**B-30(20-22)** **212469-002** **1** **3/24/2006** **Pos/Neg**	**B-30(22-24)** **212469-003** **1** **3/24/2006** **Pos/Neg**	**B-44(16-18)** **212550-002** **1** **4/3/2006** **Pos/Neg**	**B-44(18-20)** **212550-003** **1** **4/3/2006** **Pos/Neg**	**B-44(20-22)** **212550-004** **1** **4/3/2006** **Pos/Neg**	**B-44(22-24)** **212550-005** **1** **4/3/2006** **Pos/Neg**	**B-44(14-24)** **212550-006** **1** **4/3/2006** **Pos/Neg**
Ignitability	Negative	Neg	Neg	Neg	Neg	Neg	Neg	Neg	Neg

TABLE 8
PAINT FILTER TEST AND IGNITABILITY IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth** **Carteret** **Acceptance** **Criteria** **Yes/No**	**B-48(16-24)** **212582-013** **1** **4/6/2006** **yes/no**	**B-48(24-30)** **212582-015** **1** **4/6/2006** **yes/no**	**B-49(10-20)** **212570-017** **1** **4/5/2006** **yes/no**	**B-49(20-28)** **212582-003** **1** **4/5/2006** **yes/no**	**B-50(14-20)** **212602-001** **1** **4/6/2006** **yes/no**	**B-50(20-26)** **212602-005** **1** **4/6/2006** **yes/no**	**B-51(18-24)** **212570-010** **1** **4/4/2006** **yes/no**
Paint Filter Test	No	no	no	no	no	no	no	no

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth** **Carteret** **Acceptance** **Criteria** **Pos/Neg**	**B-45(0-6)** **212550-012** **1** **4/3/2006** **Pos/Neg**	**B-46(14-20)** **212550-017** **1** **4/4/2006** **Pos/Neg**	**B-47(18-22)** **212602-010** **1** **4/10/2006** **Pos/Neg**	**B-48(10-16)** **212582-004** **1** **4/6/2006** **Pos/Neg**	**B-48(16-24)** **212582-013** **1** **4/6/2006** **Pos/Neg**	**B-48(24-30)** **212582-015** **1** **4/6/2006** **Pos/Neg**	**B-49(10-20)** **212570-017** **1** **4/5/2006** **Pos/Neg**
Ignitability	Negative	Neg	Neg	Neg	Neg	Neg	Neg	Neg

TABLE 8
PAINT FILTER TEST AND IGNITABILITY IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Carteret Acceptance Criteria Yes/No**	**B-52 (6-18)** **not enough sample volume for analysis**
Paint Filter Test	No	

Client ID	**Clean Earth**	**B-49(20-28)**
Lab Sample ID	**Carteret**	**212582-003**
Dilution	**Acceptance**	**1**
Date Sampled	**Criteria**	**4/5/2006**
Units	**Pos/Neg**	**Pos/Neg**
Compound		
Ignitability	Negative	Neg

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Commercial Source Soil Requirements (%)	B-30(18-20) 212469-001 1 3/24/2006 %	B-30(20-22) 212469-002 1 3/24/2006 %	B-30(22-24) 212469-003 1 3/24/2006 %	B-44(17.5-18) 212550-001 1 4/3/2006 %	B-44(16-18) 212550-002 1 4/3/2006 %	B-44(18-20) 212550-003 1 4/3/2006 %
% Solids	NS	81.8	85.5	82.5	80.5	85	84.5
% Moisture	15	18.2	14.5	17.5	19.5	15	15.5

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Commercial Source Soil Requirements (%)**	**B-44(20-22) 212550-004 1 4/3/2006 %**	**B-44(22-24) 212550-005 1 4/3/2006 %**	**B-44(14-24) 212550-006 1 4/3/2006 %**	**B-45(4.5-5) 212550-007 1 4/3/2006 %**	**B-45(0-6)TPH-1 212550-008 1 4/3/2006 %**	**B-45(0-6)TPH-2 212550-009 1 4/3/2006 %**
% Solids	NS	85.9	86.4	88.6	76.8	92	88.3
% Moisture	15	14.1	13.6	11.4	23.2	8	11.7

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Commercial Source Soil Requirements (%)**	**B-45(0-6)TPH-3** **212550-010** **1** **4/3/2006** **%**	**B-45(0-6)TPH-4** **212550-011** **1** **4/3/2006** **%**	**B-45(0-6)** **212550-012** **1** **4/3/2006** **%**	**B-46(16-18)** **212550-013** **1** **4/4/2006** **%**	**B-46(17-17.5)** **212550-014** **1** **4/4/2006** **%**	**B-46(18-19)** **212550-015** **1** **4/4/2006** **%**
% Solids	NS	90.3	92.2	104	91.9	76.1	65.4
% Moisture	15	9.7	7.8	0.1	8.1	23.9	34.6

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Commercial Source Soil Requirements (%)**	**B-46(19-20)** **212550-016** **1** **4/4/2006** **%**	**B-46(14-20)** **212550-017** **1** **4/4/2006** **%**	**B-46(14-20)A** **212701-011** **1** **4/4/2006** **%**	**B-46(14-20)B** **212701-012** **1** **4/4/2006** **%**	**B-47(18-18.5)** **212602-006** **1** **4/10/2006** **%**	**B-47(18-20)** **212602-007** **1** **4/10/2006** **%**
% Solids	NS	84.7	88.6	88.6	88.6	96.8	89.9
% Moisture	15	15.3	11.4	11.4	11.4	3.2	10.1

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Commercial Source Soil Requirements (%)	B-47(20-22) 212602-008 1 4/10/2006 %	B-47(22-24) 212602-009 1 4/10/2006 %	B-47(18-22) 212602-010 1 4/10/2006 %	B-48(16-24)A 212701-005 1 4/6/2006 %	B-48(16-24)B 212701-006 1 4/6/2006 %	B-48(24-30)A 212701-007 1 4/6/2006 %
% Solids	NS	97.2	98.5	96	82.7	82.7	83.4
% Moisture	15	2.8	1.5	4	17.3	17.3	16.6

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Commercial Source Soil Requirements (%)	B-48(24-30)B 212701-008 1 4/6/2006 %	B-49(10-12) 212570-011 1 4/5/2006 %	B-49(12-14) 212570-012 1 4/5/2006 %	B-49(15.5-16) 212570-013 1 4/5/2006 %	B-49(14-16) 212570-014 1 4/5/2006 %	B-49(16-18) 212570-015 1 4/5/2006 %
% Solids	NS	83.4	91.8	90	91.1	87.8	79.1
% Moisture	15	16.6	8.2	10	8.9	12.2	20.9

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Commercial Source Soil Requirements (%)**	**B-49(18-20)** **212570-016** **1** **4/5/2006** **%**	**B-49(10-20)** **212570-017** **1** **4/5/2006** **%**	**B-49(20-22)** **212570-018** **1** **4/5/2006** **%**	**B-49(22-24)** **212570-019** **1** **4/5/2006** **%**	**B-49(25-25.5)** **212570-020** **1** **4/5/2006** **%**	**B-49(20-28)A** **212701-003** **1** **4/5/2006** **%**
% Solids	NS	70.4	87.9	80.8	84.7	87.6	84.9
% Moisture	15	29.6	12.1	19.2	15.3	12.4	15.1

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Commercial Source Soil Requirements (%)	B-49(20-28)B 212701-004 1 4/5/2006 %	B-50(14-20) 212602-001 1 4/6/2006 %	B-50(20-22) 212602-002 1 4/6/2006 %	B-50(22-24) 212602-003 1 4/6/2006 %	B-50(24-26) 212602-004 1 4/6/2006 %	B-50(20-26) 212602-005 1 4/6/2006 %
% Solids	NS	84.9	90.3	80.6	71.8	79.8	76.2
% Moisture	15	15.1	9.7	19.4	28.2	20.2	23.8

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Commercial Source Soil Requirements (%)**	**B-50(20-26)A 212701-001 1 4/6/2006 %**	**B-50(20-26)B 212701-002 1 4/6/2006 %**	**B-51(18-20) 212570-006 1 4/4/2006 %**	**B-51(21-21.5) 212570-007 1 4/4/2006 %**	**B-51(20-22) 212570-008 1 4/4/2006 %**	**B-51(22-24) 212570-009 1 4/4/2006 %**
% Solids	NS	76.2	76.2	87.3	88.1	83.4	86.7
% Moisture	15	23.8	23.8	12.7	11.9	16.6	13.3

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Commercial Source Soil Requirements (%)	B-51(18-24) 212570-010 1 4/4/2006 %	B-51(18-24)A 212701-009 1 4/4/2006 %	B-51(18-24)B 212701-010 1 4/4/2006 %	B-52(12-14) 212570-001 1 4/4/2006 %	B-52(14-16) 212570-002 1 4/4/2006 %	B-52(15.5-16) 212570-003 1 4/4/2006 %
% Solids	NS	85.7	85.7	85.7	87.5	84.3	66.2
% Moisture	15	14.3	14.3	14.3	12.5	15.7	33.8

TABLE 9
PERCENT MOISTURE AND PERCENT SOLIDS IN SOIL
PETROLEUM WASTE CHARACTERIZATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Commercial Source Soil Requirements (%)**	**B-52(16-18)** **212570-004** **1** **4/4/2006** **%**	**B-52(6-18)** **212570-005** **1** **4/4/2006** **%**	**B-52(6-8)** **212550-018** **1** **4/4/2006** **%**	**B-52(8-10)** **212550-019** **1** **4/4/2006** **%**	**B-52(10-12)** **212550-020** **1** **4/4/2006** **%**
% Solids	NS	83.3	95.1	83.7	80.2	93.7
% Moisture	15	16.7	4.9	16.3	19.8	6.3

ATTACHMENT H
ANALYTICAL RESULTS FOR WASTE CLASSIFICATION

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-20(0-6)A**	**B-20(0-6)B**	**B-20(0-6)C**	**B-20(0-6)D**	**B-20(0-6)E**	**B-20(0-6)F**
Lab Sample ID	**Limits**	**212630-009**	**212630-010**	**212630-011**	**212630-012**	**212630-013**	**212630-014**
Dilution	**As Defined By**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR[1]**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound							
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0033 JT	0.0036 JT	0.0032 JT	0.011 T	0.0035 JT	0.004 JT
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.0007 U	0.0007 UH	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 J	0.0004 U	0.0004 U	0.0004 UH	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-21(0-6)A**	**B-21(0-6)B**	**B-21(0-6)C**	**B-21(0-6)D**	**B-21(0-6)E**	**B-21(0-6)F**
Lab Sample ID	**Limits**	**212630-003**	**212630-004**	**212630-005**	**212630-006**	**212630-007**	**212630-008**
Dilution	**As Defined By**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR[1]**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound							
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0034 JT	0.0033 JT	0.0066 JT	0.0029 JT	0.0033 JT	0.0033 JT
Chloroform-TCLP	6	0.0008 J	0.00083 J	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.00041 J	0.0004 U	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.00065 J	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP Limits As Defined By 40-CFR[1]**	**B-22(0-6)A**	**B-22(0-6)B**	**B-22(0-6)C**	**B-22(0-6)D**	**B-22(0-6)E**	**B-22(0-6)F**
Lab Sample ID		**212628-009**	**212628-010**	**212628-011**	**212628-012**	**212628-013**	**212628-014**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound							
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0091 JHT	0.0037 JT	0.0012 UT	0.0038 JT	0.0038 JT	0.0039 JT
Chloroform-TCLP	6	0.00072 J	0.00077 J	0.0007 U	0.00072 J	0.00076 J	0.00075 J
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP** **Limits** **As Defined By** **40-CFR[1]** **mg/L**	**B-23(0-6)A** **212660-026** **1** **4/13/2006** **mg/L**	**B-23(0-6)B** **212660-027** **1** **4/13/2006** **mg/L**	**B-23(0-6)C** **212660-028** **1** **4/13/2006** **mg/L**	**B-23(0-6)D** **212660-029** **1** **4/13/2006** **mg/L**	**B-23(0-6)E** **212660-030** **1** **4/13/2006** **mg/L**
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0076 J	0.0012 U	0.0029 JH	0.0012 U	0.006 J
Chloroform-TCLP	6	0.00072 J	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 UBT	0.0007 UBT	0.0007 UBT	0.0007 UBT	0.0007 UBT
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP** **Limits** **As Defined By** **40-CFR[1]** **mg/L**	**B-23(0-6)F** **212660-031** **1** **4/13/2006** **mg/L**	**B-24(0-6)A** **212660-032** **1** **4/13/2006** **mg/L**	**B-24(0-6)B** **212660-033** **1** **4/13/2006** **mg/L**	**B-24(0-6)C** **212660-034** **1** **4/13/2006** **mg/L**	**B-25(0-6)A** **212660-006** **1** **4/12/2006** **mg/L**
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0012 U	0.016	0.0012 U	0.012	0.0027 JH
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 UBT	0.0007 UBT	0.0007 UBT	0.0007 UBT	0.0007 UT
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP** **Limits** **As Defined By** **40-CFR[1]** **mg/L**	**B-25(0-6)B** **212660-007** **1** **4/12/2006** **mg/L**	**B-25(0-6)C** **212660-008** **1** **4/12/2006** **mg/L**	**B-25(0-6)D** **212660-009** **1** **4/12/2006** **mg/L**	**B-25(0-6)E** **212660-010** **1** **4/12/2006** **mg/L**	**B-25(0-6)F** **212660-011** **1** **4/12/2006** **mg/L**	**B-26(0-2)** **212671-001** **1** **4/13/2006** **mg/L**
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0012 U	0.0012 U	0.0012 U	0.018	0.0012 U	0.0012 UT
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 UT	0.0007 UT	0.0007 UT	0.0007 UT	0.0007 UT	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.00084 J	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP** **Limits** **As Defined By** **40-CFR[1]** **mg/L**	**B-26(2-4)** **212671-002** **1** **4/13/2006** **mg/L**	**B-26(0-6)A** **212491-008** **1** **3/28/2006** **mg/L**	**B-26(0-6)B** **212491-009** **1** **3/28/2006** **mg/L**	**B-26(0-6)C** **212491-010** **1** **3/28/2006** **mg/L**	**B-26(0-6)D** **212491-011** **1** **3/28/2006** **mg/L**	**B-26(0-6)E** **212491-012** **1** **3/28/2006** **mg/L**
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0012 UT	0.0024 JT	0.0031 JT	0.0029 JT	0.0027 JT	0.0023 JT
Chloroform-TCLP	6	0.0007 U	0.0007 UH	0.0007 U	0.0007 UH	0.0007 UH	0.0007 UH
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.00072 J	0.00043 J	0.00097 J	0.0011 J	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-29(0-6)A**	**B-29(0-6)B**	**B-29(0-6)C**	**B-29(0-6)D**	**B-29(0-6)E**	**B-43(0-2)**
Lab Sample ID	**Limits**	**212491-003**	**212491-004**	**212491-005**	**212491-006**	**212491-007**	**212671-003**
Dilution	**As Defined By**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR[1]**	**3/28/2006**	**3/28/2006**	**3/28/2006**	**3/28/2006**	**3/28/2006**	**4/14/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound							
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.002 JT	0.0026 JT	0.03 T	0.0021 JT	0.0018 JT	0.0048 JT
Chloroform-TCLP	6	0.0007 UH	0.0007 U	0.0007 U	0.0007 UH	0.0007 UH	0.00085 J
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0015 J	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-43(2-4)**	**B-43(0-6)A**	**B-43(0-6)B**	**B-43(0-6)C**	**B-43(0-6)D**	**B-43(0-6)E**
Lab Sample ID	**Limits**	**212671-004**	**212519-003**	**212519-004**	**212519-005**	**212519-006**	**212519-007**
Dilution	**As Defined By**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR[1]**	**4/14/2006**	**3/30/2006**	**3/30/2006**	**3/30/2006**	**3/30/2006**	**3/30/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound							
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0012 UT	0.0043 JT	0.0076 JT	0.0096 JT	0.035 T	0.004 JT
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0022 J	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP** **Limits** **As Defined By** **40-CFR[1]** **mg/L**	**B-43(6-14)A** **212519-008** **1** **3/30/2006** **mg/L**	**B-43(6-14)B** **212519-009** **1** **3/30/2006** **mg/L**	**B-43(6-14)C** **212519-010** **1** **3/30/2006** **mg/L**	**B-43(6-14)D** **212519-011** **1** **3/30/2006** **mg/L**	**B-43(6-14)E** **212519-012** **1** **3/30/2006** **mg/L**	**B-44(0-6)A** **212555-003** **1** **4/3/2006** **mg/L**
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.004 JT	0.0026 JT	0.0043 JT	0.0037 JT	0.0081 JT	0.0039 JB
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.00046 J
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-44(0-6)B**	**B-44(0-6)C**	**B-44(0-6)D**	**B-44(0-6)E**	**B-44(0-14)A***	**B-44(0-14)B***
Lab Sample ID	**Limits**	**212555-004**	**212555-005**	**212555-006**	**212555-007**	**212555-008**	**212555-009**
Dilution	**As Defined By**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR[1]**	**4/3/2006**	**4/3/2006**	**4/3/2006**	**4/3/2006**	**4/3/2006**	**4/3/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound							
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0071 JB	0.0036 JB	0.0043 JB	0.026 B	0.004 JB	0.0041 JB
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.00056 J	0.0004 U	0.00042 J	0.00054 J	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0009 J	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-44(0-14)C***	**B-44(0-14)D***	**B-44(0-14)E***	**B-46(0-6)A**	**B-46(0-6)B**	**B-46(0-6)C**
Lab Sample ID	**Limits**	**212555-010**	**212555-011**	**212555-012**	**212581-003**	**212581-004**	**212581-005**
Dilution	**As Defined By**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR[1]**	**4/3/2006**	**4/3/2006**	**4/3/2006**	**4/4/2006**	**4/4/2006**	**4/4/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0042 JB	0.0041 JB	0.0038 JB	0.017 T	0.0042 JT	0.0038 JT
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.00043 J	0.00054 J	0.0004 U	0.0004 J	0.00051 J	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0015 J	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-46(0-6)D**	**B-47(10-18)A**	**B-47(10-18)B**	**B-47(10-18)C**	**B-47(10-18)D**	**B-47(10-18)E**
Lab Sample ID	**Limits**	**212581-006**	**212628-003**	**212628-004**	**212628-005**	**212628-006**	**212628-007**
Dilution	**As Defined By**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR[1]**	**4/4/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**
Units	**mg/L**	**ug/Kg**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound							
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0073 JT	0.0077 JT	0.0033 JT	0.0033 JT	0.0025 JT	0.0056 JT
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.00075 J	0.0007 U	0.0007 J	0.00077 J
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.00047 J	0.0004 U	0.00059 J
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Tetrachloroethene-TCLP	0.7	0.0005 U	0.00058 JH	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP Limits As Defined By 40-CFR[1]** **mg/L**	**B-47(10-18)F** **212628-008** **1** **4/10/2006** **mg/L**	**B-52(0-6)A** **212581-007** **1** **4/4/2006** **ug/Kg**	**B-52(0-6)B** **212581-008** **1** **4/4/2006** **ug/Kg**	**B-52(0-6)C** **212581-009** **1** **4/4/2006** **ug/Kg**	**B-52(0-6)D** **212581-010** **1** **4/4/2006** **ug/Kg**	**B-53(0-6)A** **212660-012** **1** **4/12/2006** **mg/L**
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.012 T	0.019 T	0.013 T	0.0012 UT	0.0037 JT	0.0012 U
Chloroform-TCLP	6	0.00075 J	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.00049 J
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 UBT
Tetrachloroethene-TCLP	0.7	0.0007 J	0.0017 J	0.0017 J	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP Limits As Defined By 40-CFR[1]** **mg/L**	**B-53(0-6)B** **212660-013** **1** **4/12/2006** **mg/L**	**B-53(0-6)C** **212660-014** **1** **4/12/2006** **mg/L**	**B-53(0-6)D** **212660-015** **1** **4/12/2006** **mg/L**	**B-53(0-6)E** **212660-016** **1** **4/12/2006** **mg/L**	**B-53(0-6)F** **212660-017** **1** **4/12/2006** **mg/L**
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0012 U	0.0012 U	0.0071 J	0.0012 U	0.0012 U
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.00054 J	0.0004 U	0.0004 U	0.0004 U	0.00058 J
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 UBT	0.0007 UBT	0.0007 UBT	0.0007 UBT	0.0007 UBT
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.00084 J	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-54(0-6)A**	**B-54(0-6)B**	**B-54(0-6)C**	**B-54(0-6)D**	**B-54(0-6)E**
Lab Sample ID	**Limits**	**212660-018**	**212660-019**	**212660-020**	**212660-021**	**212660-022**
Dilution	**As Defined By**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR^1**	**4/13/2006**	**4/13/2006**	**4/13/2006**	**4/13/2006**	**4/13/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound						
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0012 U	0.0012 U	0.0033 JH	0.0012 U	0.0012 U
Chloroform-TCLP	6	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 UBT	0.0007 UBT	0.0007 UBT	0.0007 UBT	0.0007 UBT
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U

TABLE 1A
TCLP - VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP Limits As Defined By 40-CFR[1]** **mg/L**	**B-54(0-6)F** **212660-023** **1** **4/13/2006** **mg/L**	**B-54(0-6)G** **212660-024** **1** **4/13/2006** **mg/L**	**B-54(0-6)H** **212660-025** **1** **4/13/2006** **mg/L**
Vinyl chloride-TCLP	0.2	0.0008 U	0.0008 U	0.0008 U
1 1-Dichloroethene-TCLP	0.7	0.0007 U	0.0007 U	0.0007 U
2-Butanone (MEK)-TCLP	200	0.0012 U	0.0012 U	0.0012 U
Chloroform-TCLP	6	0.00074 J	0.0007 J	0.00078 J
Carbon tetrachloride-TCLP	0.5	0.001 U	0.001 U	0.001 U
Benzene-TCLP	0.5	0.0004 U	0.0004 U	0.0004 U
1 2-Dichloroethane-TCLP	0.5	0.0006 U	0.0006 U	0.0006 U
Trichloroethene-TCLP	0.5	0.0007 UBT	0.0007 UBT	0.0007 UBT
Tetrachloroethene-TCLP	0.7	0.0005 U	0.0005 U	0.0005 U
Chlorobenzene-TCLP	100	0.0004 U	0.0004 U	0.0004 U

TABLE 1
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR BENEFICIAL USE DETERMINATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1- Non hazardous waste as defined by the Federal Code of Regulations for hazardous waste (40 CFR) using the Toxicity Characteristic Leaching Procedure (TCLP).

Exceedences are highlighted in bold font.

mg/L - micrograms per liter = parts per million (ppm).

U - Analyte was not detected at or above the reporting limit.

H - concentration was calculated using manual alternate peak selection.

J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).

B - Compound was found in the blank and sample.

* - These samples were collected from the 6-14 foot depth interval, and were originally named B-44(6-14)A through E. The laboratory erroneously named them B-44(0-14)A through E for the VOA TCLP analysis.

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth Philadelphia Acceptance Criteria[1]**	**B-20(0-6)A**	**B-20(0-6)B**	**B-20(0-6)C**	**B-20(0-6)D**	**B-20(0-6)E**	**B-20(0-6)F**
Lab Sample ID		**212630-009**	**212630-010**	**212630-011**	**212630-012**	**212630-013**	**212630-014**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
Chloromethane	NS	1 U	1 U	0.99 U	0.99 U	1 U	1 U
Vinyl chloride	NS	0.96 U	0.97 U	0.96 U	0.96 U	0.98 U	0.98 U
Bromomethane	NS	0.91 U	0.91 U	0.9 U	0.9 U	0.93 U	0.92 U
Chloroethane	NS	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
1 1-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Carbon disulfide	NS	0.68 U	0.68 U	0.67 U	0.67 U	0.69 U	0.68 U
Acetone	NS	3.5 U	24	3.5 U	13 J	23	15 J
Methylene chloride	NS	15 JB	12 JB	11 JB	15 JB	13 JB	14 JB
trans-1 2-Dichloroethene	NS	0.64 U	0.65 U	0.64 U	0.64 U	0.65 U	0.65 U
Methyl-tert-butyl-ether (MTBE)	NS	1 U	1 U	1 U	1 U	1 U	1 U
1 1-Dichloroethane	NS	0.9 U	0.9 U	0.89 U	0.89 U	0.91 U	0.91 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U
2-Butanone (MEK)	NS	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	NS	0.59 U	0.59 U	0.58 U	0.58 U	0.6 U	0.59 U
1 1 1-Trichloroethane	NS	0.93 U	0.94 U	0.92 U	0.93 U	0.95 U	0.94 U
Carbon tetrachloride	NS	0.86 U	0.87 U	0.86 U	0.86 U	0.88 U	0.87 U
Benzene	NS	0.95 U	0.96 U	0.95 U	0.95 U	0.97 U	0.96 U
1 2-Dichloroethane	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Trichloroethene	NS	0.75 U	0.76 U	0.75 U	0.75 U	0.77 U	0.76 U
1 2-Dichloropropane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	NS	0.93 U	0.94 U	0.92 U	0.93 U	0.95 U	0.94 U
cis-1 3-Dichloropropene	NS	0.86 U	0.87 U	0.86 U	0.86 U	0.88 U	0.87 U
4-Methyl-2-pentanone (MIBK)	NS	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Toluene	NS	0.93 U	1.4 J	0.92 U	0.93 U	0.95 U	0.94 U
trans-1 3-Dichloropropene	NS	1 U	1 U	1 U	1 U	1 U	1 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U
Tetrachloroethene	NS	0.78 U	0.78 U	0.77 U	0.77 U	0.79 U	0.78 U
2-Hexanone	NS	2.8 U	2.8 U	2.8 U	2.8 U	2.9 U	2.8 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-20(0-6)A** **212630-009** **1** **4/10/2006** **ug/Kg**		**B-20(0-6)B** **212630-010** **1** **4/10/2006** **ug/Kg**		**B-20(0-6)C** **212630-011** **1** **4/10/2006** **ug/Kg**		**B-20(0-6)D** **212630-012** **1** **4/10/2006** **ug/Kg**		**B-20(0-6)E** **212630-013** **1** **4/10/2006** **ug/Kg**		**B-20(0-6)F** **212630-014** **1** **4/10/2006** **ug/Kg**	
Dibromochloromethane	NS	0.45	U	0.46	U	0.45	U	0.45	U	0.46	U	0.46	U
Chlorobenzene	NS	0.88	U	0.88	U	0.87	U	0.87	U	0.89	U	0.89	U
Ethylbenzene	NS	0.88	U	0.88	U	0.87	U	0.87	U	0.89	U	0.89	U
Styrene	NS	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Bromoform	NS	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
1 1 2 2-Tetrachloroethane	NS	1.3	U	1.3	U	1.3	U	1.3	U	1.4	U	1.4	U
Xylenes (total)	NS	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
Total VOCs	**30,000,000**	15		37		11		28		36		29	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Clean Earth	B-21(0-6)A	B-21(0-6)B	B-21(0-6)C	B-21(0-6)D	B-21(0-6)E	B-21(0-6)F
Lab Sample ID	Philadelphia	212630-003	212630-004	212630-005	212630-006	212630-007	212630-008
Dilution	Acceptance	1	1	1	1	1	1
Date Sampled	Criteria[1]	4/10/2006	4/10/2006	4/10/2006	4/10/2006	4/10/2006	4/10/2006
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
Chloromethane	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Vinyl chloride	NS	1 U	1.1 U	1 U	1 U	1 U	1.1 U
Bromomethane	NS	0.96 U	0.99 U	0.97 U	0.99 U	0.96 U	1 U
Chloroethane	NS	2.2 U	2.3 U	2.2 U	2.3 U	2.2 U	2.3 U
1 1-Dichloroethene	NS	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Carbon disulfide	NS	0.71 U	0.74 U	0.72 U	0.73 U	0.72 U	0.75 U
Acetone	NS	3.7 U	3.8 U	4.1 J	3.8 U	3.7 U	3.9 U
Methylene chloride	NS	12 JB	12 JB	13 JB	15 JB	10 JB	13 JB
trans-1 2-Dichloroethene	NS	0.68 U	0.7 U	0.68 U	0.7 U	0.68 U	0.71 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1 1-Dichloroethane	NS	0.95 U	0.98 U	0.96 U	0.98 U	0.95 U	1 U
cis-1 2-Dichloroethene	NS	1.2 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U
2-Butanone (MEK)	NS	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.2 U
Chloroform	NS	0.62 U	0.64 U	0.62 U	0.64 U	0.62 U	0.65 U
1 1 1-Trichloroethane	NS	0.98 U	1 U	0.99 U	1 U	0.99 U	1 U
Carbon tetrachloride	NS	0.91 U	0.94 U	0.92 U	0.94 U	0.92 U	0.96 U
Benzene	NS	1 U	1 U	1 U	1 U	1 U	1.1 U
1 2-Dichloroethane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Trichloroethene	NS	0.8 U	0.82 U	0.8 U	0.82 U	0.8 U	0.84 U
1 2-Dichloropropane	NS	1.2 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U
Bromodichloromethane	NS	0.98 U	1 U	0.99 U	1 U	0.99 U	1 U
cis-1 3-Dichloropropene	NS	0.91 U	0.94 U	0.92 U	0.94 U	0.92 U	0.96 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Toluene	NS	0.98 U	1 U	0.99 U	1 U	0.99 U	1 U
trans-1 3-Dichloropropene	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1 1 2-Trichloroethane	NS	1.2 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U
Tetrachloroethene	NS	0.82 U	0.85 U	0.83 U	0.84 U	0.82 U	0.86 U
2-Hexanone	NS	3 U	3.1 U	3 U	3 U	3 U	3.1 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-21(0-6)A** **212630-003** **1** **4/10/2006** **ug/Kg**		**B-21(0-6)B** **212630-004** **1** **4/10/2006** **ug/Kg**		**B-21(0-6)C** **212630-005** **1** **4/10/2006** **ug/Kg**		**B-21(0-6)D** **212630-006** **1** **4/10/2006** **ug/Kg**		**B-21(0-6)E** **212630-007** **1** **4/10/2006** **ug/Kg**		**B-21(0-6)F** **212630-008** **1** **4/10/2006** **ug/Kg**	
Dibromochloromethane	NS	0.48	U	0.5	U	0.48	U	0.49	U	0.48	U	0.5	U
Chlorobenzene	NS	0.92	U	0.95	U	0.93	U	0.95	U	0.93	U	0.97	U
Ethylbenzene	NS	0.92	U	0.95	U	0.93	U	0.95	U	0.93	U	0.97	U
Styrene	NS	1.2	U	1.3	U	1.2	U	1.3	U	1.2	U	1.3	U
Bromoform	NS	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.5	U	1.4	U	1.5	U	1.4	U	1.5	U
Xylenes (total)	NS	2.3	U	2.4	U	2.3	U	2.4	U	2.3	U	2.4	U
Total VOCs	**30,000,000**	12		12		17		15		10		13	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Clean Earth Philadelphia Acceptance Criteria[1]	B-22(0-6)A	B-22(0-6)B	B-22(0-6)C	B-22(0-6)D	B-22(0-6)E	B-22(0-6)F
Lab Sample ID		212628-009	212628-010	212628-011	212628-012	212628-013	212628-014
Dilution		1	1	1	1	1	1
Date Sampled		4/10/2006	4/10/2006	4/10/2006	4/10/2006	4/10/2006	4/10/2006
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
Chloromethane	NS	1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U
Vinyl chloride	NS	1 U	0.98 U	1 U	1 U	1 U	1 U
Bromomethane	NS	0.95 U	0.92 U	0.96 U	0.98 U	0.98 U	0.97 U
Chloroethane	NS	2.2 U	2.1 U	2.2 U	2.2 U	2.3 U	2.2 U
1 1-Dichloroethene	NS	1.3 U	1.2 U	1.3 U	1.3 U	1.3 U	1.3 U
Carbon disulfide	NS	0.71 U	0.69 U	0.72 U	0.73 U	0.73 U	0.72 U
Acetone	NS	28	24	16 J	14 J	28	21 J
Methylene chloride	NS	19 JB	11 JB	12 JB	11 JB	14 JB	13 JB
trans-1 2-Dichloroethene	NS	0.67 U	0.65 U	0.68 U	0.69 U	0.69 U	0.68 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U
1 1-Dichloroethane	NS	0.94 U	0.91 U	0.95 U	0.96 U	0.97 U	0.96 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Butanone (MEK)	NS	2.1 U	2 U	2.1 U	2.1 U	2.1 U	2.1 U
Chloroform	NS	0.61 U	0.6 U	0.62 U	0.63 U	0.63 U	0.62 U
1 1 1-Trichloroethane	NS	0.97 U	0.95 U	0.98 U	1 U	1 U	0.99 U
Carbon tetrachloride	NS	0.9 U	0.88 U	0.91 U	0.93 U	0.93 U	0.92 U
Benzene	NS	1 U	0.97 U	1 U	1 U	1 U	1 U
1 2-Dichloroethane	NS	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U
Trichloroethene	NS	0.79 U	0.77 U	0.8 U	0.81 U	0.81 U	0.8 U
1 2-Dichloropropane	NS	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U
Bromodichloromethane	NS	0.97 U	0.95 U	0.98 U	1 U	1 U	0.99 U
cis-1 3-Dichloropropene	NS	0.9 U	0.88 U	0.91 U	0.93 U	0.93 U	0.92 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.3 U	1.4 U	1.4 U	1.4 U	1.4 U
Toluene	NS	1.4 J	1.3 J	1.2 J	1 U	1.3 J	0.99 U
trans-1 3-Dichloropropene	NS	1.1 U	1 U	1.1 U	1.1 U	1.1 U	1.1 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Tetrachloroethene	NS	0.81 U	0.79 U	0.82 U	0.83 U	0.84 U	0.83 U
2-Hexanone	NS	2.9 U	2.9 U	3 U	3 U	3 U	3 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-22(0-6)A**	**B-22(0-6)B**	**B-22(0-6)C**	**B-22(0-6)D**	**B-22(0-6)E**	**B-22(0-6)F**
Lab Sample ID	**Philadelphia**	**212628-009**	**212628-010**	**212628-011**	**212628-012**	**212628-013**	**212628-014**
Dilution	**Acceptance**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**Criteria[1]**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/10/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
Dibromochloromethane	NS	0.47 U	0.46 U	0.48 U	0.49 U	0.49 U	0.48 U
Chlorobenzene	NS	0.91 U	0.89 U	0.93 U	0.94 U	0.95 U	0.93 U
Ethylbenzene	NS	0.91 U	0.89 U	0.93 U	0.94 U	0.95 U	0.93 U
Styrene	NS	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U
Bromoform	NS	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U	1.2 U
1 1 2 2-Tetrachloroethane	NS	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Xylenes (total)	NS	2.3 U	2.2 U	2.3 U	2.3 U	2.3 U	2.3 U
Total VOCs	**30,000,000**	48.4	36.3	29.2	25	43.3	34

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth Philadelphia Acceptance Criteria[1] ug/Kg	B-23(0-6)A 212660-026 1 4/13/2006 ug/Kg		B-23(0-6)B 212660-027 1 4/13/2006 ug/Kg		B-23(0-6)C 212660-028 1 4/13/2006 ug/Kg		B-23(0-6)D 212660-029 1 4/13/2006 ug/Kg		B-23(0-6)E 212660-030 1 4/13/2006 ug/Kg	
Chloromethane	NS	1.1	U	1	U	1	U	1	U	1	U
Vinyl chloride	NS	1	U	1	U	1	U	1	U	0.99	U
Bromomethane	NS	0.96	U	0.95	U	0.95	U	0.95	U	0.93	U
Chloroethane	NS	2.2	U	2.2	U	2.2	U	2.2	U	2.1	U
1 1-Dichloroethene	NS	1.3	U	1.3	U	1.3	U	1.3	U	1.2	U
Carbon disulfide	NS	0.71	U	0.71	U	0.71	U	0.71	U	0.69	U
Acetone	NS	6.9	J	40		7.6	J	8.3	J	7.6	J
Methylene chloride	NS	17	JB	18	JB	17	JB	23	JB	19	JB
trans-1 2-Dichloroethene	NS	0.68	U	0.67	U	0.67	U	0.68	U	0.66	U
Methyl-tert-butyl-ether (MTBE)	NS	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
1 1-Dichloroethane	NS	0.95	U	0.94	U	0.94	U	0.94	U	0.92	U
cis-1 2-Dichloroethene	NS	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
2-Butanone (MEK)	NS	2.1	U	2.1	U	2.1	U	2.1	U	2	U
Chloroform	NS	0.62	U	0.62	U	0.62	U	0.62	U	0.6	U
1 1 1-Trichloroethane	NS	0.98	U	0.98	U	0.98	U	0.98	U	0.95	U
Carbon tetrachloride	NS	0.91	U	0.91	U	0.91	U	0.91	U	0.89	U
Benzene	NS	1	U	1	U	1	U	1	U	0.98	U
1 2-Dichloroethane	NS	1.2	U	1.1	U	1.1	U	1.2	U	1.1	U
Trichloroethene	NS	0.79	U	0.79	U	0.79	U	0.79	U	0.77	U
1 2-Dichloropropane	NS	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Bromodichloromethane	NS	0.98	U	0.98	U	0.98	U	0.98	U	0.95	U
cis-1 3-Dichloropropene	NS	0.91	U	0.91	U	0.91	U	0.91	U	0.89	U
4-Methyl-2-pentanone (MIBK)	NS	1.4	U	1.4	U	1.4	U	1.4	U	1.3	U
Toluene	NS	0.98	UB	0.98	UB	0.98	U	0.98	UB	0.95	UB
trans-1 3-Dichloropropene	NS	1.1	U	1.1	U	1.1	U	1.1	U	1	U
1 1 2-Trichloroethane	NS	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Tetrachloroethene	NS	0.82	U	0.81	U	0.81	U	0.81	U	0.79	U
2-Hexanone	NS	3	U	2.9	U	2.9	U	2.9	U	2.9	U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-23(0-6)A** **212660-026** **1** **4/13/2006** **ug/Kg**		**B-23(0-6)B** **212660-027** **1** **4/13/2006** **ug/Kg**		**B-23(0-6)C** **212660-028** **1** **4/13/2006** **ug/Kg**		**B-23(0-6)D** **212660-029** **1** **4/13/2006** **ug/Kg**		**B-23(0-6)E** **212660-030** **1** **4/13/2006** **ug/Kg**	
Dibromochloromethane	NS	0.48	U	0.48	U	0.48	U	0.48	U	0.47	U
Chlorobenzene	NS	0.92	U	0.92	U	0.92	U	0.92	U	0.9	U
Ethylbenzene	NS	0.92	U	0.92	U	0.92	U	0.92	U	0.9	U
Styrene	NS	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Bromoform	NS	1.2	U	1.1	U	1.1	U	1.2	U	1.1	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Xylenes (total)	NS	2.3	U	2.3	U	2.3	U	2.3	U	2.2	U
Total VOCs	**30,000,000**	24.88		58.98		24.6		32.28		27.55	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Clean Earth	B-23(0-6)F	B-24(0-6)A	B-24(0-6)B	B-24(0-6)C	B-25(0-6)A
Lab Sample ID	Philadelphia	212660-031	212660-032	212660-033	212660-034	212660-006
Dilution	Acceptance	1	1	1	1	1
Date Sampled	Criteria[1]	4/13/2006	4/13/2006	4/13/2006	4/13/2006	4/12/2006
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound						
Chloromethane	NS	1 U	1 U	1 U	1.1 U	1.3 U
Vinyl chloride	NS	1 U	1 U	1 U	1 U	1.2 U
Bromomethane	NS	0.94 U	0.94 U	0.95 U	0.97 U	1.2 U
Chloroethane	NS	2.2 U	2.2 U	2.2 U	2.2 U	2.7 U
1 1-Dichloroethene	NS	1.2 U	1.2 U	1.3 U	1.3 U	1.5 U
Carbon disulfide	NS	0.7 U	0.7 U	0.71 U	0.72 U	0.87 U
Acetone	NS	7.6 J	3.6 U	6.1 J	3.7 U	4.5 U
Methylene chloride	NS	17 JB	21 JB	33 B	29 B	48 B
trans-1 2-Dichloroethene	NS	0.66 U	0.66 U	0.67 U	0.68 U	0.82 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.3 U
1 1-Dichloroethane	NS	0.93 U	0.93 U	0.94 U	0.96 U	1.2 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.5 U
2-Butanone (MEK)	NS	2 U	2 U	2.1 U	2.1 U	2.5 U
Chloroform	NS	0.61 U	0.61 U	0.62 U	0.63 U	0.75 U
1 1 1-Trichloroethane	NS	0.96 U	0.96 U	0.98 U	0.99 U	1.2 U
Carbon tetrachloride	NS	0.89 U	0.89 U	0.91 U	0.92 U	1.1 U
Benzene	NS	0.99 U	0.99 U	1 U	1 U	1.2 U
1 2-Dichloroethane	NS	1.1 U	1.1 U	1.1 U	1.2 U	1.4 U
Trichloroethene	NS	0.78 U	0.78 U	0.79 U	0.8 U	0.97 U
1 2-Dichloropropane	NS	1.2 U	1.2 U	1.2 U	1.3 U	1.5 U
Bromodichloromethane	NS	0.96 U	0.96 U	0.98 U	0.99 U	1.2 U
cis-1 3-Dichloropropene	NS	0.89 U	0.89 U	0.91 U	0.92 U	1.1 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.4 U	1.4 U	1.4 U	1.7 U
Toluene	NS	0.96 UHB	0.96 UB	0.98 UB	0.99 UB	1.2 UB
trans-1 3-Dichloropropene	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.3 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.5 U
Tetrachloroethene	NS	0.8 U	0.8 U	0.81 U	0.83 U	0.99 U
2-Hexanone	NS	2.9 U	2.9 U	2.9 U	3 U	3.6 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-23(0-6)F**		**B-24(0-6)A**		**B-24(0-6)B**		**B-24(0-6)C**		**B-25(0-6)A**	
Lab Sample ID	**Philadelphia**	**212660-031**		**212660-032**		**212660-033**		**212660-034**		**212660-006**	
Dilution	**Acceptance**	**1**		**1**		**1**		**1**		**1**	
Date Sampled	**Criteria[1]**	**4/13/2006**		**4/13/2006**		**4/13/2006**		**4/13/2006**		**4/12/2006**	
Units	**ug/Kg**	**ug/Kg**		**ug/Kg**		**ug/Kg**		**ug/Kg**		**ug/Kg**	
Compound											
Dibromochloromethane	NS	0.47	U	0.47	U	0.48	U	0.48	U	0.58	U
Chlorobenzene	NS	0.9	U	0.9	U	0.92	U	0.93	U	1.1	U
Ethylbenzene	NS	0.9	U	0.9	U	0.92	U	0.93	U	1.1	U
Styrene	NS	1.2	U	1.2	U	1.2	U	1.3	U	1.5	U
Bromoform	NS	1.1	U	1.1	U	1.1	U	1.2	U	1.4	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.4	U	1.4	U	1.4	U	1.7	U
Xylenes (total)	NS	2.2	U	2.2	U	2.3	U	2.3	U	2.8	U
Total VOCs	**30,000,000**	25.56		21.96		40.08		29.99		49.2	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth Philadelphia Acceptance Criteria[1] ug/Kg	B-25(0-6)B 212660-007 1 4/12/2006 ug/Kg	B-25(0-6)C 212660-008 1 4/12/2006 ug/Kg	B-25(0-6)D 212660-009 1 4/12/2006 ug/Kg	B-25(0-6)E 212660-010 1 4/12/2006 ug/Kg	B-25(0-6)F 212660-011 1 4/12/2006 ug/Kg	B-26(0-2) 212671-001 1 4/13/2006 ug/Kg
Chloromethane	NS	1.1 U	1.1 U	1.1 U	1.2 U	1 U	1.1 U
Vinyl chloride	NS	1 U	1 U	1 U	1.2 U	0.98 U	1.1 U
Bromomethane	NS	0.97 U	0.97 U	0.97 U	1.1 U	0.92 U	0.99 U
Chloroethane	NS	2.2 U	2.2 U	2.2 U	2.5 U	2.1 U	2.3 U
1 1-Dichloroethene	NS	1.3 U	1.3 U	1.3 U	1.4 U	1.2 U	1.3 U
Carbon disulfide	NS	0.72 U	0.72 U	0.72 U	0.81 U	0.69 U	0.74 U
Acetone	NS	32	3.7 U	20 J	5.2 J	89	3.8 U
Methylene chloride	NS	130 B	58 B	130 B	170 B	150 B	7.6 JB
trans-1 2-Dichloroethene	NS	0.68 U	0.68 U	0.69 U	0.77 U	0.65 U	0.7 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1.1 U	1.1 U	1.2 U	1 U	1.1 U
1 1-Dichloroethane	NS	0.96 U	0.96 U	0.96 U	1.1 U	0.91 U	0.98 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.4 U	1.2 U	1.3 U
2-Butanone (MEK)	NS	2.1 U	2.1 U	2.1 U	2.4 U	2 U	2.2 U
Chloroform	NS	0.62 U	0.63 U	0.63 U	0.7 U	0.6 U	0.64 U
1 1 1-Trichloroethane	NS	0.99 U	0.99 U	1 U	1.1 U	0.94 U	1 U
Carbon tetrachloride	NS	0.92 U	0.92 U	0.93 U	1 U	0.88 U	0.95 U
Benzene	NS	1 U	1 U	1 U	1.1 U	0.97 U	1 U
1 2-Dichloroethane	NS	1.2 U	1.2 U	1.2 U	1.3 U	1.1 U	1.2 U
Trichloroethene	NS	0.8 U	0.8 U	0.81 U	0.9 U	0.76 U	0.82 U
1 2-Dichloropropane	NS	1.2 U	1.3 U	1.3 U	1.4 U	1.2 U	1.3 U
Bromodichloromethane	NS	0.99 U	0.99 U	1 U	1.1 U	0.94 U	1 U
cis-1 3-Dichloropropene	NS	0.92 U	0.92 U	0.93 U	1 U	0.88 U	0.95 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.4 U	1.4 U	1.6 U	1.3 U	1.4 U
Toluene	NS	1.3 J	0.99 UB	1 U	1.1 U	1.5 J	1 U
trans-1 3-Dichloropropene	NS	1.1 U	1.1 U	1.1 U	1.2 U	1 U	1.1 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.2 U	1.4 U	1.2 U	1.3 U
Tetrachloroethene	NS	0.83 U	0.83 U	0.83 U	1.3 J	0.79 U	0.85 U
2-Hexanone	NS	3 U	3 U	3 U	3.4 U	2.8 U	3.1 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-25(0-6)B** **212660-007** **1** **4/12/2006** **ug/Kg**		**B-25(0-6)C** **212660-008** **1** **4/12/2006** **ug/Kg**		**B-25(0-6)D** **212660-009** **1** **4/12/2006** **ug/Kg**		**B-25(0-6)E** **212660-010** **1** **4/12/2006** **ug/Kg**		**B-25(0-6)F** **212660-011** **1** **4/12/2006** **ug/Kg**		**B-26(0-2)** **212671-001** **1** **4/13/2006** **ug/Kg**	
Dibromochloromethane	NS	0.48	U	0.48	U	0.49	U	0.55	U	0.46	U	0.5	U
Chlorobenzene	NS	0.93	U	0.93	U	0.94	U	1.1	U	0.89	U	0.96	U
Ethylbenzene	NS	0.93	U	0.93	U	0.94	U	1.1	U	0.89	U	0.96	U
Styrene	NS	1.2	U	1.3	U	1.3	U	1.4	U	1.2	U	1.3	U
Bromoform	NS	1.2	U	1.2	U	1.2	U	1.3	U	1.1	U	1.2	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.4	U	1.4	U	1.6	U	1.4	U	1.5	U
Xylenes (total)	NS	2.3	U	2.3	U	2.3	U	2.6	U	2.2	U	2.4	U
Total VOCs	**30,000,000**	163.3		58.99		150		176.5		240.5		7.6	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth Philadelphia Acceptance Criteria[1]**	**B-26(2-4)**	**B-26(0-6)A**	**B-26(0-6)B**	**B-26(0-6)C**	**B-26(0-6)D**	**B-26(0-6)E**
Lab Sample ID		**212671-002**	**212491-008**	**212491-009**	**212491-010**	**212491-011**	**212491-012**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/13/2006**	**3/28/2006**	**3/28/2006**	**3/28/2006**	**3/28/2006**	**3/28/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
Chloromethane	NS	1.1 U	1.1 U	1.1 U	1 U	1 U	0.9 U
Vinyl chloride	NS	1 U	1 U	1 U	1 U	0.96 U	0.87 U
Bromomethane	NS	0.99 U	0.96 U	0.97 U	0.95 U	0.91 U	0.82 U
Chloroethane	NS	2.3 U	2.2 U	2.2 U	2.2 U	2.1 U	1.9 U
1 1-Dichloroethene	NS	1.3 U	1.3 U	1.3 U	1.3 U	1.2 U	1.1 U
Carbon disulfide	NS	0.73 U	0.72 U	0.72 U	0.7 U	0.67 U	0.61 U
Acetone	NS	3.8 U	3.7 U	3.7 U	15 J	8.6 J	6.4 J
Methylene chloride	NS	11 JB	11 JB	12 JB	15 JB	22 JB	14 JB
trans-1 2-Dichloroethene	NS	0.7 U	0.68 U	0.69 U	0.67 U	0.64 U	0.58 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1.1 U	1.1 U	1.1 U	1 U	0.93 U
1 1-Dichloroethane	NS	0.98 U	0.95 U	0.96 U	0.93 U	0.9 U	0.81 U
cis-1 2-Dichloroethene	NS	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1 U
2-Butanone (MEK)	NS	2.1 U	2.1 U	2.1 U	2.1 U	2 U	1.8 U
Chloroform	NS	0.64 U	0.62 U	0.63 U	0.61 U	0.59 U	0.53 U
1 1 1-Trichloroethane	NS	1 U	0.99 U	0.99 U	0.97 U	0.93 U	0.84 U
Carbon tetrachloride	NS	0.94 U	0.92 U	0.92 U	0.9 U	0.86 U	0.78 U
Benzene	NS	1 U	1 U	1 U	2.1 J	3.5 J	1.6 J
1 2-Dichloroethane	NS	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	0.99 U
Trichloroethene	NS	0.82 U	0.8 U	0.8 U	0.78 U	0.75 U	0.68 U
1 2-Dichloropropane	NS	1.3 U	1.2 U	1.3 U	1.2 U	1.2 U	1.1 U
Bromodichloromethane	NS	1 U	0.99 U	0.99 U	0.97 U	0.93 U	0.84 U
cis-1 3-Dichloropropene	NS	0.94 U	0.92 U	0.92 U	0.9 U	0.86 U	0.78 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.4 U	1.4 U	1.4 U	1.3 U	1.2 U
Toluene	NS	1 U	2 J	0.99 UB	5.4 JB	7 B	2.6 JB
trans-1 3-Dichloropropene	NS	1.1 U	1.1 U	1.1 U	1.1 U	1 U	0.92 U
1 1 2-Trichloroethane	NS	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1 U
Tetrachloroethene	NS	0.84 U	0.82 U	0.83 U	0.81 U	0.77 U	0.7 U
2-Hexanone	NS	3 U	3 U	3 U	2.9 U	2.8 U	2.5 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-26(2-4)** **212671-002** **1** **4/13/2006** **ug/Kg**	**B-26(0-6)A** **212491-008** **1** **3/28/2006** **ug/Kg**	**B-26(0-6)B** **212491-009** **1** **3/28/2006** **ug/Kg**	**B-26(0-6)C** **212491-010** **1** **3/28/2006** **ug/Kg**	**B-26(0-6)D** **212491-011** **1** **3/28/2006** **ug/Kg**	**B-26(0-6)E** **212491-012** **1** **3/28/2006** **ug/Kg**
Dibromochloromethane	NS	0.49 U	0.48 U	0.49 U	0.47 U	0.45 U	0.41 U
Chlorobenzene	NS	0.95 U	0.93 U	0.93 U	0.91 U	0.87 U	0.79 U
Ethylbenzene	NS	0.95 U	0.93 U	0.93 U	7.7	6.3	1.4 J
Styrene	NS	1.3 U	1.2 U	1.3 U	1.2 U	1.2 U	1.1 U
Bromoform	NS	1.2 U	1.2 U	1.2 U	1.1 U	1.1 U	0.99 U
1 1 2 2-Tetrachloroethane	NS	1.5 U	1.4 U	1.4 U	1.4 U	1.3 U	1.2 U
Xylenes (total)	NS	2.4 U	2.3 U	2.3 U	22	21	5
Total VOCs	**30,000,000**	11	13	12.99	67.2	68.4	31

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth Philadelphia Acceptance Criteria[1] ug/Kg	B-29(0-6)A 212491-003 1 3/28/2006 ug/Kg	B-29(0-6)B 212491-004 1 3/28/2006 ug/Kg	B-29(0-6)C 212491-005 1 3/28/2006 ug/Kg	B-29(0-6)D 212491-006 1 3/28/2006 ug/Kg	B-29(0-6)E 212491-007 1 3/28/2006 ug/Kg	B-43(0-2) 212671-003 1 4/14/2006 ug/Kg
Chloromethane	NS	1 U	0.88 U	1 U	1 U	1 U	1 U
Vinyl chloride	NS	1 U	0.85 U	1 U	1 U	1 U	1 U
Bromomethane	NS	0.95 U	0.8 U	0.95 U	0.94 U	0.94 U	0.94 U
Chloroethane	NS	2.2 U	1.9 U	2.2 U	2.2 U	2.2 U	2.2 U
1 1-Dichloroethene	NS	1.3 U	1.1 U	1.3 U	1.2 U	1.2 U	1.3 U
Carbon disulfide	NS	0.71 U	0.6 U	0.71 U	0.7 U	0.7 U	0.7 U
Acetone	NS	7.6 J	5.2 J	4.6 J	6.2 J	3.6 U	3.6 J
Methylene chloride	NS	14 JB	17 JB	20 JB	19 JB	15 JB	12 JB
trans-1 2-Dichloroethene	NS	0.67 U	0.57 U	0.67 U	0.67 U	0.66 U	0.67 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	0.91 U	1.1 U	1.1 U	1.1 U	1.1 U
1 1-Dichloroethane	NS	0.94 U	0.79 U	0.94 U	0.93 U	0.93 U	0.93 U
cis-1 2-Dichloroethene	NS	1.2 U	1 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Butanone (MEK)	NS	2.1 U	1.7 U	2.1 U	2 U	2 U	2 U
Chloroform	NS	0.62 U	0.52 U	0.61 U	0.61 U	0.61 U	0.61 U
1 1 1-Trichloroethane	NS	0.98 U	0.82 U	0.97 U	0.96 U	0.96 U	0.97 U
Carbon tetrachloride	NS	0.91 U	0.76 U	0.9 U	0.89 U	0.89 U	0.9 U
Benzene	NS	1 U	0.84 U	1 U	0.99 U	0.99 U	0.99 U
1 2-Dichloroethane	NS	1.1 U	0.97 U	1.1 U	1.1 U	1.1 U	1.1 U
Trichloroethene	NS	0.79 U	0.67 U	0.79 U	0.78 U	0.78 U	0.78 U
1 2-Dichloropropane	NS	1.2 U	1 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	NS	0.98 U	0.82 U	0.97 U	0.96 U	0.96 U	0.97 U
cis-1 3-Dichloropropene	NS	0.91 U	0.76 U	0.9 U	0.89 U	0.89 U	0.9 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.2 U	1.4 U	1.4 U	1.4 U	1.4 U
Toluene	NS	1 JB	1.5 JB	0.97 UB	1.3 JB	0.96 UB	0.97 U
trans-1 3-Dichloropropene	NS	1.1 U	0.9 U	1.1 U	1.1 U	1.1 U	1.1 U
1 1 2-Trichloroethane	NS	1.2 U	1 U	1.2 U	1.2 U	1.2 U	1.2 U
Tetrachloroethene	NS	0.81 U	0.69 U	0.81 U	0.8 U	0.8 U	0.8 U
2-Hexanone	NS	2.9 U	2.5 U	2.9 U	2.9 U	2.9 U	2.9 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-29(0-6)A** **212491-003** **1** **3/28/2006** **ug/Kg**		**B-29(0-6)B** **212491-004** **1** **3/28/2006** **ug/Kg**		**B-29(0-6)C** **212491-005** **1** **3/28/2006** **ug/Kg**		**B-29(0-6)D** **212491-006** **1** **3/28/2006** **ug/Kg**		**B-29(0-6)E** **212491-007** **1** **3/28/2006** **ug/Kg**		**B-43(0-2)** **212671-003** **1** **4/14/2006** **ug/Kg**	
Dibromochloromethane	NS	0.48	U	0.4	U	0.48	U	0.47	U	0.47	U	0.47	U
Chlorobenzene	NS	0.92	U	0.77	U	0.92	U	0.91	U	0.9	U	0.91	U
Ethylbenzene	NS	0.92	U	0.77	U	0.92	U	0.91	U	0.9	U	0.91	U
Styrene	NS	1.2	U	1	U	1.2	U	1.2	U	1.2	U	1.2	U
Bromoform	NS	1.1	U	0.97	U	1.1	U	1.1	U	1.1	U	1.1	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.2	U	1.4	U	1.4	U	1.4	U	1.4	U
Xylenes (total)	NS	2.3	U	1.9	U	2.3	U	2.2	U	2.2	U	2.3	U
Total VOCs	**30,000,000**	22.6		23.7		25.57		26.5		15.96		15.6	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-43(2-4)**	**B-43(0-6)A**	**B-43(0-6)B**	**B-43(0-6)C**	**B-43(0-6)D**	**B-43(0-6)E**
Lab Sample ID	**Philadelphia**	**212671-004**	**212519-003**	**212519-004**	**212519-005**	**212519-006**	**212519-007**
Dilution	**Acceptance**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**Criteria[1]**	**4/14/2006**	**3/30/2006**	**3/30/2006**	**3/30/2006**	**3/30/2006**	**3/30/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
Chloromethane	NS	1.1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	NS	1 U	0.98 U	0.98 U	0.98 U	1 U	0.98 U
Bromomethane	NS	0.98 U	0.92 U	0.93 U	0.93 U	0.94 U	0.92 U
Chloroethane	NS	2.2 U	2.1 U	2.1 U	2.1 U	2.2 U	2.1 U
1 1-Dichloroethene	NS	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Carbon disulfide	NS	0.73 U	0.69 U	0.69 U	0.69 U	0.7 U	0.69 U
Acetone	NS	3.8 U	3.5 U	3.6 U	3.6 U	3.6 U	3.6 U
Methylene chloride	NS	6.8 JB	7.3 JB	6.3 JB	7.2 JB	5.9 JB	5.8 JB
trans-1 2-Dichloroethene	NS	0.69 U	0.65 U	0.65 U	0.65 U	0.67 U	0.65 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1 U	1 U	1 U	1.1 U	1 U
1 1-Dichloroethane	NS	0.96 U	0.91 U	0.91 U	0.91 U	0.93 U	0.91 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Butanone (MEK)	NS	2.1 U	2 U	2 U	2 U	2 U	2 U
Chloroform	NS	0.63 U	0.6 U	0.6 U	0.6 U	0.61 U	0.6 U
1 1 1-Trichloroethane	NS	1 U	0.95 U	0.95 U	0.95 U	0.96 U	0.95 U
Carbon tetrachloride	NS	0.93 U	0.88 U	0.88 U	0.88 U	0.89 U	0.88 U
Benzene	NS	1 U	0.97 U	0.97 U	0.97 U	0.99 U	0.97 U
1 2-Dichloroethane	NS	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Trichloroethene	NS	0.81 U	0.77 U	0.77 U	0.77 U	0.78 U	0.77 U
1 2-Dichloropropane	NS	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	NS	1 U	0.95 U	0.95 U	0.95 U	0.96 U	0.95 U
cis-1 3-Dichloropropene	NS	0.93 U	0.88 U	0.88 U	0.88 U	0.89 U	0.88 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.3 U	1.3 U	1.3 U	1.4 U	1.3 U
Toluene	NS	1 U	0.95 UB	0.95 UB	0.95 UB	0.96 UB	0.95 UB
trans-1 3-Dichloropropene	NS	1.1 U	1 U	1 U	1 U	1.1 U	1 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Tetrachloroethene	NS	0.83 U	0.79 U	0.79 U	0.79 U	0.8 U	0.79 U
2-Hexanone	NS	3 U	2.8 U	2.9 U	2.9 U	2.9 U	2.9 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-43(2-4)** **212671-004** **1** **4/14/2006** **ug/Kg**		**B-43(0-6)A** **212519-003** **1** **3/30/2006** **ug/Kg**		**B-43(0-6)B** **212519-004** **1** **3/30/2006** **ug/Kg**		**B-43(0-6)C** **212519-005** **1** **3/30/2006** **ug/Kg**		**B-43(0-6)D** **212519-006** **1** **3/30/2006** **ug/Kg**		**B-43(0-6)E** **212519-007** **1** **3/30/2006** **ug/Kg**	
Dibromochloromethane	NS	0.49	U	0.46	U	0.46	U	0.46	U	0.47	U	0.46	U
Chlorobenzene	NS	0.94	U	0.89	U	0.89	U	0.89	U	0.91	U	0.89	U
Ethylbenzene	NS	0.94	U	0.89	U	0.89	U	0.89	U	0.91	U	0.89	U
Styrene	NS	1.3	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Bromoform	NS	1.2	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Xylenes (total)	NS	2.3	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
Total VOCs	**30,000,000**	6.8		8.25		7.25		8.15		6.86		6.75	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Clean Earth Philadelphia Acceptance Criteria[1]	B-43(6-14)A	B-43(6-14)B	B-43(6-14)C	B-43(6-14)D	B-43(6-14)E
Lab Sample ID		212519-008	212519-009	212519-010	212519-011	212519-012
Dilution		1	1	1	1	1
Date Sampled		3/30/2006	3/30/2006	3/30/2006	3/30/2006	3/30/2006
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound						
Chloromethane	NS	1 U	1.1 U	1 U	1 U	1 U
Vinyl chloride	NS	1 U	1 U	1 U	1 U	1 U
Bromomethane	NS	0.94 U	0.98 U	0.95 U	0.94 U	0.94 U
Chloroethane	NS	2.2 U	2.3 U	2.2 U	2.2 U	2.2 U
1 1-Dichloroethene	NS	1.3 U	1.3 U	1.3 U	1.2 U	1.3 U
Carbon disulfide	NS	0.7 U	0.73 U	0.71 U	0.7 U	0.7 U
Acetone	NS	3.6 U	3.8 U	3.7 U	3.6 U	3.6 U
Methylene chloride	NS	7 JB	5.9 JB	8.2 JB	6.9 JB	8.8 JB
trans-1 2-Dichloroethene	NS	0.67 U	0.69 U	0.67 U	0.67 U	0.67 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1 1-Dichloroethane	NS	0.93 U	0.97 U	0.94 U	0.93 U	0.93 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Butanone (MEK)	NS	2.1 U	2.1 U	2.1 U	2 U	2 U
Chloroform	NS	0.61 U	0.63 U	0.61 U	0.61 U	0.61 U
1 1 1-Trichloroethane	NS	0.97 U	1 U	0.97 U	0.96 U	0.97 U
Carbon tetrachloride	NS	0.9 U	0.93 U	0.9 U	0.89 U	0.9 U
Benzene	NS	0.99 U	1 U	1 U	0.99 U	0.99 U
1 2-Dichloroethane	NS	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U
Trichloroethene	NS	0.78 U	0.81 U	0.79 U	0.78 U	0.78 U
1 2-Dichloropropane	NS	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	NS	0.97 U	1 U	0.97 U	0.96 U	0.97 U
cis-1 3-Dichloropropene	NS	0.9 U	0.93 U	0.9 U	0.89 U	0.9 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Toluene	NS	0.97 UB	1 UB	1 JB	0.96 UB	0.97 UB
trans-1 3-Dichloropropene	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Tetrachloroethene	NS	0.81 U	0.84 U	0.81 U	0.8 U	0.8 U
2-Hexanone	NS	2.9 U	3 U	2.9 U	2.9 U	2.9 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-43(6-14)A** **212519-008** **1** **3/30/2006** **ug/Kg**		**B-43(6-14)B** **212519-009** **1** **3/30/2006** **ug/Kg**		**B-43(6-14)C** **212519-010** **1** **3/30/2006** **ug/Kg**		**B-43(6-14)D** **212519-011** **1** **3/30/2006** **ug/Kg**		**B-43(6-14)E** **212519-012** **1** **3/30/2006** **ug/Kg**	
Dibromochloromethane	NS	0.47	U	0.49	U	0.48	U	0.47	U	0.47	U
Chlorobenzene	NS	0.91	U	0.94	U	0.92	U	0.91	U	0.91	U
Ethylbenzene	NS	0.91	U	0.94	U	0.92	U	0.91	U	0.91	U
Styrene	NS	1.2	U	1.3	U	1.2	U	1.2	U	1.2	U
Bromoform	NS	1.1	U	1.2	U	1.1	U	1.1	U	1.1	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
Xylenes (total)	NS	2.3	U	2.3	U	2.3	U	2.2	U	2.3	U
Total VOCs	**30,000,000**	7.97		6.9		9.2		7.86		9.77	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Clean Earth Philadelphia Acceptance Criteria[1]	B-44(0-6)A	B-44(0-6)B	B-44(0-6)C	B-44(0-6)D	B-44(0-6)E	B-44(0-14)A*
Lab Sample ID		212555-003	212555-004	212555-005	212555-006	212555-007	212555-008
Dilution		1	1	1	1	1	1
Date Sampled		4/3/2006	4/3/2006	4/3/2006	4/3/2006	4/3/2006	4/3/2006
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1.1 U
Vinyl chloride	NS	1 U	0.99 U	1 U	0.99 U	0.97 U	1 U
Bromomethane	NS	0.95 U	0.94 U	0.95 U	0.94 U	0.92 U	0.96 U
Chloroethane	NS	2.2 U	2.2 U	2.2 U	2.2 U	2.1 U	2.2 U
1 1-Dichloroethene	NS	1.3 U	1.2 U	1.3 U	1.2 U	1.2 U	1.3 U
Carbon disulfide	NS	0.7 U	0.7 U	0.71 U	0.7 U	0.68 U	0.71 U
Acetone	NS	3.6 U	5.8 J	3.7 U	3.6 U	3.5 U	3.7 U
Methylene chloride	NS	11 JB	14 JB	20 JB	13 JB	16 JB	14 JB
trans-1 2-Dichloroethene	NS	0.67 U	0.66 U	0.67 U	0.66 U	0.65 U	0.68 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1.1 U	1.1 U	1.1 U	1 U	1.1 U
1 1-Dichloroethane	NS	0.93 U	0.92 U	0.94 U	0.92 U	0.91 U	0.95 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Butanone (MEK)	NS	2.1 U	2 U	2.1 U	2 U	2 U	2.1 U
Chloroform	NS	0.61 U	0.6 U	0.62 U	0.61 U	0.59 U	0.62 U
1 1 1-Trichloroethane	NS	0.97 U	0.96 U	0.98 U	0.96 U	0.94 U	0.98 U
Carbon tetrachloride	NS	0.9 U	0.89 U	0.91 U	0.89 U	0.87 U	0.91 U
Benzene	NS	0.99 U	0.98 U	1 U	0.98 U	0.96 U	1 U
1 2-Dichloroethane	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U
Trichloroethene	NS	0.78 U	0.78 U	0.79 U	0.78 U	0.76 U	0.79 U
1 2-Dichloropropane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	NS	0.97 U	0.96 U	0.98 U	0.96 U	0.94 U	0.98 U
cis-1 3-Dichloropropene	NS	0.9 U	0.89 U	0.91 U	0.89 U	0.87 U	0.91 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.3 U	1.4 U	1.3 U	1.3 U	1.4 U
Toluene	NS	0.97 UB	1.6 JB	2 JB	0.96 UB	1.1 JB	0.98 UB
trans-1 3-Dichloropropene	NS	1.1 U	1 U	1.1 U	1.1 U	1 U	1.1 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Tetrachloroethene	NS	0.81 U	0.8 U	1.1 J	0.8 U	1.6 J	3.8 J
2-Hexanone	NS	2.9 U	2.9 U	2.9 U	2.9 U	2.8 U	3 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-44(0-6)A** **212555-003** **1** **4/3/2006** **ug/Kg**	**B-44(0-6)B** **212555-004** **1** **4/3/2006** **ug/Kg**	**B-44(0-6)C** **212555-005** **1** **4/3/2006** **ug/Kg**	**B-44(0-6)D** **212555-006** **1** **4/3/2006** **ug/Kg**	**B-44(0-6)E** **212555-007** **1** **4/3/2006** **ug/Kg**	**B-44(0-14)A*** **212555-008** **1** **4/3/2006** **ug/Kg**
Dibromochloromethane	NS	0.47 U	0.47 U	0.48 U	0.47 U	0.46 U	0.48 U
Chlorobenzene	NS	0.91 U	0.9 U	0.92 U	0.9 U	0.88 U	0.92 U
Ethylbenzene	NS	0.91 U	0.9 U	0.92 U	0.9 U	0.88 U	0.92 U
Styrene	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromoform	NS	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U
1 1 2 2-Tetrachloroethane	NS	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
Xylenes (total)	NS	2.3 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U
Total VOCs	**30,000,000**	11.97	21.4	23.1	13.96	18.7	18.78

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-44(0-14)B***	**B-44(0-14)C***	**B-44(0-14)D***	**B-44(0-14)E***	**B-46(0-6)A**
Lab Sample ID	**Philadelphia**	**212555-009**	**212555-010**	**212555-011**	**212555-012**	**212581-003**
Dilution	**Acceptance**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**Criteria[1]**	**4/3/2006**	**4/3/2006**	**4/3/2006**	**4/3/2006**	**4/4/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound						
Chloromethane	NS	1 U	1.1 U	1 U	1 U	0.99 U
Vinyl chloride	NS	1 U	1 U	0.98 U	0.98 U	0.96 U
Bromomethane	NS	0.94 U	0.97 U	0.92 U	0.92 U	0.91 U
Chloroethane	NS	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U
1 1-Dichloroethene	NS	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U
Carbon disulfide	NS	0.7 U	0.72 U	0.69 U	0.69 U	0.67 U
Acetone	NS	3.6 U	23 J	3.5 U	3.5 U	12 J
Methylene chloride	NS	13 JB	19 JB	17 JB	13 JB	9.9 JB
trans-1 2-Dichloroethene	NS	0.66 U	0.69 U	0.65 U	0.65 U	0.64 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1.1 U	1 U	1 U	1 U
1 1-Dichloroethane	NS	0.93 U	0.96 U	0.91 U	0.91 U	0.89 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U
2-Butanone (MEK)	NS	2 U	2.1 U	2 U	2 U	2 U
Chloroform	NS	0.61 U	0.63 U	0.6 U	0.6 U	0.58 U
1 1 1-Trichloroethane	NS	0.96 U	1 U	0.94 U	0.94 U	0.93 U
Carbon tetrachloride	NS	0.89 U	0.92 U	0.88 U	0.88 U	0.86 U
Benzene	NS	0.98 U	1 U	0.97 U	0.97 U	0.95 U
1 2-Dichloroethane	NS	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U
Trichloroethene	NS	0.78 U	0.81 U	0.76 U	0.76 U	0.75 U
1 2-Dichloropropane	NS	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	NS	0.96 U	1 U	0.94 U	0.94 U	0.93 U
cis-1 3-Dichloropropene	NS	0.89 U	0.92 U	0.88 U	0.88 U	0.86 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.4 U	1.3 U	1.3 U	1.3 U
Toluene	NS	0.96 UB	1.1 JB	0.94 UB	0.94 UB	0.93 UB
trans-1 3-Dichloropropene	NS	1.1 U	1.1 U	1 U	1 U	1 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.1 U
Tetrachloroethene	NS	1.4 J	0.83 U	0.79 U	0.79 U	0.77 U
2-Hexanone	NS	2.9 U	3 U	2.8 U	2.8 U	2.8 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-44(0-14)B*** **212555-009** **1** **4/3/2006** **ug/Kg**		**B-44(0-14)C*** **212555-010** **1** **4/3/2006** **ug/Kg**		**B-44(0-14)D*** **212555-011** **1** **4/3/2006** **ug/Kg**		**B-44(0-14)E*** **212555-012** **1** **4/3/2006** **ug/Kg**		**B-46(0-6)A** **212581-003** **1** **4/4/2006** **ug/Kg**	
Dibromochloromethane	NS	0.47	U	0.49	U	0.46	U	0.46	U	0.45	U
Chlorobenzene	NS	0.9	U	0.94	U	0.89	U	0.89	U	0.87	U
Ethylbenzene	NS	0.9	U	0.94	U	0.89	U	0.89	U	0.87	U
Styrene	NS	1.2	U	1.3	U	1.2	U	1.2	U	1.2	U
Bromoform	NS	1.1	U	1.2	U	1.1	U	1.1	U	1.1	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.4	U	1.4	U	1.4	U	1.3	U
Xylenes (total)	NS	2.2	U	2.3	U	2.2	U	2.2	U	2.2	U
Total VOCs	**30,000,000**	15.36		43.1		17.94		13.94		22.83	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-46(0-6)B**	**B-46(0-6)C**	**B-46(0-6)D**	**B-47(10-18)A**	**B-47(10-18)B**
Lab Sample ID	**Philadelphia**	**212581-004**	**212581-005**	**212581-006**	**212628-003**	**212628-004**
Dilution	**Acceptance**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**Criteria[1]**	**4/4/2006**	**4/4/2006**	**4/4/2006**	**4/10/2006**	**4/10/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound						
Chloromethane	NS	1 U	0.98 U	0.95 U	1.1 U	1.1 U
Vinyl chloride	NS	0.99 U	0.95 U	0.92 U	1 U	1 U
Bromomethane	NS	0.93 U	0.9 U	0.87 U	0.99 U	0.97 U
Chloroethane	NS	2.1 U	2.1 U	2 U	2.3 U	2.2 U
1 1-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.3 U	1.3 U
Carbon disulfide	NS	0.69 U	0.67 U	0.65 U	0.73 U	0.72 U
Acetone	NS	14 J	13 J	13 J	3.8 U	3.7 U
Methylene chloride	NS	10 JB	11 JB	9.2 JB	14 JB	13 JB
trans-1 2-Dichloroethene	NS	0.66 U	0.63 U	0.62 U	0.7 U	0.69 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1 U	0.99 U	1.1 U	1.1 U
1 1-Dichloroethane	NS	0.92 U	0.88 U	0.86 U	0.98 U	0.96 U
cis-1 2-Dichloroethene	NS	1.2 U	1.1 U	1.1 U	1.3 U	1.2 U
2-Butanone (MEK)	NS	2 U	1.9 U	1.9 U	2.1 U	2.1 U
Chloroform	NS	0.6 U	0.58 U	0.56 U	0.64 U	0.63 U
1 1 1-Trichloroethane	NS	0.95 U	0.92 U	0.89 U	1 U	0.99 U
Carbon tetrachloride	NS	0.89 U	0.85 U	0.83 U	0.94 U	0.92 U
Benzene	NS	0.98 U	0.94 U	0.91 U	1 U	1 U
1 2-Dichloroethane	NS	1.1 U	1.1 U	1 U	1.2 U	1.2 U
Trichloroethene	NS	0.77 U	0.74 U	0.72 U	0.82 U	0.8 U
1 2-Dichloropropane	NS	1.2 U	1.2 U	1.1 U	1.3 U	1.3 U
Bromodichloromethane	NS	0.95 U	0.92 U	0.89 U	1 U	0.99 U
cis-1 3-Dichloropropene	NS	0.89 U	0.85 U	0.83 U	0.94 U	0.92 U
4-Methyl-2-pentanone (MIBK)	NS	1.3 U	1.3 U	1.3 U	1.4 U	1.4 U
Toluene	NS	0.95 UB	0.92 UB	0.89 UB	1 U	0.99 U
trans-1 3-Dichloropropene	NS	1 U	1 U	0.98 U	1.1 U	1.1 U
1 1 2-Trichloroethane	NS	1.2 U	1.1 U	1.1 U	1.3 U	1.2 U
Tetrachloroethene	NS	0.79 U	0.76 U	0.74 U	0.84 U	0.83 U
2-Hexanone	NS	2.9 U	2.8 U	2.7 U	3 U	3 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-46(0-6)B** **212581-004** **1** **4/4/2006** **ug/Kg**		**B-46(0-6)C** **212581-005** **1** **4/4/2006** **ug/Kg**		**B-46(0-6)D** **212581-006** **1** **4/4/2006** **ug/Kg**		**B-47(10-18)A** **212628-003** **1** **4/10/2006** **ug/Kg**		**B-47(10-18)B** **212628-004** **1** **4/10/2006** **ug/Kg**	
Dibromochloromethane	NS	0.47	U	0.45	U	0.43	U	0.49	U	0.49	U
Chlorobenzene	NS	0.9	U	0.86	U	0.84	U	0.95	U	0.93	U
Ethylbenzene	NS	0.9	U	0.86	U	0.84	U	0.95	U	0.93	U
Styrene	NS	1.2	U	1.2	U	1.1	U	1.3	U	1.3	U
Bromoform	NS	1.1	U	1.1	U	1	U	1.2	U	1.2	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.3	U	1.3	U	1.5	U	1.4	U
Xylenes (total)	NS	2.2	U	2.1	U	2.1	U	2.4	U	2.3	U
Total VOCs	**30,000,000**	24.95		24.92		23.09		14		13	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria^1** **ug/Kg**	**B-47(10-18)C** **212628-005** **1** **4/10/2006** **ug/Kg**	**B-47(10-18)D** **212628-006** **1** **4/10/2006** **ug/Kg**	**B-47(10-18)E** **212628-007** **1** **4/10/2006** **ug/Kg**	**B-47(10-18)F** **212628-008** **1** **4/10/2006** **ug/Kg**	**B-52(0-6)A** **212581-007** **1** **4/4/2006** **ug/Kg**
Chloromethane	NS	1.1 U	1 U	1.1 U	1.1 U	1 U
Vinyl chloride	NS	1.1 U	0.98 U	1 U	1 U	0.99 U
Bromomethane	NS	1 U	0.92 U	0.98 U	0.97 U	0.93 U
Chloroethane	NS	2.3 U	2.1 U	2.3 U	2.2 U	2.1 U
1 1-Dichloroethene	NS	1.3 U	1.2 U	1.3 U	1.3 U	1.2 U
Carbon disulfide	NS	0.74 U	0.68 U	0.73 U	0.72 U	0.69 U
Acetone	NS	3.8 U	3.5 U	3.8 U	3.7 U	12 J
Methylene chloride	NS	11 JB	13 JB	13 JB	12 JB	5.6 JB
trans-1 2-Dichloroethene	NS	0.7 U	0.65 U	0.69 U	0.68 U	0.66 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1 U	1.1 U	1.1 U	1.1 U
1 1-Dichloroethane	NS	0.98 U	0.91 U	0.97 U	0.96 U	0.92 U
cis-1 2-Dichloroethene	NS	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Butanone (MEK)	NS	2.2 U	2 U	2.1 U	2.1 U	2 U
Chloroform	NS	0.64 U	0.59 U	0.63 U	0.62 U	0.6 U
1 1 1-Trichloroethane	NS	1 U	0.94 U	1 U	0.99 U	0.95 U
Carbon tetrachloride	NS	0.95 U	0.87 U	0.93 U	0.92 U	0.89 U
Benzene	NS	1 U	0.96 U	1 U	1 U	0.98 U
1 2-Dichloroethane	NS	1.2 U	1.1 U	1.2 U	1.2 U	1.1 U
Trichloroethene	NS	0.83 U	0.76 U	0.81 U	0.8 U	0.77 U
1 2-Dichloropropane	NS	1.3 U	1.2 U	1.3 U	1.2 U	1.2 U
Bromodichloromethane	NS	1 U	0.94 U	1 U	0.99 U	0.95 U
cis-1 3-Dichloropropene	NS	0.95 U	0.87 U	0.93 U	0.92 U	0.89 U
4-Methyl-2-pentanone (MIBK)	NS	1.4 U	1.3 U	1.4 U	1.4 U	1.3 U
Toluene	NS	1 U	0.94 U	1 U	0.99 U	0.95 UB
trans-1 3-Dichloropropene	NS	1.1 U	1 U	1.1 U	1.1 U	1 U
1 1 2-Trichloroethane	NS	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U
Tetrachloroethene	NS	0.85 U	0.78 U	0.84 U	0.83 U	0.8 U
2-Hexanone	NS	3.1 U	2.8 U	3 U	3 U	2.9 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-47(10-18)C** **212628-005** **1** **4/10/2006** **ug/Kg**		**B-47(10-18)D** **212628-006** **1** **4/10/2006** **ug/Kg**		**B-47(10-18)E** **212628-007** **1** **4/10/2006** **ug/Kg**		**B-47(10-18)F** **212628-008** **1** **4/10/2006** **ug/Kg**		**B-52(0-6)A** **212581-007** **1** **4/4/2006** **ug/Kg**	
Dibromochloromethane	NS	0.5	U	0.46	U	0.49	U	0.48	U	0.47	U
Chlorobenzene	NS	0.96	U	0.89	U	0.94	U	0.93	U	0.9	U
Ethylbenzene	NS	0.96	U	0.89	U	0.94	U	0.93	U	0.9	U
Styrene	NS	1.3	U	1.2	U	1.3	U	1.2	U	1.2	U
Bromoform	NS	1.2	U	1.1	U	1.2	U	1.2	U	1.1	U
1 1 2 2-Tetrachloroethane	NS	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U
Xylenes (total)	NS	2.4	U	2.2	U	2.3	U	2.3	U	2.2	U
Total VOCs	**30,000,000**	11		13		13		12		18.55	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Clean Earth Philadelphia Acceptance Criteria[1] ug/Kg	B-52(0-6)B 212581-008 1 4/4/2006 ug/Kg	B-52(0-6)C 212581-009 1 4/4/2006 ug/Kg	B-52(0-6)D 212581-010 1 4/4/2006 ug/Kg	B-53(0-6)A 212660-012 1 4/12/2006 ug/Kg	B-53(0-6)B 212660-013 1 4/12/2006 ug/Kg
Chloromethane	NS	1 U	1 U	1.1 U	1.1 U	1.1 U
Vinyl chloride	NS	0.98 U	1 U	1.1 U	1.1 U	1 U
Bromomethane	NS	0.93 U	0.94 U	1 U	1 U	0.98 U
Chloroethane	NS	2.1 U	2.2 U	2.3 U	2.3 U	2.3 U
1 1-Dichloroethene	NS	1.2 U	1.2 U	1.4 U	1.3 U	1.3 U
Carbon disulfide	NS	0.69 U	0.7 U	0.76 U	0.75 U	0.73 U
Acetone	NS	15 J	16 J	13 J	7.7 J	11 J
Methylene chloride	NS	18 JB	18 JB	13 JB	29 B	30 B
trans-1 2-Dichloroethene	NS	0.66 U	0.66 U	0.72 U	0.71 U	0.69 U
Methyl-tert-butyl-ether (MTBE)	NS	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U
1 1-Dichloroethane	NS	0.92 U	0.93 U	1 U	0.99 U	0.97 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U
2-Butanone (MEK)	NS	2 U	2 U	2.2 U	2.2 U	2.1 U
Chloroform	NS	0.6 U	0.61 U	0.66 U	0.65 U	0.63 U
1 1 1-Trichloroethane	NS	0.95 U	0.96 U	1 U	1 U	1 U
Carbon tetrachloride	NS	0.88 U	0.89 U	0.97 U	0.96 U	0.93 U
Benzene	NS	0.97 U	0.99 U	1.1 U	1.1 U	1 U
1 2-Dichloroethane	NS	1.1 U	1.1 U	1.2 U	1.2 U	1.2 U
Trichloroethene	NS	0.77 U	0.78 U	0.84 U	1.7 J	1.4 J
1 2-Dichloropropane	NS	1.2 U	1.2 U	1.3 U	1.3 U	1.3 U
Bromodichloromethane	NS	0.95 U	0.96 U	1 U	1 U	1 U
cis-1 3-Dichloropropene	NS	0.88 U	0.89 U	0.97 U	0.96 U	0.93 U
4-Methyl-2-pentanone (MIBK)	NS	1.3 U	1.4 U	1.5 U	1.4 U	1.4 U
Toluene	NS	1.2 JB	1.1 JB	1 UB	1 U	1 U
trans-1 3-Dichloropropene	NS	1 U	1.1 U	1.1 U	1.1 U	1.1 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.3 U	1.3 U	1.2 U
Tetrachloroethene	NS	0.79 U	0.8 U	0.87 U	1.8 J	1.2 J
2-Hexanone	NS	2.9 U	2.9 U	3.1 U	3.1 U	3 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-52(0-6)B** **212581-008** **1** **4/4/2006** **ug/Kg**		**B-52(0-6)C** **212581-009** **1** **4/4/2006** **ug/Kg**		**B-52(0-6)D** **212581-010** **1** **4/4/2006** **ug/Kg**		**B-53(0-6)A** **212660-012** **1** **4/12/2006** **ug/Kg**		**B-53(0-6)B** **212660-013** **1** **4/12/2006** **ug/Kg**	
Dibromochloromethane	NS	0.46	U	0.47	U	0.51	U	0.5	U	0.49	U
Chlorobenzene	NS	0.89	U	0.9	U	0.98	U	0.97	U	0.94	U
Ethylbenzene	NS	0.89	U	0.9	U	0.98	U	0.97	U	0.94	U
Styrene	NS	1.2	U	1.2	U	1.3	U	1.3	U	1.3	U
Bromoform	NS	1.1	U	1.1	U	1.2	U	1.2	U	1.2	U
1 1 2 2-Tetrachloroethane	NS	1.4	U	1.4	U	1.5	U	1.5	U	1.4	U
Xylenes (total)	NS	2.2	U	2.2	U	2.4	U	2.4	U	2.3	U
Total VOCs	**30,000,000**	34.2		35.1		27		40.2		43.6	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Clean Earth	B-53(0-6)C	B-53(0-6)D	B-53(0-6)E	B-53(0-6)F	B-54(0-6)A	B-54(0-6)B
Lab Sample ID	Philadelphia	212660-014	212660-015	212660-016	212660-017	212660-018	212660-019
Dilution	Acceptance	1	1	1	1	1	1
Date Sampled	Criteria[1]	4/12/2006	4/12/2006	4/12/2006	4/12/2006	4/13/2006	4/13/2006
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
Chloromethane	NS	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1 U
Vinyl chloride	NS	1.1 U	1.1 U	1.1 U	1.1 U	0.97 U	1 U
Bromomethane	NS	1 U	1.1 U	1 U	1 U	0.91 U	0.95 U
Chloroethane	NS	2.4 U	2.5 U	2.3 U	2.3 U	2.1 U	2.2 U
1 1-Dichloroethene	NS	1.4 U	1.4 U	1.3 U	1.3 U	1.2 U	1.3 U
Carbon disulfide	NS	0.76 U	0.8 U	0.74 U	0.74 U	0.68 U	0.71 U
Acetone	NS	5 J	4.1 U	3.8 U	9.4 J	3.5 U	3.7 U
Methylene chloride	NS	13 JB	20 JB	13 JB	7.2 JB	14 JB	17 JB
trans-1 2-Dichloroethene	NS	0.72 U	0.76 U	0.71 U	0.7 U	0.64 U	0.67 U
Methyl-tert-butyl-ether (MTBE)	NS	1.2 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U
1 1-Dichloroethane	NS	1 U	1.1 U	0.99 U	0.98 U	0.9 U	0.94 U
cis-1 2-Dichloroethene	NS	1.3 U	1.4 U	1.3 U	1.3 U	1.2 U	1.2 U
2-Butanone (MEK)	NS	2.2 U	2.3 U	2.2 U	2.2 U	2 U	2.1 U
Chloroform	NS	0.66 U	0.69 U	0.65 U	0.64 U	0.59 U	0.61 U
1 1 1-Trichloroethane	NS	1 U	1.1 U	1 U	1 U	0.93 U	0.97 U
Carbon tetrachloride	NS	0.97 U	1 U	0.95 U	0.95 U	0.87 U	0.9 U
Benzene	NS	1.1 U	1.1 U	1 U	1 U	0.96 U	1 U
1 2-Dichloroethane	NS	1.2 U	1.3 U	1.2 U	1.2 U	1.1 U	1.1 U
Trichloroethene	NS	0.85 U	0.89 U	0.83 U	0.83 U	0.76 U	0.79 U
1 2-Dichloropropane	NS	1.3 U	1.4 U	1.3 U	1.3 U	1.2 U	1.2 U
Bromodichloromethane	NS	1 U	1.1 U	1 U	1 U	0.93 U	0.97 U
cis-1 3-Dichloropropene	NS	0.97 U	1 U	0.95 U	0.95 U	0.87 U	0.9 U
4-Methyl-2-pentanone (MIBK)	NS	1.5 U	1.5 U	1.4 U	1.4 U	1.3 U	1.4 U
Toluene	NS	1 UB	1.1 U	1 UB	1 UB	0.93 U	0.97 UB
trans-1 3-Dichloropropene	NS	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U
1 1 2-Trichloroethane	NS	1.3 U	1.4 U	1.3 U	1.3 U	1.2 U	1.2 U
Tetrachloroethene	NS	0.87 U	0.91 U	0.85 U	0.85 U	0.78 U	0.81 U
2-Hexanone	NS	3.2 U	3.3 U	3.1 U	3.1 U	2.8 U	2.9 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth Philadelphia Acceptance Criteria[1]**	**B-53(0-6)C**		**B-53(0-6)D**		**B-53(0-6)E**		**B-53(0-6)F**		**B-54(0-6)A**		**B-54(0-6)B**	
Lab Sample ID		**212660-014**		**212660-015**		**212660-016**		**212660-017**		**212660-018**		**212660-019**	
Dilution		**1**		**1**		**1**		**1**		**1**		**1**	
Date Sampled		**4/12/2006**		**4/12/2006**		**4/12/2006**		**4/12/2006**		**4/13/2006**		**4/13/2006**	
Units	**ug/Kg**	**ug/Kg**		**ug/Kg**		**ug/Kg**		**ug/Kg**		**ug/Kg**		**ug/Kg**	
Compound													
Dibromochloromethane	NS	0.51	U	0.54	U	0.5	U	0.5	U	0.46	U	0.48	U
Chlorobenzene	NS	0.98	U	1	U	0.96	U	0.96	U	0.88	U	0.92	U
Ethylbenzene	NS	0.98	U	1	U	0.96	U	0.96	U	0.88	U	0.92	U
Styrene	NS	1.3	U	1.4	U	1.3	U	1.3	U	1.2	U	1.2	U
Bromoform	NS	1.2	U	1.3	U	1.2	U	1.2	U	1.1	U	1.1	U
1 1 2 2-Tetrachloroethane	NS	1.5	U	1.6	U	1.5	U	1.5	U	1.3	U	1.4	U
Xylenes (total)	NS	2.4	U	2.6	U	2.4	U	2.4	U	2.2	U	2.3	U
Total VOCs	**30,000,000**	19		20		14		17.6		14		17.97	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	Clean Earth	B-54(0-6)C	B-54(0-6)D	B-54(0-6)E	B-54(0-6)F	B-54(0-6)G	B-54(0-6)H
Lab Sample ID	Philadelphia	212660-020	212660-021	212660-022	212660-023	212660-024	212660-025
Dilution	Acceptance	1	1	1	1	1	1
Date Sampled	Criteria[1]	4/13/2006	4/13/2006	4/13/2006	4/13/2006	4/13/2006	4/13/2006
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
Chloromethane	NS	1 U	1 U	1 U	1 U	1 U	1.1 U
Vinyl chloride	NS	0.97 U	1 U	0.99 U	1 U	0.97 U	1 U
Bromomethane	NS	0.91 U	0.95 U	0.94 U	0.95 U	0.91 U	0.96 U
Chloroethane	NS	2.1 U	2.2 U	2.2 U	2.2 U	2.1 U	2.2 U
1 1-Dichloroethene	NS	1.2 U	1.3 U	1.2 U	1.3 U	1.2 U	1.3 U
Carbon disulfide	NS	0.68 U	0.71 U	0.7 U	0.71 U	0.68 U	0.72 U
Acetone	NS	4.5 J	3.7 U	3.6 U	3.6 U	3.5 U	5.6 JM
Methylene chloride	NS	20 JB	18 JB	16 JB	20 JB	20 JB	12 JB
trans-1 2-Dichloroethene	NS	0.65 U	0.68 U	0.66 U	0.67 U	0.65 U	0.68 U
Methyl-tert-butyl-ether (MTBE)	NS	1 U	1.1 U	1.1 U	1.1 U	1 U	1.1 U
1 1-Dichloroethane	NS	0.9 U	0.94 U	0.92 U	0.94 U	0.9 U	0.95 U
cis-1 2-Dichloroethene	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
2-Butanone (MEK)	NS	2 U	2.1 U	2 U	2.1 U	2 U	2.1 U
Chloroform	NS	0.59 U	0.62 U	0.61 U	0.61 U	0.59 U	0.62 U
1 1 1-Trichloroethane	NS	0.94 U	0.98 U	0.96 U	0.97 U	0.93 U	0.99 U
Carbon tetrachloride	NS	0.87 U	0.91 U	0.89 U	0.9 U	0.87 U	0.92 U
Benzene	NS	0.96 U	1 U	0.98 U	0.99 U	0.96 U	1 U
1 2-Dichloroethane	NS	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.2 U
Trichloroethene	NS	0.76 U	0.79 U	0.78 U	0.79 U	0.76 U	0.8 U
1 2-Dichloropropane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Bromodichloromethane	NS	0.94 U	0.98 U	0.96 U	0.97 U	0.93 U	0.99 U
cis-1 3-Dichloropropene	NS	0.87 U	0.91 U	0.89 U	0.9 U	0.87 U	0.92 U
4-Methyl-2-pentanone (MIBK)	NS	1.3 U	1.4 U	1.3 U	1.4 U	1.3 U	1.4 U
Toluene	NS	0.94 UB	0.98 UB	0.96 UB	0.97 U	0.93 UB	0.99 UB
trans-1 3-Dichloropropene	NS	1 U	1.1 U	1.1 U	1.1 U	1 U	1.1 U
1 1 2-Trichloroethane	NS	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Tetrachloroethene	NS	0.78 U	0.81 U	0.8 U	0.81 U	0.78 U	0.82 U
2-Hexanone	NS	2.8 U	2.9 U	2.9 U	2.9 U	2.8 U	3 U

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-54(0-6)C** **212660-020** **1** **4/13/2006** **ug/Kg**		**B-54(0-6)D** **212660-021** **1** **4/13/2006** **ug/Kg**		**B-54(0-6)E** **212660-022** **1** **4/13/2006** **ug/Kg**		**B-54(0-6)F** **212660-023** **1** **4/13/2006** **ug/Kg**		**B-54(0-6)G** **212660-024** **1** **4/13/2006** **ug/Kg**		**B-54(0-6)H** **212660-025** **1** **4/13/2006** **ug/Kg**	
Dibromochloromethane	NS	0.46	U	0.48	U	0.47	U	0.47	U	0.46	U	0.48	U
Chlorobenzene	NS	0.88	U	0.92	U	0.9	U	0.91	U	0.88	U	0.93	U
Ethylbenzene	NS	0.88	U	0.92	U	0.9	U	0.91	U	0.88	U	0.93	U
Styrene	NS	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Bromoform	NS	1.1	U	1.2	U	1.1	U	1.1	U	1.1	U	1.2	U
1 1 2 2-Tetrachloroethane	NS	1.3	U	1.4	U	1.4	U	1.4	U	1.3	U	1.4	U
Xylenes (total)	NS	2.2	U	2.3	U	2.2	U	2.3	U	2.2	U	2.3	U
Total VOCs	**30,000,000**	25.44		18.98		16.96		20		20.93		18.59	

TABLE 1B
VOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1 - Waste classification criteria provided by Clean Earth, of Philadelphia, PA.

Exceedences are highlighted in bold font.

ug/Kg - micrograms per kilogram = parts per billion (ppb).

U - Analyte was not detected at or above the reporting limit.

* - These samples were collected from the 6-14 foot depth interval, and were originally named B-44(6-14)A through E. The laboratory erroneously named them B-44(0-14)A through E for the VOA analysis.

TABLE 2A
TCLP - SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP Limits As Defined By 40-CFR[1]** **mg/L**	**B-20(0-6)** **212630-002** **1** **4/10/2006** **mg/L**	**B-21(0-6)** **212630-001** **1** **4/10/2006** **mg/L**	**B-22(0-6)** **212628-002** **1** **4/10/2006** **mg/L**	**B-23(0-6)** **212660-004** **1** **4/13/2006** **mg/L**	**B-24(0-6)** **212660-005** **1** **4/13/2006** **mg/L**	**B-25(0-6)** **212660-001** **1** **4/12/2006** **mg/L**
Pyridine-TCLP	5	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1 4-Dichlorobenzene-TCLP	7.5	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U
2-Methylphenol-TCLP	200	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Hexachloroethane-TCLP	3	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
4-Methylphenol-TCLP	200	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Nitrobenzene-TCLP	2	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Hexachlorobutadiene-TCLP	0.5	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
2 4 6-Trichlorophenol-TCLP	2	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
2 4 5-Trichlorophenol-TCLP	400	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
2 4-Dinitrotoluene-TCLP	0.13	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Hexachlorobenzene-TCLP	0.13	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Pentachlorophenol-TCLP	100	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

TABLE 2A
TCLP - SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP Limits As Defined By 40-CFR[1]** **mg/L**	**B-26(0-6)** **212491-001** **1** **3/28/2006** **mg/L**	**B-29(0-6)** **212491-002** **1** **3/28/2006** **mg/L**	**B-43(0-6)** **212519-001** **1** **3/30/2006** **mg/L**	**B-43(6-14)** **212519-002** **1** **3/30/2006** **mg/L**	**B-44(0-6)** **212555-001** **1** **4/3/2006** **mg/L**	**B-44(6-14)** **212555-002** **1** **4/3/2006** **mg/L**
Pyridine-TCLP	5	0.005 U	0.005 U	0.002 U	0.002 U	0.005 U	0.005 U
1 4-Dichlorobenzene-TCLP	7.5	0.0009 U	0.0009 U	0.0005 U	0.0005 U	0.0009 U	0.0009 U
2-Methylphenol-TCLP	200	0.001 U	0.001 U	0.0006 U	0.0006 U	0.001 U	0.001 U
Hexachloroethane-TCLP	3	0.002 U	0.002 U	0.001 U	0.001 U	0.002 U	0.002 U
4-Methylphenol-TCLP	200	0.0007 U	0.0007 U	0.0003 U	0.0003 U	0.0007 U	0.0007 U
Nitrobenzene-TCLP	2	0.002 U	0.002 U	0.0008 U	0.0008 U	0.002 U	0.002 U
Hexachlorobutadiene-TCLP	0.5	0.002 U	0.002 U	0.0008 U	0.0008 U	0.002 U	0.002 U
2 4 6-Trichlorophenol-TCLP	2	0.002 U	0.002 U	0.0008 U	0.0008 U	0.002 U	0.002 U
2 4 5-Trichlorophenol-TCLP	400	0.002 U	0.002 U	0.0008 U	0.0008 U	0.002 U	0.002 U
2 4-Dinitrotoluene-TCLP	0.13	0.002 U	0.002 U	0.0008 U	0.0008 U	0.002 U	0.002 U
Hexachlorobenzene-TCLP	0.13	0.002 U	0.002 U	0.001 U	0.001 U	0.002 U	0.002 U
Pentachlorophenol-TCLP	100	0.01 U	0.01 U	0.005 U	0.005 U	0.01 U	0.01 U

TABLE 2A
TCLP - SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	TCLP Limits As Defined By 40-CFR[1] mg/L	B-46(0-6) 212581-001 1 4/4/2006 mg/L	B-47(10-18) 212628-001 1 4/10/2006 mg/L	B-52(0-6) 212581-002 1 4/4/2006 mg/L	B-53(0-6) 212660-002 1 4/12/2006 mg/L	B-54(0-6) 212660-003 1 4/13/2006 mg/L
Pyridine-TCLP	5	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1 4-Dichlorobenzene-TCLP	7.5	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U
2-Methylphenol-TCLP	200	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Hexachloroethane-TCLP	3	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
4-Methylphenol-TCLP	200	0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
Nitrobenzene-TCLP	2	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Hexachlorobutadiene-TCLP	0.5	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
2 4 6-Trichlorophenol-TCLP	2	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
2 4 5-Trichlorophenol-TCLP	400	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
2 4-Dinitrotoluene-TCLP	0.13	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Hexachlorobenzene-TCLP	0.13	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Pentachlorophenol-TCLP	100	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

TABLE 2A
TCLP - SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1- Non hazardous waste as defined by the Federal Code of Regulations for hazardous waste (40 CFR) using the Toxicity Characteristic Leaching Procedure (TCLP).

Exceedences are highlighted in bold font.

mg/L - micrograms per liter = parts per million (ppm).

U - Analyte was not detected at or above the reporting limit.

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-20(0-6)**	**B-21(0-6)**	**B-22(0-6)**	**B-23(0-6)**	**B-24(0-6)**	**B-25(0-6)**
Lab Sample ID	**Philadelphia**	**212630-002**	**212630-001**	**212628-002**	**212660-004**	**212660-005**	**212660-001**
Dilution	**Acceptance**	**1**	**1**	**10**	**1**	**1**	**1**
Date Sampled	**Criteria[1]**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**	**4/12/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
Phenol	NS	210 U	120 U	1000 U	100 U	110 U	110 U
Bis(2-chloroethyl)ether	NS	98 U	56 U	480 U	48 U	53 U	52 U
1 3-Dichlorobenzene	NS	110 U	64 U	540 U	54 U	60 U	59 U
1 4-Dichlorobenzene	NS	120 U	66 U	560 U	56 U	150 J	61 U
1 2-Dichlorobenzene	NS	120 U	70 U	590 U	59 U	66 U	65 U
Benzyl alcohol	NS	140 U	79 U	670 U	67 U	74 U	73 U
2-Methylphenol	NS	190 U	110 U	940 U	94 U	100 U	100 U
2 2-oxybis (1-chloropropane)	NS	100 U	59 U	500 U	50 U	55 U	54 U
n-Nitroso-di-n-propylamine	NS	98 U	56 U	480 U	48 U	53 U	52 U
Hexachloroethane	NS	130 U	74 U	630 U	62 U	69 U	68 U
4-Methylphenol	NS	390 U	220 U	1900 U	190 U	210 U	210 U
2-Chlorophenol	NS	190 U	110 U	910 U	91 U	100 U	99 U
Nitrobenzene	NS	87 U	50 U	420 U	42 U	47 U	46 U
Bis(2-chloroethoxy)methane	NS	120 U	71 U	600 U	60 U	67 U	66 U
1 2 4-Trichlorobenzene	NS	120 U	70 U	590 U	59 U	66 U	65 U
Isophorone	NS	130 U	75 U	640 U	63 U	70 U	69 U
2 4-Dimethylphenol	NS	370 U	210 U	1800 U	180 U	200 U	200 U
Hexachlorobutadiene	NS	150 U	85 U	720 U	72 U	80 U	79 U
Naphthalene	NS	120 U	79 J	1900 J	79 J	230 J	120 J
2 4-Dichlorophenol	NS	240 U	140 U	1200 U	120 U	130 U	130 U
4-Chloroaniline	NS	230 U	130 U	1100 U	110 U	130 U	120 U
2 4 6-Trichlorophenol	NS	190 U	110 U	900 U	90 U	100 U	98 U
2 4 5-Trichlorophenol	NS	260 U	150 U	1300 U	130 U	140 U	140 U
Hexachlorocyclopentadiene	NS	540 U	310 U	2600 U	260 U	290 U	290 U
2-Methylnaphthalene	NS	180 J	66 U	1400 J	120 J	240 J	130 J
2-Nitroaniline	NS	91 U	52 U	450 U	44 U	49 U	48 U
2-Chloronaphthalene	NS	110 U	61 U	520 U	52 U	58 U	57 U
4-Chloro-3-methylphenol	NS	250 U	140 U	1200 U	120 U	130 U	130 U
2 6-Dinitrotoluene	NS	130 U	76 U	650 U	64 U	72 U	70 U

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth Philadelphia Acceptance Criteria[1]**	**B-20(0-6)**	**B-21(0-6)**	**B-22(0-6)**	**B-23(0-6)**	**B-24(0-6)**	**B-25(0-6)**
Lab Sample ID		**212630-002**	**212630-001**	**212628-002**	**212660-004**	**212660-005**	**212660-001**
Dilution		**1**	**1**	**10**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**	**4/12/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
2-Nitrophenol	NS	250 U	140 U	1200 U	120 U	140 U	130 U
3-Nitroaniline	NS	150 U	86 U	730 U	73 U	81 U	80 U
Dimethyl phthalate	NS	110 U	64 U	540 U	54 U	60 U	59 U
2 4-Dinitrophenol	NS	250 U	140 U	1200 U	120 U	140 U	130 U
Acenaphthylene	NS	160 J	130 J	1500 J	170 J	200 J	130 J
2 4-Dinitrotoluene	NS	130 U	75 U	640 U	63 U	70 U	69 U
Acenaphthene	NS	520 J	100 J	3100 J	100 J	330 J	71 J
Dibenzofuran	NS	340 J	66 U	2900 J	56 U	220 J	61 U
4-Nitrophenol	NS	310 U	180 U	1500 U	150 U	170 U	160 U
Fluorene	NS	480 J	110 J	4700	88 J	300 J	64 J
4-Nitroaniline	NS	100 U	60 U	510 U	51 U	56 U	55 U
4-Bromophenyl phenyl ether	NS	110 U	64 U	540 U	54 U	60 U	59 U
Hexachlorobenzene	NS	110 U	61 U	520 U	52 U	58 U	57 U
Diethyl phthalate	NS	110 U	61 U	2100 J	52 U	58 U	57 U
4-Chlorophenyl phenyl ether	NS	100 U	57 U	490 U	49 U	54 U	53 U
Pentachlorophenol	NS	630 U	360 U	3100 U	300 U	340 U	330 U
n-Nitrosodiphenylamine	NS	110 U	62 U	530 U	53 U	59 U	58 U
4 6-Dinitro-2-methylphenol	NS	520 U	300 U	2500 U	250 U	280 U	280 U
Phenanthrene	NS	6000	1600	32000	1400	4200	1100
Anthracene	NS	1000	310 J	8700	420	940	230 J
Carbazole	NS	480 J	110 J	3000 J	86 J	340 J	98 J
Di-n-butyl phthalate	NS	96 U	55 U	470 U	46 U	220 J	250 J
Fluoranthene	NS	5900	2400	19000	3000	4200	1700
Pyrene	NS	5000	2500	16000	2100	3500	1500
Butyl benzyl phthalate	NS	94 U	54 U	460 U	45 U	51 U	50 U
Benzo(a)anthracene	NS	3200	1500	13000	1500	2200	1000
Chrysene	NS	3100	1500	11000	1500	2500	1100
3 3-Dichlorobenzidine	NS	190 U	110 U	940 U	94 U	100 U	100 U
Bis(2-ethylhexyl)phthalate	NS	96 U	55 U	630 J	56 JH	64 J	58 J

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-20(0-6)** **212630-002** **1** **4/10/2006** **ug/Kg**	**B-21(0-6)** **212630-001** **1** **4/10/2006** **ug/Kg**	**B-22(0-6)** **212628-002** **10** **4/10/2006** **ug/Kg**	**B-23(0-6)** **212660-004** **1** **4/13/2006** **ug/Kg**	**B-24(0-6)** **212660-005** **1** **4/13/2006** **ug/Kg**	**B-25(0-6)** **212660-001** **1** **4/12/2006** **ug/Kg**
Di-n-octyl phthalate	NS	76 U	44 U	370 U	37 U	41 U	40 U
Benzo(b)fluoranthene	NS	2500	1600	9000	1400	1700	1200
Benzo(k)fluoranthene	NS	1400	540 M	4200	1100	1400	450
Benzo(a)pyrene	NS	2600	1400	9200	1500	1900	940
Indeno(1 2 3-cd)pyrene	NS	2300	1400	6600	790	1000	620
Dibenzo(a h)anthracene	NS	790	470	2300 J	280 J	410	150 J
Benzo(ghi)perylene	NS	2700	2000	6800	820	1100	610
Total SVOCs	**40,000,000**	38,650	17,749	159,030	16,509	27,344	11,521

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-26(0-6)**	**B-29(0-6)**	**B-43(0-6)**	**B-43(6-14)**	**B-44(0-6)**	**B-44(6-14)**
Lab Sample ID	**Philadelphia**	**212491-001**	**212491-002**	**212519-001**	**212519-002**	**212555-001**	**212555-002**
Dilution	**Acceptance**	**50**	**10**	**1**	**4**	**1**	**1**
Date Sampled	**Criteria[1]**	**3/28/2006**	**3/28/2006**	**3/30/2006**	**3/30/2006**	**4/3/2006**	**4/3/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
Phenol	NS	11000 U	1100 U	110 U	410 U	110 U	110 U
Bis(2-chloroethyl)ether	NS	5200 U	490 U	50 U	190 U	49 U	51 U
1 3-Dichlorobenzene	NS	5900 U	560 U	57 U	220 U	55 U	58 U
1 4-Dichlorobenzene	NS	6200 U	580 U	59 U	220 U	57 U	60 U
1 2-Dichlorobenzene	NS	6500 U	620 U	62 U	240 U	61 U	63 U
Benzyl alcohol	NS	7300 U	690 U	70 U	270 U	68 U	71 U
2-Methylphenol	NS	10000 U	980 U	99 U	380 U	96 U	100 U
2 2-oxybis (1-chloropropane)	NS	5500 U	520 U	52 U	200 U	51 U	53 U
n-Nitroso-di-n-propylamine	NS	5200 U	490 U	50 U	190 U	49 U	51 U
Hexachloroethane	NS	6800 U	650 U	66 U	250 U	64 U	67 U
4-Methylphenol	NS	21000 U	2000 U	200 U	760 U	190 U	200 U
2-Chlorophenol	NS	10000 U	940 U	96 U	360 U	93 U	97 U
Nitrobenzene	NS	4600 U	440 U	45 U	170 U	43 U	45 U
Bis(2-chloroethoxy)methane	NS	6600 U	630 U	64 U	240 U	62 U	64 U
1 2 4-Trichlorobenzene	NS	6500 U	620 U	62 U	240 U	61 U	63 U
Isophorone	NS	7000 U	660 U	67 U	250 U	65 U	68 U
2 4-Dimethylphenol	NS	20000 U	1900 U	190 U	730 U	190 U	190 U
Hexachlorobutadiene	NS	7900 U	750 U	76 U	290 U	74 U	77 U
Naphthalene	NS	20000 J	670 J	420	1800	320 J	380
2 4-Dichlorophenol	NS	13000 U	1200 U	120 U	460 U	120 U	120 U
4-Chloroaniline	NS	12000 U	1200 U	120 U	450 U	120 U	120 U
2 4 6-Trichlorophenol	NS	9900 U	930 U	95 U	360 U	92 U	96 U
2 4 5-Trichlorophenol	NS	14000 U	1300 U	130 U	510 U	130 U	140 U
Hexachlorocyclopentadiene	NS	29000 U	2700 U	280 U	1100 U	270 U	280 U
2-Methylnaphthalene	NS	12000 J	580 U	270 J	1200 J	170 J	120 J
2-Nitroaniline	NS	4900 U	460 U	47 U	180 U	46 U	48 U
2-Chloronaphthalene	NS	5700 U	540 U	55 U	210 U	53 U	55 U
4-Chloro-3-methylphenol	NS	13000 U	1200 U	130 U	480 U	120 U	130 U
2 6-Dinitrotoluene	NS	7100 U	670 U	68 U	260 U	66 U	69 U

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth Philadelphia Acceptance Criteria[1]**	**B-26(0-6)**	**B-29(0-6)**	**B-43(0-6)**	**B-43(6-14)**	**B-44(0-6)**	**B-44(6-14)**
Lab Sample ID		**212491-001**	**212491-002**	**212519-001**	**212519-002**	**212555-001**	**212555-002**
Dilution		**50**	**10**	**1**	**4**	**1**	**1**
Date Sampled		**3/28/2006**	**3/28/2006**	**3/30/2006**	**3/30/2006**	**4/3/2006**	**4/3/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
2-Nitrophenol	NS	13000 U	1300 U	130 U	490 U	130 U	130 U
3-Nitroaniline	NS	8000 U	760 U	77 U	290 U	75 U	78 U
Dimethyl phthalate	NS	5900 U	560 U	57 U	220 U	55 U	58 U
2 4-Dinitrophenol	NS	13000 U	1300 U	130 U	490 U	120 U	130 U
Acenaphthylene	NS	9400 J	3500 J	97 J	510 J	110 J	48 J
2 4-Dinitrotoluene	NS	7000 U	660 U	67 U	250 U	65 U	68 U
Acenaphthene	NS	34000 J	1100 J	61 U	680 J	60 U	62 U
Dibenzofuran	NS	20000 J	1100 J	100 J	1100 J	73 J	67 J
4-Nitrophenol	NS	16000 U	1600 U	160 U	600 U	150 U	160 U
Fluorene	NS	29000 J	1300 J	72 J	790 J	67 J	49 U
4-Nitroaniline	NS	5600 U	530 U	53 U	200 U	52 U	54 U
4-Bromophenyl phenyl ether	NS	5900 U	560 U	57 U	220 U	55 U	58 U
Hexachlorobenzene	NS	5700 U	540 U	55 U	210 U	53 U	55 U
Diethyl phthalate	NS	5700 U	540 U	55 U	210 U	53 U	55 U
4-Chlorophenyl phenyl ether	NS	5300 U	510 U	51 U	200 U	50 U	52 U
Pentachlorophenol	NS	33000 U	3200 U	320 U	1200 U	310 U	330 U
n-Nitrosodiphenylamine	NS	5800 U	550 U	56 U	210 U	54 U	57 U
4 6-Dinitro-2-methylphenol	NS	28000 U	2600 U	270 U	1000 U	260 U	270 U
Phenanthrene	NS	320000	23000	980	9800	800	480
Anthracene	NS	67000	3500 J	170 J	1800	180 J	80 J
Carbazole	NS	16000 J	1700 J	89 J	790 J	100 J	55 U
Di-n-butyl phthalate	NS	5100 U	480 U	160 J	190 U	480	86 J
Fluoranthene	NS	250000	30000	1100	8000	950	450
Pyrene	NS	290000	19000	1200	7500	800	440
Butyl benzyl phthalate	NS	5000 U	470 U	450	180 U	4900	520
Benzo(a)anthracene	NS	120000	12000	540	4000	570	260 J
Chrysene	NS	120000	13000	610	4300	560	250 J
3 3-Dichlorobenzidine	NS	10000 U	980 U	99 U	380 U	96 U	100 U
Bis(2-ethylhexyl)phthalate	NS	5100 U	480 U	740	190 U	1600	390

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Clean Earth Philadelphia Acceptance Criteria[1] ug/Kg**	**B-26(0-6) 212491-001 50 3/28/2006 ug/Kg**	**B-29(0-6) 212491-002 10 3/28/2006 ug/Kg**	**B-43(0-6) 212519-001 1 3/30/2006 ug/Kg**	**B-43(6-14) 212519-002 4 3/30/2006 ug/Kg**	**B-44(0-6) 212555-001 1 4/3/2006 ug/Kg**	**B-44(6-14) 212555-002 1 4/3/2006 ug/Kg**
Di-n-octyl phthalate	NS	4100 U	380 U	39 U	150 U	38 U	40 U
Benzo(b)fluoranthene	NS	92000	13000	500	4200	530	240 J
Benzo(k)fluoranthene	NS	31000 J	4300	150 J	160 U	250 J	110 J
Benzo(a)pyrene	NS	93000	10000	390	3000	500	210 J
Indeno(1 2 3-cd)pyrene	NS	93000	6300	440	2900	530	250 J
Dibenzo(a h)anthracene	NS	23000 J	1600 J	120 J	770 J	140 J	57 J
Benzo(ghi)perylene	NS	99000	5400	440	2600	560	260 J
Total SVOCs	**40,000,000**	1,738,400	150,470	9,038	55,740	14,190	4,698

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61^{ST} STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-46(0-6)**	**B-47(10-18)**	**B-52(0-6)**	**B-53(0-6)**	**B-54(0-6)**
Lab Sample ID	**Philadelphia**	**212581-001**	**212628-001**	**212581-002**	**212660-002**	**212660-003**
Dilution	**Acceptance**	**1**	**4**	**1**	**5**	**1**
Date Sampled	**Criteria[1]**	**4/4/2006**	**4/10/2006**	**4/4/2006**	**4/12/2006**	**4/13/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound						
Phenol	NS	110 U	470 U	110 U	560 U	110 U
Bis(2-chloroethyl)ether	NS	50 U	220 U	49 U	260 U	53 U
1 3-Dichlorobenzene	NS	56 U	250 U	56 U	300 U	60 U
1 4-Dichlorobenzene	NS	58 U	260 U	58 U	310 U	62 U
1 2-Dichlorobenzene	NS	62 U	270 U	61 U	330 U	65 U
Benzyl alcohol	NS	69 U	300 U	69 U	370 U	74 U
2-Methylphenol	NS	98 U	430 U	97 U	520 U	100 U
2 2-oxybis (1-chloropropane)	NS	52 U	230 U	51 U	270 U	55 U
n-Nitroso-di-n-propylamine	NS	50 U	220 U	49 U	260 U	53 U
Hexachloroethane	NS	65 U	280 U	64 U	340 U	69 U
4-Methylphenol	NS	200 U	860 U	200 U	1000 U	210 U
2-Chlorophenol	NS	95 U	410 U	94 U	500 U	100 U
Nitrobenzene	NS	44 U	190 U	44 U	230 U	47 U
Bis(2-chloroethoxy)methane	NS	63 U	270 U	62 U	330 U	67 U
1 2 4-Trichlorobenzene	NS	62 U	270 U	61 U	330 U	65 U
Isophorone	NS	66 U	290 U	65 U	350 U	70 U
2 4-Dimethylphenol	NS	190 U	830 U	190 U	1000 U	200 U
Hexachlorobutadiene	NS	75 U	330 U	74 U	400 U	80 U
Naphthalene	NS	63 U	3500	62 U	330 U	85 J
2 4-Dichlorophenol	NS	120 U	520 U	120 U	630 U	130 U
4-Chloroaniline	NS	120 U	520 U	120 U	620 U	130 U
2 4 6-Trichlorophenol	NS	94 U	410 U	93 U	500 U	99 U
2 4 5-Trichlorophenol	NS	130 U	580 U	130 U	700 U	140 U
Hexachlorocyclopentadiene	NS	270 U	1200 U	270 U	1400 U	290 U
2-Methylnaphthalene	NS	58 U	1100 J	58 U	310 U	62 U
2-Nitroaniline	NS	46 U	200 U	46 U	240 U	49 U
2-Chloronaphthalene	NS	54 U	240 U	53 U	290 U	57 U
4-Chloro-3-methylphenol	NS	120 U	540 U	120 U	660 U	130 U
2 6-Dinitrotoluene	NS	67 U	290 U	67 U	360 U	71 U

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth Philadelphia**	**B-46(0-6)**	**B-47(10-18)**	**B-52(0-6)**	**B-53(0-6)**	**B-54(0-6)**
Lab Sample ID	**Acceptance**	**212581-001**	**212628-001**	**212581-002**	**212660-002**	**212660-003**
Dilution	**Criteria[1]**	**1**	**4**	**1**	**5**	**1**
Date Sampled		**4/4/2006**	**4/10/2006**	**4/4/2006**	**4/12/2006**	**4/13/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound						
2-Nitrophenol	NS	130 U	560 U	130 U	680 U	140 U
3-Nitroaniline	NS	76 U	330 U	75 U	400 U	81 U
Dimethyl phthalate	NS	56 U	250 U	56 U	300 U	60 U
2 4-Dinitrophenol	NS	130 U	550 U	130 U	670 U	130 U
Acenaphthylene	NS	45 U	1600	45 U	1600 J	110 J
2 4-Dinitrotoluene	NS	66 U	290 U	65 U	350 U	70 U
Acenaphthene	NS	61 U	2300	60 U	530 J	110 J
Dibenzofuran	NS	58 U	2000	58 U	500 J	69 J
4-Nitrophenol	NS	160 U	680 U	150 U	830 U	170 U
Fluorene	NS	47 U	2500	47 U	740 JM	90 J
4-Nitroaniline	NS	53 U	230 U	52 U	280 U	56 U
4-Bromophenyl phenyl ether	NS	56 U	250 U	56 U	300 U	60 U
Hexachlorobenzene	NS	54 U	240 U	53 U	290 U	57 U
Diethyl phthalate	NS	54 U	1200 J	53 U	290 U	57 U
4-Chlorophenyl phenyl ether	NS	51 U	220 U	50 U	270 U	54 U
Pentachlorophenol	NS	320 U	1400 U	310 U	1700 U	340 U
n-Nitrosodiphenylamine	NS	55 U	240 U	55 U	290 U	58 U
4 6-Dinitro-2-methylphenol	NS	260 U	1200 U	260 U	1400 U	280 U
Phenanthrene	NS	510	18000	220 J	12000	1600
Anthracene	NS	75 J	4600	60 U	2500	320 J
Carbazole	NS	54 U	2200	53 U	840 J	120 J
Di-n-butyl phthalate	NS	48 U	210 U	48 U	260 U	51 U
Fluoranthene	NS	1000	16000	320 J	17000	2600
Pyrene	NS	1100	15000	360 J	14000	2100
Butyl benzyl phthalate	NS	66 J	210 U	47 U	250 U	50 U
Benzo(a)anthracene	NS	560	8500	180 J	9200	1300
Chrysene	NS	620	7500	180 J	8500	1400
3 3-Dichlorobenzidine	NS	98 U	430 U	97 U	520 U	100 U
Bis(2-ethylhexyl)phthalate	NS	69 J	210 U	48 U	260 U	51 U

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-46(0-6)** **212581-001** **1** **4/4/2006** **ug/Kg**		**B-47(10-18)** **212628-001** **4** **4/10/2006** **ug/Kg**		**B-52(0-6)** **212581-002** **1** **4/4/2006** **ug/Kg**		**B-53(0-6)** **212660-002** **5** **4/12/2006** **ug/Kg**		**B-54(0-6)** **212660-003** **1** **4/13/2006** **ug/Kg**	
Di-n-octyl phthalate	NS	39	U	170	U	38	U	200	U	41	U
Benzo(b)fluoranthene	NS	620		7800		190	J	5700		1500	
Benzo(k)fluoranthene	NS	41	U	2000	H	51	J	6500		530	
Benzo(a)pyrene	NS	310	J	7900		130	J	7300		1300	
Indeno(1 2 3-cd)pyrene	NS	190	J	6300		140	J	4800		770	
Dibenzo(a h)anthracene	NS	48	JM	1900		40	U	1800	J	200	J
Benzo(ghi)perylene	NS	200	J	7300		150	J	4800		740	
Total SVOCs	**40,000,000**	5,368		119,200		1,921		98,310		14,944	

TABLE 2B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
1 - Waste classification criteria provided by Clean Earth, of Philadelphia, PA.
ug/Kg - micrograms per kilogram = parts per billion (ppb).
U - Analyte was not detected at or above the reporting limit.
J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
M - concentration calculated using manual integration.
NS - No standard.

TABLE 3
PESTICIDES AND HERBICIDES IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	TCLP Limits As Defined By 40-CFR[1] mg/L	B-20(0-6) 212630-002 1 4/10/2006 mg/L	B-21(0-6) 212630-001 1 4/10/2006 mg/L	B-22(0-6) 212628-002 1 4/10/2006 mg/L	B-23(0-6) 212660-004 1 4/13/2006 mg/L	B-24(0-6) 212660-005 1 4/13/2006 mg/L	B-25(0-6) 212660-001 1 4/12/2006 mg/L
Herbicides							
2,4,5-TP (Silvex)-TCLP	1	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U
2,4-D-TCLP	10	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Pesticides							
gamma-BHC (Lindane)-TCLP	0.4	0.000026 U	0.000026 U	0.000026 U	0.000026 U	0.000026 U	0.000026 U
Heptachlor-TCLP	0.008	0.000039 U	0.000039 U	0.000039 U	0.000039 U	0.000039 U	0.000039 U
Heptachlor epoxide-TCLP	0.008	0.000028 U	0.000028 U	0.000028 U	0.000028 U	0.000028 U	0.000028 U
Endrin-TCLP	0.02	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U
Methoxychlor-TCLP	10	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Toxaphene-TCLP	0.5	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
Chlordane-TCLP	0.03	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U

TABLE 3
PESTICIDES AND HERBICIDES IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**TCLP Limits As Defined By 40-CFR[1] mg/L**	**B-26(0-6) A6C310123001 1 3/28/2006 mg/L**	**B-29(0-6) A6C310123002 1 3/28/2006 mg/L**	**B-43(0-6) 212519-001 1 3/30/2006 mg/L**	**B-43(6-14) 212519-002 1 3/30/2006 mg/L**	**B-44(0-6) 212555-001 1 4/3/2006 mg/L**	**B-44(6-14) 212555-002 1 4/3/2006 mg/L**
Herbicides							
2,4,5-TP (Silvex)-TCLP	1	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U
2,4-D-TCLP	10	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Pesticides							
gamma-BHC (Lindane)-TCLP	0.4	0.000026 U	0.000026 U	0.000026 U	0.000026 U	0.000026 U	0.000026 U
Heptachlor-TCLP	0.008	0.000039 U	0.000039 U	0.000039 U	0.000039 U	0.000039 U	0.000039 U
Heptachlor epoxide-TCLP	0.008	0.000028 U	0.000028 U	0.000028 U	0.000028 U	0.000028 U	0.000028 U
Endrin-TCLP	0.02	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U
Methoxychlor-TCLP	10	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Toxaphene-TCLP	0.5	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
Chlordane-TCLP	0.03	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U

TABLE 3
PESTICIDES AND HERBICIDES IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	TCLP Limits As Defined By 40-CFR[1] mg/L	B-46(0-6) 212581-001 1 4/4/2006 mg/L	B-47(10-18) 212628-001 1 4/10/2006 mg/L	B-52(0-6) 212581-002 1 4/4/2006 mg/L	B-53(0-6) 212660-002 1 4/12/2006 mg/L	B-54(0-6) 212660-003 1 4/13/2006 mg/L
Herbicides						
2,4,5-TP (Silvex)-TCLP	1	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U
2,4-D-TCLP	10	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Pesticides						
gamma-BHC (Lindane)-TCLP	0.4	0.000026 U	0.000026 U	0.000026 U	0.000026 U	0.000046 JM
Heptachlor-TCLP	0.008	0.000039 U	0.000039 U	0.000039 U	0.000039 U	0.000039 U
Heptachlor epoxide-TCLP	0.008	0.000028 U	0.000028 U	0.000028 U	0.000028 U	0.000028 U
Endrin-TCLP	0.02	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U
Methoxychlor-TCLP	10	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Toxaphene-TCLP	0.5	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
Chlordane-TCLP	0.03	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U

TABLE 3
PESTICIDES AND HERBICIDES IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1- Non hazardous waste as defined by the Federal Code of Regulations for hazardous waste (40 CFR) using the Toxicity Characteristic Leaching Procedure (TCLP).

Exceedences are highlighted in bold font.

mg/L - micrograms per liter = parts per million (ppm).

J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).

M - concentration calculated using manual integration.

U - Analyte was not detected at or above the reporting limit.

TABLE 4
POLYCHLORINATED BIPHENYLS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth Philadelphia Acceptance Criteria[1]**	**B-20(0-6)**	**B-21(0-6)**	**B-22(0-6)**	**B-23(0-6)**	**B-24(0-6)**	**B-25(0-6)**
Lab Sample ID		**212630-002**	**212630-001**	**212628-002**	**212660-004**	**212660-005**	**212660-001**
Dilution		**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled		**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**	**4/12/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound							
Aroclor 1016	NS	3.1 U	3.6 U	3 U	3 U	3.3 U	3.2 U
Aroclor 1221	NS	1.7 U	2 U	1.6 U	1.7 U	1.8 U	1.7 U
Aroclor 1232	NS	2.1 U	2.4 U	2 U	2 U	2.2 U	2.1 U
Aroclor 1242	NS	3.3 U	3.9 U	3.2 U	3.2 U	3.5 U	3.4 U
Aroclor 1248	NS	3 U	3.5 U	2.8 U	2.9 U	3.2 U	3.1 U
Aroclor 1254	NS	1.3 U	9.6 JM	46	1.3 U	1.4 U	1.4 U
Aroclor 1260	NS	4.4 U	5.2 U	88	4.3 U	15 JM	24 M
Total PCBs	**50,000**	ND	10	134	ND	15	24

TABLE 4
POLYCHLORINATED BIPHENYLS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **ug/Kg**	**B-26(0-6)** **212491-001** **1** **3/28/2006** **ug/Kg**		**B-29(0-6)** **212491-002** **1** **3/28/2006** **ug/Kg**		**B-43(0-6)** **212519-001** **1** **3/30/2006** **ug/L**		**B-43(6-14)** **212519-002** **1** **3/30/2006** **ug/L**		**B-44(0-6)** **212555-001** **1** **4/3/2006** **ug/Kg**		**B-44(6-14)** **212555-002** **1** **4/3/2006** **ug/Kg**	
Aroclor 1016	NS	3.3	U	3.1	U	3.2	U	3.1	U	3.2	U	3.1	U
Aroclor 1221	NS	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Aroclor 1232	NS	2.2	U	2.1	U	2.1	U	2	U	2.1	U	2.1	U
Aroclor 1242	NS	3.5	U	3.3	U	3.4	U	3.3	U	3.4	U	3.3	U
Aroclor 1248	NS	3.1	U	3	U	3.1	U	3	U	3.1	U	3	U
Aroclor 1254	NS	1.4	U	1.3	U	15	J	5.1	JM	35	M	8.4	JM
Aroclor 1260	NS	34	M	4.4	U	19	J	4.4	U	18	J	4.5	U
Total PCBs	**50,000**	34		ND		34		5		53		8	

TABLE 4
POLYCHLORINATED BIPHENYLS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-46(0-6)**	**B-47(10-18)**	**B-52(0-6)**	**B-53(0-6)**	**B-54(0-6)**
Lab Sample ID	**Philadelphia**	**212581-001**	**212628-001**	**212581-002**	**212660-002**	**212660-003**
Dilution	**Acceptance**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**Criteria[1]**	**4/4/2006**	**4/10/2006**	**4/4/2006**	**4/12/2006**	**4/13/2006**
Units	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**	**ug/Kg**
Compound						
Aroclor 1016	NS	3 U	3.5 U	3.1 U	3.3 U	3.3 U
Aroclor 1221	NS	1.7 U	1.9 U	1.7 U	1.8 U	1.8 U
Aroclor 1232	NS	2 U	2.3 U	2 U	2.2 U	2.2 U
Aroclor 1242	NS	3.2 U	3.7 U	3.3 U	3.5 U	3.5 U
Aroclor 1248	NS	2.9 U	3.3 U	3 U	3.2 U	3.1 U
Aroclor 1254	NS	55 M	1.5 U	3.7 JM	1.4 U	1.4 U
Aroclor 1260	NS	9.7 JM	36 M	4.4 U	35 M	4.7 U
Total PCBs	**50,000**	65	36	4	35	ND

TABLE 4
POLYCHLORINATED BIPHENYLS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1 - Waste classification criteria provided by Clean Earth, of Philadelphia, PA.
µg/Kg - micrograms per kilogram = parts per billion (ppb)
U - Analyte was not detected at or above the reporting limit.
J - Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
M - concentration calculated using manual integration.
NS - No standard.
ND - Not detected.

TABLE 5
TCLP METALS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-20(0-6)**	**B-21(0-6)**	**B-22(0-6)**	**B-23(0-6)**	**B-24(0-6)**	**B-25(0-6)**
Lab Sample ID	**Limits**	**212630-002**	**212630-001**	**212628-002**	**212660-004**	**212660-005**	**212660-001**
Dilution	**as defined by**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR[1]**	**4/10/2006**	**4/10/2006**	**4/10/2006**	**4/13/2006**	**4/13/2006**	**4/12/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound							
Arsenic-TCLP	5	0.0279 B	0.0195 U	0.0195 U	0.0195 U	0.0195 U	0.0195 U
Barium-TCLP	100	0.77	1.27	1.02	0.997	1.24	1.43
Cadmium-TCLP	1	0.008 B	0.0061 B	0.0177 B	0.0124 B	0.221	0.0772
Chromium-TCLP	5	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0065 U
Lead-TCLP	5	0.967	0.337	0.289	2.18	3.59	2.51
Mercury-TCLP	0.2	0.0009 U	0.0009 U	0.0009 U	0.0009 UN	0.0009 UN	0.001 BN
Selenium-TCLP	1	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Silver-TCLP	5	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U

TABLE 5
TCLP METALS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP Limits as defined by 40-CFR[1]** **mg/L**	**B-26(0-6)** **212491-001** **1** **3/28/2006** **mg/L**	**B-29(0-6)** **212491-002** **1** **3/28/2006** **mg/L**	**B-32 (0-14)** **Need to sample All other metals pass BUD criteria**	**B-43(0-6)** **212519-001** **1** **3/30/2006** **mg/L**	**B-43(6-14)** **212519-002** **1** **3/30/2006** **mg/L**	**B-44(0-6)** **212555-001** **1** **4/3/2006** **mg/L**
Arsenic-TCLP	5	0.021 B	0.0195 U		0.0195 U	0.0195 U	0.0195 U
Barium-TCLP	100	1.06	0.713		0.47	0.369	0.35
Cadmium-TCLP	1	0.102	0.0203 B		0.0055 U	0.0055 U	0.0055 U
Chromium-TCLP	5	0.0146 B	0.0065 U		0.0065 U	0.0065 U	0.0174 B
Lead-TCLP	5	**23.4**	**5.14**	0.139	0.274	0.244	0.264
Mercury-TCLP	0.2	0.0009 UN	0.0009 UN		0.0016 BN	0.0009 UN	0.0009 U
Selenium-TCLP	1	0.025 U	0.025 U		0.025 U	0.025 U	0.025 U
Silver-TCLP	5	0.0062 B	0.0055 U		0.0055 U	0.0055 U	0.0055 U

TABLE 5
TCLP METALS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**TCLP Limits as defined by 40-CFR[1] mg/L**	**B-44(6-14)** **212555-002** **1** **4/3/2006** **mg/L**
Arsenic-TCLP	5	0.0195 U
Barium-TCLP	100	0.407
Cadmium-TCLP	1	0.0055 U
Chromium-TCLP	5	0.0118 B
Lead-TCLP	5	0.182
Mercury-TCLP	0.2	0.0009 U
Selenium-TCLP	1	0.025 U
Silver-TCLP	5	0.0055 U

TABLE 5
TCLP METALS IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**TCLP**	**B-46(0-6)**	**B-47(10-18)**	**B-52(0-6)**	**B-53(0-6)**	**B-54(0-6)**
Lab Sample ID	**Limits**	**212581-001**	**212628-001**	**212581-002**	**212660-002**	**212660-003**
Dilution	**as defined by**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**40-CFR^1**	**4/4/2006**	**4/10/2006**	**4/4/2006**	**4/12/2006**	**4/13/2006**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Compound						
Arsenic-TCLP	5	0.0195 U	0.023 B	0.0195 U	0.0195 U	0.0195 U
Barium-TCLP	100	0.445	0.225	0.236	0.912	0.795
Cadmium-TCLP	1	0.0055 U	0.0055 U	0.0055 U	0.0179 B	0.0055 U
Chromium-TCLP	5	0.0233 B	0.0065 U	0.0065 U	0.0065 U	0.0065 U
Lead-TCLP	5	0.064	0.802	0.0912	**17**	0.137
Mercury-TCLP	0.2	0.0009 U	0.0009 U	0.0009 U	0.0009 UN	0.0009 UN
Selenium-TCLP	1	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U
Silver-TCLP	5	0.0055 U	0.0055 U	0.0055 U	0.0055 U	0.0055 U

TABLE 5
TCLP METALS IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
1 - The RCRA Toxicity Characteristic Leaching Potential (TCLP) maximum contaminant concentrations.
SB - Site Background
mg/L - milligrams per liter = parts per million (ppm)
U - Analyte was not detected at or above the reporting limit.
B - Value obtained from a reading that was less than the Contract Required Detection Limit (CRDL).
N - MS/MSD spike recovery exceeds control limits.

TABLE 6
SULFIDE, TOX, AND CYANIDE IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREE SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **mg/kg**	**B-21(0-6)** **212630-001** **1** **4/10/2006** **mg/Kg**	**B-20(0-6)** **212630-002** **1** **4/10/2006** **mg/Kg**	**B-22(0-6)** **212628-002** **1** **4/10/2006** **mg/Kg**	**B-23(0-6)** **212660-004** **1** **4/13/2006** **mg/Kg**	**B-24(0-6)** **212660-005** **1** **4/13/2006** **mg/Kg**	**B-25(0-6)** **212660-001** **1** **4/12/2006** **mg/Kg**
Reactivity Sulfide	ND	12 U	12 U	12 U	12 U	12 U	12 U
Total Extractable Organic Halogens	ND	35.4 U	35.7 U	36.6 U	37.3 U	40.7 U	38.6 U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria** **µg/Kg**	**B-20(0-6)** **212630-002** **1** **4/10/2006** **µg/Kg**	**B-21(0-6)** **212630-001** **1** **4/10/2006** **µg/Kg**	**B-22(0-6)** **212628-002** **1** **4/10/2006** **µg/Kg**	**B-23(0-6)** **212660-004** **1** **4/13/2006** **µg/Kg**	**B-24(0-6)** **212660-005** **1** **4/13/2006** **µg/Kg**	**B-25(0-6)** **212660-001** **1** **4/12/2006** **µg/Kg**
Reactivity Cyanide	ND	ND U	ND U	ND U	ND U	ND U	ND U

TABLE 6
SULFIDE, TOX, AND CYANIDE IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREE SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-26(0-6)** **212491-001** **1** **3/28/2006** **mg/Kg**	**B-29(0-6)** **212491-002** **1** **3/28/2006** **mg/Kg**	**B-43(0-6)** **212519-001** **1** **3/30/2006** **mg/Kg**	**B-43(6-14)** **212519-002** **1** **3/30/2006** **mg/Kg**	**B-44(0-6)** **212555-001** **1** **4/3/2006** **mg/Kg**	**B-44(6-14)** **212555-002** **1** **4/3/2006** **mg/Kg**
Reactivity Sulfide	12 U	12 U	12 U	12 U	12 U	12 U
Total Extractable Organic Halogens	35 U	35.5 U	38.1 U	34.5 U	35.1 U	35.3 U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-26(0-6)** **212491-001** **1** **3/28/2006** **µg/Kg**	**B-29(0-6)** **212491-002** **1** **3/28/2006** **µg/Kg**	**B-43(0-6)** **212519-001** **1** **3/30/2006** **µg/Kg**	**B-43(6-14)** **212519-002** **1** **3/30/2006** **µg/Kg**	**B-44(0-6)** **212555-001** **1** **4/3/2006** **µg/Kg**	**B-44(6-14)** **212555-002** **1** **4/3/2006** **µg/Kg**
Reactivity Cyanide	ND U	ND U	ND U	ND U	ND U	ND U

TABLE 6
SULFIDE, TOX, AND CYANIDE IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREE SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-46(0-6)** **212581-001** **1** **4/4/2006** **mg/Kg**	**B-47(10-18)** **212628-001** **1** **4/10/2006** **mg/Kg**	**B-52(0-6)** **212581-002** **1** **4/4/2006** **mg/Kg**	**B-53(0-6)** **212660-002** **1** **4/12/2006** **mg/Kg**	**B-54(0-6)** **212660-003** **1** **4/13/2006** **mg/Kg**
Reactivity Sulfide	12 U	12 U	12 U	12 U	12 U
Total Extractable Organic Halogens	33.5 U	37.7 U	35.2 U	37.7 U	38.3 U

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**B-46(0-6)** **212581-001** **1** **4/4/2006** **µg/Kg**	**B-47(10-18)** **212628-001** **1** **4/10/2006** **µg/Kg**	**B-52(0-6)** **212581-002** **1** **4/4/2006** **µg/Kg**	**B-53(0-6)** **212660-002** **1** **4/12/2006** **µg/Kg**	**B-54(0-6)** **212660-003** **1** **4/13/2006** **µg/Kg**
Reactivity Cyanide	ND U	ND U	ND U	ND U	ND U

TABLE 6
SULFIDE, TOX, AND CYANIDE IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
1 - Waste classification criteria provided by Clean Earth of Philadelphia, PA.
µg/Kg - micrograms per kilograms = parts per billion (ppb)
mg/Kg - milligrams per kilogram = parts per million (ppm)
U - Analyte was not detected at or above the reporting limit.
B - Compound was found in the blank and sample.
ND - Not detected

TABLE 7
pH, CORROSIVITY, AND IGNITABILITY IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria[1]** **pH Units**	**B-21(0-6)** **212630-001** **1** **4/10/2006** **pH Units**	**B-20(0-6)** **212630-002** **1** **4/10/2006** **pH Units**	**B-22(0-6)** **212628-002** **1** **4/10/2006** **pH Units**	**B-23(0-6)** **212660-004** **1** **4/13/2006** **pH Units**	**B-24(0-6)** **212660-005** **1** **4/13/2006** **pH Units**	**B-25(0-6)** **212660-001** **1** **4/12/2006** **pH Units**	**B-26(0-6)** **212491-001** **1** **3/28/2006** **pH Units**
pH	12.5 > pH >2	8.35	10.33	9.77	8.23	8.84	7.92	8.24
Corrosivity (pH Solid)	NO	NO	NO	NO	NO	NO	NO	NO

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Clean Earth Philadelphia Acceptance Criteria** **Pos/Neg**	**B-21(0-6)** **212630-001** **1** **4/10/2006** **Pos/Neg**	**B-20(0-6)** **212630-002** **1** **4/10/2006** **Pos/Neg**	**B-22(0-6)** **212628-002** **1** **4/10/2006** **Pos/Neg**	**B-23(0-6)** **212660-004** **1** **4/13/2006** **Pos/Neg**	**B-24(0-6)** **212660-005** **1** **4/13/2006** **Pos/Neg**	**B-25(0-6)** **212660-001** **1** **4/12/2006** **Pos/Neg**	**B-26(0-6)** **212491-001** **1** **3/28/2006** **Pos/Neg**
Ignitability	Negative	Negative	Negative	Negative	Negative	Negative	Negative	Negative

TABLE 7
pH, CORROSIVITY, AND IGNITABILITY IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-29(0-6)**	**B-43(0-6)**	**B-43(6-14)**	**B-44(0-6)**	**B-44(6-14)**	**B-46(0-6)**	**B-47(10-18)**
Lab Sample ID	**Philadelphia**	**212491-002**	**212519-001**	**212519-002**	**212555-001**	**212555-002**	**212581-001**	**212628-001**
Dilution	**Acceptance**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**Criteria[1]**	**3/28/2006**	**3/30/2006**	**3/30/2006**	**4/3/2006**	**4/3/2006**	**4/4/2006**	**4/10/2006**
Units	**pH Units**	**pH Units**	**pH Units**	**pH Units**	**pH Units**	**pH Units**	**pH Units**	**pH Units**
Compound								
pH	12.5 > pH >2	8.59	9.71	10.4	8.71	10.69	11.81	8.29
Corrosivity (pH Solid)	NO	NO	NO	NO	NO	NO	NO	NO

Client ID	**Clean Earth**	**B-29(0-6)**	**B-43(0-6)**	**B-43(6-14)**	**B-44(0-6)**	**B-44(6-14)**	**B-46(0-6)**	**B-47(10-18)**
Lab Sample ID	**Philadelphia**	**212491-002**	**212519-001**	**212519-002**	**212555-001**	**212555-002**	**212581-001**	**212628-001**
Dilution	**Acceptance**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Date Sampled	**Criteria**	**3/28/2006**	**3/30/2006**	**3/30/2006**	**4/3/2006**	**4/3/2006**	**4/4/2006**	**4/10/2006**
Units	**Pos/Neg**	**Pos/Neg**	**Pos/Neg**	**Pos/Neg**	**Pos/Neg**	**Pos/Neg**	**Pos/Neg**	**Pos/Neg**
Compound								
Ignitability	Negative	Negative	Negative	Negative	Negative	Negative	Negative	Negative

TABLE 7
pH, CORROSIVITY, AND IGNITABILITY IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID	**Clean Earth**	**B-52(0-6)**	**B-53(0-6)**	**B-54(0-6)**
Lab Sample ID	**Philadelphia**	**212581-002**	**212660-002**	**212660-003**
Dilution	**Acceptance**	**1**	**1**	**1**
Date Sampled	**Criteria[1]**	**4/4/2006**	**4/12/2006**	**4/13/2006**
Units	**pH Units**	**pH Units**	**pH Units**	**pH Units**
Compound				
pH	12.5 > pH >2	10.86	9.84	8.19
Corrosivity (pH Solid)	NO	NO	NO	NO

Client ID	**Clean Earth**	**B-52(0-6)**	**B-53(0-6)**	**B-54(0-6)**
Lab Sample ID	**Philadelphia**	**212581-002**	**212660-002**	**212660-003**
Dilution	**Acceptance**	**1**	**1**	**1**
Date Sampled	**Criteria**	**4/4/2006**	**4/12/2006**	**4/13/2006**
Units	**Pos/Neg**	**Pos/Neg**	**Pos/Neg**	**Pos/Neg**
Compound				
Ignitability	Negative	Negative	Negative	Negative

TABLE 7
pH, CORROSIVITY, AND IGNITABILITY IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1 - Waste classification criteria provided by Clean Earth, of Philadelphia, PA.
µg/Kg - micrograms per kilogram = parts per billion (ppb)
mg/Kg - milligrams per kilogram = parts per million (ppm)
U - Analyte was not detected at or above the reporting limit.
B - Compound was found in the blank and sample.

TABLE 8
PERCENT MOISTURE IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Commercial Source Soil Requirements (%)**	**B-22(0-6)A 212628-009 1 4/10/2006 %**	**B-22(0-6)B 212628-010 1 4/10/2006 %**	**B-22(0-6)C 212628-011 1 4/10/2006 %**	**B-22(0-6)D 212628-012 1 4/10/2006 %**	**B-22(0-6)E 212628-013 1 4/10/2006 %**	**B-22(0-6)F 212628-014 1 4/10/2006 %**	**B-26(0-6) 212491-001 1 3/28/2006 %**
% Solids	NS	86.4	88.7	85.3	84.1	83.5	84.8	83.4
% Moisture	15	13.6	11.3	14.7	**15.9**	**16.5**	**15.2**	**16.6**

TABLE 8
PERCENT MOISTURE IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Commercial Source Soil Requirements (%)**	**B-29(0-6)** **212491-002** **1** **3/28/2006** **%**	**B-29(0-6)A** **212491-003** **1** **3/28/2006** **%**	**B-29(0-6)B** **212491-004** **1** **3/28/2006** **%**	**B-29(0-6)C** **212491-005** **1** **3/28/2006** **%**	**B-29(0-6)D** **212491-006** **1** **3/28/2006** **%**	**B-29(0-6)E** **212491-007** **1** **3/28/2006** **%**
% Solids	NS	89.2	86.1	102	86.2	87.2	87.3
% Moisture	15	10.8	13.9	0.1	13.8	12.8	12.7

TABLE 8
PERCENT MOISTURE IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Commercial Source Soil Requirements (%)	B-26(0-6)A 212491-008 1 3/28/2006 %	B-26(0-6)B 212491-009 1 3/28/2006 %	B-26(0-6)C 212491-010 1 3/28/2006 %	B-26(0-6)D 212491-011 1 3/28/2006 %	B-44(0-6) 212555-001 1 4/3/2006 %	B-44(6-14) 212555-002 1 4/3/2006 %	B-44(0-6)A 212555-003 1 4/3/2006 %	B-44(0-6)B 212555-004 1 4/3/2006 %
% Solids	NS	85.1	84.5	86.7	90.4	87	88.4	86.7	87.7
% Moisture	15	14.9	**15.5**	13.3	9.6	13	11.6	13.3	12.3

TABLE 8
PERCENT MOISTURE IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	Commercial Source Soil Requirements (%)	B-44(0-6)C 212555-005 1 4/3/2006 %	B-44(0-6)D 212555-006 1 4/3/2006 %	B-44(0-6)E 212555-007 1 4/3/2006 %	B-44(0-14)A* 212555-008 1 4/3/2006 %	B-44(0-14)B* 212555-009 1 4/3/2006 %	B-44(0-14)C* 212555-010 1 4/3/2006 %	B-44(0-14)D* 212555-011 1 4/3/2006 %	B-44(0-14)E* 212555-012 1 4/3/2006 %
% Solids	NS	86.1	87.6	89.5	85.6	87.4	84.4	89	88.9
% Moisture	15	13.9	12.4	10.5	14.4	12.6	**15.6**	11	11.1

TABLE 8
PERCENT MOISTURE IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Commercial Source Soil Requirements (%)**	**B-43(0-6) 212519-001 1 3/30/2006 %**	**B-43(6-14) 212519-002 1 3/30/2006 %**	**B-43(0-6)A 212519-003 1 3/30/2006 %**	**B-43(0-6)B 212519-004 1 3/30/2006 %**	**B-43(0-6)C 212519-005 1 3/30/2006 %**	**B-43(0-6)D 212519-006 1 3/30/2006 %**	**B-43(0-6)E 212519-007 1 3/30/2006 %**	**B-43(6-14)A 212519-008 1 3/30/2006 %**
% Solids	NS	87.4	89.5	88.8	88.6	88.6	87.2	88.7	86.8
% Moisture	15	12.6	10.5	11.2	11.4	11.4	12.8	11.3	13.2

TABLE 8
PERCENT MOISTURE IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Commercial Source Soil Requirements (%)**	**B-43(6-14)B** **212519-009** **1** **3/30/2006** **%**	**B-43(6-14)C** **212519-010** **1** **3/30/2006** **%**	**B-43(6-14)D** **212519-011** **1** **3/30/2006** **%**	**B-43(6-14)E** **212519-012** **1** **3/30/2006** **%**	**B-46(0-6)** **212581-001** **1** **4/4/2006** **%**	**B-52(0-6)** **212581-002** **1** **4/4/2006** **%**	**B-46(0-6)A** **212581-003** **1** **4/4/2006** **%**	**B-46(0-6)B** **212581-004** **1** **4/4/2006** **%**
% Solids	NS	83.8	86.2	87.2	87	90.9	88.2	90.6	88.1
% Moisture	15	**16.2**	13.8	12.8	13	9.1	11.8	9.4	11.9

TABLE 8
PERCENT MOISTURE IN SOIL FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID Lab Sample ID Dilution Date Sampled Units Compound	**Commercial Source Soil Requirements (%)**	**B-46(0-6)C 212581-005 1 4/4/2006 %**	**B-46(0-6)D 212581-006 1 4/4/2006 %**	**B-47(10-18) 212628-001 1 4/10/2006 %**	**B-22(0-6) 212628-002 1 4/10/2006 %**	**B-47(10-18)A 212628-003 1 4/10/2006 %**	**B-47(10-18)B 212628-004 1 4/10/2006 %**	**B-47(10-18)C 212628-005 1 4/10/2006 %**	**B-47(10-18)D 212628-006 1 4/10/2006 %**
% Solids	NS	91.6	94.3	79.9	92.4	83	84.5	82.3	89.2
% Moisture	15	8.4	5.7	**20.1**	7.6	17	**15.5**	**17.7**	10.8

TABLE 8
PERCENT MOISTURE IN SOIL
FOR WASTE CLASSIFICATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Commercial Source Soil Requirements (%)**	**B-47(10-18)E** **212628-007** **1** **4/10/2006** **%**	**B-47(10-18)F** **212628-008** **1** **4/10/2006** **%**	**B-52(0-6)A** **212581-007** **1** **4/4/2006** **%**	**B-52(0-6)B** **212581-008** **1** **4/4/2006** **%**	**B-52(0-6)C** **212581-009** **1** **4/4/2006** **%**	**B-52(0-6)D** **212581-010** **1** **4/4/2006** **%**
% Solids	NS	83.7	84.8	88	88.4	87.3	80.6
% Moisture	15	**16.3**	**15.2**	12	11.6	12.7	**19.4**

March 23, 2006

Mr. Shaminder Chawla
Environmental Engineer 2
NYSDEC – Region 2
Division of Environmental Remediation
47-40 21st Street
Long Island City, New York 11101

Subject: **Remediation Work Plan**
BCP ID No. 231043
West 61st Street Site
New York, New York

Dear Mr. Chawla:

AKRF, Inc. (AKRF) is pleased to submit the enclosed Remediation Work Plan (RWP), Remediation Health and Safety Plan (RHASP), and a proposed Fact Sheet (# 3) for the West 61st Street Site, New York, New York. This plan addresses: collection and analytical procedures for waste characterization, petroleum-contaminated soil delineation, and post-excavation endpoint verification samples; management practices for the handling of on-site excavated soils, management of the vehicles entering, receiving the soil, and leaving the site; and the disposition of the soil removed from the Site.

All on-site activities will be undertaken in conformance with Remediation Health and Safety Plan (RHASP), included in Appendix A of this RWP. The RHASP also contains an Expanded Community Air Monitoring Plan, which is included as Appendix F. This same Expanded Community Air Monitoring Plan was previously included in the NYSDEC/NYSDOH-approved June 2005 HASP. The RHASP expands the previously approved June 2005 Revised HASP to include health and safety issues relating to the excavation, storage, and removal of soil of known chemical composition, and any additional unknown tanks encountered during excavation.

If you have any questions, please contact Project Manager Richard Gardineer, P.E. at 914-922-2369, or me at 646-388-9520.

Sincerely,
AKRF, Inc.

Michelle Lapin, P.E.
Senior Vice President

cc: Ms. Julia Guastella, NYSDOH
Mr. Bennet Schonfeld, Algin Management Company, LLC
David Freeman, Paul, Hastings, Janofsky & Walker LLP

March 23, 2006

Ms. Julia Guastella
Bureau of Environmental Exposure Investigation
Division of Environmental Health Investigation
NYSDOH
547 River Street, Room 300
Troy, NY 12180

Subject: **Remediation Work Plan**
BCP ID No. 231043
West 61st Street Site
New York, New York

Dear Ms. Guastella:

AKRF, Inc. (AKRF) is pleased to submit the enclosed Remediation Work Plan (RWP), Remediation Health and Safety Plan (RHASP), and a proposed Fact Sheet (# 3) for the West 61st Street Site, New York, New York. This plan addresses: collection and analytical procedures for waste characterization, petroleum-contaminated soil delineation, and post-excavation endpoint verification samples; management practices for the handling of on-site excavated soils, management of the hauling trucks entering, receiving the soil, and leaving the site; and the disposition of the soil removed from the Site.

All on-site activities will be undertaken in conformance with Remediation Health and Safety Plan (RHASP), included in Appendix A of this RWP. The RHASP also contains an Expanded Community Air Monitoring Plan, which is included as Appendix F. This same Expanded Community Air Monitoring Plan was previously included in the NYSDEC/NYSDOH-approved June 2005 HASP. The RHASP expands the previously approved June 2005 Revised HASP to include health and safety issues relating to the excavation, storage, and removal of soil of known chemical composition, and any additional unknown tanks encountered during excavation.

If you have any questions, please contact Project Manager Richard Gardineer, P.E. at 914-922-2369, or me at 646-388-9520.

Sincerely,
AKRF, Inc.

Michelle Lapin, P.E.
Senior Vice President

cc: Mr. Shaminder Chawla, NYSDEC
Mr. Bennet Schonfeld, Algin Management Company, LLC
David Freeman, Paul, Hastings, Janofsky & Walker LLP

AKRF, Inc.
440 Park Avenue South New York, NY 10016
212-696-0670

Submitted to:

Algin Management Co., LLC
64-35 Yellowstone Boulevard
Forest Hills, NY 11375

REMEDIATION WORK PLAN

West 61st Street Site

New York, New York

Project Number: 10321
BCP ID 231043

MARCH 2006

West 61st Site

NEW YORK, NEW YORK

Remedial Work Plan

NYSDEC BCP Number: C231043

AKRF Project Number: 10321

Prepared for:

Algin Management Company, LLC
64-35 Yellowstone Boulevard
Forest Hills, New York 11375

Prepared by:

AKRF Engineering, P.C.
440 Park Avenue South
New York, NY 10016
212-696-0670

Reviewed and Approved by:

MARCH 2006

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EXECUTIVE SUMMARY

The West 61st Street Site (the "Site") consists of approximately 62,500 square feet (approximately 1.44 acres) located on West 60th and 61st Streets between West End Avenue and Amsterdam Avenue in Manhattan, New York. The southwestern boundary of the Site is 100 feet east of west End Avenue and approximately 500 feet east of the Hudson River. Specifically, the Site consists of Block 1152, Lots 5, 8, 10, 11, 12, 13, 43, 52, 53, and 55. These parcels are currently occupied by vacant land, except for the northeastern corner of the Site, which is presently used as a commercial parking lot. Residential, industrial, institutional (three schools and a NYC Parks Department pool and community center), and commercial properties (an auto repair shop) are present in the surrounding neighborhood. The Site is located in an area currently going through a transformation from four and five-story residential, industrial, and commercial establishments, to schools and low-rise and high-rise residential buildings containing first-floor retail uses (stores).

The proposed development on the Site is a multi-tenant residential complex with low-rise and high-rise structures, located on the main area of the Site, between West 60th and 61st Streets. A two-level underground parking garage will be situated beneath two of the buildings. A recreation area, consisting of a tennis court and track, will be constructed on the northeastern portion of the Site, along West 60th Street. The intended use of this site is consistent with the current transition of this neighborhood and surrounding area.

A Phase I Environmental Site Assessment (ESA) was performed by AKRF on the Project Site in June 2003 to provide a preliminary Site evaluation to determine whether any existing environmental conditions or past Site uses could affect the intended Site use. The Phase I ESA Report included the findings of a Site inspection, the evaluation of available historical information, and the interpretation of relevant federal and State environmental databases. The Phase I ESA noted the presence of several above ground storage tanks and the likelihood of several below ground storage tanks. Former Site uses included a gasoline station, an automobile repair shop, an iron works, and automobile parking areas. The report also noted the presence of a commercial-industrial facility (Emsig) located east of Lot 13, which produced buttons and fabric. Records indicated that the facility generated metals and solvents in concentrations to be classified as hazardous wastes, and utilized two petroleum storage tanks during it operation from 1926 to 2003. The Phase I ESA identified several recognized environmental conditions (e.g., on-site tanks and previous uses of the Site and the off-site Emsig facility), and recommended that additional information be gathered to further assess the Site.

In October of 2004, Algin Management Company, LLC (Algin) submitted an application to the New York State Department of Environmental Conservation (NYSDEC) to participate in the Brownfield Cleanup Program as a volunteer and was approved to participate in early 2005. Under this agreement, Algin performed a NYSDEC- approved and New York State Department of Health (NYSDOH)-approved remedial site investigation in late summer and early fall of 2005, and submitted a Remedial site Investigation Report (RIR) in January 2006. An Interim Remedial Measure Work Plan was submitted to NYSDEC and NYSDOH in February 2006 to remove one or more suspected underground tanks at three locations, and to remove two distinct locations of contaminated soil containing lead and acetone. The Remediation Work Plan has been prepared to address the environmental conditions identified in the January 2006 RIR.

The remedial investigation activities that occurred at the Site included; a geophysical survey to identify underground tanks; the advancement of soil borings at 18 locations with the collection of two or more samples at each location and analysis for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and metals; the installation of 10 groundwater monitoring wells, with the collection of samples and analysis for VOCs, SVOCs, pesticides, PCBs and metals; and the installation of soil vapor probes with the collection and analysis of soil vapor samples for VOCs. The results of the remedial investigation indicated that underground tanks are suspected at three locations (two in Lot 43 and one in Lot 53), and possibly a fourth location in Lot 8. Elevated levels of lead were detected in the northeastern corner of Lot 43 and a slightly elevated concentration of acetone was detected at one location (MW-4) in Lot 5. Petroleum contamination was identified in the southern portion of the Site along West 60th Street. The groundwater flowing from the Site contained one volatile organic compound (benzene) and two pesticides (heptachlor epoxide and 4,4' DDD) slightly above groundwater quality standards. Several metals were identified in concentrations exceeding groundwater standards. The RIR stated that the Site does not pose a significant threat to public health or the environment and indicated that the proposed remedy (construction of the proposed project and removal of contaminated soil) would remove on-site contamination to NYSDEC/NYSDOH standards such that the future occupants would not be exposed to any contaminants remaining at the Site, and any remaining contaminants would not pose a future off-site environmental or health threat.

This Remediation Work Plan includes measures to remove sources of contamination including: underground tanks; contaminated soil directly around the tanks; petroleum-contaminated soil; historic (urban) fill; and construction and demolition debris within the proposed cellar and sub-cellar. In addition, excavation of fill material is necessary in the recreation area and the courtyard to achieve desired elevations for development. Soil beneath the limits of excavation will be tested to ensure that they meet NYSDEC-approved limits in Technical and Administrative Guidance Memorandum (TAGM) # 4046 Recommended Soil Cleanup Objectives (RSCOs) or the allowable site specific soil limits proposed in this document. Another important feature in the Remediation Work Plan is the immediate post-excavation construction of the building foundation and cellar/sub-cellar walls to prevent and/or minimize the recontamination of the remediated areas of the Site. The bottom elevation of the cellar of Building A and the sub-cellar of Buildings B and C are below the groundwater level. Immediate construction of the foundation and surrounding walls will prevent and/or minimize off-site contaminants from entering the Site and avert possible recontamination of the Site. The installation of the foundation and walls is necessary around the entire site, except the eastern section of Lot 43, which is elevated and is not subject to groundwater inflow. The groundwater is in the bedrock and will flow beneath this portion of the Site. To achieve this purpose, the proposed foundation and walls should be constructed: along West 60th Street; along the western property line of Lot 5; along the northern property line of Lot 5; along Building A facing Lot 8; along Building A facing Lots 55, 56, and 57; along Building B facing Lot 8; along Building C facing Lot 55, along the western property line of Lot 55; along West 61st Street; along Building C facing the eastern section of Lot 43 (existing parking lot); and along the eastern property line of Lot 13.

The Remediation Work Plan indicates that most of the excavated waste will be transported off-site to out-of-state facilities located in New Jersey and Pennsylvania. Only native soil to be used as backfill will be tested and approved by NYSDEC before its use. The RWP contains several appendices: a Remediation Health and Safety Plan (Appendix A), which addresses Community Air Monitoring to ensure that the surrounding community is protected from any vapors, dust or odors emitted during the excavation and loading of the on-site soil; a Quality Assurance Project Plan (Appendix C) to ensure that appropriate collection and analytical procedures are observed for any environmental or waste characterization sampling activities; a Sampling Plan (Appendix D) to ensure specific collection and analytical procedures are observed to meet the requirements of the facilities receiving the on-site soil and NYSDEC endpoint sample requirements; and a Soil Management Plan (Appendix E) to provide direction for excavation and any stockpiling of the excavated material, and truck waiting, loading and exiting procedures, including haul routes, and measures to minimize dust, odors and noise from the trucks.

1.0 INTRODUCTION

The West 61st Street Site (the "Site") consists of approximately 62,500 square feet located on West 60th and 61st Streets between West End Avenue and Amsterdam Avenue in Manhattan, New York (Figure 1). Specifically, the study Site consists of Block 1152, Lots 5, 8, 10, 11, 12, 13, 43, 52, 53, and 55 (Figure 2). These parcels are currently occupied by vacant land, except for the northeastern corner of the Site, which is presently used as a commercial parking lot. Residential, industrial, institutional (school), and commercial properties are present in the surrounding neighborhood.

A Phase I Environmental Site Assessment (ESA) performed by AKRF, Inc. (AKRF), in June 2003 identified Recognized Environmental Conditions (RECs) for the Site, including former and current land use and potential underground storage tanks. In October 2004, West 60th Street Associates, LLC, and West End Enterprises, LLC (the Volunteer), submitted an application to participate in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP). The Brownfield Cleanup Agreement for the Site was signed by the Volunteer in March 2005 and has been subsequently executed by NYSDEC. Under this agreement, the Volunteer prepared and submitted a Remedial Investigation Work Plan (RIWP), dated April 2005, which included the Phase I ESA, and a subsequent RIWP Addendum, dated June 2005, which were approved by the NYSDEC. These documents were prepared in compliance with NYSDEC Division of Environmental Remediation guidance document DER-10 and included digital submittals.

The Remedial Investigation (RI) commenced in late summer 2005, and was completed in early November 2005. The RI was performed in conformance with the BCP Guidance Document, DER-10, and a NYSDEC-prepared Cross-Reference Check List (Appendix J). The January 2006 Remedial Investigation Report (RIR) included the tabulated results of all Site investigation data and information. Specific tasks undertaken in this study included a Site-wide geophysical survey, excavation of three test trenches in Lot 8, and the collection and analysis of subsurface soil, groundwater, and soil vapor. A Conceptual Site Model, included as Appendix M of the RIR, explained the occurrence of contaminant sources and their fate and transport at the Site in context of the local Site stratigraphy and hydrogeology. The model utilized both plan views (Figures 6, 7, 9, 10, 11, and 17 of the RIR) and cross-sectional views (Figures 12, 12A 12B, 12C, and 12D of the RIR) of the Site. The potential off-site migration of on-site contaminants, and the potential effect on off-site receptors, are also evaluated in the Qualitative Human Health Exposure Assessment, included as Appendix L of the RIR.

The RIR indicated that the Site did not contain consequential amounts of hazardous waste and, therefore, did not pose a significant threat to public health and the environment. The groundwater leaving the southwestern corner of the Site contained benzene and two pesticides (4,4'-DDD and heptachlor epoxide) in concentrations slightly above their respective groundwater standards. Several metals, whose unfiltered (total metal) sample concentrations were above groundwater quality standards, were detected. Volatile organic compounds (VOCs) were present in the soil vapor collected at five locations around the Site, but were not considered to have an adverse health effect on the area surrounding the Site. Seven on-site Areas of Concern (AOCs) were identified in the RIR. Three identified AOCs are suspected locations of underground storage tanks, identified during the geophysical survey. A fourth tank, located in the basement of a former building, was not verified during the RI field work, but is still considered to be an AOC. The analysis of soil samples collected at two locations indicated the presence of lead and acetone in concentrations warranting removal. The lead was further tested through the Toxicity Characteristic Leaching Procedure (TCLP), and was determined to be a characteristic hazardous waste. The acetone is considered to be a non-hazardous industrial waste. The final on-site AOC identified was an area of apparent petroleum-contaminated soil and groundwater along West 60th Street.

An Interim Remedial Measure Work Plan (IRM), dated February 2006, has been submitted to clean up five of the AOCs. The three tank locations (AOC-2, AOC-3, and AOC-4) will be excavated. All liquids, semi-solids, and solids will be removed from the tanks. The tanks will be cleaned and removed and any contaminated soil will be removed. Each material will be transported to an approved disposal, processing, or recovery facility. Post-excavation samples will be collected to verify that all petroleum contamination has been removed from the surrounding fill. The lead-contaminated and acetone-contaminated soil will be excavated and transported off-site to approved disposal facilities. Post-excavation samples will be collected to verify that targeted contaminated soil has been removed. This work will be undertaken with an approved Construction Health and Safety Plan (CHASP), including a Community Air Monitoring Plan (CAMP).

The objectives of this Remedial Work Plan (RWP) are to: develop and conduct a sampling program to classify the existing material to be removed from the Site; evaluate the soil remaining at the Site to determine whether the soil meets Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs), or whether the soil will result in future off-site contamination; assess potential exposure pathways of on-site residual contamination; develop remedial goals for the Site; develop and evaluate appropriate remedial alternatives; and present a preliminary design of the preferred alternative. A complete description of the preferred alternative is presented in Section 3.6.3.

As required under the BCP, the Volunteer has prepared and provided the NYSDEC with a Fact Sheet describing the RWP to be distributed to the Site contact list. A 45-day public comment period will be observed to allow for public review of the document and for submission of comments. In addition, the approved RWP and the Fact Sheet will be made available in the document repository at the following locations:

Riverside Branch
New York Public Library
127 Amsterdam Avenue
New York, NY 10023-6447
(212) 870-1810

NYSDEC
One Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101
(718) 482-4897

2.0 SITE DESCRIPTION

2.1 SITE LOCATION

The 1.44-acre Site is located in western Manhattan, approximately 500 feet east of the Hudson River. It is contiguous between West 60th and 61st Streets, and is situated on the block between West End Avenue and Amsterdam Avenue. The Site consists of Block 1152, Lots 5, 8, 10, 11, 12, 13, 43, 52, 53, and 55. The eastern boundary of Lot 5 is approximately 100 feet east of West End Avenue, as shown on Figure 2.

2.2 SITE AND VICINITY CHARACTERISTICS

The Site is located in an area currently going through a transformation from residential, industrial, and commercial establishments, to schools and residential buildings containing first-floor retail uses (stores). Past and present commercial establishments in the area have included gasoline stations, automobile repair shops, a fabric/button manufacturer that generated hazardous wastes, and a railyard. The immediate area around the Site currently contains residential buildings, three schools, a community center, and an auto repair shop.

2.3 NEARBY PUBLIC AREAS OF CONCERN

There are a number of residences and schools in close proximity to the Site. Residences and a public school are located across West 61st Street from the Site. A public school is located adjacent to Lot 43, along West 61st Street, at the intersection of West 61st Street and Amsterdam Avenue. Residential buildings are being constructed adjacent to Lot 13, along West 60th Street and at the southeastern corner of West 60th Street and West End Avenue. A New York City Parks Department pool is located across West 60th Street. A charter school is located on West 60th Street adjacent to Lot 5. The immediate area is shown on Figure 2; the surrounding area is shown on Figure 8.

2.4 SITE HISTORY

The regulatory databases, Fire Department records, electronic Building Department records, historical land-use maps, and visual inspections indicated that the subject block was developed prior to 1907 as residential, transitioned from primarily residential to commercial and industrial uses by the 1950s, and has remained commercial and industrial through the present.

A Phase I Environmental Site Assessment (ESA) was performed by AKRF on the Project Site in June 2003. The ESA report included the findings of a Site inspection, the evaluation of available historical information, and the interpretation of relevant federal and State environmental databases. The aboveground and underground storage tanks identified in the Phase I ESA are listed in Table 1. The pertinent findings of the June 2003 report are summarized below.

<u>Lot Uses</u>:

The building on Lot 5 was constructed prior to 1926, and had a partial basement used to house a fuel storage tank and a furnace. The most recent use of this structure was as a garage for the repair and maintenance of taxis. The most recent inspection prior to the Remedial Investigation (RI) identified three 275-gallon tanks on the first floor used to store engine oil, transmission fluid, and used engine oil. A 1,080-gallon vaulted aboveground storage tank was observed in the basement. The building was demolished during the RI field activities.

Lot 8 was occupied by two four-story brick residential buildings with basements. In 1926, the building was identified as containing one 550-gallon underground storage tank. In 1940, New York City (NYC) Building Department records indicated the installation of a gasoline tank, but Site interviews did not confirm the presence of the underground storage tank. In 1961, a City permit for a fuel oil burner was issued and the presence of a 1,050-gallon tank was verified by a previous Site inspection. The building also contained one 55-gallon drum and 8 empty 55-gallon drums. This building was demolished prior to the RI.

Lot 10 was occupied by a vacant one-story building constructed between 1926 and 1951. Historically, this parcel was initially occupied by a four-story residential building, followed by an auto repair shop, followed by a one-story packing case manufacturer, and then by unknown occupants. During the Site visit, one 275-gallon waste oil aboveground storage tank was observed. The building contained piles of debris consisting of auto parts, garbage, and construction debris. Building Department records indicated that a permit application was filed in 1950 to install a gasoline tank. It is unknown whether this gasoline tank was installed and whether it was present at the time of the inspection. This building was demolished before the RI.

Lot 11 contained a two-story brick building constructed between 1926 and 1951, and was occupied by N&P Auto Repair on the first floor with an employee break room on the second floor. Historically, this parcel was occupied by a four-story residential building, then residences and manufacturing, then a two-story auto repair shop, and finally by unknown occupants. During the Site visit, the first-floor garage contained small containers of spray paint, cases of motor oil, two hydraulic lifts with external hydraulic oil canisters, a small solvent degreasing station, and a radiator fluid wash bath. The floor was observed to be stained with automobile fluids and the shop was observed to generally practice poor housekeeping. The building reportedly had a crawl space, but it was inaccessible at the time of the inspection. The building was demolished during the RI field activities.

Lot 12 was occupied by a two-story brick building at the time of the inspection that contained an electrical contractor's office constructed between 1926 and 1951. Historically, this parcel was occupied by a four-story factory building with residences on the fourth floor, followed by a one-story iron works factory, and finally by unknown occupants. There was no evidence of current or historical on-site storage tanks. The building was demolished during the RI field activities.

Lot 13 was occupied by a gravel parking lot used for taxicab parking and a small elevated office in the rear of the lot. Historically, this parcel was occupied by a total of four separate four-story, residential buildings with ground-floor retail uses. The lot was then used for two separate periods as a two-story auto repair shop, and became a vacant lot in 2001. The 1926 historical (Sanborn) map indicated that a 1,000-gallon gasoline underground storage tank was located on the Site. This parcel was listed for three 550-gallon diesel underground storage tanks installed in 1969 on the regulatory database. Their registration expired in 1993. Records maintained by the Fire Department revealed that a permit for three 550-gallon tanks filed in 1984 expired in 1989. These are likely the same tanks listed in the regulatory database. It is unknown whether or not these tanks had been removed or remained on the parcel at the time of the Site inspection. During the Site visit, no evidence of on-site tanks, such as fill caps or vent pipes, was observed. The Phase I ESA noted the presence of a manufacturer directly uphill from and adjacent to this lot. Discharges from this adjacent off-site property, the former Emsig Manufacturing, may have affected on-site conditions. The building was demolished during the RI field activities.

Lot 43 is presently occupied by a gravel paved lot used for commercial parking. Historically, this parcel was occupied by nine five-story residential buildings until 1926. The lot was then used for parking and as a gasoline station with a small one-story office. It was then a vacant lot from 1976 to 1986, at which time it became a commercial parking lot. NYC Building Department records indicated that an unspecified number of gasoline tank installation permits were applied for in 1947. These permits are most likely associated with the former on-site gasoline station noted on the 1951 Sanborn map. The Phase I ESA stated that these tanks apparently remained in place. The one-story office has not been demolished.

Lot 52 contained a one-story concrete block and brick building used by 3G Studio Corporation for soundstage and set building activities. This building was constructed sometime between 1907 and 1926. There was no evidence to indicate the current presence of petroleum or chemical storage tanks on-site. Historically, this parcel was occupied by a one- to two-story building with a storefront, then a one-story auto repair shop, followed by a metal works factory (c. 1951), and then a one-story building with unknown occupants just prior to its most recent use by 3G Studios. Storage tanks may have been in use on-site in the past, but there were no records to indicate any such tanks. The building was demolished during the RI field activities.

Lot 53 contained a one-story brick building with a basement. It was attached to the building on Lot 52, and was also most recently used by 3G Studio Corporation for soundstage and set building activities. This building was constructed between 1926 and 1951, and was occupied by two five-story residential buildings, followed by a one- to two-story garage, and finally the one- to two-story soundstage. NYC Building Department records indicated that a gasoline tank installation permit was applied for in 1950. Site interviews indicated that there were no active gasoline tanks on-site. The Phase I ESA was unable to ascertain whether this tank was installed, and if so, whether it was subsequently removed. The building was demolished during RI field activities.

Lot 55 was most recently occupied by a gravel and paved lot containing parked trucks and cars. This parking area was used by the east-adjacent 3G Studio Corporation. There was no evidence to suggest the presence of chemical or petroleum storage tanks. Historically, this parcel was occupied by a five-story residential building, and was then used as a parking lot. The former residential building may have utilized a fuel oil storage tank; however, no records indicated such usage.

During the June 2003 Phase I ESA Site inspection, buildings were present on seven of the ten Site lots. Since that time, the Site buildings have been demolished; all that remains is a one-story guard shack located in the eastern portion of the Site on Lot 43, along West 61st Street. Concrete slabs have been left in place on Lots 5 and 53. After demolition of the buildings, the Site was graded with on-site construction and demolition (C&D) debris to match the surrounding ground surface elevation. Three aboveground storage tanks from Lots 5 and 12 were closed and disposed of off-site prior to the demolition.

2.5 OFF-SITE HISTORY

The area around the Site contained tenement houses and some commercial establishments, such as an auto repair shop, a parking garage with gasoline tanks, a gasoline station, a brewing company, a junkyard, a bakery, and a public bathhouse. In subsequent years, two public schools were constructed on West 61st Street, and a charter school was constructed on West 60th Street. From 1926 to approximately June 2003, Emsig Manufacturing, a factory that produced buttons and fabrics, operated adjacent to the Lot 13. Emsig Manufacturing, listed as a hazardous waste generator, used acetone and styrene in their manufacturing process, generating wastes such as ignitable, corrosive, solvents, plating wastes, and metals including barium and chromium. The property contained two 3,000-gallon fuel oil storage tanks. The original structure was demolished and the property is presently being developed as an apartment building.

2.6 DESCRIPTION OF CONTEMPLATED SITE USE

The proposed development on the Site is a multi-tenant residential complex with low-rise and high-rise structures, located on the Main Area of the Site, between West 60th and 61st Streets. A two-level underground parking garage would be situated beneath two of the buildings (Buildings B and C). A recreation area, consisting of a tennis court and track, would be constructed on the Eastern Area of the Site, along West 60th Street. The layout of these contemplated uses is shown on Figure 4.

2.7 SITE GEOLOGY, HYDROGEOLOGY, AND SUBSURFACE CHARACTERISTICS

The surface topography at the Site and the surrounding area slopes downward from east to west towards the Hudson River. Based on a Site survey by True North Surveyors, Inc., the property lies at an elevation of approximately 61 feet at its highest point, sloping westerly to an elevation of approximately 32 feet at its lowest point, based on the Borough of Manhattan Datum (Figure 6). Geotechnical engineering borings performed by RA Consultants (Appendix P of the Remedial Investigation Report [RIR]) indicate that the bedrock surface is variable and ranges from elevation 40.8 feet in the northeastern corner of the Site to elevation 0 at a point along West 61st Street near the northwestern corner (Figure 9). Depth to bedrock varies from 9.5 to 45 feet below ground surface. The geotechnical investigation indicated that the bedrock appears to undulate as well as slope. The bedrock consists of highly-weathered schist that is part of the Manhattan Formation.

The information gathered from the overburden and bedrock groundwater monitoring wells identified groundwater at depths of approximately ten to 16 feet below grade. In the bedrock aquifer, the groundwater elevations ranged from elevation 51 in the northeastern corner of the Site to elevation 31 in the southeastern corner. Based on this information, the estimated flow direction in the bedrock aquifer appears to be slightly towards the southwest. In the overburden aquifer, groundwater was not encountered in the Eastern Area of the Site. In the central portion to the western perimeter of the Site, the groundwater ranged from elevation 30 to elevation 15. Groundwater in the overburden aquifer appears to flow from the northeast to the southwest, ultimately discharging into the Hudson River. The groundwater flow at the Site is probably affected by one or more factors, which may include current and past pumping of groundwater; past filling activities; underground utilities and other subsurface openings or obstructions such as basements or underground parking garages; bedrock geology; and other factors. Groundwater in New York County is not used as a source of potable water.

2.8 NATURE AND EXTENT OF CONTAMINATION

2.8.1 Soil, Groundwater, and Soil Vapor Assessments

A geotechnical investigation was undertaken at the Site in February 2005 by RA Consultants. Sixteen borings were advanced to bedrock at various locations throughout the Site using rotary drill rigs. Four borings were drilled on the southern portion of the Site along West 60th Street: one boring (B-10) was placed in the southeastern corner of Lot 13; one boring (B-12) was placed in the southwestern corner of Lot 13; one boring (B-14) was located in the southern portion of Lot 8; and one boring (B-16) was placed in the sidewalk near the southwestern corner of Lot 3. The report and boring location map are included in Appendix P of the Remedial Investigation Report (RIR). Petroleum odors were noted in three of the boring logs (B-12, B-14, and B-16) and the report narrative. The petroleum odors were noted at depths ranging from 15 to 22 feet below the surface.

In the fall of 2005, a Remedial Investigation (RI) was undertaken at the Site. Between September 8 and 26, 2005, General Borings, Inc., of Prospect, Connecticut, advanced soil borings B-1 through B-18 at locations shown on Figure 4. A hollow-stem auger (HSA) rotary rig with a split-spoon sampler was used to advance the soil borings into the subsurface. All soil samples were characterized according to the Modified Burmeister soil classification system and screened for volatile organic compounds (VOCs) using a Thermo 580B Organic Vapor Meter (OVM) equipped with a photoionization detector (PID). Two or more soil samples from each boring were selected for laboratory analysis based on PID response and visual indications of contamination (e.g., staining, sheens, and odors). If no evidence of contamination was encountered during field screening, one soil sample was collected from the top two feet of the boring (referred to as a surficial sample), and the second soil sample was collected from the two-foot interval directly above the water table. At five locations (B-11, B-14, B-16, B-17, and B-18), a third soil sample was taken at approximately 20 to 25 feet below the surface. These deep samples were used to ascertain the soil quality near the bottom of the proposed excavations for the building construction. The collected soil samples were submitted to Severn Trent Laboratories, Inc. (STL), of Shelton, Connecticut, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory. Soil samples were analyzed for VOCs by Environmental Protection Agency (EPA) Method 8260, semi-volatile organic compounds (SVOCs) by EPA Method 8270, polychlorinated biphenyls (PCBs) by EPA Method 8081, pesticides by EPA Method 8082, and Target Analyte List (TAL) metals by EPA Methods 6000/7000 series.

Ten groundwater monitoring wells were installed between September 8 and 23, 2005, around the perimeter of the Site. Nine borings were converted into groundwater monitoring wells. Seven of these wells were installed in the overburden. At three locations where groundwater was not encountered in the overburden, the groundwater monitoring wells (MW-3, MW-5, and MW-9) were installed in the bedrock. Each groundwater monitoring well, consisting of two-inch diameter PVC, was installed with at least seven feet of the ten-foot slotted screen length below the groundwater level. Each well had a one-foot bottom-capped riser beneath the screen to act as a sump. In the southwestern corner of Lot 5, a second groundwater monitoring well (MW-7D) was installed such that the bottom of the screen was at the bedrock interface. This well was installed to check for dense non-aqueous phased liquids (DNAPLs), and to determine the vertical component of the groundwater flow. Immediately following installation, the monitoring wells were developed using dedicated polyethylene tubing connected to a submersible whale pump. During development, the water was periodically monitored for turbidity and water quality indicators (pH, temperature, dissolved oxygen, oxidation-reduction potential [ORP], and specific conductivity), with measurements collected approximately every five minutes. Development of the well was continued until turbidity was less than 50 nephelometric turbidity units (NTUs) for 3 successive readings, or until water quality indicators stabilized to within 10 percent for pH, temperature, and specific conductivity for 3 successive readings, or until at least 3 well volumes were purged from the well. All well development water was containerized in labeled 55-gallon drums to await off-site disposal.

Groundwater samples were collected at least one week following well development. Low flow sampling techniques were used based on the guidance in the USEPA Region II's Ground Water Sampling Procedure for Low Stress (Low Flow) Purging and Sampling, dated March 16, 1998. More than three well volumes of water were removed from each well, and the turbidity in each well was less than 50 NTUs. Groundwater samples were collected in laboratory-supplied containers according to EPA analytical protocols. Each sample was labeled, sealed, placed in a chilled cooler, and submitted to STL for analysis. Groundwater samples were analyzed for VOCs by EPA Method 8260, SVOCs by EPA Method 8270, PCBs by EPA method 8081, pesticides by EPA Method 8082, and TAL metals by EPA Methods 6000/7000 series (both filtered and unfiltered samples). The groundwater sampling logs are provided in Appendix G.

Seven soil gas vapor probes were installed at NYSDOH-approved locations on the Site between September 20 and 26, 2005. Shallow and deep gas vapor probes were installed at two locations. Due to the presence of bricks and rock in the upper soil or fill material, the soil vapor probes were installed using a 4.5-inch HSA. The shallow and deep holes were drilled to five feet and 12 feet, respectively. An approximately three-inch outside diameter split-spoon sampler was then lowered into the auger and driven six to seven inches below grade. The sampler was withdrawn and an assembly consisting of an anchor point, a six-inch stainless steel screen, and Teflon tubing was lowered into the hole. The three-inch hole was then backfilled with six to eight inches of coarse sand. Next, the hole was filled with hydrated bentonite chips to a depth of three feet below grade. The auger was then lifted several feet, and the hole was backfilled with hydrated bentonite chips, continuing until 12 inches below grade, which was then filled with a concrete mixture and completed with a seven-inch diameter flush-mount "road box."

The vapor probes were sampled for VOCs using EPA Method TO-15. A trip blank, selected at random from the prepared Summa canisters, was sent back to the laboratory, filled by certified clean air, and then analyzed along with the other canisters. Each day of sampling, a new Summa canister was set up in the center of the Site for the purpose of collecting a background sample. One duplicate sample was taken simultaneously with the standard sample at vapor probe 2-D using a "T-connection" device provided by the laboratory. The background samples were set up with eight-hour regulators, which was representative of background conditions during the entire sample collection period.

Prior to the collection of air samples into the Summa canisters, three volumes of air were evacuated at each vapor probe using a peristaltic pump and a Tedlar bag. Prior to the evacuation, the sampling point was covered with a three-foot by three-foot shroud or plastic sheet. A hole was cut in the center of the shroud and the Teflon tube was pulled through the shroud. A tube from a helium tank was placed under the shroud, the edges of the shroud were sealed, and the helium tank was opened. After the Tedlar bag was filled, methane, helium, and PID meters were used to monitor its contents. Helium gas was used as a trace gas for the detection of any leaks in the bentonite seal of the well. Since helium was not detected in any of the Tedlar bags, no additional measures were needed to ensure a proper seal.

2.8.2 Soil Contamination

The overburden soil at the Site, excluding the northeastern area located along West 61st Street, consists of two distinct layers. The upper layer, ranging from approximately 3 to 16 feet thickness, is urban fill material, consisting of rock, brick, silt, wood, and glass, with ash and slag. The lower layer is native soil comprises sand and silt with some gravel. The urban fill material was placed directly on the bedrock in the Eastern Area of the Site (presently used as a parking lot). The native soil varies in thickness from 6 to 26 feet in the Main Area of the Site, located between West 60th and 61st Streets. The two layers differ in chemical composition. Semi-volatile organic compounds (SVOCs), including carcinogenic polycyclic aromatic hydrocarbons (cPAHs), were detected in the 28 samples collected at the surface and below grade. The concentrations of one or more cPAHs at 20 sample locations were above the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs). Surficial samples of the fill material contained one VOC (acetone); no other VOCs were detected in the fill material. The fill material did not contain pesticides or polychlorinated biphenyls (PCBs). Each fill sample contained at least one metal above the applicable Eastern US Background. Zinc was identified in every sample at concentrations above the Eastern US background range. Other metals detected in concentrations above the Eastern US background range included aluminum, barium, cadmium, calcium, chromium, copper, lead, magnesium, mercury, and nickel. The native soil did not contain VOCs, SVOCs, pesticides, or PCBs. One or two metals were present in concentrations above Eastern US background concentrations. Two of the 14 native soil samples collected contained one VOC each: acetone and xylenes (total). Three samples contained one or more cPAHs (SVOCs). Eleven of the 14 native soil samples contained one or more metals in concentrations above the Eastern US background ranges; zinc was the most prevalent. Other metals present in the native soil in concentrations above the Eastern US background ranges were aluminum, barium, cadmium, calcium, chromium, lead, magnesium, mercury, and nickel.

The analytical data from B-17 and observations of staff during the drilling of the geotechnical and environmental borings in the southern portion of the Site along West 60th Street indicate the presence of petroleum in the soil. Elevated cPAHs were present in the two samples of native soil collected from boring B-17 at depths just above and below the apparent groundwater level. The source of this contamination has not been identified. Acetone was detected in soil samples collected at two locations, MW-4 (12’-14’) and MW-6 (0-2’). The Remedial Work Plan (RWP) includes additional soil sampling to provide in-situ sampling of the fill material and native soil at and above elevation 14.5 for classification and disposal options, and to determine the horizontal and vertical extent of the petroleum contamination along West 60th Street.

2.8.3 Groundwater Contamination

The groundwater flows through the Site generally from the east and northeast towards the southwest. The groundwater in the eastern (parking lot) and southeastern portions of the Site is present in the bedrock only. No volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, or polychlorinated biphenyls (PCBs) were detected at concentrations above New York Code of Rules and Regulations (NYCRR) Section 703.5, Groundwater Quality Standards and/or Technical and Operational Guidance Series (TOGS) 1.1.1. Four metals (aluminum, iron, manganese, and sodium) were present in the groundwater samples collected from these upgradient bedrock monitoring wells in concentrations above groundwater standards. Due to the sharp decrease in elevation of the bedrock, the bedrock groundwater discharges into the Site overburden (fill and native soil). Metals were detected in filtered and unfiltered samples taken from “intermediate” groundwater monitoring wells MW-1, MW-4, and MW-8. In two of these wells (MW-1 and MW-4), no VOCs, SVOCs, pesticides, or PCBs were detected above groundwater standards. The sample collected from MW-8 contained four VOCs (benzene, toluene, ethylbenzene, and xylenes [total]) in concentrations above groundwater standards. One SVOC (naphthalene) was detected at a concentration above its groundwater standard. MW-8 is approximately 80 feet downgradient of boring B-17, the location of the petroleum-contaminated material. This petroleum appears to be flowing on the groundwater table towards the southwestern corner of the Site. The samples collected from downgradient groundwater monitoring wells MW-6, MW-7, and MW-7D contained ten metals (aluminum, cadmium, chromium, iron, lead, magnesium, manganese, nickel, selenium, and sodium), analyzed from unfiltered samples, in concentrations above groundwater standards. Two pesticides (4,4’-DDD in MW-7 and heptachlor epoxide in MW-7D) were present in concentrations above groundwater standards. Benzene was present in a sample collected from MW-7 at a concentration above its groundwater standard at a concentration of 2.0 micrograms per liter [µg/L] or 1.0 µg/L. The presence of benzene in the groundwater at location MW-7 indicates that the petroleum contamination has migrated to the southwestern corner of the Site.

2.8.4 Soil Gas

Volatile organic compounds (VOCs) were detected in the soil vapor probes installed and sampled around the perimeter of the Site. The sample collected from soil vapor probe SG-3D, located near MW-8, contained one tentatively identified compound (TIC) (unknown VOC) at a concentration of 14,000 parts per billion per (1 Liter) volume (ppbv). This vapor probe was installed at a depth of approximately 12 feet below the surface, and was located in the area of the apparent petroleum contamination plume. This area will be excavated to bedrock as part of the construction of the parking garage. Samples collected from the other soil vapor probes contained numerous VOCs in concentrations ranging from one microgram per cubic meter [µg/m^3] to 390 µg/m^3, with a few TICs, ranging up to 690 ppbv. A number of the VOCs detected in the soil vapor were not found in the soil or groundwater. This indicates the existence of apparent off-site source(s) of VOCs, which have migrated beneath the Site. In all but two locations (the southeastern and northeastern corners [parking lot] of the Site) the construction of the cellar and sub-cellar will result in the removal of the fill material and, therefore, the structures will be below the groundwater level, thus eliminating any need for soil vapor management. The northeastern corner of the Site will be covered with asphaltic concrete, paving block, and/or two feet of soil for recreation and outdoor use. Therefore, soil vapor management will not be required. A cellar will be constructed to elevation 30 in the southeastern corner of the Site. The structure will be placed directly onto bedrock in half of this section; native soil will remain beneath the structure in the remainder of this section. This area will be further evaluated during the remedial design process to determine whether soil vapor management is needed.

3.0 ALTERNATIVES ANALYSIS

3.1 EXPOSURE ASSESSMENT

Potentially exposed populations and potential exposure pathways for on-site contamination are evaluated in this section. An exposure assessment for off-site contamination will be included in a separate off-site investigation. Exposure can only occur if there is a complete pathway from a specific chemical of concern contained in one of the on-site media to a receptor. The mere presence of a chemical at a site is not in itself evidence that a complete exposure pathway will exist. Based on results from the previous Site investigations, contaminated media at the Site include historic fill; contaminated soil (carcinogenic polycyclic aromatic hydrocarbons [cPAHs], pesticides, and metals); petroleum-contaminated soil; and petroleum-, pesticide-, and metal-contaminated groundwater. Potential receptors include: on-site environmental and construction workers for the proposed redevelopment, future residents of the proposed development, future on-site maintenance workers, off-site residents, off-site schoolchildren, off-site maintenance workers, and off-site surface water. Considering the use limitations already in place at the Site and in the surrounding area, the following potential exposure pathways are considered incomplete:

- *Groundwater ingestion:* New York City Code prohibits the use of groundwater for potable purposes; therefore, this exposure pathway is not complete for any current or future on-site or off-site receptors.
- *Soil dermal contact by future on-site residents:* Following Site redevelopment, direct contact with soil would be prevented by the total removal of all on-site soil containing contaminants with concentrations above Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs) if a Track 1 Cleanup is selected, or by the removal of on-site grossly contaminated soil and the presence of structures or impervious surfaces over the majority of the Site’s ground surface and two feet of clean fill material covering the small landscaped area in the north-central portion of the Site if a Track 4 Cleanup is selected.
- *Inhalation of vapor by future on-site residents:* The building will consist of a cellar and sub-cellar. Retail stores will be located on the first floor, with residences on the second floor and above. The bottom slab of the sub-cellar is located at an elevation below the groundwater level; vapors will not accumulate or penetrate through the slab. The cellar will be above the water level, but will be sealed to prevent vapor intrusion. An exhaust system will be constructed to vent the parking garage located in the cellar and sub-cellar; this will remove any potential vapor intrusion through the sidewalls above groundwater level. Direct exposure to soil vapors will not occur; the pathway is incomplete.

The following on-site pathways are considered potentially complete:

- *Soil dermal contact by on-site environmental and construction workers and future maintenance workers:* Proposed remediation and construction activities would involve excavation in areas of known soil contamination, which could result in direct contact with the soil. If a Track 4 Cleanup is selected, direct contact with contaminated soil could also occur during future maintenance activities requiring soil excavation (e.g., repair of utility lines or subsurface repair activities in the recreation area). If a Track 1 Cleanup is selected, the contaminated material will be removed and the pathway will be incomplete.
- *Groundwater dermal contact by on-site environmental and construction workers and future maintenance workers:* Proposed remediation and construction activities would involve excavation to below the water table, and dewatering, which could result in direct contact with contaminated groundwater. Future maintenance activities could also involve excavating below the water table, resulting in direct contact with groundwater. If a Track 1 Cleanup is selected, the on-site source of contaminants entering the groundwater will be

eliminated and the groundwater contamination will diminish such that the pathway for exposure in the future may become incomplete.

- *Incidental groundwater ingestion by on-site environmental and construction workers and future maintenance workers:* Remediation and construction workers could ingest small amounts of contaminated groundwater that would be exposed during remediation/ redevelopment activities. Incidental groundwater ingestion could also occur during non-potable groundwater use (e.g., for irrigation) by future maintenance workers.
- *Inhalation of particulates and vapors by on-site environmental and construction workers:* Proposed remediation activities involve disturbing contaminated soil, which could result in the release of contaminant-laden dust and contaminant vapors. Dust and contaminant vapors could be released during future maintenance activities requiring excavation.
- *Inhalation of particulates and vapors by off-site residents:* Dust and vapors released on-site during proposed remediation activities and future maintenance activities could migrate off-site, resulting in exposure to off-site residents.
- *Storm water runoff into the Hudson River:* Contaminated soil exposed during the early stages of the proposed remediation activities could become entrained in stormwater runoff, and subsequently enter the Hudson River through the City's stormwater sewer system.

3.2 REMEDIAL GOALS

The remedial goals for the West 61st Street Site are: to be protective of public health and the environment, given the intended use of the Site; to remove or eliminate on-site identifiable sources of contamination to the extent feasible, regardless of presumed risk or intended use of the Site; and to prevent future re-contamination from off-site sources, through the immediate construction and sealing of footings, sub-cellar walls, and cellar walls to prevent the flow of contaminated groundwater into the Site. These remedial goals are consistent with guidance for Brownfield (Voluntary) Cleanup Program sites in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation guidance document DER-10.

3.3 STANDARDS, CRITERIA, AND GUIDANCE

For unrestricted use of the Site (Track 1 Cleanup), contaminant levels in soil would need to be below Recommended Soil Cleanup Objectives (RSCOs) listed in Technical and Administrative Guidance Memorandum (TAGM) #4046. If a Track 4 Cleanup is selected, considering the contemplated Site use and anticipated institutional controls, Site Specific Soil Action Levels (SSSALs) have been developed that are considered consistent with the remedial goal of protection of human health and the environment. The SSSALs for benzene, toluene, ethylbenzene, and xlyene (BTEX); naphthalene; total volatile organic compounds (VOCs); and total semi-volatile organic compounds (SVOCs) are the RSCOs listed in TAGM #4046. The SSSALs for metals are based on Site and nearby background levels in the West 61st Street area. The SSSALs are summarized in Table 2.

A table summarizing the analytical results for all soil samples analyzed during the Supplemental Remedial Investigation (RI), additional delineation soil borings, and the soil pile characterization is provided in Appendix G. Soil and groundwater concentrations of metals and compounds exceeding TAGM #4046 RSCOs and 6 New York Code of Rules and Regulations (NYCRR) Section 703.5 Groundwater Quality Standards are shown in **bold**. Locations where soil contaminants exceeding the SSSALs are listed in Table 3 and are shown on Figure 15.

3.4 REMEDIAL OBJECTIVES

Based on the potentially complete exposure pathways identified in the exposure assessment and the remedial goals for the Site, remedial objectives have been established as follows:

- Remove Areas of Concern (AOCs) AOC-1, AOC-2, AOC-3, AOC-4, and AOC-7 by excavating known or suspected underground storage tanks, petroleum-contaminated soil around the tanks, lead-contaminated soil, and acetone-affected soil.
- Remove six feet of fill material (containing carcinogenic polycyclic aromatic hydrocarbons [cPAHs] and metals) from the northeastern portion of the Site, and all of the non-petroleum-contaminated fill material in the Main Area of the Site.
- Remove the petroleum-contaminated fill material and native soil along West 60th Street, whose benzene, toluene, ethylbenzene, xylene (BTEX); naphthalene; total volatile organic compound (VOC); and semi-volatile organic compound (SVOC) concentrations exceed Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs).
- Remove any on-site native soil or fill material with VOC, SVOC, pesticide, or polychlorinated biphenyl (PCB) concentrations exceeding TAGM #4046 RSCOs (for Track 1 Cleanup) or Site Specific Soil Action Levels (SSSALs) (for Track 4 Cleanup).
- Prevent future on-site re-contamination by preventing and/or minimizing the inflow of contaminated groundwater into the Site through the construction and waterproofing (with a vapor barrier) of footings, sub-cellar walls, and cellar walls. Specifically, these structures are needed to prevent contamination: along West 61st Street (Lots 43-55); along West 60th Street (Lots 5-13); along the eastern property line of Lot 13; along the western property line of Lot 55; along the northern property line Lots 5 and 8, and along the western property line of Lot 5. The barrier will not be required along the eastern property line of Lot 43, along the southern property line of Lot 43, or along the upper portion of Lot 43, which currently serves as a parking area. This portion of Lot 43 is elevated and does not have groundwater inflow within the overburden.
- Prevent on-site reuse of historic fill or native soil with VOC, SVOC, pesticide, or PCB concentrations exceeding TAGM #4046 RSCOs.
- Prevent inhalation of contaminant vapors and dust.
- Prevent direct contact with contaminants in soil and groundwater.
- Prevent storm water runoff during soil disturbing activities.

3.5 DEVELOPMENT OF REMEDIAL ALTERNATIVES

Two remedial alternatives were developed to achieve the remedial action objectives established for the Site, as described in this section. These alternatives are consistent with the Brownfield Cleanup Program (BCP) guidelines for a site determined not to pose a significant threat to public health or the environment.

Remedial Alternative #1: Track 1 Cleanup For Unrestricted Use

Alternative #1 involves conducting remedial activities to address subsurface soil and groundwater contamination through source removal. It will consist of excavating and disposing of all tanks, petroleum-contaminated soil, fill material, and native soil that contain contaminant concentrations above the applicable Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs). This would include removing the urban historic fill from the entire Site; and removing all known and discovered underground storage tanks, petroleum-contaminated soil, acetone-contaminated soil, lead-contaminated soil, and native soil exceeding TAGM #4046 RSCOs. Site controls, including a Health and Safety Plan (HASP), a Community Air Monitoring Plan, and an Erosion and Sediment Control Plan, would be implemented during remedial activities to prevent unacceptable exposure to Site workers, the surrounding community, and nearby surface water. The foundation, footings, and cellar/sub-cellar would be constructed after the removal of the contaminated soil and uncontaminated soil to the desired excavation elevations; the cellar/sub-cellar walls will limit and/or prevent the flow of contaminants in the groundwater from entering and re-contaminating the Site. Construction of this “containment wall” would begin immediately after the soil was removed to the desired construction elevation, and endpoint sampling indicated that no contaminants were present in concentrations above TAGM #4046 RSCOs. Consideration of this alternative fulfills New York State Department of Environmental Conservation (NYSDEC) guidance requiring analysis of a cleanup action that would result in unrestricted use of the Site.

Remedial Alternative #2: Track 4 Cleanup For Planned Use

Alternative #2 involves conducting remedial activities to address subsurface soil and groundwater contamination based on the intended or planned use for the Site. The extent of the removal of subsurface contaminants at the Site in this alternative would be to ensure that the occupants of the Site would not be exposed to contaminants left in place and that these contaminants will not create future off-site contamination or adversely affect public health or the environment. The Main Area of the Site will be redeveloped with residential buildings and a parking garage; the Eastern Area will be redeveloped for recreation use. The top six feet of fill material would be removed from the Eastern Area of the Site and covered with asphalt, pavers (walkway), or two feet of clean soil. Some fill material in the Main Area of the Site would remain in the courtyard area, provided that it does not contain contaminants in concentrations above the Site Specific Soil Action Levels (SSSALs). All suspected and discovered underground storage tanks, grossly petroleum-contaminated soil, and soil containing lead in a concentration exceeding the SSSAL would be removed. Petroleum-contaminated and acetone-contaminated soil found to exceed SSSALs would be removed. Site controls, including a HASP, Community Air Monitoring Plan (CAMP), and Storm Water Pollution Prevention Plan (SWPPP), would be implemented during remedial activities to prevent unacceptable exposure to Site workers, the surrounding community, and nearby surface water. The foundation, footings, and cellar/sub-cellar would be constructed after the removal of the contaminated soil and uncontaminated soil to desired excavation elevations; the cellar/sub-cellar walls will limit and/or prevent the flow of contaminants in the groundwater from entering and re-contaminating the Site. Construction of this “containment wall” would begin immediately after the soil was removed to the desired construction elevation, and endpoint sampling indicated that no contaminants were present in concentrations above the SSSALs. Institutional controls would be required to ensure minimal exposure through subsurface excavation in the recreation and courtyard areas, and those areas that are adjacent to the buildings. Consideration of this alternative fulfills NYSDEC guidance requiring analysis of the “Track 4 Cleanup” alternative.

3.6 ANALYSIS OF REMEDIAL ALTERNATIVES

3.6.1 Remedial Alternative #1: Track 1 Cleanup For Unrestricted Use

Overall Protection of Public Health and the Environment

Alternative #1 would provide overall protection of public health and the environment because all contaminants exceeding Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RCSOs) would be removed from the Site. In addition, future residents would not be exposed to contaminant vapors from off-site sources that may migrate from soil gas into the proposed residential building. There could be some exposure to on-site workers and residents during the remediation process. This will be mitigated through the sequencing of remedial activities and implementation of a Health and Safety Plan (HASP), including a Community Air Monitoring Plan. Prior to the removal of the fill material, the underground storage tanks, lead-contaminated soil, and acetone-contaminated soil will be removed by specialized workers who have undergone the 40-hour HAZWOPER Training. After removal of the fill material, the specialized workers will return to the Site to remove the petroleum-contaminated native soil. The construction workers would follow procedures of an approved Construction Health and Safety Plan (CHASP) to address measures to be observed if an underground storage tank or other unknown condition is discovered. The specialized workers would then return if such conditions are encountered.

Compliance with Standards, Criteria, and Guidance (SCGs)

Alternative #1 would comply with the Standards, Criteria, and Guidance (SCGs), because contaminants left in place would be at concentrations below TAGM #4046 RSCOs, which would be protective of public health, and would not result in groundwater or surface water violations.

Long-Term Effectiveness and Permanence

Alternative #1 would provide long-term effectiveness and permanence. All material above TAGM #4046 RSCOs would be removed.

Reduction of Toxicity, Mobility, or Volume with Treatment

Contaminant toxicity, mobility, and volume would be reduced if Alternative #1 is implemented, as all of the contaminated material that could create a potential adverse effect on public health or the environment would be removed.

Short-Term Effectiveness

Alternative #1 would provide short-term effectiveness because there would be controls in place, such as a CHASP and a Community Air Monitoring Plan (CAMP), to minimize direct exposure to contaminants by construction workers for the proposed development. In addition, controlled storm water runoff would prevent contaminants from entering nearby surface water.

Implementability

Alternative #1 requires approvals and permits prior to its implementation. This remedial work would be completed within eight months of the commencement of activities.

Cost

It is estimated that implementation of this Alternative would cost approximately $3,900,000.

3.6.2 Remedial Alternative #2: Track 4 Cleanup For Planned Use

Overall Protection of Public Health and the Environment

Alternative #2 would provide protection of public health and the environment, provided that all contaminants above Site Specific Soil Action Levels (SSSAL) are removed and institutional controls are implemented and maintained. Future residents would not be exposed to contaminant vapors from on-site or off-site sources that may migrate from soil gas into the proposed residential building, due to the location of the residences (second floor and higher) and the operation of the cellar/sub-cellar ventilation system. There could be some exposure to on-site workers and residents during the remediation process. This will be mitigated through the sequencing of remedial activities and the implementation of a Health and Safety Plan (HASP), including a Community Air Monitoring Plan (CAMP). Prior to the removal of the fill material, the underground storage tanks, soil containing lead in a concentration above SSSAL, and acetone-contaminated soil will be removed by specialized workers who have undergone the 40-hour HAZWOPER Training. After removal of the fill material, the specialized workers will return to the Site to remove the petroleum-contaminated native soil. The construction workers would follow procedures of an approved Construction Health and Safety Plan (CHASP) to address measures to be observed if an underground storage tank or some other unknown condition is discovered. The specialized workers would then return to the work area, if such conditions are encountered.

Compliance with Standards, Criteria, and Guidance (SCGs)

Alternative #2 would comply with the Standards, Criteria, and Guidance (SCGs), because contaminants at the Site would remain beneath the buildings and below the surface in the eastern (recreation) area, and would be at concentrations below SSSALs that would not result in future air or off-site groundwater quality standard violations.

Long-Term Effectiveness and Permanence

Alternative #2 would provide long-term effectiveness and permanence, provided that institutional controls are implemented, observed, and maintained.

Reduction of Toxicity, Mobility, or Volume with Treatment

Contaminant toxicity, mobility, and volume would be reduced if Alternative #2 is implemented, provided that institutional controls are implemented, observed, and maintained.

Short-Term Effectiveness

Alternative #2 would provide short-term effectiveness because there would be controls in place, such as a CHASP and a CAMP, to minimize direct exposure to contaminants by construction workers for the proposed development. In addition, controlled storm water runoff would prevent contaminants from entering nearby surface water.

Implementability

Alternative #2 requires approvals and permits prior to its implementation. This remedial work would be completed within eight months of the commencement of activities.

Cost

It is estimated that implementation of this Alternative would cost approximately $3,250,000.

3.6.3 Preferred Alternative

The comparison of both alternatives is based on the implementation, observance, and maintenance of the institutional controls to ensure that there is no worker exposure during any post-remediation excavation activities, and that cap or cover on the recreation area and the courtyard are maintained, and the basement exhaust ventilation system is operated and maintained. Both alternatives are equally protective of public health and the environment. Alternative #1 will meet all Standards, Criteria, and Guidance (SCG) on-site and off-site; Alternative #2 will not meet on-site SCG (subsurface soil) or on-site groundwater quality standards, but will not cause future off-site groundwater contravention or adversely affect the downgradient surface water (Hudson River). Both alternatives will provide long-term effectiveness and permanence. Alternative #1 will more effectively reduce toxicity and mobility through the removal of all contaminated material above TAGM RSCOs. The short-term effectiveness and implementability are the same for both alternatives. The cost for Alternative #1 is approximately $500,000 higher than Alternative #2.

Due to cost, Alternative #1 may not be the desired alternative for the entire Site. Three sections of the Site will be discussed regarding the preferred alternatives.

Eastern Area (Parking Lot)

Removal of all of the fill material in the Eastern Area (parking lot) of the Site is not necessary to protect public health and the environment. The area is outdoors and will remain so, and any potential volatile organic compounds (VOCs) in the soil vapor will not have an adverse health impact. The proposed Project includes the removal of six feet of fill material in this area, to be covered by an asphalt tennis court and surrounding asphalt track. The portion of this area along West 61st Street will be covered with pavers for the walkway and two feet of clean soil for ornamental gardens and grass (see Figure 4). Therefore, there is no direct exposure (dermal or ingestion) in this recreation area. The amount of vapors emanating from the soil does not appear to pose an inhalation problem. The cost to remove all additional fill material in this area to bedrock, and to transport and place clean soil, is approximately $475,000 Alternative #2 may be preferred for the Eastern Area of the Site.

Main Area (Buildings and Garage)

Alternative #1 is preferred for the Main Area of the Site, where the buildings are to be constructed. A Track 1 Cleanup is attainable. The cost between the two alternatives, excluding the removal of the soil in the courtyard, is not appreciable; the cost is approximately 2,850,000.

Courtyard Area (Along Western Border)

Both alternatives are protective for this area. The placement and maintenance of two feet of clean soil will prevent direct exposure (dermal and ingestion). The potential vapors emanating from the fill material does not appear to pose an inhalation problem. The cost of removing and replacing all of the fill material in this area compared to removing and replacing two feet is approximately $400,000. Alternative #2 may be preferred for this area.

4.0 REMEDIAL WORK PLAN

Both remedial alternatives involve excavating and disposing of urban fill, petroleum-contaminated soil, lead-contaminated soil above Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs), construction and demolition (C&D) debris in Lot 8, and all hydrocarbon-contaminated soil and historic fill that contain contaminant concentrations exceeding the Site Specific Soil Action Levels (SSSALs). The anticipated sequence of activities is as follows:

- Collect subsurface samples of the urban fill material, soil mixed with C&D debris in Lot 8, and native soil above the desired excavation elevation throughout the Site. Collect additional subsurface soil samples in the southern portion of the Site along West 60th Street (AOC-5 on Figure 4) to delineate the suspected petroleum-contaminated soil and groundwater. This information will be submitted to the selected disposal facility for waste acceptability review.
- Collect endpoint samples in the native soil below the anticipated vertical extent of excavation. In each of the borings drilled for waste classification, a third sample will be collected at a depth one to two feet below the anticipated elevation of excavation (e.g., elevation 14.0 for the sub-cellar and elevation 30.0 for the cellar).
- Conduct an Interim Remedial Measure (IRM) to excavate and remove the suspected underground storage tanks and any petroleum-contaminated soil around the tanks in Lots 43 and 53 (AOC-2, AOC-3, and AOC-4 on Figure 4). Remove the lead-contaminated soil at location B/MW-1 (0-2’) (AOC-1 on Figure 4), and remove the acetone-affected soil at B/MW-4 (12’-14’) (AOC-7 as shown on Figure 4). Depending upon the waste analysis by the disposal facility, the acetone-affected soil at location B/MW-7 (0-2’) may be removed.
- Remove six feet of fill material on the eastern or upper portion of Lot 43 to accommodate the recreation area. Excavate an additional 14 feet of fill material along the western edge of the Eastern Area of the Site to accommodate the basement exhaust system. If a Track 1 Cleanup is selected, additional soil will be excavated to bedrock.
- Remove fill material in the areas of the footprint of the building sub-cellar, and move fill to elevation 30.0 in the areas of the footprint of the building cellar. Remove material to elevation 37.0 in the courtyard area. If a Track 1 Cleanup is selected, all fill material exceeding TAGM #4046 RSCOs will be removed.
- Remove any underground storage tanks and petroleum-contaminated soil discovered during the removal of the fill material in accordance with the Construction Health and Safety Plan (CHASP).
- Remove the suspected petroleum-contaminated material (fill and native soil) along West 60th Street.
- Remove the native soil to the desired elevation.
- Conduct post-excavation verification sampling to determine compliance with the SSSALs (Track 4 Cleanup) or TAGM #4046 RSCOs (Track 1 Cleanup).

- Construct the foundations, footings, and cellar and sub-cellar walls with membrane sheet waterproofing/vapor barrier in each portion of the Site immediately after the surrounding soil is found to meet the selected cleanup track standards.

During the removal of the suspected petroleum-contaminated material, plastic sheeting and/or foam may be used during excavation of this area to contain odors and dust. A CHASP, a Community Air Monitoring Plan, and an Erosion and Sediment Control Plan will be implemented to ensure protection of Site workers, the surrounding community, and nearby surface water during the soil excavation activities. The cellar floor slab and walls may be constructed with a vapor protection material, and institutional controls will be implemented to prevent exposure to residual contamination that is left in place following soil removal if a Track 4 Cleanup is selected. All remediation work will be conducted in accordance with this Remedial Work Plan (RWP). Any development activities, such as the placement of footings or other foundation, conducted concurrently with the remediation activities will not interfere with the work described in this RWP. The various elements of the proposed remedial alternative are described in more detail in the following sections. Technical specifications for contractor implementation of the RWP are included as Appendix F.

4.1 SITE PREPARATION

4.1.1 Sediment and Erosion Control Measures

Sediment and erosion control measures will be installed at the Site prior to conducting any ground-intrusive work. These measures will be installed according to the requirements of the Erosion and Sediment Control Plan, and all applicable or relevant and appropriate federal, State, and local laws. The measures will provide for abatement and control of environmental pollution arising from proposed remediation and construction activities. The control measures will include silt fencing around the perimeter of the Site, drainage inlet protection, and stabilized construction (gravel) pads at each construction entrance.

4.1.2 Permanent Sheeting

Permanent interlocking steel sheeting may be installed around the southern, western, and northern perimeters of the Main Area of the Site to isolate the Site from potential off-site future contaminant migration. The sheeting will be driven into the native soil. The seams in the sheeting will be sealed with hydrocarbon-resistant Adeka gaskets (or equivalent) to prevent the infiltration of contaminants back onto the Site.

During soil remediation activities, the sheeting will serve to limit lateral and vertical migration of groundwater into the excavation area, thereby limiting the volume of dewatering fluids that will need to be treated and discharged. The sheeting will also serve to prevent collapse of the excavation sidewalls to ensure that the excavation areas will fit within the containment structures and allow excavation up to the property lines. During the remediation activities, fill material meeting the Site Specific Soil Action Levels (SSSALs) will be backfilled within the confines of the permanent sheeting (if a Track 4 clean up is selected), which will serve to further isolate potential contaminants from the surrounding environment.

4.1.3 Grading/On-Site Fill Material

After removal of the suspected petroleum-contaminated material, filling may be necessary to raise the excavated area to the desired elevation for the foundation. On-site fill material may be used to fill these depressed areas if it meets environmental and geotechnical criteria. In areas using a Track 4 Cleanup, only fill material demonstrated not to exceed Site Specific Soil Action Levels (SSSALs) will be utilized. In areas using a Track 1 Cleanup, only fill material demonstrated not to exceed Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs) will be utilized. This data will be from the pre-excavation in-situ testing, or from composite testing of segregated piles, if required. All soil stockpiling and grading activities will be performed in conformance with the Erosion and Sediment Control Plan.

4.1.4 Permits

All necessary permits will be obtained prior to commencing the remediation work. The required permits include:

- New York City Department of Sanitation (DOS) landfill permit (16 RCNY Chapter 3) for placement of clean fill;
- A New York City Department of Environmental Protection (NYCDEP) sewer connection permit (15 RCNY Chapter 19) for discharge of groundwater from dewatering operations to the City sanitary sewer;
- Filing of a Notice of Intent (NOI) with the New York State Department of Environmental Conservation (NYSDEC) to obtain coverage under New York State Pollutant Discharge Elimination System (SPDES) General Stormwater Permit for Construction Activity (Permit Number GP-02-01); and
- Submitting a permit application to the New York City Department of Buildings for excavation and foundation work to construct the footings, sub-cellar, and cellar walls.

4.2 SOIL REMOVAL

4.2.1 Extent of Soil Removal

The soil removal area will extend laterally and vertically to the limits of excavation, as shown on Figure 5. In the proposed recreation area located in the northeastern section of the Site, a minimum thickness of six feet of fill material (Track 4 Cleanup) will be excavated through the entire area (approximately 150 feet by 100 feet.) In the western portion of this area, an additional excavation of approximately 14 feet will be undertaken to place the ventilation system to elevation 39.6, as shown on Figure 14. In the Main Area of the Site, excavation to construct the cellar and sub-cellar will occur within the outline shown on Figure 5. Approximately three feet of fill material will be excavated in the courtyard area (see Figure 5) to elevation 37.0. If a Track 1 Cleanup is selected, the excavation for the cellar and the courtyard area will continue to the native soil. For a Track 4 Cleanup, the estimated amounts of material to be excavated and disposed of off-site are 31,000 cubic yards (cy) of fill material, 13,000 cy of native soil, 3,000 cy of bedrock, 5,000 cy of petroleum-contaminated material, 1,500 cy of construction and demolition (C&D) debris, 15 cy of acetone-affected soil, and 8 cy of lead-contaminated soil. A Track 1 Cleanup would require the additional excavation of approximately 6,500 cubic yards of fill material and native soil.

4.2.2 Excavation

All excavation and loading of soil will be performed on-site. The sequence involves the removal of five Areas of Concern (AOCs) (AOC-1, AOC-2, AOC-3, AOC-4, and AOC-

7), followed by the removal of the fill material throughout the Site. The petroleum-contaminated material (fill material and native soil) will then be removed, followed by the uncontaminated native soil. All material destined for off-site disposal will be loaded directly onto the haul vehicles, if possible. The only material that may be stockpiled would be the native soil. Any off-site fill material will be tested prior to transportation to the Site in accordance with the requirements of the intended receiving facility.

Endpoint sampling at the bottom of the excavation will occur prior to excavation. Additional endpoint samples will be taken, if required. Sidewall endpoint samples will be taken at the completion of excavation.

4.2.3 Dewatering

Dewatering will be performed as necessary to complete the proposed work. Submersible pumps will be used to pump groundwater from gravel-lined sumps dug at the bottom of the excavations. The chemicals present in the groundwater samples collected from groundwater monitoring wells MW-6, MW-7, MW-7D, and MW-8 are in concentrations below the maximum allowable limits set by the New York City Department of Environmental Protection (NYCDEP) for discharge into the combined sewers. A sample of the on-site water will be collected and analyzed for NYCDEP discharge parameters to ensure that effluent limitations are met. Additional sampling and analysis of the dewatering discharge will be completed as required by the NYCDEP. Analysis of the groundwater collected from three downgradient groundwater monitoring wells located in the southeastern corner of the Site, and one intermediate groundwater monitoring well located along West 61st Street, indicates that the collected water will meet the majority of the discharge limitations with the exception of total solids and total suspended solids. To address this issue, the collected on-site water will be pumped into a settling tank before being discharged into the sewer system.

Should the chemical analysis of future collected samples of the groundwater and/or surface water indicate exceedances of the discharge limits, the groundwater and surface water will be pumped to a treatment unit consisting of two settling tanks to remove suspended solids, a separator to remove free-phase product, if any, filters to remove suspended particles from the water stream, and liquid phase granulated activated carbon (GAC) units to remove dissolved organic contaminants. Vents in the holding tanks will be connected to a vapor phase GAC unit to remove volatile organic compounds (VOCs) from the vented air stream. The treated water will be discharged to the sanitary sewer through a sewer connection to the existing 12-inch New York City sanitary sewer under West 60th Street, or transported to an approved facility by a hauler with a valid 6 New York Code of Rules and Regulations (NYCRR) Part 364 Waste Transporter Permit. The sewer connection and discharge will be conducted under a sewer connection permit from the NYCDEP.

A sample of the treated water will be collected prior to the sewer connection at the time of system activation, and will be analyzed for NYCDEP discharge parameters to ensure that effluent limitations are met. Additional sampling and analysis of the dewatering discharge will be completed as required by NYCDEP. All waste materials from the water treatment system (e.g., spent carbon and bag filters, sediment from the settling tanks) will be characterized and disposed of at an appropriate waste receiving facility. No dewatering fluids will be recharged back to the land surface or subsurface of the Site.

4.2.4 Off-Site Disposal Facilities

The on-site fill material, native soil, construction and demolition (C&D) debris in Lot 8, and petroleum-contaminated material will be transported to facilities located in New Jersey and Pennsylvania. The fill material and native soil that meets the chemical and geotechnical criteria for beneficial reuse will be transported to either the EnCap-Meadowlands Redevelopment Site in Lyndhurst and Rutherford, New Jersey, or the Former Allied Signal Site in Elizabeth, New Jersey. Material that does not meet the criteria for acceptance for beneficial reuse will be transported to one or more of the following facilities: Soil Safe in Logan, New Jersey; Clean Earth of Philadelphia, Pennsylvania; and/or Clean Earth of Carteret, Inc., of Carteret, New Jersey.

If facilities located in New York State are selected, the various waste components will be classified consistent with applicable New York State regulations. Hazardous waste determination and classification will be based on 6 New York Code of Rules and Regulations (NYCRR) Part 360. Non-hazardous waste will be characterized consistent with 6 NYCRR Part 360. Based on these regulations the following tentative classifications are as follows: Municipal Waste – fill material, and native soil and bedrock containing contaminants in concentrations above Site background; C&D Debris – Lot 8; Petroleum-Contaminated Soil – any fill material, native soil, and C&D debris containing petroleum above TAGM; C&D Debris (“Exempt”) as defined in 6 NYCRR Subpart 360-7.1 – uncontaminated native soil and bedrock; and characteristic hazardous waste – any on-site material containing lead that exceeds the maximum allowable value for lead when analyzed by the Toxicity Characteristic Leaching Procedure (TCLP).

4.2.5 Trucking

All trucks hauling hazardous waste, non-hazardous industrial waste, and petroleum-contaminated waste will have valid waste transporter permits from the New York State Department of Environmental Conservation (NYSDEC) as per 6 New York Code of Rules and Regulations (NYCRR) Part 364, and any applicable permits required by the City of New York. The trucks will be fully lined and covered with plastic sheeting followed by a tarp. All loads will be covered before the trucks leave the Site. Each cover will be tight-fitting; loose-fitting canvas truck covers will be prohibited. If deemed necessary, Biosolve will be sprayed on the truckloads before placement of the cover.

The decontamination pads for the Main Area will be located at the eastern exit gate on West 60th Street, and at the exit gate currently serving the parking lot in the Eastern Area of the Site. At each point of egress, a pad composed of gravel or crushed stone will be constructed. At each gravel pad, soil will be washed off the exterior, undercarriage, and wheels of the trucks before leaving the Site. Wash water will be collected for treatment and disposal. Prior to leaving the excavation area, all petroleum-contaminated material containers and transport vehicles will be inspected for evidence of exterior contamination (including inside of wheels and undercarriage). Any such contamination will be removed on the decontamination pad before the truck exits the Site.

All trucks will enter the Site from West 60th Street whenever possible. Trucks picking up excavated material from the Eastern Area (parking lot) of the Site will enter from West 61st Street. Queuing of trucks will be performed on-site only. Trucks will not stop or idle in the neighborhood surrounding the Site. After loading, all trucks will proceed directly to Amsterdam Avenue (10th Avenue), travel north to West 66th Street, and then travel west on West 66th Street to West End Avenue (11th Avenue). From that location, the trucks will head either north to the Cross Bronx Expressway, or south to the Lincoln Tunnel. No stopping or staging in the neighborhood between the Site and the Lincoln Tunnel or the Cross Bronx Expressway will occur. The specified truck routes to and from the Site and the Lincoln Tunnel, and from the Site to the Cross Bronx Expressway, are shown on Figures 1 and 2 in Appendix E. The specific truck route(s) between the Site and the designated disposal facilities will be determined once the appropriate disposal facilities are identified.

4.2.6 Air/Odor Monitoring

Work zone air monitoring at and around the Site will be performed in accordance with the Remediation Health and Safety Plan (RHASP) provided in Appendix A. Air monitoring at the Site perimeter and in the surrounding community will be performed in accordance with a Community Air Monitoring Plan (CAMP) provided in Section 4.7 of the RHASP, and an Expanded Community Air Monitoring Plan and Odor/Vapor Control Plan, included as Appendix F in the RHASP. The CAMP specifies monitoring at the Site perimeter for organic vapors, particulates (PM_{10}), odors, and visible dust. Walk-around air monitoring, including downwind monitoring locations near the three neighborhood schools, will be conducted in accordance with the CAMP.

4.2.7 Endpoint Sampling

Endpoint samples will be collected from borings advanced during the waste characterization activities. The endpoint sample will be a grab sample, taken from a two-foot split-spoon sampler, driven two feet below the anticipated depth of excavation elevation. The samples will be collected at a rate of one sample for every approximately 1,800 square feet (an average grid size of 42 feet by 42 feet). The collected samples will be analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds, (SVOCs), TCL pesticides and polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals. The analysis will occur at an approved New York State Department of Health (NYSDOH)-approved laboratory using Category B Deliverables.

Endpoint samples in the area of the suspected petroleum contamination will be collected after the removal of the contamination consistent with the requirements of Division of Remediation guidance memorandum DER-10. For larger areas, a sample grid will be established and samples will be collected at a 30-foot interval (one sample per 900 square feet). The endpoint samples will be collected at 30-foot intervals (900 square feet). In the areas of petroleum contamination, sidewall samples will be taken at 30-foot intervals (900 square feet) after completion of the removal of the contaminated soil. If the sides of excavation are limited to the sheeting, sidewall endpoint soil samples outside the sheeting limits will be collected via soil borings advanced along each side of the sheeting at an interval of approximately 50 feet. The sidewall samples will be collected from a depth corresponding to the approximate center of the contamination. Endpoint samples will be analyzed in the following manner:

- Sidewall and bottom endpoint samples in areas where no further construction or waste removal is anticipated will be analyzed for TCL VOCs, SVOCs, pesticides and PCBs, and TAL metals using Category B Deliverables.
- Sidewall and bottom endpoint samples in petroleum-contaminated areas where further excavation or waste removal is anticipated will be analyzed for Spills

Technology and Remediation Series (STARS) VOCs (Environmental Protection Agency [EPA] Method 8201) or TCL VOCs (EPA Method 8260) using Category A Deliverables.

4.3 RESTORATION

4.3.1 Backfill Material

Fill material from off-site sources brought to the Site will not consist of any material considered to be a hazardous waste, construction and demolition (C&D) debris, municipal waste, industrial commercial waste, or any other material that must be disposed of at a Part 360-permitted facility. Material from a quarry, a registration facility, and "exempt" C&D debris under 360-7.1 will be considered for acceptance. Approval from the New York Department of Environmental Conservation (NYSDEC) will be obtained prior to the acceptance of any of these materials. No organic material will be considered for use as a fill material.

On-site fill material and native soil may be considered for use as backfill for a Track 4 Cleanup. These materials can be used only if their contaminant concentrations are less than the Site Specific Soil Action Levels (SSSALs). Only native soil demonstrated to contain contaminants in concentrations less than the Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs) can be placed within the top two feet of the surface beneath the courtyard area and beneath the ornamental flower, grass, and pavers in the recreation area. If a Track 1 Cleanup is selected, only native soil can be used as a backfill material, provided that the contaminant concentrations are below TAGM #4046 RSCOs. Fill material and/or native soil to be used will be excavated and staged in approximately 1,000-cubic yard (cy) stockpiles and characterized for on-site reuse as backfill. Soil meeting the SSSALs will be used to backfill the soil excavations (Track 4 Cleanup only). All soil stockpiling, handling, and characterization will be conducted according to the requirements of the Erosion and Sediment Control Plan and Soil Management Plan, included in Appendix E. Historic fill that does not meet the SSSALs will be delivered to an appropriate disposal facility in accordance with the Soil Management Plan. If sufficient on-site fill material meeting the SSSALs (Track 4 Cleanup) or TAGM #4046 RSCOs (Track 1 Cleanup) is not available for reuse, additional fill material will be imported from off-site for backfilling the excavations. The material will be obtained only from a source that is approved by the New York State Department of Environmental Conservation (NYSDEC).

4.3.2 Backfilling

If excavation of waste material (e.g., petroleum-contaminated soil) necessitates backfilling, approved fill material will be used to achieve proper elevation. Depending on the selected cleanup track (Track 1 or Track 4), the material will meet the Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs) or Site Specific Soil Action Levels (SSSALs), respectively. No backfilling will occur without prior New York State Department of Environmental Conservation (NYSDEC) approval. Air monitoring will be performed during all backfilling activities in accordance with the Health and Safety Plan (HASP) and Air Monitoring Plan.

4.4 ENGINEERING CONTROLS

4.4.1 Soil Cap – Track 4 Cleanup

A cap will be placed over the entire Site. The cap for a Track 4 Cleanup, if selected, will prevent exposure to underlying soil that could contain contaminant concentrations exceeding New York State Department of Environmental Conservation (NYSDEC) Recommended Soil Cleanup Objectives (RSCOs). The Site cap will consist of: on-site buildings in the Main Area; asphalt paving, paving blocks, and two feet of clean soil for the recreation area; and two feet of clean soil in the courtyard area, located west of the proposed buildings. A marker layer (e.g., orange construction fencing or other geotextile) will be installed under the entire cap in the recreation area and beneath the two-foot clean soil cap in the courtyard to demarcate the interface between reused fill material and clean fill/paving/structures. The top six inches of the soil cap will consist of soil suitable for sustaining vegetative growth.

4.4.2 Vapor Barrier

The proposed development on the Site will comprise high-rise and low-rise residential structures on the Main Area of the Site, located between West 60th and 61st Streets. The first floor of the buildings will be retail stores. Private residences will begin on the second floor and continue upward. The sublevels of the building will include a cellar and sub-cellar. A two-floor parking garage will be constructed in the entire sub-cellar and approximately half of the cellar. An exhaust system will be constructed to remove the air from the garage. The floor of the sub-cellar will be beneath the groundwater level and will be sealed with membrane waterproofing to prevent water intrusion. Portions of the cellar not situated above the sub-cellar will be on soil above the groundwater elevation. If required, an appropriate material will be placed beneath the slab as a vapor barrier.

4.5 NUISANCE CONTROL

4.5.1 Rodent Control

Although there is no current evidence of rodents, traps will be placed around the Site periphery to control rats and other rodents. The traps will be replaced as required, but at a minimum frequency of once every month. All general refuse generated during remediation/construction activities will be containerized in covered dumpsters or roll-offs, which will be emptied on a weekly basis to avoid attracting rodents. In addition, no food will be stored on-site.

4.5.2 Noise Control

All construction vehicles and equipment will be equipped with appropriate noise control devices to maintain noise levels that conform to the latest Occupational Safety and Health Act (OSHA) standards and all State and local regulations. All mufflers and noise control devices will be properly maintained and replaced, as necessary. All pumps and other equipment that are required to operate during normal non-working hours will be, to the extent possible, electrically driven.

4.6 CITIZEN PARTICIPATION

Citizen participation (CP) activities will include preparation of a Project Fact Sheet. The Project Fact Sheet will be submitted in WordPerfect format for New York State Department of Environmental Conservation (NYSDEC) approval, and will include: a Site description; a summary of the remedial action objectives and the selected remedial alternative; a Project schedule; and a list of sources of additional information. The approved Fact Sheet will be sent via certified mail to persons on the Project mailing list (included as Appendix H) prior to the start of remedial activities, with certification of the mailing provided to the NYSDEC Project Manager.

4.7 RECORD KEEPING

A Project logbook will be maintained during all remediation activities, and will be available for New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) inspection. The following information will be recorded in the Project logbook:

- Date, weather, and Site conditions;
- Names and companies of all on-site personnel;
- Makes, models, and calibration records for all monitoring equipment;
- Makes and models of remediation equipment;
- Sample numbers and descriptions;
- A truck log listing license plate numbers and arrival/departure times; and,
- Site sketches showing excavation areas, sampling locations, and stockpiles (if any).

Copies of all waste manifests and bills of lading will be maintained with the Project logbook.

4.8 REPORTING

4.8.1 Daily Reports

Daily reports will be provided to the New York State Department Environmental Conservation (NYSDEC)/New York State Department of Health (NYSDOH) Project Managers via e-mail during excavation activities. The reports will include a summary of daily activities and air sampling results (including any exceedances), and will describe any odor or dust problems and corrective actions taken. A Site map will be submitted, as required, to identify work areas described in the reports. Any time-sensitive information (e.g., the occurrence of a spill or an emergency situation) will be communicated directly to the NYSDEC Project Manager.

4.8.2 Final Remedial Report

Upon completion of Site remediation, a Final Remedial Report will be prepared and submitted to the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH). The Final Remedial Report will include:

- Photographs of remedial activities (submitted on compact disk);
- As-built drawings for all constructed elements (e.g., sub-floor slab vapor barrier);
- Monitoring and endpoint sampling results collected during implementation of the remedy;
- A Site Management Plan for the remedy;
- An accounting of the destination of all material removed from the Site and associated manifests/bills of lading and certificates of disposal from the respective receiving facilities;

- Documentation of source approval and sampling for backfill materials imported from off-site;
- A Site survey showing locations of all primary contaminant sources (including, but not limited to, tanks and hotspots) identified during investigation and remediation activities; and,
- An itemized description of costs incurred during Site remediation.

The Final Remediation Report will include a certification by a Professional Engineer that all remediation and development excavation activities (i.e., grading cuts, utility trenches, footings, etc.) were completed in accordance with the contaminant field screening methodology defined in the Remedial Work Plan (RWP), inclusive of the Soil Management Plan (Appendix E).

4.9 INSTITUTIONAL CONTROLS

4.9.1 Site Management Plan

In the event that a Track 1 cleanup is not selected for the entire site, a final site management plan will be prepared upon completion of the remedial activities to specify future soil handling requirements, operation and maintenance (O&M) procedures, and Site use restrictions. The Site Management Plan will include the Project's Soil Management Plan; Health and Safety Plan (HASP); Erosion and Sediment Control Plan; and an Operation, Maintenance, and Monitoring (OM&M) Plan. The Soil Management Plan, HASP, will be included as Appendices to this document; the OM&M Plan will be prepared at the completion of the remedy and will include the following:

- As-built drawings and descriptions of all engineering controls implemented as part of the long-term remedy (i.e., vapor mitigation system, Site cap, containment wall), including manufacturer cut sheets of any remediation equipment;
- O&M procedures, including an inspection protocol, to ensure proper functioning of the remedy;
- Vapor and groundwater monitoring plans to evaluate the performance of the remedy; and,
- A contingency plan describing procedures to be conducted in the event of an emergency.

The OM&M Plan will be updated periodically during use to reflect changes in Site conditions, or the manner in which the remedy is operated and/or maintained.

4.9.2 Environmental Easement

An environmental easement will be recorded for the Site to enforce the following use restrictions:

- Installation of groundwater wells for potable and non-potable purposes (e.g., car washing, non-contact cooling water) will be prohibited;
- Any future excavation activities must be conducted in accordance with the Site Management Plan; and,

- The vapor mitigation system, soil cap, and permanent containment wall must be operated and maintained according to the Site OM&M Plan.

The environmental easement will be recorded in the New York County Clerk's office and will include: a description of the use restriction; a map showing the area of the restriction; a written agreement by the property owner to establish and maintain the institutional and engineering controls; and a copy of the Site Management Plan. Prior to recording the environmental easement, notification of the intent to establish the institutional controls will be sent to all adjacent property owners, New York State Department of Health (NYSDOH), New York City Department of Health and Mental Hygiene, and the New York County Clerk's office.

4.9.3 Annual Certification

In the event Track 4 is selected for any portion of the Site, an Annual Certification will be submitted to the New York State Department of Environmental Conservation (NYSDEC) to document the efficacy of the remedy. The Annual Certification will be signed by a Professional Engineer (P.E.), and will certify that: the institutional and/or engineering controls are unchanged from the previous certification; nothing has occurred that would impair the ability of the controls to protect public health and the environment; and no violations of the Site Management Plan have occurred. The certification will include the monitoring data collected during the reporting period as specified in the Site Management Plan.

4.10 SCHEDULE AND COSTS

Fieldwork for the remedial actions will be scheduled from 7:00 AM to 5:00 PM on weekdays. Prior New York State Department of Environmental Conservation (NYSDEC) approval will be obtained for work conducted outside of these hours. The excavation and removal of the on-site soil, based on an estimated excavation and transportation rate of 1,000 to 1,500 cubic yards per day, is anticipated to require two months to complete. The excavation is scheduled to commence mid-to-late May 2006 and will be completed by the end of July. The construction of the foundation and walls will require four to five months to complete. This work should be completed by the end of 2006. The estimated cost for the excavation, loading the hauling vehicles, and the construction of the foundation and walls is $10,000,000. This cost may increase if a Tack 1 Cleanup requires additional excavation and backfilling. The cost for the transportation and disposal of the on-site soil is dependent upon the cleanup track selected. Appendix I includes Track 1 and Track 4 cost estimates for the Eastern Area and the Main Area. The recommended scenario is a Track 1 Cleanup for the Main Area (the three proposed buildings and the courtyard) and a Track 4 Cleanup for the Eastern Area (the recreation area). The transportation and removal cost this scenario is $3,700,000.

5.0 REFERENCES

1. AKRF Inc.; *Phase I Environmental Assessment, Algin Properties, West 61st Street Project,* New York, New York; June 2003.
2. AKRF, Inc.; *Remedial Investigation Work Plan, West 61st Site*, New York, New York; April 2005.
3. EDR, Sanborn, Inc.; *Historical Fire Insurance Maps*; 1907, 1926, 1951, 1976, 1986, and 2001.
4. AKRF, Inc.; *Revised Health and Safety Plan, West 61st Street Site*, New York, New York; June 2005.
5. AKRF, Inc.; *Remedial Investigation Work Plan Addendum, West 61st Street Site*, New York, New York; June 2005.
6. AKRF, Inc.; *Revised Citizen Participation Plan, West 61st Street Site*, New York, New York; June 2005.
7. AKRF, Inc.; *Remedial Investigation Report, West 61st Street Site*, New York, New York; January 2006.
8. AKRF, Inc.; *Interim Remedial Measure Work Plan, West 61st Street Site*, New York, New York; February 2006.
9. NYSDEC, *Draft DER-10 Technical Guidance for Site Investigation and Remediation*, Division of Environmental Remediation; December 2002.
10. NYSDEC, *Draft Voluntary Cleanup Program Guide,* Division of Environmental Remediation; May 2002.
11. NYSDEC, *Technical and Administrative Guidance Memorandum #4046*, Division of Environmental Remediation; December 2000.
12. NYSDEC, *6 NYCRR Part 371, Identification and Listing of Hazardous Wastes*; September 2005.
13. NYSDEC, *6 NYCRR Part 360, Solid Waste Management Facilities*; November 1999.

TABLES

Table 1
On-Site Tanks Identified in Phase 1 ESA
West 61st Street, New York, NY

Lot	Source	Date	Capacity (gallons)	Contents	UST/AST
5	Sanborn Maps	1926	550	GT	UST
	Site Visit, Fire/Bldg Dept	1940	1,080	FO	AST
	Site Visit	* * *	275 275 275	Motor Oil Waste Oil Transmission Oil	AST AST AST
8	Sanborn Maps	1926	550	GT	UST
	Bldg Dept	1940	*	GT Permit	*
	Site Visit, Bldg Dept	1961	1,050	Fuel Oil	AST (Vaulted)
10	Site Visit	*	275	Waste Oil	AST
	Bldg Dept	1950	*	GT Permit	*
11	No Evidence of Tanks				
12	No Evidence of Tanks				
13	Sanborn Maps	1926	1,000	GT	UST
	Fire Dept, Regulatory Database	1969	Three 550	Diesel	UST
Part of 43	Sanborn Maps	1951	*	Gasoline Station	*
	Bldg Dept	1947	*	GT Permit	*
52	No Evidence of Tanks				
53	Bldg Dept	1950	*	GT Permit	*
55	No Evidence of Tanks				

Notes: AST = Aboveground Storage Tank, UST = Underground Storage Tank,
* = Unknown, FO = Fuel Oil, GT = Gasoline Tank,

Table 2
Site Specific Soil Action Levels
West 60th Street, New York, NY

Compound	Action Level (mg/kg)	Source
Benzene	0.06	TAGM #4046
Toluene	1.5	TAGM #4046
Ethylbenzene	5.5	TAGM #4046
O-xylene	1.2	TAGM #4046
M/P-xylene	0.6	TAGM #4046
Naphthalene	13.0	TAGM #4046
Total VOCs	10.0	TAGM #4046
Total SVOCs	500	TAGM #4046
B(a)P equivalents	3.00	NYSDEC Guidance
Lead	1,000	Background range in historic fill
Mercury	2	Background range in historic fill
Arsenic	25	Background range in historic fill
Other Criteria	Grossly petroleum-contaminated soil	DER-10

Notes:
mg/kg = milligrams per kilogram
TAGM #4046 = New York State Department of Environmental Conservation Technical and Administrative Guidance Memorandum #4046 – Determination of Soil Cleanup Objectives and Cleanup Levels.
VOCs = volatile organic compounds
SVOCs = semi-volatile organic compounds
B(a)P Equivalents = the sum of the concentrations of seven carcinogenic polynuclear hydrocarbons, each in units equivalent to one mg/kg of benzo(a)pyrene.
DER – Division of Environmental Remediation

Table 3
Site Specific Soil Action Level Exceedances
West 60th Street, New York, NY

Location	Compound	Concentration (mg/kg)	SSSAL (mg/kg)
B/MW-3 (0-2’)	Lead	2,980	1,000
B-12 (0-2’)	Lead	1,5000	1,000
B-12 (2’-4’)	Lead	1,160	1,000
B-17 (14’-16’)	Lead	2,580	1,000
B/MW-2 (0-2’)	Naphthalene	15.0	13.00
		B(a)P Units	
B/MW-2 (0-2’)	B(a)P Equivalents	5.5	3.00
B/MW-7 (0-2’)	B(a)P Equivalents	4.17	3.00
B-13 (0-2’)	B(a)P Equivalents	4.74	3.00
B-17 (14’-16’)	B(a)P Equivalents	8.27	3.00

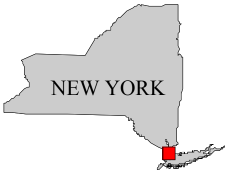
Notes:
mg/kg = milligrams per kilogram
B(a)P Equivalents = the sum of the concentrations of seven carcinogenic polynuclear hydrocarbons, each in units equivalent to one mg/kg of benzo(a)pyrene.

FIGURES

SCALE IN FEET

0’ 1000’ 2000’ 4000’

SCALE: 1”=2000’



QUADRANGLE

SOURCE:

USGS TOPOGRAPHIC MAP - CENTRAL PARK, N.Y.
QUADRANGLE - DATED 1966, PHOTOREVISED 1979.

N

West 61st Street Site
New York, New York

PROJECT SITE LOCATION

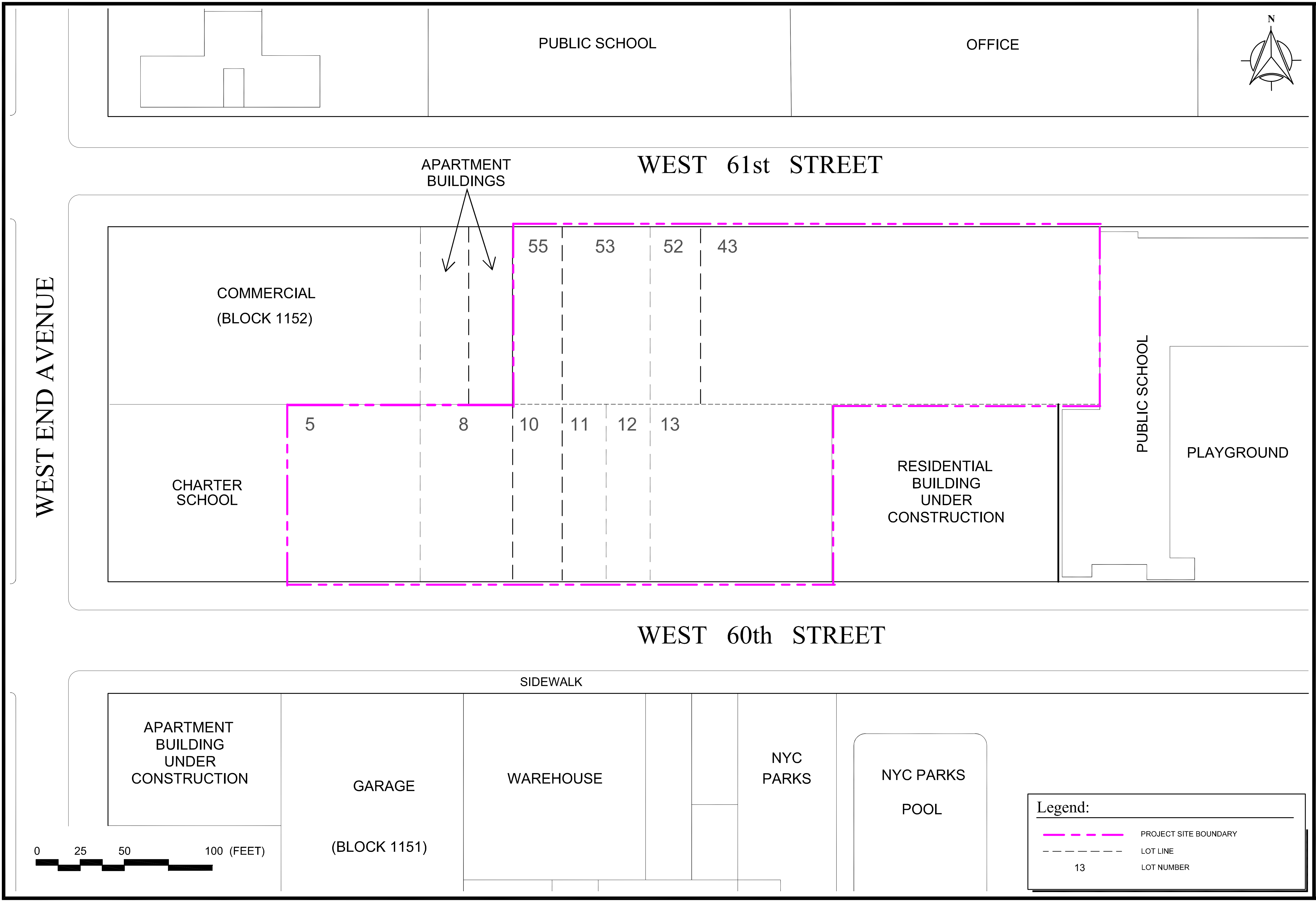
AKRF

Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
12.08.05

PROJECT No.
10321

FIGURE No.
1

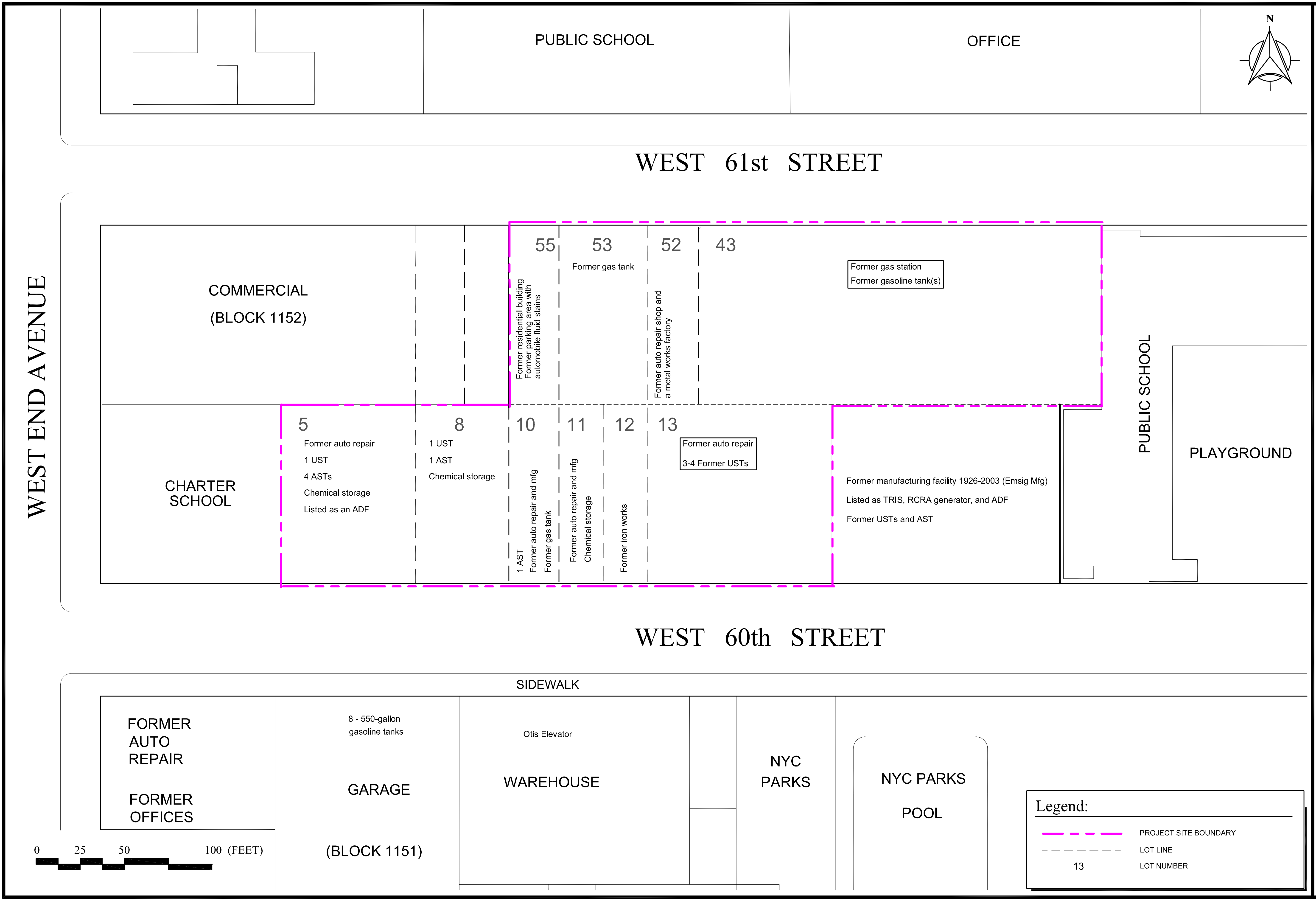


AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

West 61st Street Site
New York, New York

PROJECT SITE ABUTTERS

DATE	03.15.06
APPROX SCALE	As Shown
PROJECT No.	10321
FIGURE No.	2



AKRF
Environmental Consultants
440 Park Avenue South, New York, NY 10016

West 61st Street Site
New York, New York

SUMMARY OF PREVIOUS SITE USES

DATE
03.15.06

APPROX SCALE
As Shown

PROJECT No.
10321

FIGURE No.
3

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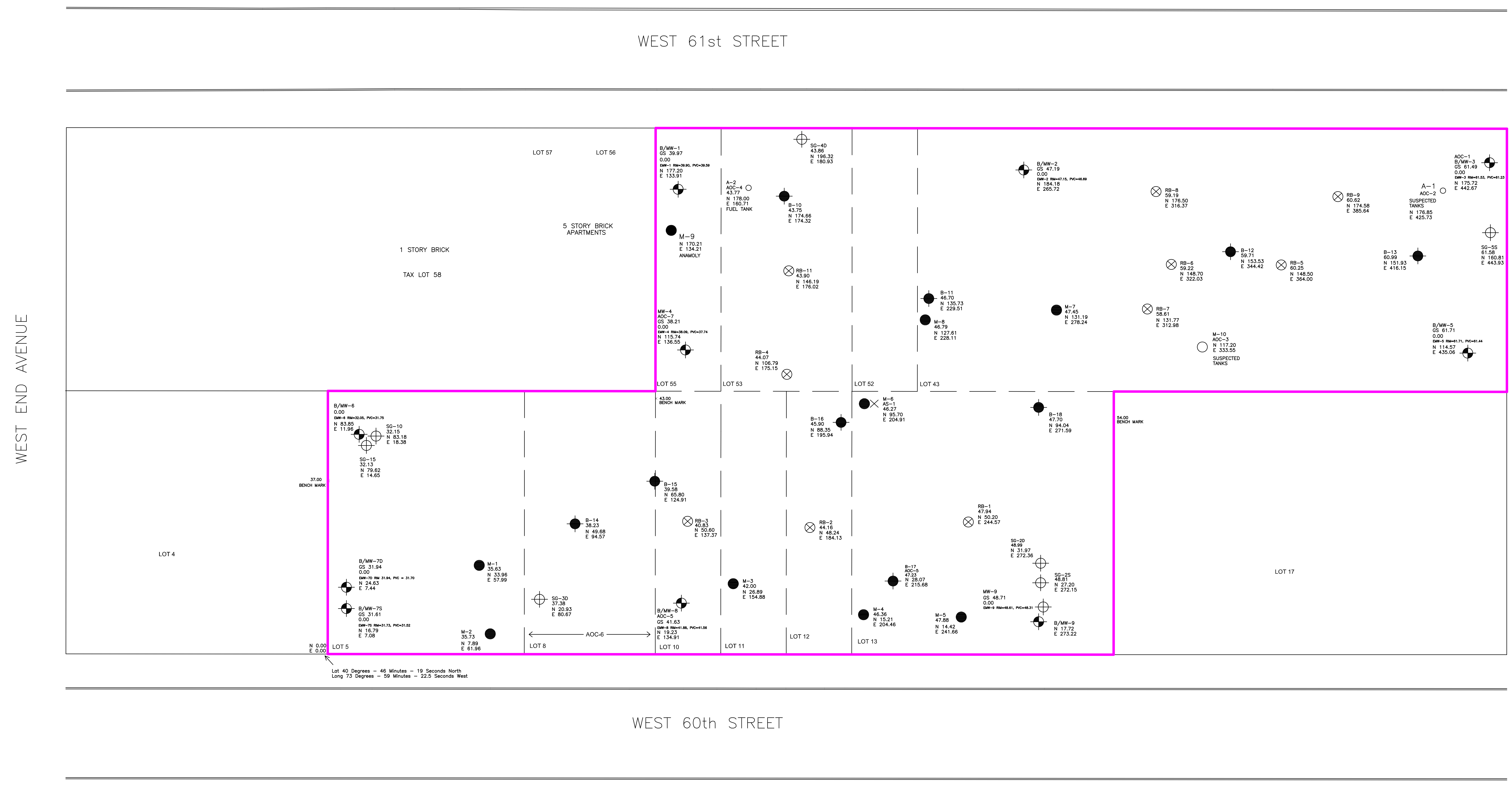

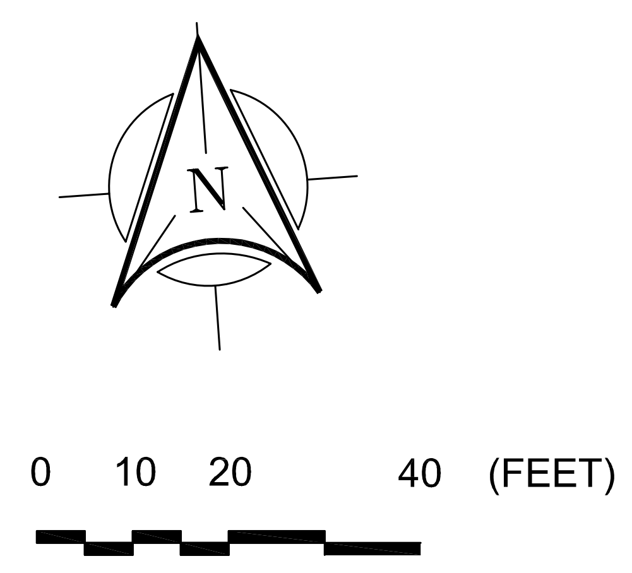

Elevations and locations surveyed by:

True North Surveyors, Inc.
John J. Vida – N.Y.P.L.S. Lic. 050298
PROFESSIONAL LAND SURVEYORS

Legend:

▬	PROPERTY BOUNDARY	⊗	GEOTECHNICAL BEDROCK BORINGS
— — — —	LOT BOUNDARY	⌖	SOIL GAS WELL
×	BACKGROUND AIR SAMPLE LOCATION	◈	MONITORING WELL / SOIL BORING
○	SUSPECTED UNDERGROUND STORAGE TANK(S)	●	SOIL BORING
●	METALLIC OBJECTS IDENTIFIED IN GEOPHYSICAL SURVEY	AOC-1	AREA OF CONCERN

Note:

ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.

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West 61st Street Site
New York, New York

ENVIRONMENTAL SAMPLING LOCATIONS AND ANAMOLIES

DATE
03.15.06

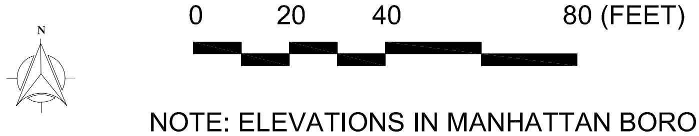
SCALE
As Shown

PROJECT No.
10321

FIGURE No.
4

Legend:

═ PROPOSED BUILDING
⁚ COURTYARD
🟨 EXCAVATE TO ELEVATION 30.0
☐ EXCAVATE TO ELEVATION 54.0
▨ EXCAVATE TO ELEVATION 40.0
🟧 EXCAVATE TO ELEVATION 14.0



NOTE: ELEVATIONS IN MANHATTAN BOROUGH DATUM

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WEST 61st STREET SITE
New York, New York

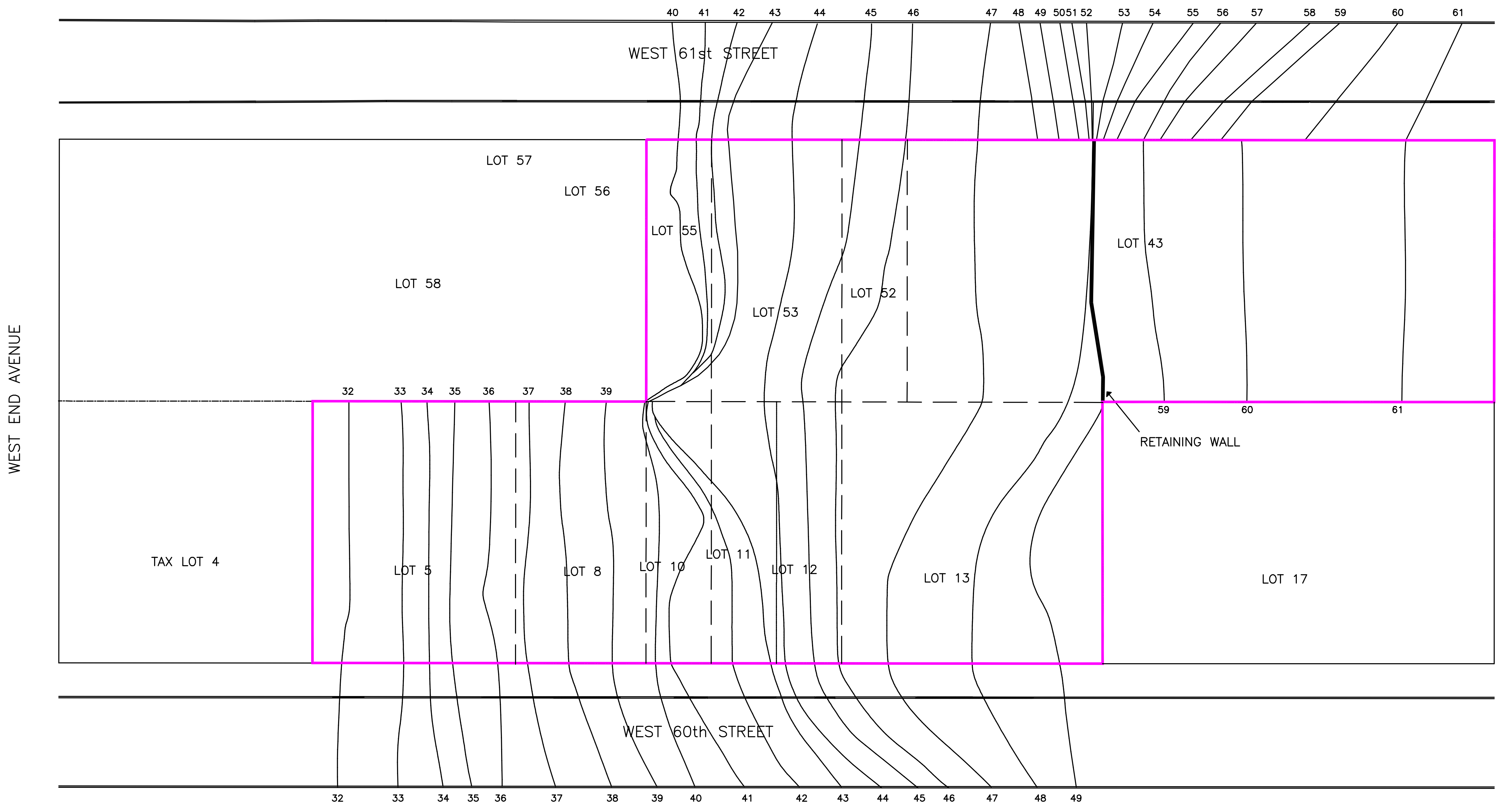
APPROXIMATE LIMITS OF EXCAVATION

DATE
03.14.06

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
5



Legend:

—	PROPERTY BOUNDARY
20 —	CONTOUR LINE
━	RETAINING WALL

Note:

ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.

0 20 40 80 (FEET)

N

This map reflects the site topography after the removal of the three buildings on Lot 5, Lots 11 and 12, and Lots 52 and 53, and subsequent site grading.

Based on a survey by:

True North Surveyors, Inc.
John J. Vida – N.Y.P.L.S. Lic. 050298
PROFESSIONAL LAND SURVEYORS

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

WEST 61st STREET SITE
New York, New York

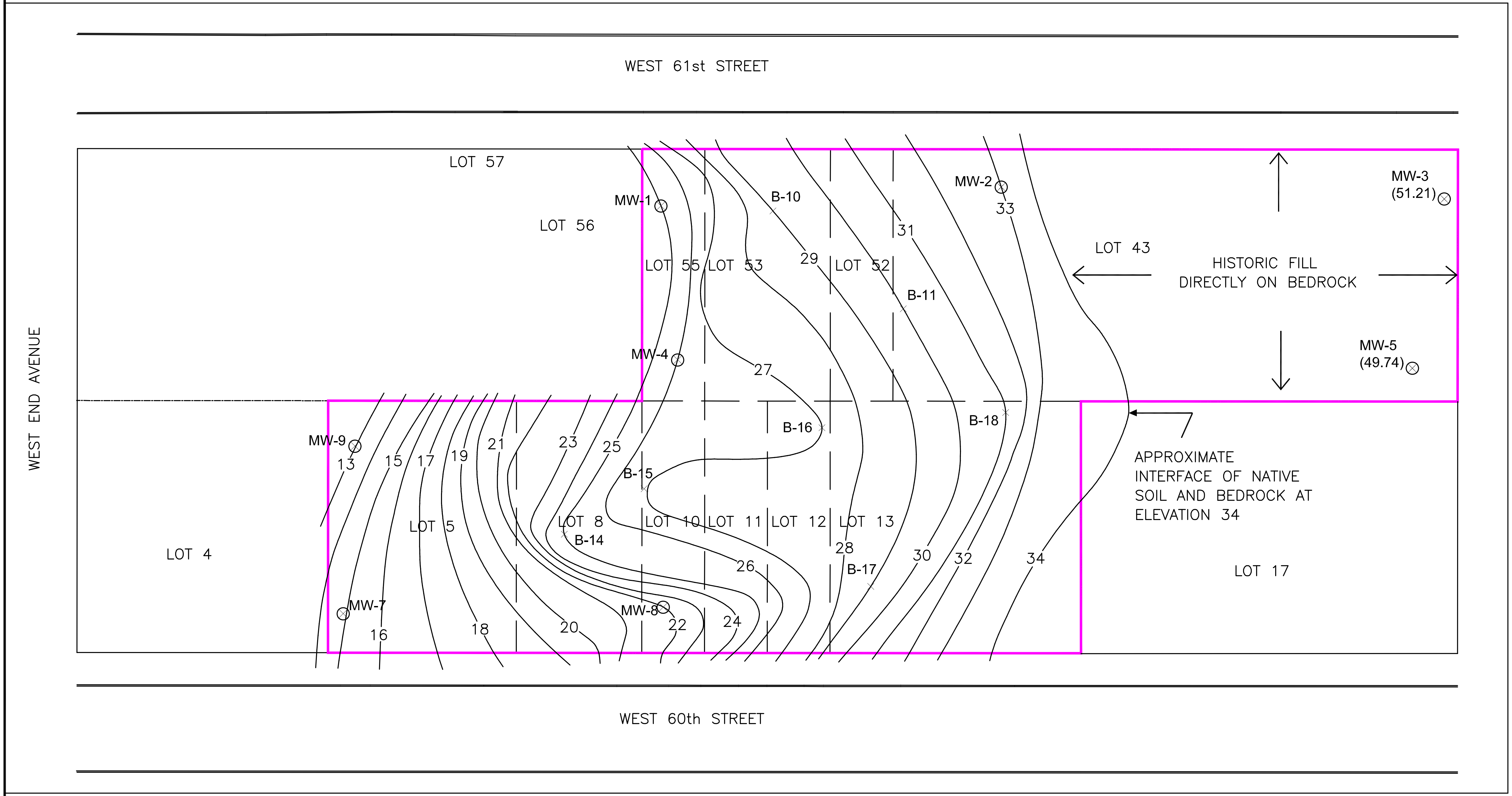
SITE TOPOGRAPHIC MAP

DATE
11.21.05

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
6

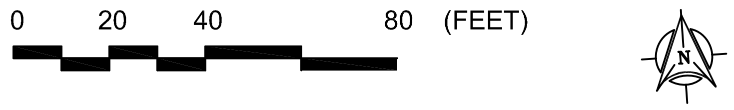


Legend:

- PROPERTY BOUNDARY
- LOT BOUNDARY
- ⊗ APPROXIMATE LOCATION OF MONITORING WELL
- × APPROXIMATE LOCATION OF BORING
- 32 —— INFERRED TOP OF NATIVE SOIL CONTOUR LINE

Note:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN (MBD), WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.



Elevations based on a survey by:

True North Surveyors, Inc.
John J. Vida – N.Y.P.L.S. Lic. 050298
PROFESSIONAL LAND SURVEYORS

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

WEST 61st STREET SITE
New York, New York

INFERRED NATIVE SOIL CONTOURS

DATE
03.15.06

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
7

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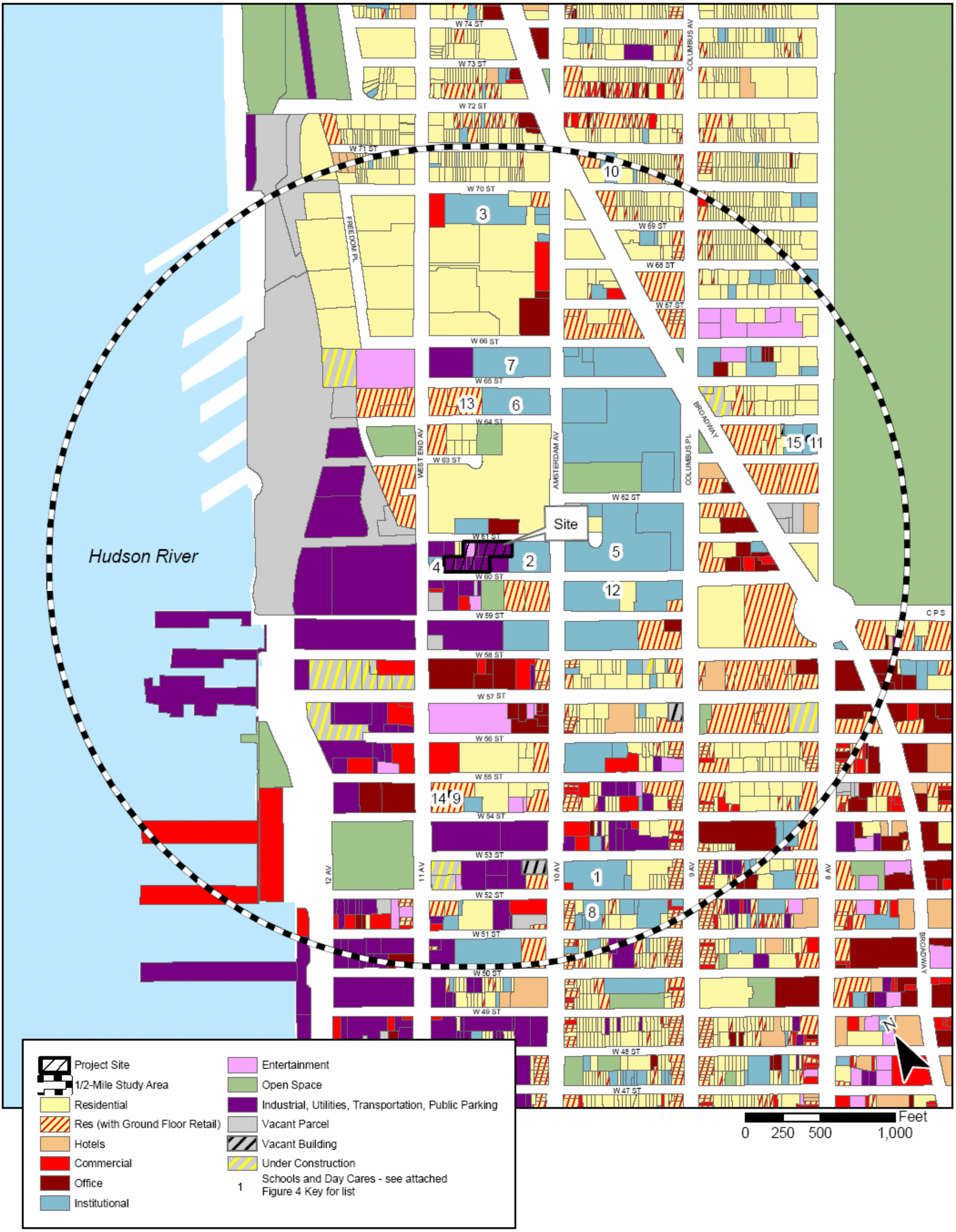
5.10.04



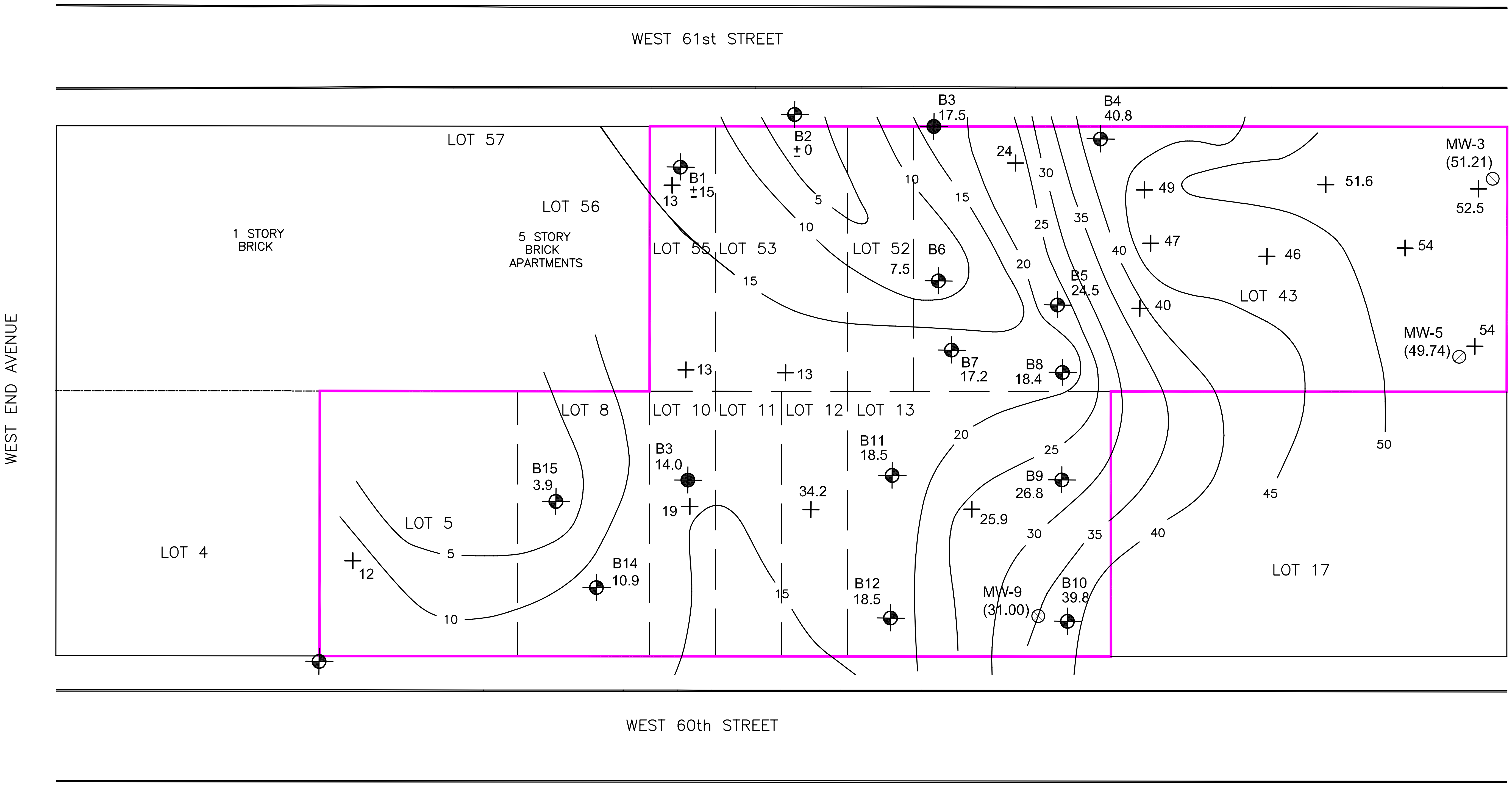
West 61st Street Site
New York, New York

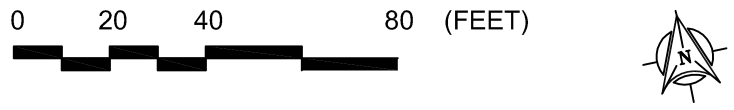
Land Use Map
Figure 8

FIGURE 8 KEY - SCHOOLS AND DAYCARES WITHIN 1/2 MILE

West 61st Street Site, New York, NY

ID	BLOCK	LOT	FACILITY NAME	FACILITY ADDRESS	ZIP
1	1062	3	PS 111 ADOLPH S. OCHS SCHOOL	440 West 53rd St	10019
2	1152	29	PS 191 AMSTERDAM SCHOOL	210 W 61st St	10023
3	1158	40	PS 199 JESSE I. STRAUS SCHOOL	270 W 70th St	10023
4	1152	1	PS 252 (CSD of jurisdiction 6)	20-26 W End Ave	10023
5	1132	20	BEACON SCHOOL	113 W 60th St	10023
6	1156	30	FIORELLO H. LA GUARDIA HS	108 Amsterdam Ave	10023
7	1157	25	MARTIN LUTHER KING HS	122 Amsterdam Ave	10023
8	1061	54	SACRED HEART OF JESUS SCHOOL	456 West 52nd St	10019
9 (same as 14)	1083	1	POLLY DODGE DAY CARE CTR	538 West 55th St	10019
10	1142	61	BLESSED SACRAMENT SCHOOL	147 W 70th St	10023
11	1116	29	MIDTOWN ETHICAL CULTURE SCHOOL	33 Central Park West	10023
12	1131	50	PROFESSIONAL CHILDRENS SCHOOL	132 West 60th St	10023
13	1156	20	MABEL BARRETT FITZGERALD	243 West 64th Street	10023
14	1083	1	POLLY DODGE CTR	538 West 55th Street	10019
15	1116	24	WESTSIDE YMCA AFTERSCHOOL CC	5 West 63 Street	10023





BASED ON CONTOURS PROVIDED BY:
RA CONSULTANTS
WAYNE, NJ

Legend:

🟪	PROPERTY BOUNDARY
— — —	LOT BOUNDARY
⊕	APPROXIMATE LOCATION OF BORING WITH OBSERVATION WELL
⊕	APPROXIMATE LOCATION OF BORING
10.9	TOP OF ROCK ELEVATION (MBD)
50 ——	INFERRED BEDROCK CONTOUR LINE
⊗ MW-5	APPROXIMATE LOCATION OF BEDROCK MONITORING WELLS INSTALLED BY AKRF, INC.

Note:

ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN (MBD), WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.

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AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

WEST 61st STREET SITE
New York, New York

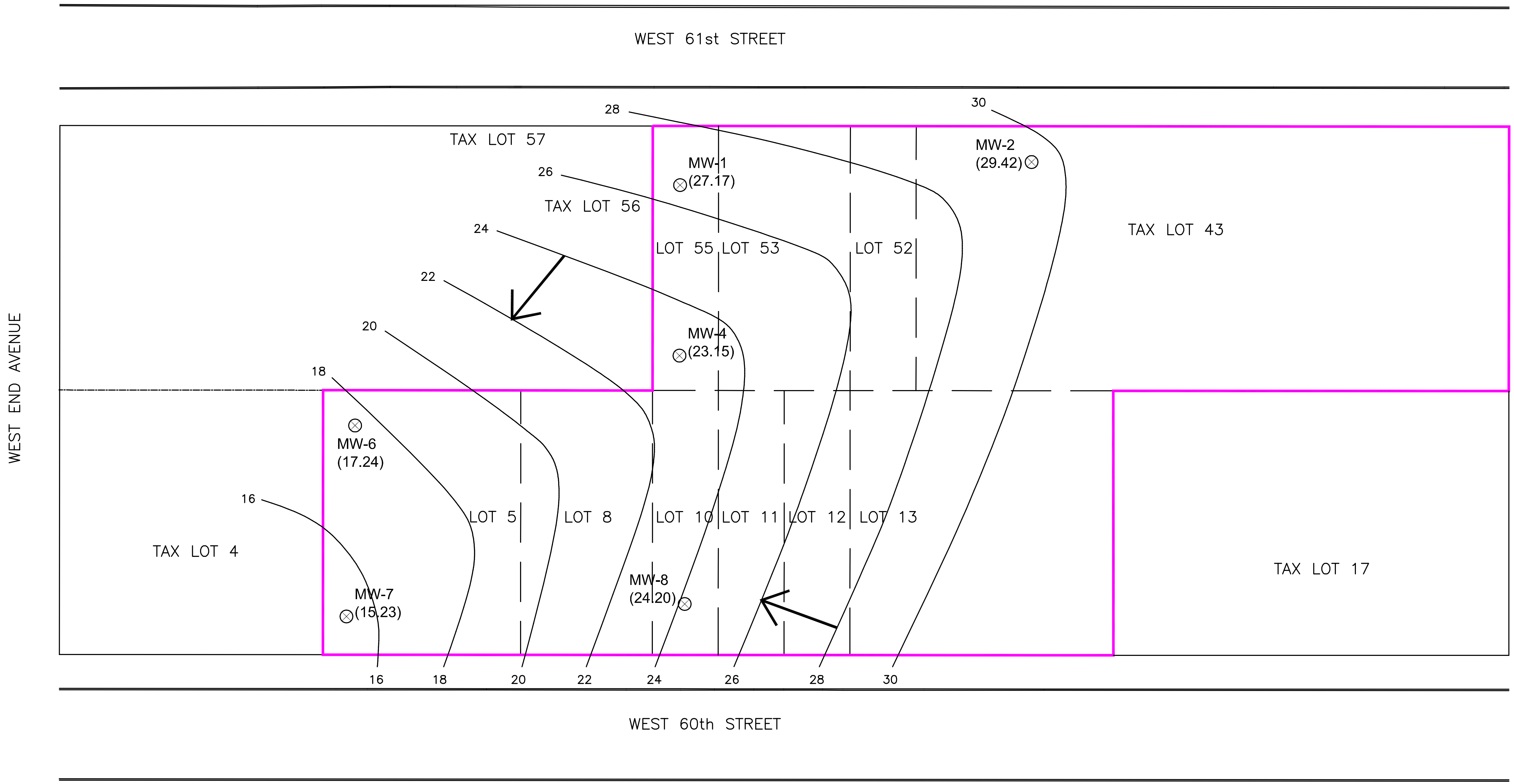
INFERRED BEDROCK CONTOURS

DATE
11.21.05

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
9



Legend:

🟪	PROPERTY BOUNDARY
– – – –	LOT BOUNDARY
⊗	OVERBURDEN MONITORING WELL
(31.00)	GROUNDWATER ELEVATION
32 ——	GROUNDWATER EQUIPOTENTIAL LINE
←	INFERRED GROUNDWATER DIRECTION

Notes:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN (MBD), WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. WATER LEVELS MEASURED ON OCTOBER 7, 2005.

0 20 40 80 (FEET)

N

Elevations based on a survey by:

True North Surveyors, Inc.
John J. Vida – N.Y.P.L.S. Lic. 050298
PROFESSIONAL LAND SURVEYORS

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

WEST 61st STREET SITE
New York, New York

OVERBURDEN AQUIFER-EQUIPOTENTIAL MAP

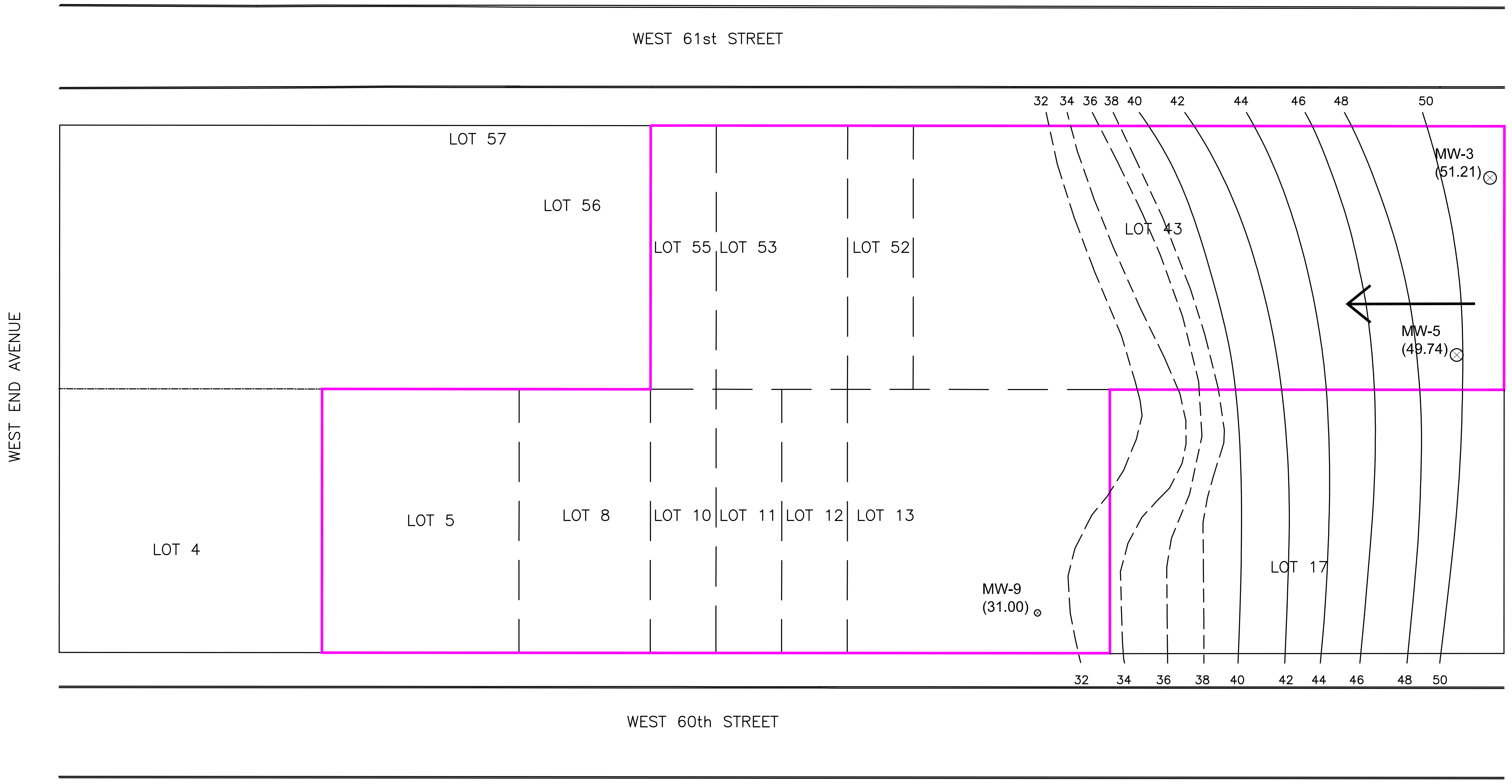
DATE
11.21.05

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
10

M:\AKRF Project Files\10321 - Algin Properties W. 60th St\Figures\F10_Overburden_Aquifer_Map.dwg



Legend:

▬	PROPERTY BOUNDARY
– – –	LOT BOUNDARY
⊗	BEDROCK MONITORING WELL
(31.00)	GROUNDWATER ELEVATION
32 ———	GROUNDWATER EQUIPOTENTIAL LINE BASED ON WELL ELEVATIONS
32 - - - -	GROUNDWATER EQUIPOTENTIAL LINE BASED ON BEDROCK ELEVATIONS
←	INFERRED GROUNDWATER DIRECTION

Notes:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN (MBD), WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. WATER LEVELS MEASURED ON OCTOBER 7, 2005.

0 20 40 80 (FEET)

Elevations based on a survey by:

True North Surveyors, Inc.
John J. Vida – N.Y.P.L.S. Lic. 050298
PROFESSIONAL LAND SURVEYORS

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

WEST 61st STREET SITE
New York, New York

BEDROCK AQUIFER-EQUIPOTENTIAL MAP

DATE
11.21.05

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
11

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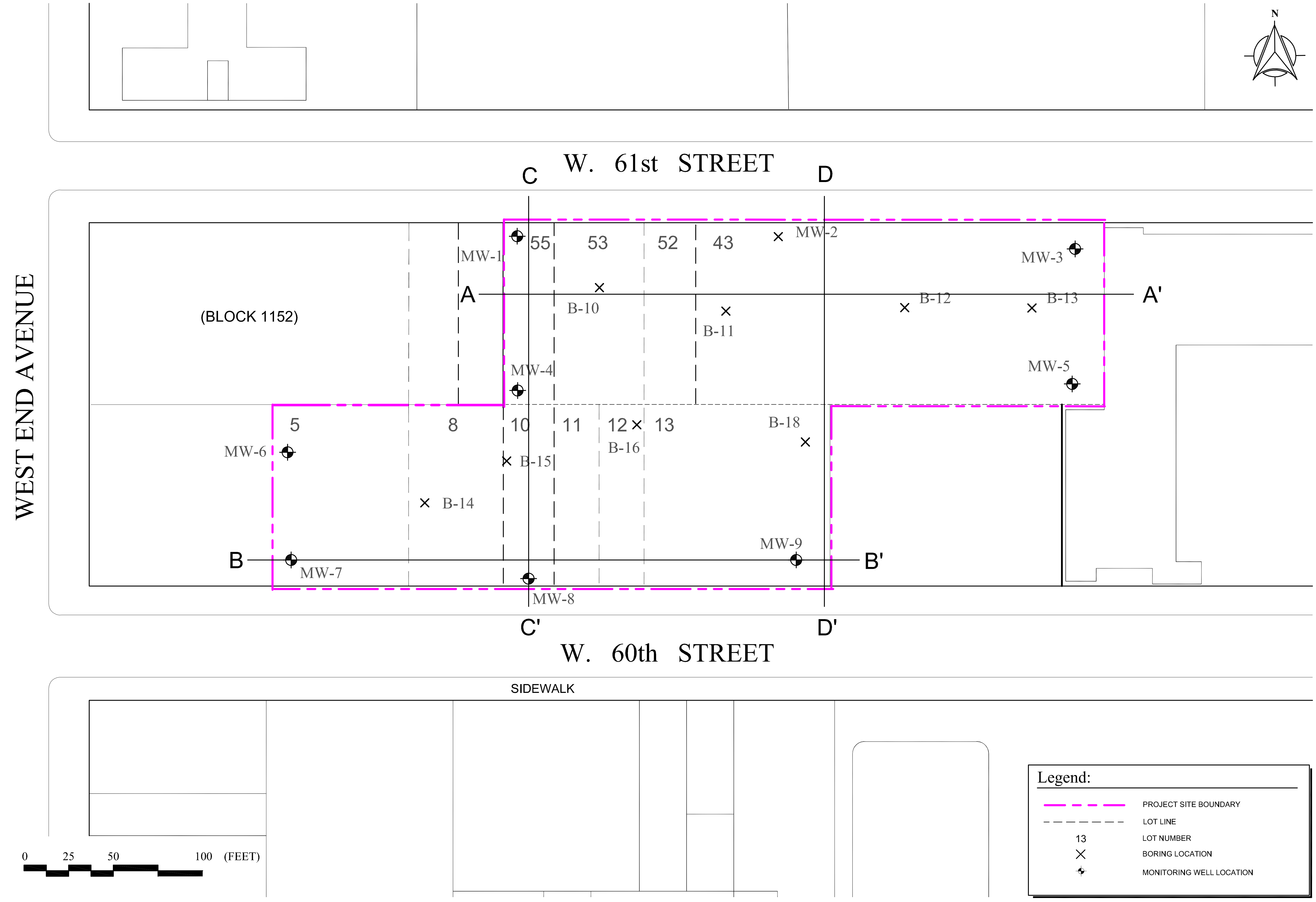

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West 61st Street Site
New York, New York

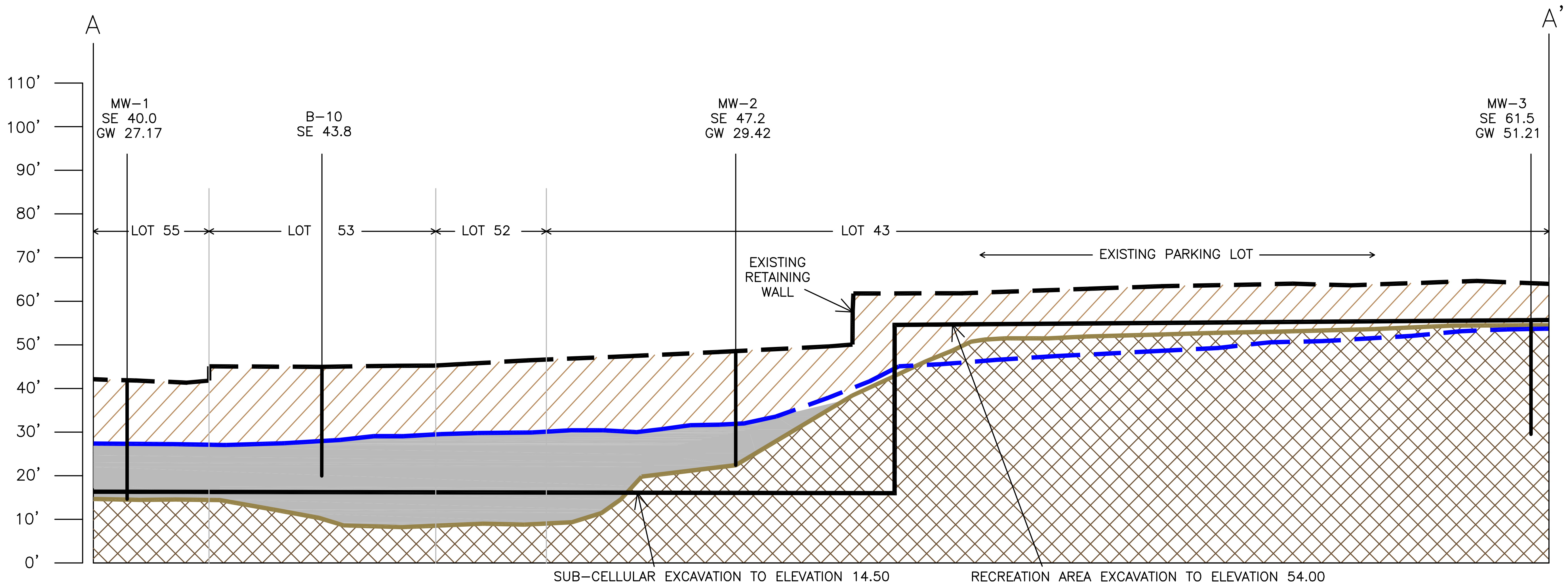
GEOLOGIC SECTION LOCATIONS

DATE
12.23.05

APPROX SCALE
As Shown

PROJECT No.
10321

FIGURE No.
12



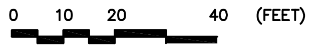
SECTION A-A'

Legend:

—	GROUNDWATER LEVEL
- - -	INFERRED GROUNDWATER LEVEL
—	BEDROCK INTERFACE
- - -	SURFACE ELEVATION
—	EXTENT OF EXCAVATION
▩	MANHATTAN SCHIST
▨	FILL - SAND, SILT, BRICK, CONCRETE, BRICK, ASH, SLAG WOOD, GLASS, ASPHALT
■	NATIVE SOIL - SAND & SILT, TRACE GRAVEL
GW	GROUNDWATER ELEVATION
SE	SURFACE ELEVATION

Notes:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN (MBD), WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. WATER LEVELS MEASURED ON OCTOBER 7, 2005.



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WEST 61st STREET SITE
New York, New York

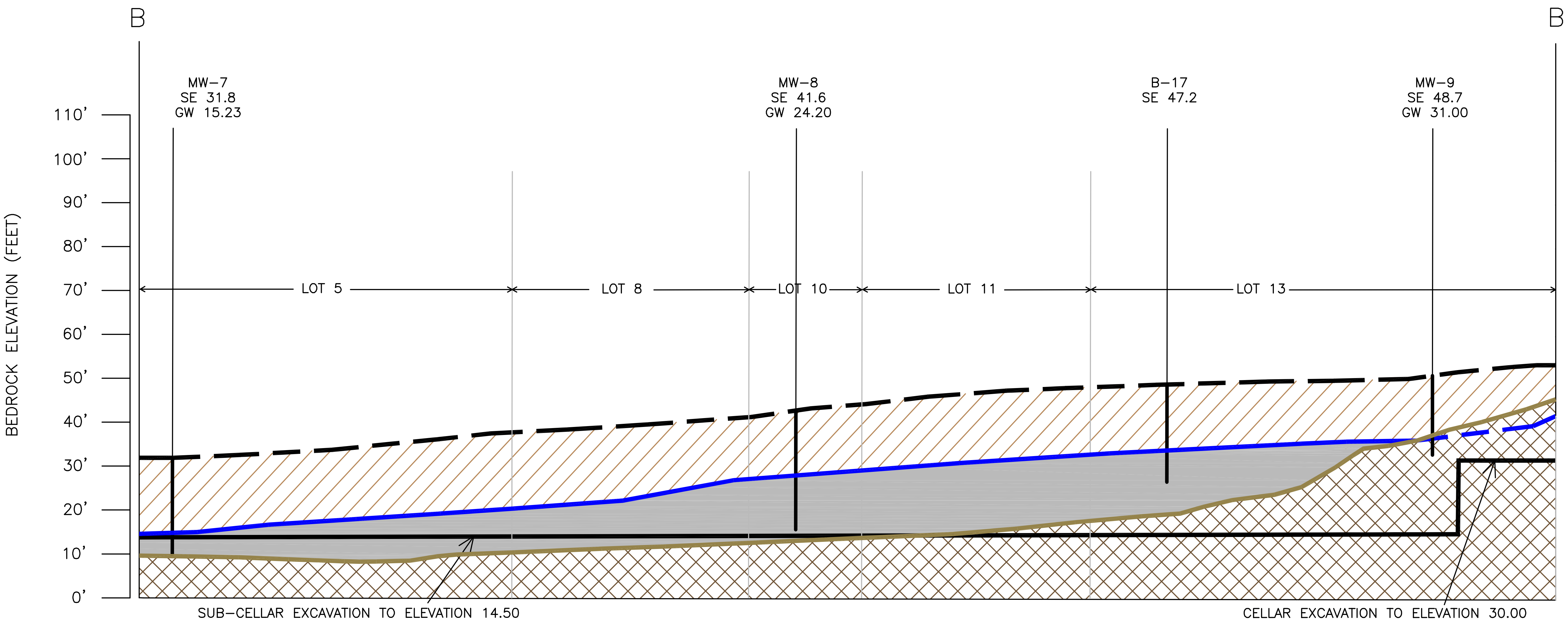
GEOLOGIC CROSS SECTION A-A'

DATE
12.19.05

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
12A



SECTION B-B'

Legend:

──	GROUNDWATER LEVEL
– – –	INFERRED GROUNDWATER LEVEL
──	BEDROCK INTERFACE
– – –	SURFACE ELEVATION
──	EXTENT OF EXCAVATION
▩	MANHATTAN SCHIST
▨	FILL - SAND, SILT, BRICK, CONCRETE, BRICK, ASH, SLAG WOOD, GLASS, ASPHALT
■	NATIVE SOIL - SAND & SILT, TRACE GRAVEL
GW	GROUNDWATER ELEVATION
SE	SURFACE ELEVATION

Notes:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN (MBD), WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. WATER LEVELS MEASURED ON OCTOBER 7, 2005.

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WEST 61st STREET SITE
New York, New York

GEOLOGIC CROSS SECTION B-B'

DATE
12.19.05

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
12B

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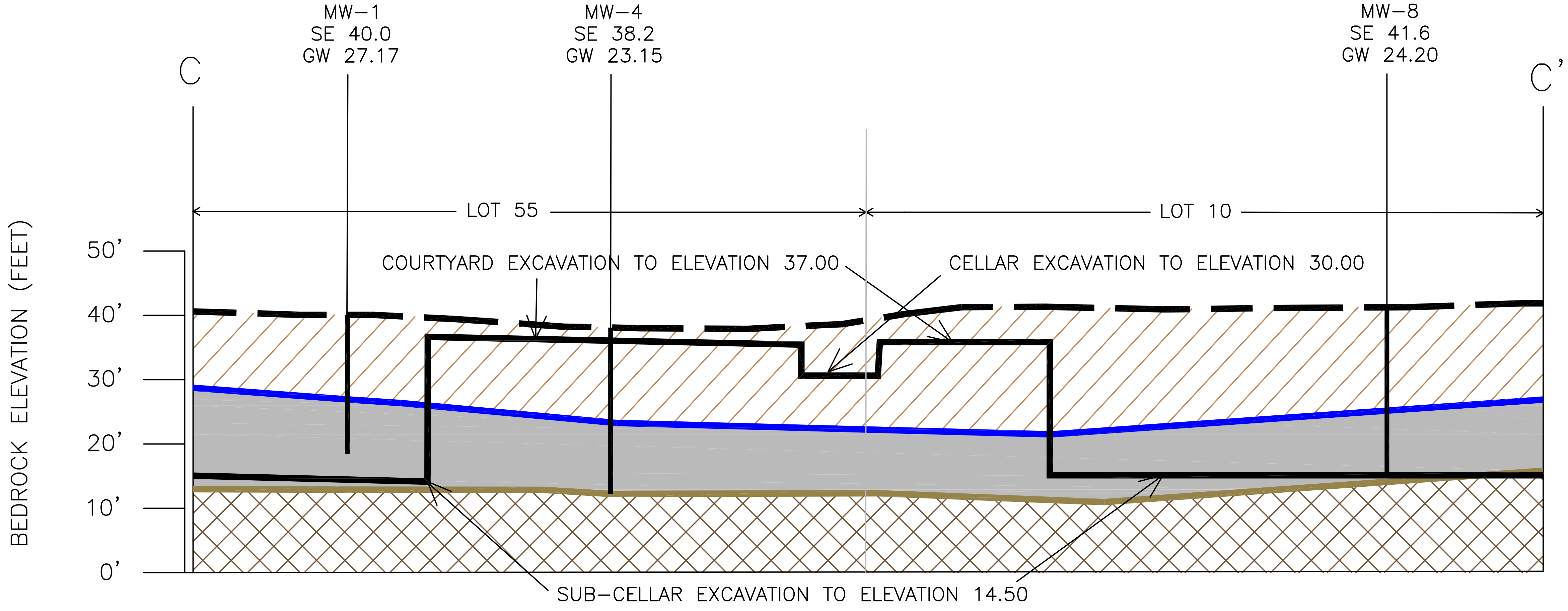


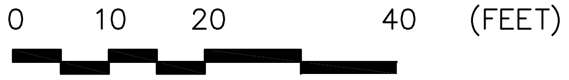
SECTION C-C'

Legend:

━━	GROUNDWATER LEVEL
– – –	INFERRED GROUNDWATER LEVEL
━━	BEDROCK INTERFACE
– – –	SURFACE ELEVATION
━━	EXTENT OF EXCAVATION
▩	MANHATTAN SCHIST
▨	FILL - SAND, SILT, BRICK, CONCRETE, BRICK, ASH, SLAG WOOD, GLASS, ASPHALT
▦	NATIVE SOIL - SAND & SILT, TRACE GRAVEL
GW	GROUNDWATER ELEVATION
SE	SURFACE ELEVATION

Notes:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN (MBD), WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. WATER LEVELS MEASURED ON OCTOBER 7, 2005.



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WEST 61st STREET SITE
New York, New York

GEOLOGIC CROSS SECTION C-C'

DATE
12.19.05
SCALE
As Shown
PROJECT No.
10321
FIGURE No.
12C

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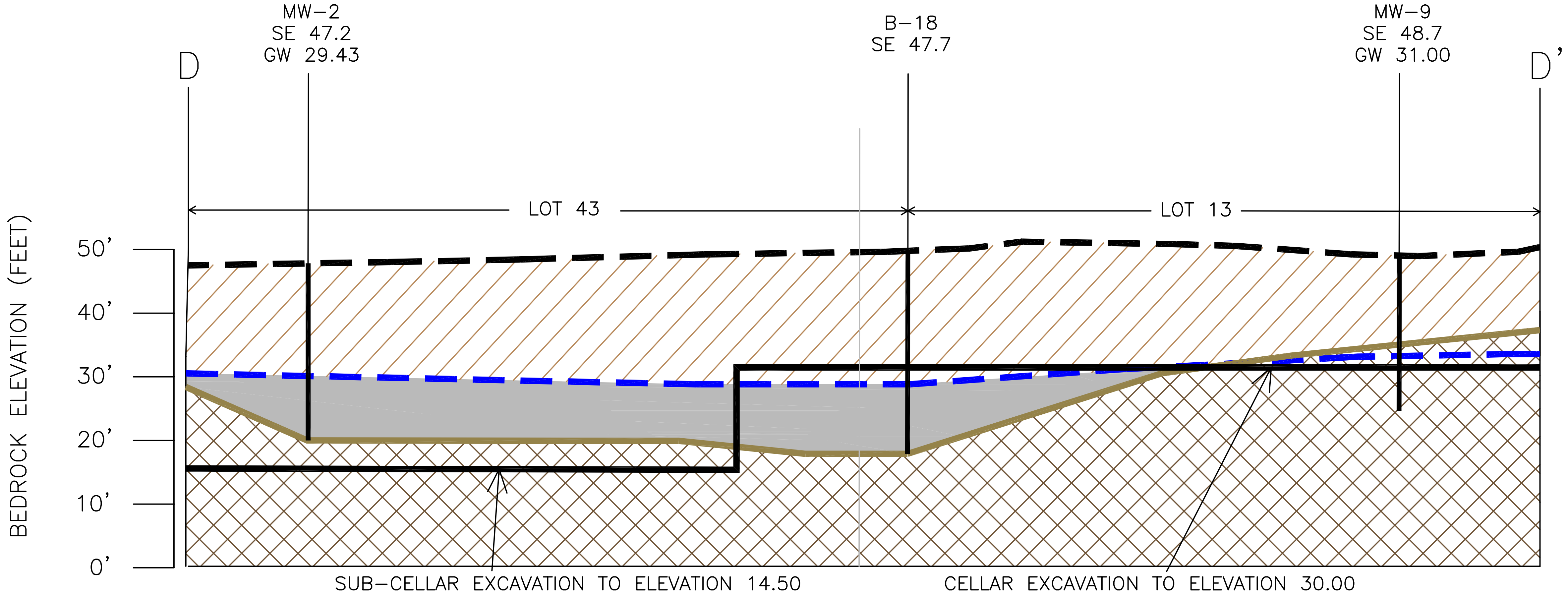

SECTION D-D'

Legend:

—	GROUNDWATER LEVEL
- - -	INFERRED GROUNDWATER LEVEL
—	BEDROCK INTERFACE
- - -	SURFACE ELEVATION
━	EXTENT OF EXCAVATION
▩	MANHATTAN SCHIST
▨	FILL - SAND, SILT, BRICK, CONCRETE, BRICK, ASH, SLAG WOOD, GLASS, ASPHALT
■	NATIVE SOIL - SAND & SILT, TRACE GRAVEL
GW	GROUNDWATER ELEVATION
SE	SURFACE ELEVATION

Notes:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN (MBD), WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. WATER LEVELS MEASURED ON OCTOBER 7, 2005.

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Environmental Consultants
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WEST 61st STREET SITE
New York, New York

GEOLOGIC CROSS SECTION D-D'

DATE
12.19.05

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
12D

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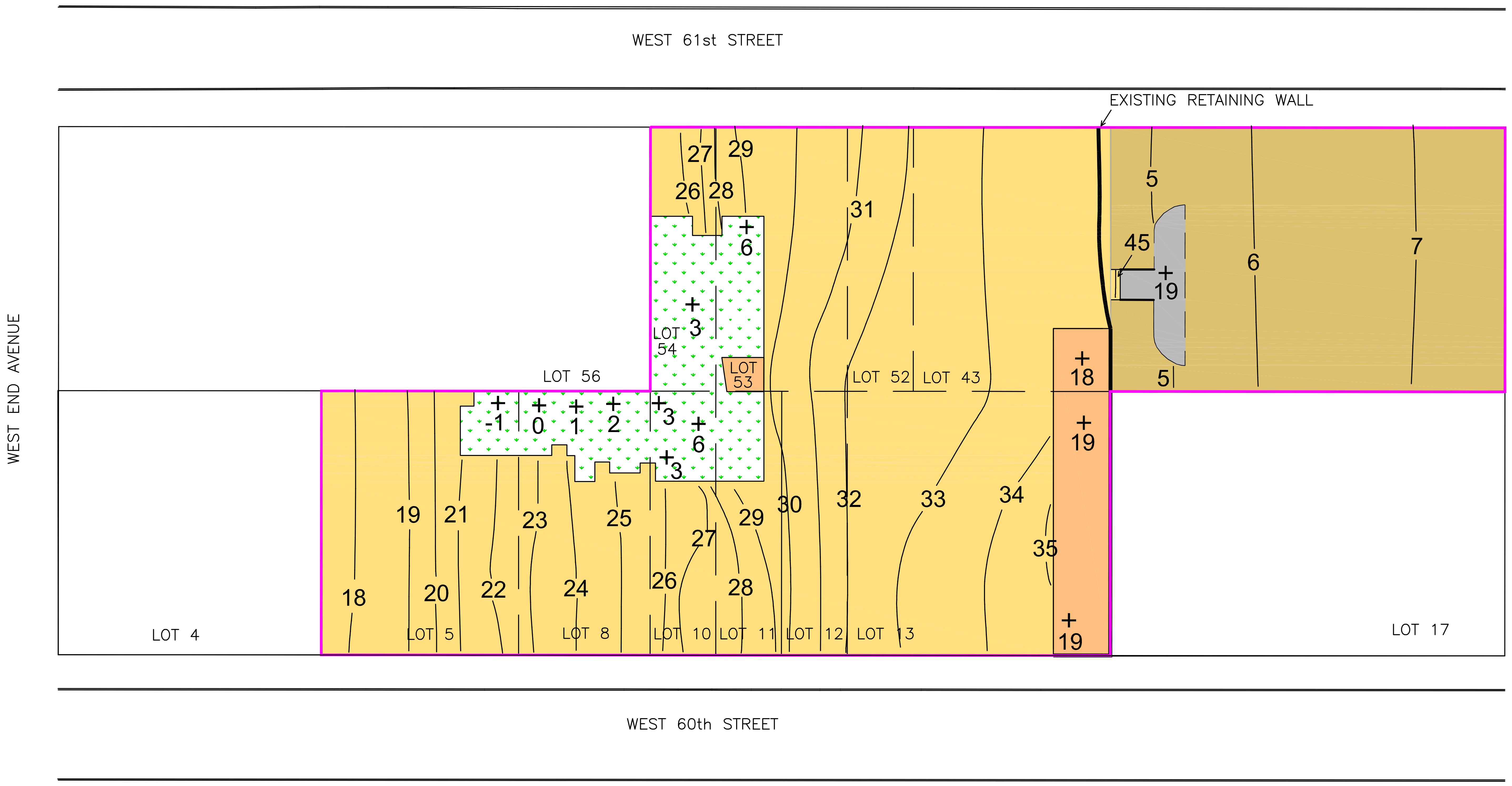
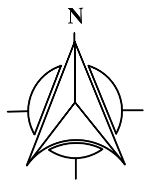


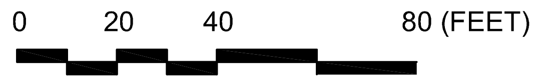
Legend:

—	PROPERTY BOUNDARY
+	DEPTH IN FEET TO LOWER LIMIT OF CONSTRUCTION
—30—	CONTOUR HAVING THE SAME DEPTH IN FEET TO LOWER LIMIT OF CONSTRUCTION
— —	LOT BOUNDARIES
🟨	SUB-CELLAR EXCAVATION TO ELEVATION 14.00
▨	COURTYARD EXCAVATION TO ELEVATION 37.00
🟧	CELLAR EXCAVATION TO ELEVATION 30.00
🟫	RECREATION ARA EXCAVATION TO ELEVATION 54.00
⬜	EXHAUST SYSTEM EXCAVATION TO ELEVATION RANGE 39.64 TO 42.00

Notes:

1. ELEVATIONS ARE ACTUAL AND REFER TO DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.75 FEET ABOVE THE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929 (UNITED STATES COAST AND GEODETIC SURVEY), MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.
2. THE SOIL REMOVAL DEPTHS WERE COMPUTED BY SUBTRACTING THE ELEVATION OF THE LOWER LIMIT OF CONSTRUCTION EXCAVATION FOR EACH BUILDING (SEE LEGEND) FROM THE EXISTING SURFACE ELEVATION CONTOURS SHOWN ON FIGURE 6.





NOTE: ELEVATIONS IN MANHATTAN BOROUGH DATUM

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WEST 61st STREET SITE
New York, New York

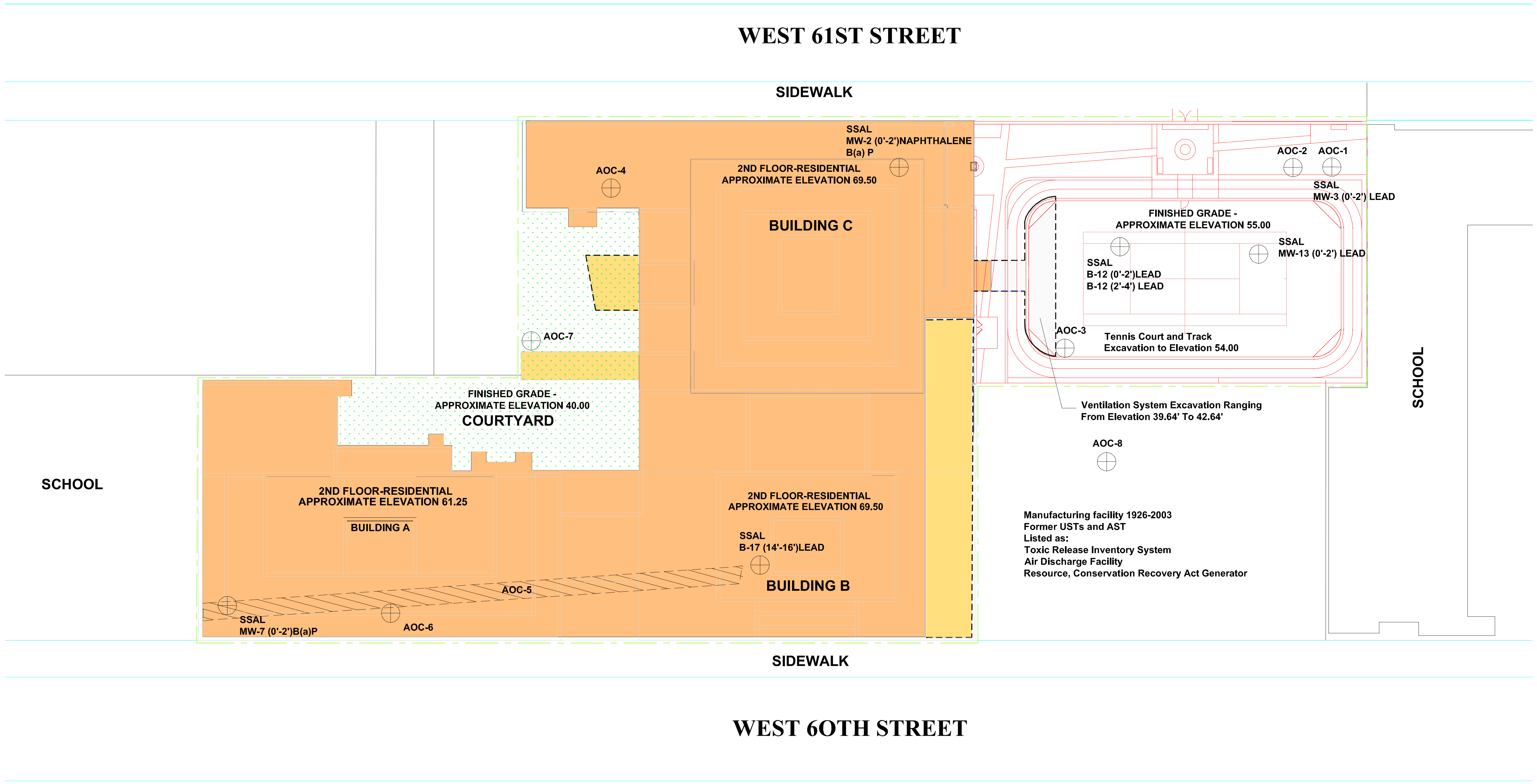
SOIL REMOVAL DEPTHS

DATE
03.15.06

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
14

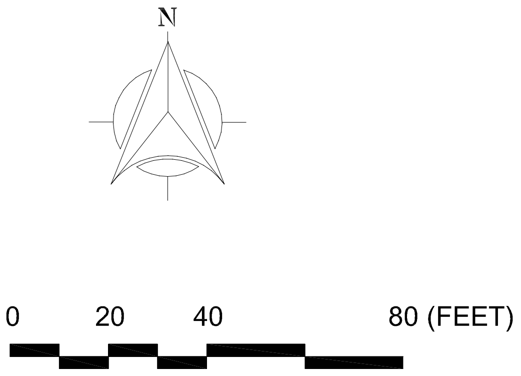


Legend:

▬	PROPERTY LINE
⊕	AREA OF CONCERN
═	PROPOSED BUILDING
UST	UNDERGROUND STORAGE TANK
AST	ABOVEGROUND STORAGE TANK
▨	COURTYARD EXCAVATION TO ELEVATION 37.00
🟧	SUB-CELLAR EXCAVATION TO ELEVATION 14.50 (MBD)
🟨	CELLAR EXCAVATION TO ELEVATION 30.00 (MBD)
SSAL	SITE SPECIFIC ACTION LEVEL EXCEEDANCE
B(a)p	BENZO (A) PYRENE EQUIVALENT

Notes:

AOC-1	ELEVATED LEAD IN SAMPLE B/MW-3 (0-2")
AOC-2	ONE OR MORE USTS NEAR GATEHOUSE
AOC-3	ONE OR MORE USTS IN SOUTHWEST CORNER OF PARKING LOT
AOC-4	ONE OR MORE POTENTIAL USTS ON LOT 53
AOC-5	ESTIMATED EXTENT OF PETROLEUM-CONTAMINATED SOIL AND/OR GROUNDWATER
AOC-6	POSSIBLE VAULTED 1,050-GALLON TANK IN BASEMENT OF LOT 8
AOC-7	ELEVATED ACETONE IN SAMPLE B/MW-4 (12-14)
AOC-8	POSSIBLE OFF-SITE SOURCE OF CONTAMINATION



NOTE: ELEVATIONS IN MANHATTAN BOROUGH DATUM

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WEST 61st STREET SITE
New York, New York

LOCATIONS OF AREAS OF CONCERN
AND SITE SPECIFIC ACTION LEVEL EXCEEDANCES

DATE
03.15.06

SCALE
As Shown

PROJECT No.
10321

FIGURE No.
15

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APPENDIX A
REMEDIATION HEALTH AND SAFETY PLAN
(INCLUDING EXPANDED COMMUNITY AIR MONITORING PLAN)

REMEDIATION
HEALTH AND SAFETY PLAN

WEST 61st STREET SITE

New York, New York
AKRF Project Number: 10321
BCP Site ID 231043

Prepared by:

AKRF

440 Park Avenue South, 7th Floor
New York, NY 10016
(212) 696-0670

Prepared for:

Algin Management Co., LLC
64-35 Yellowstone Blvd.
Forest Hills, NY 11375

MARCH 2006

TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 PURPOSE

The purpose of this Remediation Health and Safety Plan (RHASP) is to assign responsibilities, establish personnel protection standards and mandatory safety practices and procedures, and provide for contingencies that may arise during remedial excavation activities at the Project Site. The RHASP is intended to minimize health and safety risks resulting from the known and potential presence of hazardous materials on the Site.

This plan is not designed to address potential geotechnical, mechanical, or structural safety concerns, nor to supersede or replace any OSHA regulation and/or local and State construction codes or regulations.

2.0 APPLICABILITY

This Remediation Health and Safety Plan (RHASP) has been developed for implementation of construction activities conducted by all personnel on-site, both AKRF employees and others. This RHASP does not discuss other routine health and safety issues common to general construction/excavation, including but not limited to slips, trips, falls, shoring, and other physical hazards.

All AKRF employees are directed that all work must be performed in accordance with the Company's Generic HASP and all applicable OSHA regulations for the work activities required for the Project. All Project personnel are furthermore directed that they are not permitted to enter Permit Required Confined Spaces (as defined by OSHA). For issues unrelated to contaminated materials, all non-AKRF employees are to be bound by all applicable OSHA regulations and any more stringent requirements specified by their employer in their corporate HASP or otherwise. AKRF is not responsible for providing oversight for issues unrelated to contaminated materials for non-employees. This oversight will be the responsibility of the employer of that worker or other official designated by that employer.

3.0 INTRODUCTION

The West 61^{st} Street Site (the “Project Site” or “Site”) consists of the ten parcels located at the intersection of West 61^{st} Street and West End Avenue in Manhattan, New York (Figure 1). Specifically, the Site consists of Block 1152, Lots 5, 8, 10, 11, 12, 13, part of 43, 52, 53, and 55. These parcels are currently occupied by vacant land and an outdoor parking lot. Residential, industrial, and commercial properties are present in the surrounding neighborhood.

The proposed development Project includes the construction of three new buildings that would include parking and mechanical spaces at the cellar and subcellar levels; retail, residential, and community use on the first floor; and residential use (rental and condominium) from the second floor up. Building “A” will comprise 9 floors, Building “B” will comprise 14 floors, and Building “C” will comprise 29 floors. The proposed Project currently consists of the excavation of developed portions of the Site to the bedrock or within five to ten feet of the bedrock surface, which varies from a depth of approximately 9 to 40 feet below existing grade.

A Phase I Environmental Site Assessment (ESA) performed by AKRF, Inc. (AKRF), in June 2003 identified recognized environmental concerns (RECs) for the Site, including potential underground storage tanks. Geotechnical borings undertaken by RA Consultants in February 2005 detected petroleum odors at four locations along West 60^{th} Street. A Remedial Investigation (RI), completed by AKRF in November of 2005, identified seven Areas of Concern (AOCs). Three AOCs were identified in the eastern parking lot portion of Lot 43 along West 61^{st} Street, including two suspected underground storage tank locations and one discrete location of subsurface lead-contaminated fill material. Two AOCs were identified in the northwestern portion of the Site on Lots 53 and 55; a suspected underground storage tank and a discrete location of acetone-affected soil. Two AOCs were identified along West 60th Street; a suspected fuel oil vaulted storage tank observed in the basement of a building on Lot 8 (the tank's removal was not verified prior to the demolition of the building, and the basement has been filled with debris from the building); and the possible presence of petroleum-contaminated subsurface soil and groundwater identified from the RA Consultant's observations during the drilling of the rock borings and the analytical results of the samples collected during the RI.

An Interim Remedial Measure (IRM) Work Plan, dated February 2006, was submitted to the New York State department of Environmental Conservation and New York State Department of Health. The purpose of the IRM is to investigate the three alleged tank locations (ACOs 2, 3, and 4) and remove and identified tanks and petroleum-contaminated soil; to remove the lead-contaminated soil at location MW-3 (AOC-1); and to investigate the acetone-affected soil at location MW-4 (12'-14').

The IRM activities will be undertaken prior to the commencement of the construction-related removal of the fill material, construction and demolition debris in Lot 8, and the native soil. During the IRM activities, all personnel who enter locations on the Site that have been designated as Areas of Concern (AOCs) while intrusive sampling and/or excavation activities are being performed, will have completed a 40-hour training course that meets the OSHA requirements of 29 CFR Part 1910, Occupational Safety and Health Standards, and have up-to-date eight-hour refresher training. The training will allow personnel to recognize and understand the potential hazards to health and safety. After the removal of the tanks, any identified petroleum-contaminated soil around the tanks, as well as soil containing elevated concentrations of lead and/or acetone-affected soil will be removed. The remaining identified AOCs consist of the alleged petroleum-contaminated material (fill and/or native soil), located slightly above and below the groundwater level, and a suspected vaulted tank in the former basement of Lot 8 (AOC 5 and AOC-6). After the removal of the five AOCs identified in the IRM, personnel involved in the excavation and removal of fill material located in the Eastern Area (former parking lot along West 61st Street), fill and native soil in the northern portion of the Site along West 61st Street, and uncontaminated (by petroleum) fill and native soil in the southern portion of the Site along West 60th Street, will not be required to meet the OSHA requirements of 29 CFR Part 1910. The excavation and removal of the petroleum-affected soil in the southern portion of the Site along West 60th Street, the removal of the vaulted tank in Lot 8, if present, or elsewhere in the site, and any other areas subsequently identified as AOCs, will be undertaken by personnel who have completed the 40-hour training that meets the OSHA requirements of 29 CFR Part 1910. The AKRF Health and Safety Officer or designee will be present during any on-site intrusive activity to provide guidance in the event an unknown material is encountered.

4.0 HEALTH AND SAFETY GUIDELINES AND PROCEDURES

4.1 Hazard Evaluation

A Remedial Investigation (RI) was performed in the Fall of 2005. The results were reported in the Remedial Investigation Report (RIR), dated January 2006. Urban fill is present throughout the Site, consisting of sand, gravel, concrete and brick fragments, wood, slag, and construction debris. Based on laboratory analytical results, the fill material was not petroleum-contaminated, but contained semi-volatile organic compounds (SVOCs), including the SVOCs (benzo(a)pyrene, dibenzo(a,h)anthracene, chrysene, benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene). At some locations, the concentrations of one or more of the carcinogenic polycyclic aromatic hydrocarbons (cPAHs) were above the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative

Guidance Memorandum (TAGM) #4046 recommended soil cleanup objective values. Analytical results of the samples collected from the fill material revealed elevated concentrations of ten metals (aluminum, arsenic, barium, cadmium, calcium, magnesium, lead, mercury, nickel, and zinc) in concentrations above Eastern US background range concentrations at one or more locations. No significant impact from volatile organic compounds (VOCs) or pesticides was detected in the soil. One area along West 60th Street contained the presence of suspect petroleum-related compounds in the lower level of the fill material and the native soil beneath the urban fill material. VOCs (xylene and acetone) and SVOCs (all seven cPAHs) were present in the fill material and native soil along West 60th Street (Lots 5, 8, 10, 11, and 13).

The groundwater in the northeastern corner of the Site did not contain VOCs, SVOCs, pesticides, or PCBs. Four metals (aluminum, iron, selenium, and sodium) were detected in the unfiltered groundwater samples collected from the bedrock groundwater monitoring wells at concentrations above groundwater quality standards. Groundwater was found only in the bedrock in the northeastern corner of the Site; no groundwater was detected in the fill material on top of the bedrock during the remedial investigation in this portion of the Site. Groundwater was detected in the overburden (fill material and native soil) along West 61st Street. Six metals (aluminum, iron, manganese mercury, sodium, and selenium) were detected in unfiltered samples collected from one or more groundwater monitoring wells in this portion of the Site above groundwater quality standards. The samples collected from these wells did not contain VOCs, SVOCs, pesticides, or PCBs in concentrations above groundwater quality standards. Analysis of groundwater samples collected from groundwater monitoring wells along West 60th Street revealed the presence of suspect petroleum-related compounds. Five VOCs (acetone, benzene, toluene, ethylbenzene, and total xylenes) and one SVOC (naphthalene) were detected in concentrations above groundwater quality standards in one or more groundwater monitoring wells. Two pesticides (heptachlor epoxide and 4,4'-DDD) collected from the groundwater monitoring wells in this portion of the Site were detected in concentrations above groundwater quality standards. Ten metals (aluminum, cadmium, chromium, iron, lead, magnesium, manganese, nickel, selenium, and sodium) were detected in one or more unfiltered samples at concentrations above groundwater quality standards.

Soil vapor probes were installed at five locations around the perimeter of the Site. VOCs were detected in all of the samples. The concentrations detected for the identified VOCs ranged up to 390 micrograms per cubic meter ($\mu g/m^3$). The highest reading along West 60th Street was 14,000 parts per billion by volume (ppbv) for an unknown compound. This is in the area of the suspected petroleum contamination.

The most likely routes of exposure are breathing of SVOCs or metals in the particulate-laden air released during soil disturbing activities, dermal contact, and accidental ingestion. Appendix A includes specific health effects from the known on-site chemicals. The remaining sections of this RHASP address procedures (including training, air monitoring, work practices, and emergency response) to reduce the potential for unnecessary and unacceptable exposure to these contaminants.

The potential adverse health effects from these detected contaminants are diverse. Many of these compounds are known or suspected to result in chronic illness from long-term exposures. However, due to the limited nature of the proposed construction, only acute effects are a potential concern.

4.1.1 Hazards of Concern

Check all that apply		
(x) Organic Chemicals	(x) Inorganic Chemicals	( ) Radiological
( ) Biological	( ) Explosive/Flammable	( ) Oxygen Deficient Atmosphere
(x) Heat Stress	(x) Cold Stress	( ) Other
Comments: No personnel are permitted to enter Permit Required Confined Spaces.		

4.1.2 Physical Characteristics

Check all that apply		
(x) Liquid	(x) Solid (soil)	(x) Sludge from tanks
(x) Vapors	( ) Unknown	( ) Other
Comments:		

4.1.3 Hazardous Materials

Check all that apply					
Chemicals	**Solids**	**Sludges**	**Solvents**	**Oils**	**Other**
( ) Acids	(x) Ash	( ) Paints	( ) Halogens	(x) Transformer	( ) Lab
( ) Caustics	( ) Asbestos	( ) Metals	(x) Petroleum	( ) Other DF	( ) Pharm
(x) Pesticides	( ) Tailings	( ) POTW	( ) Other	(x) Motor or Hydraulic Oil	( ) Hospital
(x) Petroleum	(x) Other	( ) Other		( ) Other	( ) Rad
( ) Inks		(x) Petroleum sludge in tanks			( ) MGP
( ) PCBs					( ) Mold
(x) Metals					( ) Other
(x)Other: VOCs & SVOCs					

4.1.4 Chemicals of Concern

Chemicals	**REL/PEL/STEL (ppm)**	**Health Hazards**
Acetone	REL = 250 ppm PEL = 1000 ppm	Irritated eyes, nose, respiratory system; dizziness; headache, nausea, unconsciousness, confusion, possible coma, could affect menstrual cycle, kidney, liver, and nerve damage.
Benzene	REL = 0.1 ppm PEL = 1 ppm STEL = 5 ppm	Irritated eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude, dermatitis; bone marrow depression, potential occupational carcinogen.
Toluene	REL = 100 ppm PEL = 200 ppm STEL = 300 ppm	Irritated eyes, nose; lassitude, confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia; paresthesia; dermatitis; liver, kidney damage.
Ethylbenzene	REL = 100 ppm PEL = 100 ppm	Irritated eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma.
Xylenes	REL = 100 ppm PEL = 100 ppm	Irritated eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis.
Naphthalene	REL = 10 ppm PEL = 10 ppm	Irritated eyes; headache, confusion, excitement, malaise; nausea, vomiting, abdominal pain; irritated bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage.
Lead	REL=0.1 mg/m^3 PEL=0.05 mg/m^3	Weak, lassitude, insomnia; facial pallor, pale eye, anorexia, low weight, malnutrition, constipation, abdominal pain, colic; anemia; gingival lead line; tremors, paralysis writs and ankles; encephalopathy; kidney disease; irritation eyes; hypotension.
Particulate	PEL = 15 mg/m^3 (total) PEL = 5 mg/m^3 (respirable)	Irritated eyes, skin, throat, upper respiratory system.
Comments: REL = NIOSH Recommended Exposure Limit PEL = OSHA Permissible Exposure Limit STEL = OSHA Short Term Exposure Limit		

The potential health effects from on-site contamination are detailed in the fact sheets attached as Appendix A. Other environmental risks are outlined in the West Nile Virus and St. Louis Encephalitis Prevention information outlined in Appendix B.

4.2 Designated Personnel

AKRF has appointed Jessica Leber as the on-site Site Safety Officer (SSO). Ms. Leber will be responsible for the implementation of the Health and Safety Plan (HASP). The SSO has a four-year college degree in a scientific field, and experience in implementation of air monitoring and hazardous materials sampling programs. Ms. Leber's resume is provided in Appendix C. Health and safety training required for the SSO and all field personnel is outlined in Section 4.3 of this HASP.

4.3 Training

Prior to the commencement of construction excavation, six of the seven Areas of Concern (AOCs) will have been either removed or further evaluated through the collection of additional soil samples. The tanks and potential petroleum-contaminated soil at AOC-2, AOC-3, and AOC-4 will have been removed through Interim Remedial Measure (IRM) activities. The lead-contaminated soil (AOC-1) will be excavated, removed, and endpoint samples collected around the areas of contamination during the RIM. The suspected petroleum contamination along West 60th Street, areas of elevated semivolatile organic compounds, and the acetone-affected soil at MW -7 will be further evaluated during the waste classification sampling.

All personnel who enter locations on the Site designated as either Areas of Concern (AOC) or suspected of being AOCs, while intrusive sampling and/or excavation activities are being performed, will have completed a 40-hour training course that meets the OSHA requirements of 29 CFR Part 1910, Occupational Safety and Health Standards. All personnel will also have up-to-date eight-hour refresher training. The training will allow personnel to recognize and understand the potential hazards to health and safety.

Workers who are involved in excavation of fill material, construction and demolition debris, or uncontaminated native soil, will not be required to meet the OSHA requirements of 29 CFR Part 1910, Occupational Safety and Health Standards. However, all field personnel must attend a training program, whose purpose is to:

- Make them aware of the potential hazards they may encounter;
- Provide the knowledge and skills necessary for them to perform the work with minimal risk to health and safety;
- Make them aware of known and suspected Areas of Concern and actions that should be taken in the event they discover tanks, drums, petroleum-contaminated waste, and chemical odors not identified in the Remedial Investigation Report;
- Make then aware that any questions , observations or concerns should be immediately brought to the attention of the Site Safety Officer;
- Make them aware of the purpose and limitations of safety equipment; and
- Ensure that they can safely avoid or escape from emergencies.

Each member of the field crew will be instructed in these objectives before he/she goes onto the Site. A Site safety meeting will be conducted at the start of the Project. Additional meetings will be conducted, as necessary, for new personnel working at the Site. The Site Safety Officer, or a designated person assigned this task by the Site Safety Officer will be present during all excavation activities, regardless of the material being excavated.

4.4 Medical Surveillance Program

All AKRF and subcontractor personnel performing field work involving subsurface disturbance at the Site in designated or suspected Areas of Concern are required to have passed a complete medical surveillance examination in accordance with 29 CFR 1910.120 (f). A physician's medical release for work will be confirmed by the Site Safety Officer (SSO) before an employee can begin Site activities. The medical release will consider the type of work to be performed and the required personal protection equipment (PPE). The medical examination will, at a minimum, be provided annually and upon termination of hazardous waste Site work.

4.5 Site Work Zones

During any activities involving subsurface disturbance, the work area will be divided into various zones to prevent the spread of contamination, ensure that proper protective equipment is donned, and provide an area for decontamination.

The Exclusion Zone is defined as the area where exposure to affected media could be encountered. The Contamination Reduction Zone (CRZ) is the area where decontamination procedures take place, and is located next to the Exclusion Zone. The Support Zone is the area where support facilities such as vehicles, a fire extinguisher, and first aid supplies are located. The emergency staging area (part of the Support Zone) is the area where all workers on-site would assemble in the event of an emergency. These zones may changed by the Site Safety Officer (SSO), depending on that day's activities. All field personnel will be informed of the location of these zones before work begins.

Site Work Zones

Task	**Exclusion Zone**	**CRZ**	**Support Zone**
Excavation of lead-contaminated soil, acetone-affected soil, tank removal, and petroleum-contaminated material	10 ft from excavation	25 ft from excavation	As needed
Sampling	10 ft from drill rig	25 ft from drill rig	As needed
Comments: Control measures such as "caution tape" and/or traffic cones will be placed around the perimeter of the work area when work is being in active on-site construction area.			

4.6 Work Zone Air Monitoring

Real time air monitoring will be performed with the photoionization detector (PID) and particulate monitor during contaminated soil disturbance activities. Real time air monitoring will be performed with the combustible gas indicator and/or the multi-gas meter during tank removal activities. Measurements will be taken prior to the commencement of work and continuously during the work. Measurements will be made as close to the workers as practicable, and at the breathing height of the workers. The Site Safety Officer (SSO) will set up the equipment and confirm that it is working properly. His/her designee may oversee the air measurements during the day. The initial measurement for the day will be performed before the start of work and will establish the background level for that day. The final measurement for the day will be performed after the end of work. The action levels and required responses are listed in the table in Section 4.6.4.

4.6.1 Volatile Organic Compounds

A photoionization detector (PID) will be used to perform air monitoring during soil and groundwater sampling and soil disturbance activities conducted at the Site to determine airborne levels of total volatile organic compounds (VOCs). The PID will be calibrated daily with a 100-ppm isobutylene standard. The PID will be capable of calculating 15-minute running average concentrations and will be equipped with an audible alarm to indicate the exceedance of an action level. The VOC work zone action levels and required responses are listed in the table in Section 4.6.4.

4.6.2 Dust Particulates

A particulate monitor will be used to measure airborne levels of respirable particulates (less than ten microns) during soil disturbing activities. The particulate monitor will be used in accordance with the manufacturer’s specifications. The dust particulate work zone action levels and required responses are listed in the table in Section 4.6.4.

4.6.3 Oxygen and Combustible Gases

A combined combustible gas indicator and oxygen meter (CGI/O_2) or a multi-gas meter that measures the lower explosion limit of combustible gases (LEL), oxygen (O_2), carbon monoxide (CO), and hydrogen sulfide (H_2S) will be used to measure oxygen and combustible gases during tank removal. The combustible gas indicator and/or the multi-gas meter will be calibrated daily in accordance with manufacturers’ specifications. The CGI and O_2 work zone action levels and required responses are listed in the table in Section 4.6.4.

4.6.4 Work Zone Action Levels and Response Actions

Instrument	Task to be monitored	Action Level (Note 1)	Response Action
PID	All soil disturbance tasks	Less than 10 ppm in breathing zone.	Level D or D-Modified
		Between 10 and 100 ppm Half-face mask to 50 ppm (max.) Full-face mask to 100 ppm	Level C
		More than 100 ppm	Stop work. Resume work when readings are less than 100 ppm.
Particulate monitor	All soil disturbance tasks	Less than 5 mg/m^3	Level D
		Between 5 mg/m^3 and 125 mg/m^3	Level C. Apply dust suppression measures. If <2.5 mg/m^3, resume work using Level D. Otherwise, use Level C.
		Above 125 mg/m^3	Stop work. Apply additional dust suppression measures. Resume work when less than 125 mg/m^3.
Combustible Gas Indicator (CGI) or Equivalent (Note 2)	Tank Removal	Less than 20 percent LEL	Continue work.
		Between 20 and 80 percent LEL	Stop work. Resume work when less than 20 percent LEL.
		Above 80 percent LEL	Evacuate Exclusion Zone.
Oxygen Monitor	Tank Removal	Above 19.5 percent	Continue work.
		Below 19.5 percent	Stop work. Resume work when greater than 19.5 percent.

Notes:
1 – 15-minute time-weighted average, except for CGI, which is instantaneous reading.
2 – CGI or equivalent must measure oxygen (O_2), carbon monoxide (CO), hydrogen sulfide (H_2S), and combustible gas (LEL).
ppm – parts per million
mg/m^3 – milligrams per cubic meter
LEL – lower explosive limit

4.7 Community Air Monitoring

Perimeter community air monitoring for volatile organic compounds (VOCs) and dust particulates will be conducted during soil disturbance activities, including removal of liquids from tanks (if found), excavation and removal of underground storage tanks, excavation and removal of contaminated soil around the underground storage tanks, and drilling operations. At the start of work, air monitoring stations will be established upwind and downwind of the work activities. Exceedances of community air monitoring action levels will be reported in the daily report to the New York State Department of Environmental Conservation (NYSDEC) Project Manager.

4.7.1 Volatile Organic Compounds

Monitoring for volatile organic compounds (VOCs) will be conducted using a photoionization detector (PID). Monitoring for VOCs at both the upwind and downwind stations will be conducted at the start of each workday and every time the wind direction changes, to establish background conditions. Monitoring for VOCs at the downwind station will be continuous during soil excavation. If readings approach the Work Zone Action Levels shown in the table in Section 4.6.4, the location of the community monitoring downwind station will be moved to the downwind perimeter of the Site. Background readings and any readings that trigger response actions will be recorded in the Project log book, which will be available on-site for NYSDEC and NYSDOH review.

The VOC community action levels and required responses are listed in the table in Section 4.7.3.

Downwind odor monitoring will be performed during the excavation and loading of contaminated soil. If nuisance odors are noted, corrective actions will be implemented in accordance with Section 4.8 and the Expanded Community Air Monitoring and Odor/Vapor Control Plan provided in Appendix F.

4.7.2 Dust Particulates

Community air monitoring for dust particulates will be conducted using a real time particulate monitor that measures the concentration of airborne respirable particulates less than ten micrometers in size (PM_{10}). The monitor will be capable of calculating 15-minute running average concentrations and will be equipped with an audible alarm to indicate exceedance of action levels. Monitoring for particulates at the upwind location will be conducted at the start of each workday and every time the wind direction changes, to establish background conditions. Monitoring at the downwind station will be continuous during soil excavation. If readings approach the Work Zone Action Levels shown in the table in Section 4.6.4, the location of the community monitoring downwind station will be moved to the downwind perimeter of the Site. Background readings and any readings that trigger response actions will be recorded in the Project log book, which will be available on-site for NYSDEC and NYSDOH review. The dust particulate community action levels and required responses are listed in the table in Section 4.7.3.

4.7.3 Community Action Levels and Response Actions

Instrument	Task to be Monitored	Action Level	Response Action
PID	All soil disturbance tasks	Less than 5 ppm above background at downwind perimeter.	Continue work.
		Between 10 and 25 ppm above background at downwind perimeter.	Stop work and continue monitoring. If organic vapor levels (instantaneous reading) steadily decrease to less than 5 ppm, resume work. If organic vapor levels persists at >5 ppm, identify source and take steps to abate emissions. Work can resume if organic vapor level (15-minute average) is below 5 ppm at 200 feet downwind of work zone or half the distance to the nearest potential receptor, whichever is closer.
		More than 25 ppm above background at downwind perimeter.	Stop work.
Particulate monitor	All soil disturbance tasks	Less than 100 μg/m^3 above background (upwind perimeter) at downwind perimeter.	Continue work.
		Between 100 μg/m^3 and 150 μg/m^3 above background (upwind perimeter) at downwind perimeter.	Apply dust suppression measures. Work can continue provided downwind PM $_{10}$ particulate levels do not exceed 150 μg/m^3 above background levels and no visible dust is migrating from the work area.
		Greater than 150μg/m^3 above background (upwind perimeter) at downwind perimeter after dust suppression.	Stop work. Apply additional dust suppression measures. Resume work when less than 150 μg/m^3 above background levels and no visible dust is migrating from the work area.
Notes: ppm – parts per million μg/m^3 – micrograms per cubic meter			

4.8 Contingency Community Air Monitoring and Odor/Vapor Control Plan

Community air monitoring during subsurface disturbance activities will be performed in accordance with Section 4.7. Disturbance activities as part of the Remediation Work Plan (RWP) include soil borings and potential tank removal activities. If the community air monitoring and action level response measures described in Section 4.7 are not adequate to prevent repeated exceedences of perimeter monitoring action levels, or to prevent off-site nuisance odor impacts as detected by the community air monitoring program, the following measures will be implemented:

- The invasive activities that resulted in the repeated exceedences will be suspended.
- The NYSDEC and NYSDOH will be notified.
- The suspended activities will not be resumed until the Expanded Community Air Monitoring and Odor/Vapor Control Plan can be implemented. The Expanded Community Air Monitoring and Odor/Vapor Control Plan is attached as Appendix F.

4.9 Personal Protection Equipment

The personal protection equipment (PPE) required for various kinds of Site investigation tasks are based on 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response Appendix B, “General Description and Discussion of the Levels of Protection and Protective Gear.” AKRF field personnel and other Site personnel will wear, at a minimum, Level D PPE. The protection will be based on the air monitoring described in Section 4.6 of this HASP.

LEVEL OF PROTECTION and PPE		**Soil Excavation**
Level D (x) Steel Toe Shoes (x) Hard Hat (within 25 ft of drill rig/excavator) (x) Work Gloves	(x) Safety Glasses ( ) Face Shield (x) Ear Plugs (within 25 ft of drill rig/excavator) (x) Nitrile Gloves	Yes
Level C *(in addition to Level D)* ( ) Half Face Respirator (x) Full Face Respirator ( ) Full Face PAPR	( ) Particulate Cartridge ( ) Organic Cartridge (x) Dual Organic/Particulate Cartridge	If PID >10 ppm (breathing zone)
Comments: Cartridges to be changed out at least once per shift unless warranted beforehand (e.g., more difficult to breath, any odors detected, etc.).		

4.10 General Work Practices

To protect the health and safety of the field personnel, field personnel will adhere to the following guidelines during activities involving subsurface disturbance:

- Eating, drinking, chewing gum or tobacco, and smoking are prohibited, except in designated areas on the Site. These areas will be designated by the Site Safety Officer (SSO).
- Workers must wash their hands and face thoroughly on leaving the work area and before eating, drinking, or any other such activity.
- The workers should shower as soon as possible after leaving the Site. Contact with contaminated or suspected surfaces should be avoided.
- The buddy system should always be used; each buddy should watch for signs of fatigue, exposure, and heat/cold stress.

4.11 Contingency Plan

In the event that an underground storage tank, drum, odor, stained-soil, spill, or evidence of a previous spill or release is identified at a location, which has not been designated as an Area of Concern (AOC) in the Construction (IRM) Work Plan, that location will be considered to be the center of a new work zone. All applicable work zone requirements of Section 4.0 will apply, including but not limited to: hazardous characterization and evaluation, work zone delineation, work zone air monitoring, adherence to action levels, community air monitoring, personnel protection training requirements, and general work practices.

If the identified material is unknown or the apparent chemical has not been identified in this Remediation Health and Safety Plan (RHASP), the workers will withdraw to the edge of the exclusion zone and conduct monitoring consistent with Sections 4.7 and 4.8. The contractor will then contact the NYSDEC Spill Hotline and the other emergency contacts listed in Section 5.2.

5.0 EMERGENCY PROCEDURES AND EMERGENCY RESPONSE PLAN

The field crew will be equipped with emergency equipment, such as a first aid kit and disposable eye washes. In the case of a medical emergency, the Site Safety Officer (SSO) will determine the nature of the emergency and he/she will have someone call for an ambulance, if needed. If the nature of the injury is not serious, i.e., the person can be moved without expert emergency medical personnel, he/she should be driven to a hospital by on-site personnel. Directions to the hospital are provided below, and a hospital route map is attached.

5.1 Hospital Directions

Hospital Name:	St. Luke's Roosevelt Hospital
Phone Number:	(212) 523-4000
Address/Location:	1000 10th Avenue, New York, NY The entrance to the Emergency Room is on West 59th Street between 10th Avenue (Amsterdam Avenue) and 11th Avenue (West End Avenue).
Directions:	Go EAST on West 60th Street Turn RIGHT onto Columbus Avenue (9th Avenue) Turn RIGHT onto West 59th Street

A map to the hospital from the Site is attached as Figure 1.

5.2 Emergency Contacts

Company	Individual Name	Title	Contact Number
AKRF	Michelle Lapin	Project Director	646-388-9520 (office)
	Richard Gardineer	Project Manager	914-949-7336 (office)
	Jessica Leber	Site Safety Officer	646-388-9533 (office) 917-612-6175 (cell)
Algin Management Co., LLC	Larry Ginsberg	Client	718-896-9600
Subcontractors (driller, tank removal, etc.)	TBD – will be provided prior to the start of work	TBD	TBD
Ambulance, Fire Department, & Police Department	-	-	911
NYSDEC Spill Hotline	-	-	800-457-7362
NYSDEC	Shaminder Chawla	Project Manager	718-482-4897
NYSDOH	Julia Guastella	Project Manager	800-485-1158 x27780

6.0 APPROVAL & ACKNOWLEDGEMENTS OF RHASP

APPROVAL

Signed:	Date:
AKRF Project Manager	
Signed:	Date:
AKRF Health and Safety Officer	

Below is an affidavit that must be signed by all workers who enter the Site. A copy of the RHASP must be on-site at all times and will be kept by the Site Safety Officer (SSO).

AFFIDAVIT

I,_________________________(name), of_______________________________(company name), have read the Remediation Health and Safety Plan (RHASP) for the West 61st Street Site. I agree to conduct all on-site work in accordance with the requirements set forth in this RHASP and understand that failure to comply with this HASP could lead to my removal from the Site.

Signed:	Company:	Date:
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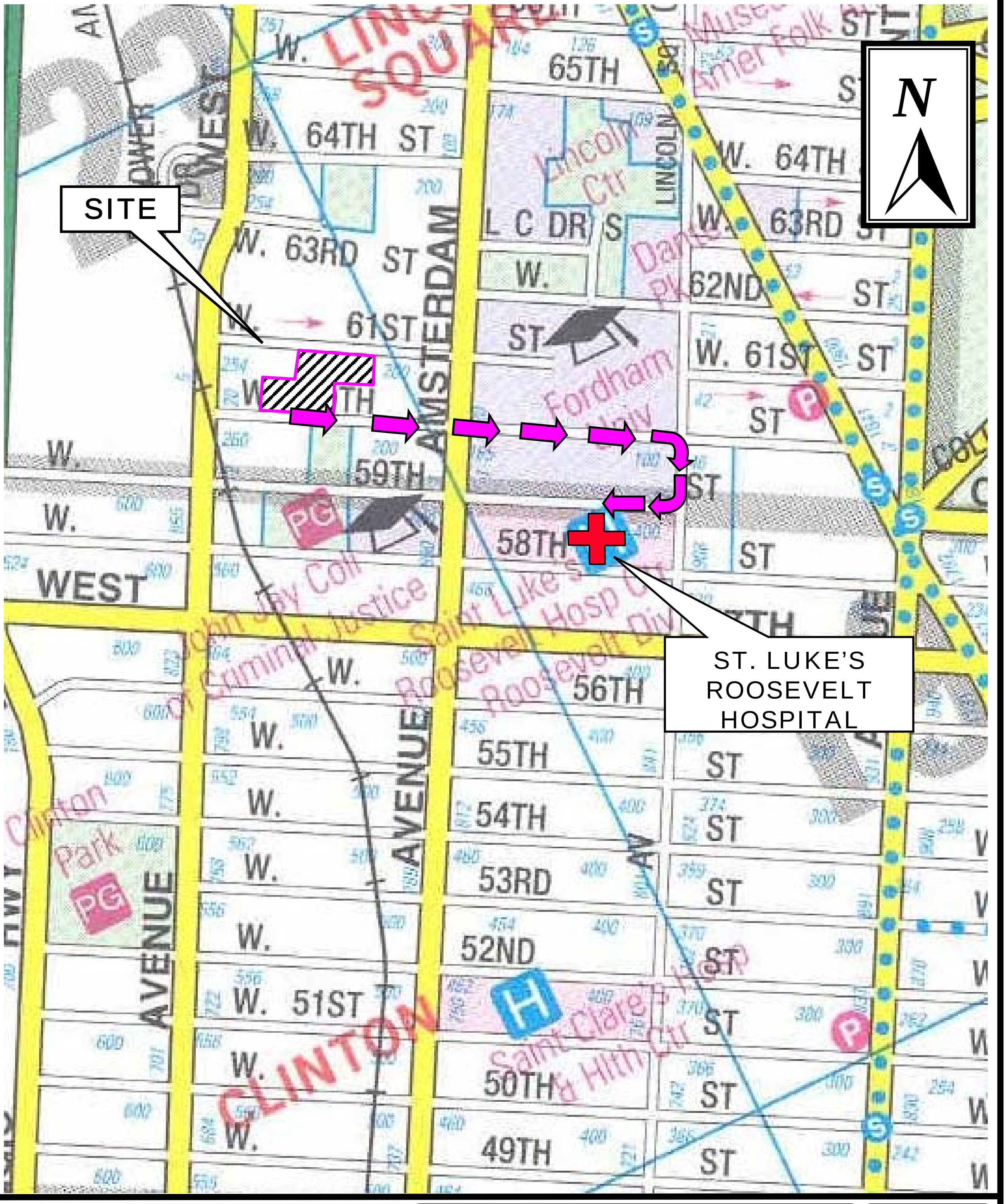
FIGURE



West 61st Street Site
New York, New York

PROJECT SITE MAP
AND NEAREST HOSPITAL

AKRF, Inc.

Environmental Consultants

440 Park Avenue S., New York, New York 10016

DATE
April 2005

DRAWING No.

PROJECT No.
10321

FIGURE No.
1

APPENDIX A

POTENTIAL HEALTH EFFECTS FROM ON-SITE CONTAMINANTS

ATSDR

AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

ACETONE

CAS # 67-64-1

Agency for Toxic Substances and Disease Registry ToxFAQs September 1995

This fact sheet answers the most frequently asked health questions (FAQs) about acetone. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to acetone results mostly from breathing air, drinking water, or coming in contact with products or soil that contain acetone. Exposure to moderate-to-high amounts of acetone can irritate your eyes and respiratory system, and make you dizzy. Very high exposure may cause you to lose consciousness. This chemical has been found in at least 572 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.

What is acetone?

(Pronounced ăs′ĭ-tōn′)

Acetone is a manufactured chemical that is also found naturally in the environment. It is a colorless liquid with a distinct smell and taste. It evaporates easily, is flammable, and dissolves in water. It is also called dimethyl ketone, 2-propanone, and beta-ketopropane.

Acetone is used to make plastic, fibers, drugs, and other chemicals. It is also used to dissolve other substances.

It occurs naturally in plants, trees, volcanic gases, forest fires, and as a product of the breakdown of body fat. It is present in vehicle exhaust, tobacco smoke, and landfill sites. Industrial processes contribute more acetone to the environment than natural processes.

What happens to acetone when it enters the environment?

☐ A large percentage (97%) of the acetone released during its manufacture or use goes into the air.

☐ In air, about one-half of the total amount breaks down from sunlight or other chemicals every 22 days.

☐ It moves from the atmosphere into the water and soil by rain and snow. It also moves quickly from soil and water back to air.

☐ Acetone doesn't bind to soil or build up in animals.

☐ It's broken down by microorganisms in soil and water.

☐ It can move into groundwater from spills or landfills.

☐ Acetone is broken down in water and soil, but the time required for this to happen varies.

How might I be exposed to acetone?

☐ Breathing low background levels in the environment.

☐ Breathing higher levels of contaminated air in the workplace or from using products that contain acetone (for example, household chemicals, nail polish, and paint).

☐ Drinking water or eating food containing acetone.

☐ Touching products containing acetone.

☐ For children, eating soil at landfills or hazardous waste sites that contain acetone.

☐ Smoking or breathing secondhand smoke.

How can acetone affect my health?

If you are exposed to acetone, it goes into your blood which then carries it to all the organs in your body. If it is a small amount, the liver breaks it down to chemicals that are not harmful and uses these chemicals to make energy for normal body functions. Breathing moderate- to-high levels of acetone for short periods of time, however, can cause nose, throat, lung, and eye irritation; headaches; light-headedness; confusion; increased pulse rate; effects on blood; nausea; vomiting; unconsciousness and possibly coma; and shortening of the menstrual cycle in women.

Swallowing very high levels of acetone can result in unconsciousness and damage to the skin in your mouth. Skin contact can result in irritation and damage to your skin.

The smell and respiratory irritation or burning eyes that occur from moderate levels are excellent warning signs that can help you avoid breathing damaging levels of acetone.

Health effects from long-term exposures are known mostly from animal studies. Kidney, liver, and nerve damage, increased birth defects, and lowered ability to reproduce (males only) occurred in animals exposed long-term. It is not known if people would have these same effects.

How likely is acetone to cause cancer?

The Department of Health and Human Services, the International Agency for Research on Cancer, and the Environmental Protection Agency (EPA) have not classified acetone for carcinogenicity.

Acetone does not cause skin cancer in animals when applied to the skin. We don't know if breathing or swallowing acetone for long periods will cause cancer. Studies of workers exposed to it found no significant risk of death from cancer.

Is there a medical test to show whether I've been exposed to acetone?

Methods are available to measure the amount of acetone in your breath, blood, and urine. The test can tell you how much acetone you were exposed to, although the amount that people have naturally in their bodies varies with each person. The tests can't tell you if you will experience any health effects from the exposure.

The test must be performed within 2-3 days after exposure because acetone leaves your body within a few days. These tests are not routinely performed at your doctor's office, but your doctor can take blood or urine samples and send them to a testing laboratory.

Has the federal government made recommendations to protect human health?

The EPA requires that spills of 5,000 pounds or more of acetone be reported.

The Occupational Safety and Health Administration (OSHA) has set a maximum concentration limit in workplace air of 1,000 parts of acetone per million parts of air (1,000 ppm) for an 8-hour workday over a 40-hour week to protect workers. The National Institute for Occupational Safety and Health (NIOSH) recommends an exposure limit of 250 ppm in workplace air for up to a 10-hour workday over a 40-hour workweek.

Glossary

Carcinogenicity: Ability to cause cancer.
Evaporate: To change into a vapor or a gas.
Ingesting: Taking food or drink into your body.
Long-term: Lasting one year or longer.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1994. Toxicological profile for acetone. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone:1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

BENZENE

CAS # 71-43-2

Agency for Toxic Substances and Disease Registry ToxFAQs September 1997

This fact sheet answers the most frequently asked health questions (FAQs) about benzene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Benzene is a widely used chemical formed from both natural processes and human activities. Breathing benzene can cause drowsiness, dizziness, and unconsciousness; long-term benzene exposure causes effects on the bone marrow and can cause anemia and leukemia. Benzene has been found in at least 813 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is benzene?

(Pronounced bĕn′zēn′)

Benzene is a colorless liquid with a sweet odor. It evaporates into the air very quickly and dissolves slightly in water. It is highly flammable and is formed from both natural processes and human activities.

Benzene is widely used in the United States; it ranks in the top 20 chemicals for production volume. Some industries use benzene to make other chemicals which are used to make plastics, resins, and nylon and synthetic fibers. Benzene is also used to make some types of rubbers, lubricants, dyes, detergents, drugs, and pesticides. Natural sources of benzene include volcanoes and forest fires. Benzene is also a natural part of crude oil, gasoline, and cigarette smoke.

What happens to benzene when it enters the environment?

- ☐ Industrial processes are the main source of benzene in the environment.
- ☐ Benzene can pass into the air from water and soil.
- ☐ It reacts with other chemicals in the air and breaks down within a few days.
- ☐ Benzene in the air can attach to rain or snow and be carried back down to the ground.
- ☐ It breaks down more slowly in water and soil, and can pass through the soil into underground water.
- ☐ Benzene does not build up in plants or animals.

How might I be exposed to benzene?

- ☐ Outdoor air contains low levels of benzene from tobacco smoke, automobile service stations, exhaust from motor vehicles, and industrial emissions.
- ☐ Indoor air generally contains higher levels of benzene from products that contain it such as glues, paints, furniture wax, and detergents.
- ☐ Air around hazardous waste sites or gas stations will contain higher levels of benzene.
- ☐ Leakage from underground storage tanks or from hazardous waste sites containing benzene can result in benzene contamination of well water.
- ☐ People working in industries that make or use benzene may be exposed to the highest levels of it.
- ☐ A major source of benzene exposures is tobacco smoke.

How can benzene affect my health?

Breathing very high levels of benzene can result in death, while high levels can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness. Eating or drinking foods containing high levels of benzene can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, and death.

The major effect of benzene from long-term (365 days or longer) exposure is on the blood. Benzene causes harmful effects on the bone marrow and can cause a decrease in red blood cells leading to anemia. It can also cause excessive bleeding and can affect the immune system, increasing the chance for infection.

Some women who breathed high levels of benzene for many months had irregular menstrual periods and a decrease in the size of their ovaries. It is not known whether benzene exposure affects the developing fetus in pregnant women or fertility in men.

Animal studies have shown low birth weights, delayed bone formation, and bone marrow damage when pregnant animals breathed benzene.

How likely is benzene to cause cancer?

The Department of Health and Human Services (DHHS) has determined that benzene is a known human carcinogen. Long-term exposure to high levels of benzene in the air can cause leukemia, cancer of the blood-forming organs.

Is there a medical test to show whether I've been exposed to benzene?

Several tests can show if you have been exposed to benzene. There is test for measuring benzene in the breath; this test must be done shortly after exposure. Benzene can also be measured in the blood, however, since benzene disappears rapidly from the blood, measurements are accurate only for recent exposures.

In the body, benzene is converted to products called metabolites. Certain metabolites can be measured in the urine. However, this test must be done shortly after exposure and is not a reliable indicator of how much benzene you have been exposed to, since the metabolites may be present in urine from other sources.

Has the federal government made recommendations to protect human health?

The EPA has set the maximum permissible level of benzene in drinking water at 0.005 milligrams per liter (0.005 mgL). The EPA requires that spills or accidental releases into the environment of 10 pounds or more of benzene be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set a permissible exposure limit of 1 part of benzene per million parts of air (1 ppm) in the workplace during an 8-hour workday, 40-hour workweek.

Glossary

Anemia: A decreased ability of the blood to transport oxygen.

Carcinogen: A substance with the ability to cause cancer.

CAS: Chemical Abstracts Service.

Chromosomes: Parts of the cells responsible for the development of hereditary characteristics.

Metabolites: Breakdown products of chemicals.

Milligram (mg): One thousandth of a gram.

Pesticide: A substance that kills pests.

References

This ToxFAQs information is taken from the 1997 Toxicological Profile for Benzene (update) produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES
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ETHYLBENZENE
CAS # 100-41-4

Agency for Toxic Substances and Disease Registry ToxFAQs June 1999

This fact sheet answers the most frequently asked health questions (FAQs) about ethylbenzene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Ethylbenzene is a colorless liquid found in a number of products including gasoline and paints. Breathing very high levels can cause dizziness, and throat and eye irritation. Ethylbenzene has been found in at least 731 of the 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is ethylbenzene?
(Pronounced ĕth′ əl bĕn′ zēn′)

Ethylbenzene is a colorless, flammable liquid that smells like gasoline. It is found in natural products such as coal tar and petroleum and is also found in manufactured products such as inks, insecticides, and paints.

Ethylbenzene is used primarily to make another chemical, styrene. Other uses include as a solvent, in fuels, and to make other chemicals.

What happens to ethylbenzene when it enters the environment?

- ☐ Ethylbenzene moves easily into the air from water and soil.
- ☐ It takes about 3 days for ethylbenzene to be broken down in air into other chemicals.
- ☐ Ethylbenzene may be released to water from industrial discharges or leaking underground storage tanks.
- ☐ In surface water, ethylbenzene breaks down by reacting with other chemicals found naturally in water.
- ☐ In soil, it is broken down by soil bacteria.

How might I be exposed to ethylbenzene?

- ☐ Breathing air containing ethylbenzene, particularly in areas near factories or highways.
- ☐ Drinking contaminated tap water.
- ☐ Working in an industry where ethylbenzene is used or made.
- ☐ Using products containing it, such as gasoline, carpet glues, varnishes, and paints.

How can ethylbenzene affect my health?

Limited information is available on the effects of ethylbenzene on people's health. The available information shows dizziness, throat and eye irritation, tightening of the chest, and a burning sensation in the eyes of people exposed to high levels of ethylbenzene in air.

Animals studies have shown effects on the nervous system, liver, kidneys, and eyes from breathing ethylbenzene in air.

How likely is ethylbenzene to cause cancer?

The EPA has determined that ethylbenzene is not classifiable as to human carcinogenicity.

No studies in people have shown that ethylbenzene exposure can result in cancer. Two available animal studies suggest that ethylbenzene may cause tumors.

How can ethylbenzene affect children?

Children may be exposed to ethylbenzene through inhalation of consumer products, including gasoline, paints, inks, pesticides, and carpet glue. We do not know whether children are more sensitive to the effects of ethylbenzene than adults.

It is not known whether ethylbenzene can affect the development of the human fetus. Animal studies have shown that when pregnant animals were exposed to ethylbenzene in air, their babies had an increased number of birth defects.

How can families reduce the risk of exposure to ethylbenzene?

Exposure to ethylbenzene vapors from household products and newly installed carpeting can be minimized by using adequate ventilation.

Household chemicals should be stored out of reach of children to prevent accidental poisoning. Always store household chemicals in their original containers; never store them in containers children would find attractive to eat or drink from, such as old soda bottles. Gasoline should be stored in a gasoline can with a locked cap.

Sometimes older children sniff household chemicals, including ethylbenzene, in an attempt to get high. Talk with your children about the dangers of sniffing chemicals.

Is there a medical test to show whether I've been exposed to ethylbenzene?

Ethylbenzene is found in the blood, urine, breath, and some body tissues of exposed people. The most common way to test for ethylbenzene is in the urine. This test measures substances formed by the breakdown of ethylbenzene. This test needs to be done within a few hours after exposure occurs, because the substances leave the body very quickly.

These tests can show you were exposed to ethylbenzene, but cannot predict the kind of health effects that might occur.

Has the federal government made recommendations to protect human health?

The EPA has set a maximum contaminant level of 0.7 milligrams of ethylbenzene per liter of drinking water (0.7 mg/L).

The EPA requires that spills or accidental releases into the environment of 1,000 pounds or more of ethylbenzene be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set an occupational exposure limit of 100 parts of ethylbenzene per million parts of air (100 ppm) for an 8-hour workday, 40-hour workweek.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for ethylbenzene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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FUEL OILS

CAS # 8008-20-6, 70892-10-3, 68476-30-2, 68476-34-6, 68476-31-3

Agency for Toxic Substances and Disease Registry ToxFAQs September 1996

This fact sheet answers the most frequently asked health questions (FAQs) about fuel oils. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Fuel oils are liquid mixtures produced from petroleum, and their use mostly involves burning them as fuels. Drinking or breathing fuel oils may cause nausea or nervous system effects. However, exposure under normal use conditions is not likely to be harmful. Fuel oils have been found in at least 26 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are fuel oils?

(Pronounced fyo͞o′əl oilz)

Fuel oils are a variety of yellowish to light brown liquid mixtures that come from crude petroleum. Some chemicals found in fuel oils may evaporate easily, while others may more easily dissolve in water.

Fuel oils are produced by different petroleum refining processes, depending on their intended uses. Fuel oils may be used as fuel for engines, lamps, heaters, furnaces, and stoves, or as solvents.

Some commonly found fuel oils include kerosene, diesel fuel, jet fuel, range oil, and home heating oil. These fuel oils differ from one another by their hydrocarbon compositions, boiling point ranges, chemical additives, and uses.

What happens to fuel oils when they enter the environment?

- ☐ Some chemicals found in fuel oils may evaporate into the air from open containers or contaminated soil or water.
- ☐ Some chemicals found in fuel oils may dissolve in water after spills to surface waters or leaks from underground storage tanks.
- ☐ Some chemicals found in fuel oils may stick to particles in water, which will eventually cause them to settle to the bottom sediment.
- ☐ Some of the chemicals found in fuel oils may be broken down slowly in air, water, and soil by sunlight or small organisms.
- ☐ Some of the chemicals found in fuel oils may build up significantly in plants and animals.

How might I be exposed to fuel oils?

- ☐ Using a home kerosene heater or stove, or using fuel oils at work.
- ☐ Breathing air in home or building basements that has been contaminated with fuel oil vapors entering from the soil.
- ☐ Drinking or swimming in water that has been contaminated with fuel oils from a spill or a leaking underground storage tank.
- ☐ Touching soil contaminated with fuel oils.
- ☐ Using fuel oils to wash paint or grease from skin or equipment.

How can fuel oils affect my health?

Little information is available about the health effects that may be caused by fuel oils. People who use kerosene stoves for cooking do not seem to have any health problems related to their exposure.

Breathing some fuel oils for short periods may cause nausea, eye irritation, increased blood pressure, headache, lightheadedness, loss of appetite, poor coordination, and difficulty concentrating. Breathing diesel fuel vapors for long periods may cause kidney damage and lower your blood's ability to clot.

Drinking small amounts of kerosene may cause vomiting, diarrhea, coughing, stomach swelling and cramps, drowsiness, restlessness, painful breathing, irritability, and unconsciousness. Drinking large amounts of kerosene may cause convulsions, coma, or death. Skin contact with kerosene for short periods may cause itchy, red, sore, or peeling skin.

How likely are fuel oils to cause cancer?

The International Agency for Research on Cancer (IARC) has determined that some fuel oils (heavy) may possibly cause cancer in humans, but for other fuel oils (light) there is not enough information to make a determination. IARC has also determined that occupational exposures to fuel oils during petroleum refining are probably carcinogenic in humans.

Some studies with mice have suggested that repeated contact with fuel oils may cause liver or skin cancer. However, other mouse studies have found this not to be the case. No studies are available in other animals or in people on the carcinogenic effects of fuel oils.

Is there a medical test to show whether I've been exposed to fuel oils?

There is no medical test that shows if you have been exposed to fuel oils. Tests are available to determine if some of the chemicals commonly found in fuel oils are in your blood. However, the presence of these chemicals in blood may not necessarily mean that you have been exposed to fuel oils.

Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) and the Air Force Office of Safety and Health (AFOSH) have set a permissible exposure level (PEL) of 400 parts of petroleum distillates per million parts of air (400 ppm) for an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) recommends that average workplace air levels not exceed 350 milligrams of petroleum distillates per cubic meter of air (350 mg/m^3) for a 40-hour workweek.

The Department of Transportation (DOT) lists fuel oils as hazardous materials and, therefore, regulates their transportation.

Glossary

Carcinogenic: Able to cause cancer.

CAS: Chemical Abstracts Service.

Evaporate: To change into a vapor or a gas.

Hydrocarbon: Any compound made up of hydrogen and carbon.

Milligram (mg): One thousandth of a gram.

ppm: Parts per million.

Sediment: Mud and debris that have settled to the bottom of a body of water.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for fuel oils. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone:1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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AUTOMOTIVE GASOLINE

CAS # 8006-61-9

Agency for Toxic Substances and Disease Registry ToxFAQs September 1996

This fact sheet answers the most frequently asked health questions (FAQs) about automobile gasoline. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to automotive gasoline most likely occurs from breathing its vapor at a service station while filling a car's fuel tank. At high levels, automotive gasoline is irritating to the lungs when breathed in and irritating to the lining of the stomach when swallowed. Exposure to high levels may also cause harmful effects to the nervous system. Automotive gasoline has been found in at least 23 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is automotive gasoline?

(Pronounced ô′tə-mō′tĭv găs′ə-lēn′)

The gasoline discussed in this fact sheet is automotive used as a fuel for engines in cars. Gasoline is a colorless, pale brown, or pink liquid, and is very flammable.

Gasoline is a manufactured mixture that does not exist naturally in the environment. Gasoline is produced from petroleum in the refining process.

Typically, gasoline contains more than 150 chemicals, including small amounts of benzene, toluene, xylene, and sometimes lead. How the gasoline is made determines which chemicals are present in the gasoline mixture and how much of each is present. The actual composition varies with the source of the crude petroleum, the manufacturer, and the time of year.

What happens to automotive gasoline when it enters the environment?

☐ Small amounts of the chemicals present in gasoline evaporate into the air when you fill the gas tank in your car or when gasoline is accidentally spilled onto surfaces and soils or into surface waters.

☐ Other chemicals in gasoline dissolve in water after spills to surface waters or underground storage tank leaks into the groundwater.

☐ In surface releases, most chemicals in gasoline will probably evaporate; others may dissolve and be carried away by water; a few will probably stick to soil.

☐ The chemicals that evaporate are broken down by sunlight and other chemicals in the air.

☐ The chemicals that dissolve in water also break down quickly by natural processes.

How might I be exposed to automotive gasoline?

☐ Breathing vapors at a service station when filling the car's fuel tank is the most likely way to be exposed.

☐ Working at a service station.

☐ Using equipment that runs on gasoline, such as a lawn mower.

☐ Drinking contaminated water.

☐ Being close to a spot where gasoline has spilled or leaked into the soil.

How can automotive gasoline affect my health?

Many of the harmful effects seen after exposure to gasoline are due to the individual chemicals in the gasoline mixture, such as benzene and lead. Inhaling or swallowing large amounts of gasoline can cause death.

Inhaling high concentrations of gasoline is irritating to the lungs when breathed in and irritating to the lining of the stomach when swallowed. Gasoline is also a skin irritant. Breathing in high levels of gasoline for short periods or swallowing large amounts of gasoline may also cause harmful effects on the nervous system.

Serious nervous system effects include coma and the inability to breathe, while less serious effects include dizziness and headaches.

There is not enough information available to determine if gasoline causes birth defects or affects reproduction.

How likely is automotive gasoline to cause cancer?

The Department of Health and Human Services (DHHS) and the International Agency for Research on Cancer (IARC) have not classified automotive gasoline for carcinogenicity. Automotive gasoline is currently undergoing review by the EPA for cancer classification.

Some laboratory animals that breathed high concentrations of unleaded gasoline vapors continuously for 2 years developed liver and kidney tumors. However, there is no evidence that exposure to gasoline causes cancer in humans.

Is there a medical test to show whether I've been exposed to automotive gasoline?

Laboratory tests are available that can measure elevated blood or urine levels of lead (as an indication of exposure to leaded gasoline only), benzene, or other substances that may result from exposure to gasoline or other sources. These methods are sensitive enough to measure background levels and levels where health effects may occur. These tests aren't available in most doctors' offices, but can be done at special laboratories that have the right equipment.

Has the federal government made recommendations to protect human health?

The EPA has established many regulations to control air pollution. These are designed to protect the public from the possible harmful health effects of gasoline.

The American Conference of Governmental Industrial Hygienists (ACGIH) set a maximum level of 890 milligrams of gasoline per cubic meter of air (890 mg/m^3) for an 8-hour workday, 40-hour workweek.

Glossary

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Crude petroleum: Petroleum that has not been processed.

Dissolve: To disappear gradually.

Evaporate: To change into a vapor or a gas.

Irritant: A substance that causes an abnormal reaction.

Mixture: A combination of two or more components.

Refining process: The process by which petroleum is purified to form gasoline.

Tumor: An abnormal mass of tissue.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for automotive gasoline. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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HYDRAULIC FLUIDS

CAS # 55957-10-3; 68937-40-6; 50815-84-4; 55962-27-1; 66594-31-8; 63848-94-2; 107028-44-4; 28777-70-0

Agency for Toxic Substances and Disease Registry ToxFAQs September 1997

This fact sheet answers the most frequently asked health questions (FAQs) about hydraulic fluids. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to hydraulic fluids occurs mainly in the workplace. Drinking certain types of hydraulic fluids can cause death in humans, and swallowing or inhaling certain types of hydraulic fluids has caused nerve damage in animals. Contact with some types of hydraulic fluids can irritate your skin or eyes. These substances have been found in at least 10 of the 1,428 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are hydraulic fluids?

(Pronounced hī-drô′lĭk flo͞o′ĭdz)

Hydraulic fluids are a large group of liquids made of many kinds of chemicals. They are used in automobile automatic transmissions, brakes, and power steering; fork lift trucks; tractors; bulldozers; industrial machinery; and airplanes. The three most common types of hydraulic fluids are mineral oil, organophosphate ester, and polyalphaolefin. Some of the trade names for hydraulic fluids include Durad®, Fyrquel®, Skydrol®, Houghton-Safe®, Pydraul®, Reofos®, Reolube®, and Quintolubric®. (Use of trade names is for identification only and does not imply endorsement by the Agency for Toxic Substances and Disease Registry, the Public Health Service, or the U.S. Department of Health and Human Services.)

Some hydraulic fluids have a bland, oily smell and others have no smell; some will burn and some will not burn. Certain hydraulic fluids are produced from crude oil and others are manufactured.

What happens to hydraulic fluids when they enter the environment?

- ☐ Hydraulic fluids can enter the environment from spills, leaks in machines that use them, or from storage areas and waste sites.
- ☐ If spilled on soil, some of the ingredients in hydraulic fluids will stay on top and others will sink into the groundwater.
- ☐ In water, some hydraulic fluids' ingredients will transfer to the bottom and can stay there for more than a year.
- ☐ Certain chemicals in hydraulic fluids may break down in air, soil, or water, but how much breaks down isn't known.
- ☐ Fish may contain some hydraulic fluids if they live in contaminated water.

How might I be exposed to hydraulic fluids?

- ☐ Touching or swallowing hydraulic fluids.
- ☐ Breathing hydraulic fluids in the air near machines where hydraulic fluids are used.
- ☐ Touching contaminated water or soil near hazardous waste sites or industrial manufacturing facilities that use or make hydraulic fluids.

How can hydraulic fluids affect my health?

Little is known about how hydraulic fluids can affect your health. Since hydraulic fluids are actually mixtures of chemicals, some of the effects seen may be caused by additives in the hydraulic fluids.

In people, the effects of breathing air with high levels of hydraulic fluids are not known. Drinking large amounts of some types of hydraulic fluids can cause pneumonia, intestinal bleeding, or death in humans. Weakness of the hands was seen in a worker who touched a lot of hydraulic fluids.

Rabbits that inhaled very high levels of one type of hydraulic fluid had trouble breathing, congested lungs, and became drowsy. The nervous systems of animals that swallowed or inhaled other hydraulic fluids were affected immediately with tremors, diarrhea, sweating, breathing difficulty, and sometimes several weeks later with weakness of the limbs, or paralysis. The immediate effects are caused because hydraulic fluids stop the action of certain enzymes, called cholinesterases, in the body. There are no reports of people swallowing or breathing the types of hydraulic fluids that cause these effects. When certain types of hydraulic fluids were put into the eyes of animals or allowed to touch the skin of people or animals for short periods of time, redness and swelling occurred. It is not known whether hydraulic fluids can cause birth defects or reproductive effects.

How likely are hydraulic fluids to cause cancer?

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified hydraulic fluids as to their carcinogenicity.

Is there a medical test to show whether I've been exposed to hydraulic fluids?

Hydraulic fluids can't be measured in blood, urine, or feces, but certain chemicals in the hydraulic fluids can be measured. Some of the hydraulic fluids stop the activity of certain enzymes, called cholinesterases, in blood and this activity can be measured. However, many other chemicals also cause this effect. This test isn't available at most doctors' offices, but can be done at special laboratories that have the right equipment.

Has the federal government made recommendations to protect human health?

There are no federal government recommendations to protect humans from the health effects of the major hydraulic fluids. However, mineral oil, the major chemical ingredient of one type of hydraulic fluid, is part of the petroleum distillate class of chemicals and there are regulations for these chemicals.

The Occupational Safety and Health Administration (OSHA) has set an exposure limit of 2,000 milligram per cubic meter (mg/m^3) petroleum distillates for an 8-hour workday, 40-hour workweek. The National Institute for Occupational Safety and Health (NIOSH) recommends an exposure limit of 350 mg/m^3 petroleum distillates for a 10-hour workday, 40-hour workweek.

Glossary

Additive: Substance added to another in small amounts to improve its properties.

CAS: Chemical Abstracts Service.

Carcinogenicity: Ability to cause cancer.

Petroleum Distillate: A chemical fraction of petroleum.

References

This ToxFAQs information is taken from the 1997 Toxicological Profile for Hydraulic Fluids produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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NAPHTHALENE
CAS # 91-20-3

Agency for Toxic Substances and Disease Registry ToxFAQs September 1996

This fact sheet answers the most frequently asked health questions (FAQs) about naphthalene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to naphthalene happens mostly from breathing air contaminated from the burning of wood or fossil fuels, industrial discharges, tobacco smoke, or moth repellents. Exposure to large amounts of naphthalene may damage or destroy some of your red blood cells. Naphthalene has been found in at least 536 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is naphthalene?

(Pronounced năf′thə-lēn′)

Naphthalene is a white solid that is found naturally in fossil fuels. Burning tobacco or wood produces naphthalene. It has a strong, but not unpleasant smell.

The major products made from naphthalene are moth repellents. It is also used for making dyes, resins, leather, tanning agents, and the insecticide, carbaryl.

What happens to naphthalene when it enters the environment?

- Naphthalene enters the environment from industrial uses, and from its use as a moth repellent.
- It also enters from the burning of wood or tobacco, and from accidental spills.
- Naphthalene evaporates easily.
- In air, moisture and sunlight break it down, often within 1 day.
- Naphthalene in water is destroyed by bacteria or evaporates into the air.
- Naphthalene binds weakly to soils and sediment.
- It does not accumulate in animals or fish.
- If dairy cows are exposed to naphthalene, some of it will be in their milk.
- If laying hens are exposed, some of it will be in their eggs.

How might I be exposed to naphthalene?

- Breathing low levels in outdoor air.
- Breathing air contaminated from industrial discharges or from burning wood or fossil fuels.
- Breathing air in homes or businesses where cigarettes are smoked, wood is burned, or moth repellents are used.
- Drinking water from contaminated wells.
- Touching clothing, blankets, or coverlets that are treated with naphthalene.

How can naphthalene affect my health?

Exposure to large amounts of naphthalene may damage or destroy some of your red blood cells. This could cause you to have too few red blood cells until your body replaces the destroyed cells. People, particularly children, have developed this problem after eating naphthalene-containing mothballs or deodorant blocks. Some of the symptoms of this problem are fatigue, lack of appetite, restlessness, and pale skin. Exposure to large amounts of naphthalene may also cause nausea, vomiting, diarrhea, blood in the urine, and a yellow color to the skin.

Animals sometimes develop cloudiness in their eyes after swallowing naphthalene. It is not clear if this also develops in people.

When mice were repeatedly exposed to naphthalene vapors for 2 years, their noses and lungs became inflamed and irritated.

How likely is naphthalene to cause cancer?

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC) and the EPA have not classified naphthalene as to its human carcinogenicity.

No studies are available in people. Naphthalene has caused cancer in studies in female mice, but not in male mice or in rats of either sex.

Is there a medical test to show whether I've been exposed to naphthalene?

Tests are available that measure levels of naphthalene and its breakdown products in urine, stool, blood, or maternal milk. A small sample of your body fat can also be removed and analyzed for naphthalene. These tests are not routinely available in a doctor's office. However, a sample taken in a doctor's office can be sent to a special laboratory, if needed.

These tests cannot determine exactly how much naphthalene you were exposed to or predict whether harmful effects will occur.

Has the federal government made recommendations to protect human health?

The EPA recommends that children not drink water containing over 0.5 parts of naphthalene per million parts of water (0.5 ppm) for more than 10 days, or 0.4 ppm for longer than 7 years. Adults should not drink water with more than 1 ppm for more than 7 years. For water consumed over a lifetime, the EPA suggests it contain no more than 0.02 ppm naphthalene. The EPA requires that discharges or spills into the environment of 100 pounds or more be reported.

The Occupational Safety and Health Administration (OSHA) has set a limit of 10 parts per million (10 ppm) for the level of naphthalene in workplace air over an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) considers more than 250 ppm of naphthalene in air to be immediately dangerous to life or health. This is the exposure level of a chemical that is likely to cause permanent health problems or death.

Glossary

Carcinogenicity: Ability of a substance to cause cancer.

CAS: Chemical Abstracts Service.

Insecticide: A substance that kills insects.

Sediment: Mud and debris that have settled to the bottom of a body of water.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene (update). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Services.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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LEAD

CAS # 7439-92-1

Agency for Toxic Substances and Disease Registry ToxFAQs June 1999

This fact sheet answers the most frequently asked health questions (FAQs) about lead. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to lead can happen from breathing workplace air or dust, eating contaminated foods, or drinking contaminated water. Children can be exposed from eating lead-based paint chips or playing in contaminated soil. Lead can damage the nervous system, kidneys, and reproductive system. Lead has been found in at least 1,026 of 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is lead?

(Pronounced lĕd)

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead can be found in all parts of our environment. Much of it comes from human activities including burning fossil fuels, mining, and manufacturing.

Lead has many different uses. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays.

Because of health concerns, lead from gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years.

What happens to lead when it enters the environment?

☐ Lead itself does not break down, but lead compounds are changed by sunlight, air, and water.

☐ When lead is released to the air, it may travel long distances before settling to the ground.

☐ Once lead falls onto soil, it usually sticks to soil particles.

☐ Movement of lead from soil into groundwater will depend on the type of lead compound and the characteristics of the soil.

☐ Much of the lead in inner-city soils comes from old houses painted with lead-based paint.

How might I be exposed to lead?

☐ Eating food or drinking water that contains lead.

☐ Spending time in areas where lead-based paints have been used and are deteriorating.

☐ Working in a job where lead is used.

☐ Using health-care products or folk remedies that contain lead.

☐ Engaging in certain hobbies in which lead is used (for example, stained glass).

How can lead affect my health?

Lead can affect almost every organ and system in your body. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the reproductive system. The effects are the same whether it is breathed or swallowed.

At high levels, lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect the memory. Lead may cause anemia, a disorder of the blood. It can also damage the male reproductive system. The connection between these effects and exposure to low levels of lead is uncertain.

How likely is lead to cause cancer?

The Department of Health and Human Services has determined that lead acetate and lead phosphate may reasonably be anticipated to be carcinogens based on studies in animals. There is inadequate evidence to clearly determine lead's carcinogenicity in people.

How can lead affect children?

Small children can be exposed by eating lead-based paint chips, chewing on objects painted with lead-based paint, or swallowing house dust or soil that contains lead.

Children are more vulnerable to lead poisoning than adults. A child who swallows large amounts of lead may develop blood anemia, severe stomachache, muscle weakness, and brain damage. A large amount of lead might get into a child's body if the child ate small pieces of old paint that contained large amounts of lead. If a child swallows smaller amounts of lead, much less severe effects on blood and brain function may occur. Even at much lower levels of exposure, lead can affect a child's mental and physical growth.

Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. These effects are more common if the mother or baby was exposed to high levels of lead.

How can families reduce the risk of exposure to lead?

Avoid exposure to sources of lead. Do not allow children to chew or mouth painted surfaces that may have been painted with lead-based paint (homes built before 1978). Run your water for 15 to 30 seconds before drinking or cooking with it. This will get rid of lead that may have leached out of pipes. Some types of paints and pigments that are used as make-up or hair coloring contain lead. Keep these kinds of products away from children. Wash children's hands and faces often to remove lead dusts and soil, and regularly clean the house of dust and tracked in soil.

Is there a medical test to show whether I've been exposed to lead?

A blood test is available to measure the amount of lead in your blood and to estimate the amount of your exposure to lead. Blood tests are commonly used to screen children for lead poisoning. Lead in teeth and bones can be measured with X-rays, but this test is not as readily available. Medical treatment may be necessary in children if the lead concentration in blood is higher than 45 micrograms per deciliter (45 µg/dL).

Has the federal government made recommendations to protect human health?

The Centers for Disease Control and Prevention (CDC) recommends that children ages 1 and 2 be screened for lead poisoning. Children who are 3 to 6 years old should be tested for lead if they have never been tested for lead before and if they receive services from public assistance programs; if they live in or regularly visit a building built before 1950; if they live in or visit a home built before 1978 that is being remodeled; or if they have a brother, sister, or playmate who has had lead poisoning. CDC considers children to have an elevated level of lead if the amount in the blood is 10 µg/dL.

The EPA requires lead in air not to exceed 1.5 micrograms per cubic meter (1.5 µg/m^3) averaged over 3 months. EPA limits lead in drinking water to 15 µg per liter.

The Occupational Health and Safety Administration (OSHA) develops regulations for workers exposed to lead. The Clean Air Act Amendments of 1990 banned the sale of leaded gasoline. The Federal Hazardous Substance Act bans children's products that contain hazardous amounts of lead.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for lead. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

METHYL *TERT*-BUTYL ETHER (MTBE) CAS # 1634-04-4

Agency for Toxic Substances and Disease Registry ToxFAQs September 1997

This fact sheet answers the most frequently asked health questions (FAQs) about methyl *tert*-butyl ether (MTBE). For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Methyl *tert*-butyl ether (MTBE) is a flammable liquid which is used as an additive in unleaded gasoline. Drinking or breathing MTBE may cause nausea, nose and throat irritation, and nervous system effects. MTBE has been found in at least 11 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is methyl *tert*-butyl ether?

(Pronounced mĕth′əl tûr′shē-ĕr′ē byo͞ot′l ē′thər)

Methyl *tert*-butyl ether (MTBE) is a flammable liquid with a distinctive, disagreeable odor. It is made from blending chemicals such as isobutylene and methanol, and has been used since the 1980s as an additive for unleaded gasolines to achieve more efficient burning.

MTBE is also used to dissolve gallstones. Patients treated in this way have MTBE delivered directly to their gall bladders through special tubes that are surgically inserted.

What happens to MTBE when it enters the environment?

☐ MTBE quickly evaporates from open containers and surface water, so it is commonly found as a vapor in the air.

☐ Small amounts of MTBE may dissolve in water and get into underground water.

☐ It remains in underground water for a long time.

☐ MTBE may stick to particles in water, which will cause it to eventually settle to the bottom sediment.

☐ MTBE may be broken down quickly in the air by sunlight.

☐ MTBE does not build up significantly in plants and animals.

How might I be exposed to MTBE?

☐ Touching the skin or breathing contaminated air while pumping gasoline.

☐ Breathing exhaust fumes while driving a car.

☐ Breathing air near highways or in cities.

☐ Drinking, swimming, or showering in water that has been contaminated with MTBE.

☐ Receiving MTBE treatment for gallstones.

How can MTBE affect my health?

Breathing small amounts of MTBE for short periods may cause nose and throat irritation. Some people exposed to MTBE while pumping gasoline, driving their cars, or working in gas stations have reported having headaches, nausea, dizziness, and mental confusion. However, the actual levels of exposure in these cases are unknown. In addition, these symptoms may have been caused by exposure to other chemicals.

There are no data on the effects in people of drinking MTBE. Studies with rats and mice suggest that drinking MTBE may cause gastrointestinal irritation, liver and kidney damage, and nervous system effects.

How likely is MTBE to cause cancer?

There is no evidence that MTBE causes cancer in humans. One study with rats found that breathing high levels of MTBE for long periods may cause kidney cancer. Another study with mice found that breathing high levels of MTBE for long periods may cause liver cancer.

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified MTBE as to its carcinogenicity.

Is there a medical test to show whether I've been exposed to MTBE?

MTBE and its breakdown product, butyl alcohol, can be detected in your breath, blood, or urine for up to 1 or 2 days after exposure. These tests aren't available at most doctors' offices, but can be done at special laboratories that have the right equipment. There is no other test specific to determining MTBE exposure.

Has the federal government made recommendations to protect human health?

The EPA has issued guidelines recommending that, to protect children, drinking water levels of MTBE not exceed 4 milligrams per liter of water (4 mg/L) for an exposure of 1-10 days, and 3 mg/L for longer-term exposures.

The American Conference of Governmental Industrial Hygienists (ACGIH) has recommended an exposure limit of 40 parts of MTBE per million parts of air (40 ppm) for an 8-hour workday, 40-hour workweek.

Glossary

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Evaporate: To change into a vapor or gas.

Milligram (mg): One thousandth of a gram.

ppm: Parts per million.

Sediment: Mud and debris that have settled to the bottom of a body of water.

References

This ToxFAQs information is taken from the 1996 Toxicological Profile for Methyl *tert*-Butyl Ether produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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POLYCHLORINATED BIPHENYLS

Division of Toxicology ToxFAQs™ February 2001

This fact sheet answers the most frequently asked health questions (FAQs) about polychlorinated biphenyls. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Polychlorinated biphenyls (PCBs) are a mixture of individual chemicals which are no longer produced in the United States, but are still found in the environment. Health effects that have been associated with exposure to PCBs include acne-like skin conditions in adults and neurobehavioral and immunological changes in children. PCBs are known to cause cancer in animals. PCBs have been found in at least 500 of the 1,598 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are polychlorinated biphenyls?

Polychlorinated biphenyls are mixtures of up to 209 individual chlorinated compounds (known as congeners). There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs have no known smell or taste. Many commercial PCB mixtures are known in the U.S. by the trade name Aroclor.

PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment and can cause harmful health effects. Products made before 1977 that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and old microscope and hydraulic oils.

What happens to PCBs when they enter the environment?

- ☐ PCBs entered the air, water, and soil during their manufacture, use, and disposal; from accidental spills and leaks during their transport; and from leaks or fires in products containing PCBs.
- ☐ PCBs can still be released to the environment from hazardous waste sites; illegal or improper disposal of industrial wastes and consumer products; leaks from old electrical transformers containing PCBs; and burning of some wastes in incinerators.
- ☐ PCBs do not readily break down in the environment and thus may remain there for very long periods of time. PCBs can travel long distances in the air and be deposited in areas far away from where they were released. In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments. PCBs also bind strongly to soil.
- ☐ PCBs are taken up by small organisms and fish in water. They are also taken up by other animals that eat these aquatic animals as food. PCBs accumulate in fish and marine mammals, reaching levels that may be many thousands of times higher than in water.

How might I be exposed to PCBs?

- ☐ Using old fluorescent lighting fixtures and electrical devices and appliances, such as television sets and refrigerators, that were made 30 or more years ago. These items may leak small amounts of PCBs into the air when they get hot during operation, and could be a source of skin exposure.
- ☐ Eating contaminated food. The main dietary sources of PCBs are fish (especially sportfish caught in contaminated lakes or rivers), meat, and dairy products.
- ☐ Breathing air near hazardous waste sites and drinking contaminated well water.
- ☐ In the workplace during repair and maintenance of PCB transformers; accidents, fires or spills involving transformers, fluorescent lights, and other old electrical devices; and disposal of PCB materials.

How can PCBs affect my health?

The most commonly observed health effects in people exposed to large amounts of PCBs are skin conditions such as acne and rashes. Studies in exposed workers have shown changes in blood and urine that may indicate liver damage. PCB exposures in the general population are not likely to result in skin and liver effects. Most of the studies of health effects of PCBs in the general population examined children of mothers who were exposed to PCBs.

Animals that ate food containing large amounts of PCBs for short periods of time had mild liver damage and some died. Animals that ate smaller amounts of PCBs in food over several weeks or months developed various kinds of health effects, including anemia; acne-like skin conditions; and liver, stomach, and thyroid gland injuries. Other effects of PCBs in animals include changes in the immune system, behavioral alterations, and impaired reproduction. PCBs are not known to cause birth defects.

How likely are PCBs to cause cancer?

Few studies of workers indicate that PCBs were associated with certain kinds of cancer in humans, such as cancer of the liver and biliary tract. Rats that ate food containing high levels of PCBs for two years developed liver cancer. The Department of Health and Human Services (DHHS) has concluded that PCBs may reasonably be anticipated to be carcinogens. The EPA and the International Agency for Research on Cancer (IARC) have determined that PCBs are probably carcinogenic to humans.

How can PCBs affect children?

Women who were exposed to relatively high levels of PCBs in the workplace or ate large amounts of fish contaminated with PCBs had babies that weighed slightly less than babies from women who did not have these exposures. Babies born to women who ate PCB-contaminated fish also showed abnormal responses in tests of infant behavior. Some of these behaviors, such as problems with motor skills and a decrease in short-term memory, lasted for several years. Other studies suggest that the immune system was affected in children born to and nursed by mothers exposed to increased levels of PCBs. There are no reports of structural birth defects caused by exposure to PCBs or of health effects of PCBs in older children. The most likely way infants will be exposed to PCBs is from breast milk. Transplacental transfers of PCBs were also reported In most cases, the benefits of breast-feeding outweigh any risks from exposure to PCBs in mother's milk.

How can families reduce the risk of exposure to PCBs?

☐ You and your children may be exposed to PCBs by eating fish or wildlife caught from contaminated locations. Certain states, Native American tribes, and U.S. territories have issued advisories to warn people about PCB-contaminated fish and fish-eating wildlife. You can reduce your family's exposure to PCBs by obeying these advisories.

☐ Children should be told not play with old appliances, electrical equipment, or transformers, since they may contain PCBs.

☐ Children should be discouraged from playing in the dirt near hazardous waste sites and in areas where there was a transformer fire. Children should also be discouraged from eating dirt and putting dirty hands, toys or other objects in their mouths, and should wash hands frequently.

☐ If you are exposed to PCBs in the workplace it is possible to carry them home on your clothes, body, or tools. If this is the case, you should shower and change clothing before leaving work, and your work clothes should be kept separate from other clothes and laundered separately.

Is there a medical test to show whether I've been exposed to PCBs?

Tests exist to measure levels of PCBs in your blood, body fat, and breast milk, but these are not routinely conducted. Most people normally have low levels of PCBs in their body because nearly everyone has been environmentally exposed to PCBs. The tests can show if your PCB levels are elevated, which would indicate past exposure to above-normal levels of PCBs, but cannot determine when or how long you were exposed or whether you will develop health effects.

Has the federal government made recommendations to protect human health?

The EPA has set a limit of 0.0005 milligrams of PCBs per liter of drinking water (0.0005 mg/L). Discharges, spills or accidental releases of 1 pound or more of PCBs into the environment must be reported to the EPA. The Food and Drug Administration (FDA) requires that infant foods, eggs, milk and other dairy products, fish and shellfish, poultry and red meat contain no more than 0.2-3 parts of PCBs per million parts (0.2-3 ppm) of food. Many states have established fish and wildlife consumption advisories for PCBs.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2000. Toxicological profile for polychlorinated biphenyls (PCBs). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs™ Internet address is http://www.atsdr.cdc.gov/toxfaq.html. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

Agency for Toxic Substances and Disease Registry ToxFAQs September 1996

This fact sheet answers the most frequently asked health questions (FAQs) about polycyclic aromatic hydrocarbons (PAHs). For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to polycyclic aromatic hydrocarbons usually occurs by breathing air contaminated by wild fires or coal tar, or by eating foods that have been grilled. PAHs have been found in at least 600 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are polycyclic aromatic hydrocarbons?

(Pronounced pŏl′ĭ-sī′klĭk ăr′ə-măt′ĭk hī′drə-kar′bənz)

Polycyclic aromatic hydrocarbons (PAHs) are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. PAHs are usually found as a mixture containing two or more of these compounds, such as soot.

Some PAHs are manufactured. These pure PAHs usually exist as colorless, white, or pale yellow-green solids. PAHs are found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides.

What happens to PAHs when they enter the environment?

- ☐ PAHs enter the air mostly as releases from volcanoes, forest fires, burning coal, and automobile exhaust.
- ☐ PAHs can occur in air attached to dust particles.
- ☐ Some PAH particles can readily evaporate into the air from soil or surface waters.
- ☐ PAHs can break down by reacting with sunlight and other chemicals in the air, over a period of days to weeks.
- ☐ PAHs enter water through discharges from industrial and wastewater treatment plants.
- ☐ Most PAHs do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers.
- ☐ Microorganisms can break down PAHs in soil or water after a period of weeks to months.
- ☐ In soils, PAHs are most likely to stick tightly to particles; certain PAHs move through soil to contaminate underground water.
- ☐ PAH contents of plants and animals may be much higher than PAH contents of soil or water in which they live.

How might I be exposed to PAHs?

- ☐ Breathing air containing PAHs in the workplace of coking, coal-tar, and asphalt production plants; smokehouses; and municipal trash incineration facilities.
- ☐ Breathing air containing PAHs from cigarette smoke, wood smoke, vehicle exhausts, asphalt roads, or agricultural burn smoke.
- ☐ Coming in contact with air, water, or soil near hazardous waste sites.
- ☐ Eating grilled or charred meats; contaminated cereals, flour, bread, vegetables, fruits, meats; and processed or pickled foods.
- ☐ Drinking contaminated water or cow's milk.

☐ Nursing infants of mothers living near hazardous waste sites may be exposed to PAHs through their mother's milk.

How can PAHs affect my health?

Mice that were fed high levels of one PAH during pregnancy had difficulty reproducing and so did their offspring. These offspring also had higher rates of birth defects and lower body weights. It is not known whether these effects occur in people.

Animal studies have also shown that PAHs can cause harmful effects on the skin, body fluids, and ability to fight disease after both short- and long-term exposure. But these effects have not been seen in people.

How likely are PAHs to cause cancer?

The Department of Health and Human Services (DHHS) has determined that some PAHs may reasonably be expected to be carcinogens.

Some people who have breathed or touched mixtures of PAHs and other chemicals for long periods of time have developed cancer. Some PAHs have caused cancer in laboratory animals when they breathed air containing them (lung cancer), ingested them in food (stomach cancer), or had them applied to their skin (skin cancer).

Is there a medical test to show whether I've been exposed to PAHs?

In the body, PAHs are changed into chemicals that can attach to substances within the body. There are special tests that can detect PAHs attached to these substances in body tissues or blood. However, these tests cannot tell whether any health effects will occur or find out the extent or source of your exposure to the PAHs. The tests aren't usually available in your doctor's office because special equipment is needed to conduct them.

Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) has set a limit of 0.2 milligrams of PAHs per cubic meter of air (0.2 mg/m^3). The OSHA Permissible Exposure Limit (PEL) for mineral oil mist that contains PAHs is 5 mg/m^3 averaged over an 8-hour exposure period.

The National Institute for Occupational Safety and Health (NIOSH) recommends that the average workplace air levels for coal tar products not exceed 0.1 mg/m^3 for a 10-hour workday, within a 40-hour workweek. There are other limits for workplace exposure for things that contain PAHs, such as coal, coal tar, and mineral oil.

Glossary

Carcinogen: A substance that can cause cancer.

Ingest: Take food or drink into your body.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for polycyclic aromatic hydrocarbons. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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TOLUENE
CAS # 108-88-3

Division of Toxicology ToxFAQs™ February 2001

This fact sheet answers the most frequently asked health questions (FAQs) about toluene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to toluene occurs from breathing contaminated workplace air, in automobile exhaust, some consumer products paints, paint thinners, fingernail polish, lacquers, and adhesives. Toluene affects the nervous system. Toluene has been found at 959 of the 1,591 National Priority List sites identified by the Environmental Protection Agency

What is toluene?

Toluene is a clear, colorless liquid with a distinctive smell. Toluene occurs naturally in crude oil and in the tolu tree. It is also produced in the process of making gasoline and other fuels from crude oil and making coke from coal.

Toluene is used in making paints, paint thinners, fingernail polish, lacquers, adhesives, and rubber and in some printing and leather tanning processes.

What happens to toluene when it enters the environment?

☐ Toluene enters the environment when you use materials that contain it. It can also enter surface water and groundwater from spills of solvents and petrolieum products as well as from leasking underground storage tanks at gasoline stations and other facilities.

☐ When toluene-containing products are placed in landfills or waste disposal sites, the toluene can enter the soil or water near the waste site.

☐ Toluene does not usually stay in the environment long.

☐ Toluene does not concentrate or buildup to high levels in animals.

How might I be exposed to toluene?

☐ Breathing contaminated workplace air or automobile exhaust.

☐ Working with gasoline, kerosene, heating oil, paints, and lacquers.

☐ Drinking contaminated well-water.

☐ Living near uncontrolled hazardous waste sites containing toluene products.

How can toluene affect my health?

Toluene may affect the nervous system. Low to moderate levles can cause tiredness, confusion, weakness, drunken-type actions, memory loss, nausea, loss of appetite, and hearing and color vision loss. These symptoms usually disappear when exposure is stopped.

Inhaling High levels of toluene in a short time can make you feel light-headed, dizzy, or sleepy. It can also cause unconsciousness, and even death.

High levels of toluene may affect your kidneys.

How likely is toluene to cause cancer?

Studies in humans and animals generally indicate that toluene does not cause cancer.

The EPA has determined that the carcinogenicity of toluene can not be classified.

How can toluene affect children?

It is likely that health effects seen in children exposed to toluene will be similar to the effects seen in adults.
Some studies in animals suggest that babies may be more sensitive than adults.

Breathing very high levels of toluene during pregnancy can result in children with birth defects and retard mental abilities, and growth. We do not know if toluene harms the unborn child if the mother is exposed to low levels of toluene during pregnancy.

How can families reduce the risk of exposure to toluene?

☐ Use toluene-containing products in well-ventilated areas.

☐ When not in use, toluene-containing products should be tightly covered to prevent evaporation into the air.

Is there a medical test to show whether I've been exposed to toluene?

There are tests to measure the level of toluene or its breakdown products in exhaled air, urine, and blood. To determine if you have been exposed to toluene, your urine or blood must be checked within 12 hours of exposure. Several other chemicals are also changed into the same breakdown products as toluene, so some of these tests are not specific for toluene.

Has the federal government made recommendations to protect human health?

EPA has set a limit of 1 milligram per liter of drinking water (1 mg/L).

Discharges, releases, or spills of more than 1,000 pounds of toluene must be reported to the National Response Center.

The Occupational Safety and Health Administration has set a limit of 200 parts toluene per million of workplace air (200 ppm).

Source of Information

Agency for Toxic Substances and Disease Registry (ATSDR). 2000. Toxicological Profile for Toluene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs™ Internet address is http://www.atsdr.cdc.gov/toxfaq.html. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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USED MINERAL-BASED CRANKCASE OIL
CAS # 8002-05-9

Agency for Toxic Substances and Disease Registry ToxFAQs September 1997

This fact sheet answers the most frequently asked health questions (FAQs) about used mineral-based crankcase oil. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Used mineral-based crankcase oil is also called used engine oil. Exposure to this oil can occur when you change the oil of your car or another type of engine. Exposure to very high levels of used oil can cause skin rashes, headaches and tremors. Used oil has been found in at least 85 of the 1,416 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is used mineral-based crankcase oil?

Used mineral-based crankcase oil is the brown-to-black, oily liquid removed from the engine of a motor vehicle when the oil is changed. It is similar to unused oil except it contains additional chemicals from its use as an engine lubricant.

The chemicals in oil include hydrocarbons, which are distilled from crude oil, and various additives that improve the oil's performance. Used oil also contains chemicals formed when the oil is exposed to high temperatures and pressures inside an engine. It also contains some metals from engine parts and small amounts of gasoline, antifreeze, and chemicals that come from gasoline when it burns inside the engine.

The chemicals found in used mineral-based crankcase oil vary depending on the brand and type of oil, whether gasoline or diesel fuel was used, the mechanical condition of the engine that the oil came from, and the amount of use between oil changes. Used oil is not naturally found in the environment.

What happens to used mineral-based crankcase oil when it enters the environment?

☐ Used mineral-based crankcase oil enters the air through the exhaust system during engine use.

☐ It may enter water or soil when disposed of improperly.

☐ The hydrocarbon components of the oil generally stick to the soil surface.

☐ Some hydrocarbons evaporate into the air very quickly, and others evaporate more slowly.

☐ Hydrocarbon components of the oil that enter surface water bind to small particles in the water and eventually settle to the bottom.

☐ Hydrocarbons from used mineral-based crankcase oil may build up in shellfish or other organisms.

☐ Some metals in used mineral-based crankcase oil dissolve in water and move through the soil easily and may be found in surface water and groundwater.

How might I be exposed to used mineral-based crankcase oil?

☐ When you change the engine oil in your car.

☐ Breathing a small amount of the chemicals from the oil in exhaust fumes or from burning the oil as heating fuel.

☐ Touching contaminated soil or drinking contaminated water.

How can used mineral-based crankcase oil affect my health?

The health effects of used mineral-based crankcase oil vary depending on the brand and type of oil used and the characteristics of the engine it came from.

Mechanics and other auto workers who are exposed to used mineral-based crankcase oil from a large number of cars have experienced skin rashes, blood effects (anemia), and headaches and tremors. However, these workers are also exposed to other chemicals, which may have caused these health effects.

Volunteers who breathed mists of used mineral-based crankcase oil for a few minutes had slightly irritated noses, throats, and eyes. Animals that ate large amounts of this oil developed diarrhea. Thus, people who swallow used mineral-based crankcase oil may also have diarrhea.

Some cows that ate used oil containing metals such as molybdenum and lead in contaminated pastures experienced anemia and tremors. Some of the cows died.

We do not know if exposure to used mineral-based crankcase oil affects the reproductive ability of men or women or whether it causes birth defects.

How likely is used mineral-based crankcase oil to cause cancer?

Long-term exposure (365 days or longer) of the skin to used mineral-based crankcase oil causes skin cancer in mice. Oils contain PAHs. Some PAHs have been identified as the cancer-causing agents. Animal tests have shown that the higher the PAH content in oil, the more likely for the oil to be carcinogenic.

The **Department of Health and Human Services (DHHS)**, the **International Agency for Research on Cancer (IARC)**, and the **EPA** have not classified used mineral-based crankcase oil with regard to its carcinogenicity in people.

Is there a medical test to show whether I've been exposed to used mineral-based crankcase oil?

Used mineral-based crankcase oil is a mixture of a large number of chemicals. Its composition depends on the brand of oil and the characteristics of the engine in which it was used. However, there are methods for determining if you have been exposed to some of the chemicals in used oil. These tests aren't available at most doctors' offices, but can be done at special laboratories that have the right equipment.

Has the federal government made recommendations to protect human health?

The EPA and most states have developed regulations regarding disposal of used oil, its recycling, spraying used oil onto road surfaces for dust control, or burning it as a fuel.

Glossary

Anemia: A decreased ability of the blood to transport oxygen.

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Evaporate: To enter the air as a vapor.

PAHs: Polyaromatic hydrocarbons; a group of chemicals found in oil and other minerals.

References

This ToxFAQs information is taken from the 1997 Toxicological Profile for Used Mineral-based Crankcase Oil produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone:1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

XYLENE
CAS # 1330-20-7

Agency for Toxic Substances and Disease Registry ToxFAQs September 1996

This fact sheet answers the most frequently asked health questions (FAQs) about xylene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to xylene occurs in the workplace and when you use paint, gasoline, paint thinners and other products that contain it. People who breathe high levels may have dizziness, confusion, and a change in their sense of balance. This substance has been found in at least 658 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is xylene?

(Pronounced zī′lēn)

Xylene is a colorless, sweet-smelling liquid that catches on fire easily. It occurs naturally in petroleum and coal tar and is formed during forest fires. You can smell xylene in air at 0.08–3.7 parts of xylene per million parts of air (ppm) and begin to taste it in water at 0.53–1.8 ppm.

Chemical industries produce xylene from petroleum. It's one of the top 30 chemicals produced in the United States in terms of volume.

Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, a thinner for paint, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.

What happens to xylene when it enters the environment?

☐ Xylene has been found in waste sites and landfills when discarded as used solvent, or in varnish, paint, or paint thinners.

☐ It evaporates quickly from the soil and surface water into the air.

☐ In the air, it is broken down by sunlight into other less harmful chemicals.

☐ It is broken down by microorganisms in soil and water.

☐ Only a small amount of it builds up in fish, shellfish, plants, and animals living in xylene-contaminated water.

How might I be exposed to xylene?

☐ Breathing xylene in workplace air or in automobile exhaust.

☐ Breathing contaminated air.

☐ Touching gasoline, paint, paint removers, varnish, shellac, and rust preventatives that contain it.

☐ Breathing cigarette smoke that has small amounts of xylene in it.

☐ Drinking contaminated water or breathing air near waste sites and landfills that contain xylene.

☐ The amount of xylene in food is likely to be low.

How can xylene affect my health?

Xylene affects the brain. High levels from exposure for short periods (14 days or less) or long periods (more than 1 year) can cause headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance. Exposure of people to high levels of xylene for short periods can also cause irritation of the skin, eyes, nose, and throat; difficulty in breathing; problems with the lungs; delayed reaction time; memory difficulties; stomach discomfort; and possibly changes in the liver and kidneys. It can cause unconsciousness and even death at very high levels.

Studies of unborn animals indicate that high concentrations of xylene may cause increased numbers of deaths, and delayed growth and development. In many instances, these same concentrations also cause damage to the mothers. We do not know if xylene harms the unborn child if the mother is exposed to low levels of xylene during pregnancy.

How likely is xylene to cause cancer?

The International Agency for Research on Cancer (IARC) has determined that xylene is not classifiable as to its carcinogenicity in humans.

Human and animal studies have not shown xylene to be carcinogenic, but these studies are not conclusive and do not provide enough information to conclude that xylene does not cause cancer.

Is there a medical test to show whether I've been exposed to xylene?

Laboratory tests can detect xylene or its breakdown products in exhaled air, blood, or urine. There is a high degree of agreement between the levels of exposure to xylene and the levels of xylene breakdown products in the urine. However, a urine sample must be provided very soon after exposure ends because xylene quickly leaves the body. These tests are not routinely available at your doctor's office.

Has the federal government made recommendations to protect human health?

The EPA has set a limit of 10 ppm of xylene in drinking water.

The EPA requires that spills or accidental releases of xylenes into the environment of 1,000 pounds or more must be reported.

The Occupational Safety and Health Administration (OSHA) has set a maximum level of 100 ppm xylene in workplace air for an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH) also recommend exposure limits of 100 ppm in workplace air.

NIOSH has recommended that 900 ppm of xylene be considered immediately dangerous to life or health. This is the exposure level of a chemical that is likely to cause permanent health problems or death.

Glossary

Evaporate: To change from a liquid into a vapor or a gas.

Carcinogenic: Having the ability to cause cancer.

CAS: Chemical Abstracts Service.

ppm: Parts per million.

Solvent: A liquid that can dissolve other substances.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for xylenes (update). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone:1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

APPENDIX B

WEST NILE VIRUS/ST. LOUIS ENCEPHALITIS PREVENTION

WEST NILE VIRUS/ST. LOUIS ENCEPHALITIS PREVENTION

The following section is based upon information provided by the CDC Division of Vector-Borne Infectious Diseases. Symptoms of West Nile Virus include fever, headache, and body aches, occasionally with skin rash and swollen lymph glands, with most infections being mild. More severe infection may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death. Most infections of St. Louis encephalitis are mild without apparent symptoms other than fever with headache. More severe infection is marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, occasional convulsions (especially infants), and spastic (but rarely flaccid) paralysis. The only way to avoid infection of West Nile Virus and St. Louis encephalitis is to avoid mosquito bites. To reduce the chance of mosquito contact:

- Stay indoors at dawn, dusk, and in the early evening.
- Wear long-sleeved shirts and long pants whenever you are outdoors.
- Spray clothing with repellents containing permethrin or DEET (N, N-diethyl-meta-toluamide), since mosquitoes may bite through thin clothing.
- Apply insect repellent sparingly to exposed skin. An effective repellent will contain 35 percent DEET. DEET in high concentrations (greater than 35 percent) provides no additional protection.
- Repellents may irritate the eyes and mouth.
- Whenever you use an insecticide or insect repellent, be sure to read and follow the manufacturer's directions for use, as printed on the product.

APPENDIX C

SITE SAFETY OFFICER RESUME

JESSICA E. LEBER

ENVIRONMENTAL SCIENTIST

Ms. Leber is an environmental scientist with about one year of professional environmental consulting experience. Her range of experience includes completing environmental site assessments, subsurface investigations, hazardous materials impact studies, and preparing sampling protocols and health and safety plans. Ms. Leber's fieldwork experience includes soil boring installation and sampling, groundwater monitoring well installation and sampling, test pit oversight, and air monitoring.

Prior to joining AKRF, Ms. Leber graduated cum laude from Columbia University with a degree in Environmental Chemistry. She has past experience working in organic and environmental chemistry research laboratories at Columbia University and Stony Brook University. Prior to her graduation, she completed an internship at a small environmental consulting firm in Nassau County.

BACKGROUND

Education

B.A., Environmental Chemistry, Columbia University

Certifications

40 Hour Hazardous Waste Operations Site Worker

New York State-Licensed Asbestos Inspector

RELEVANT EXPERIENCE

Atlantic Yards Arena, Brooklyn, NY

As part of the New York City CEQR process, Ms. Leber served on a team of Hazmat staff conducting Phase I Environmental Site Assessments in accordance with ASTM E-1527-00 related to the potential development of eight city blocks for the Atlantic Yards Arena. Ms. Leber coordinated with clients, property owners, and tenants to conduct the site inspections, historical research, regulatory records review, and preparation of the Phase I report.

Flushing, Queens, NY

Ms. Leber is serving on a team conducting an investigation and remediation of a large PCB-contaminated former utility property in Flushing, Queens. She has completed field work for several hundred soil boring installations in the contaminant delineation phase of the project and has aided in preparing documents for the site's transfer from the State Voluntary Cleanup Program to the State Brownfield Cleanup Program.

Queens West, Long Island City, NY

Ms. Leber conducted field work for a supplemental remedial investigation at this former Blau Gas manufacturing facility on a portion of the Queens West Development site in Long Island City. The work is being conducted as part of a Voluntary Cleanup Agreement with the NYSDEC. Field work activities have included soil boring installation, test pit oversight, and monitoring well installation and sampling. Ms. Leber will analyze the laboratory analytical data and aid in preparing a report of the findings of the investigation.

West - Chambers Street, New York, NY

Ms. Leber completed a subsurface investigation for this property currently in the CEQR process to allow residential and commercial development at the site. Ms. Leber's work included the installation and sampling of soil borings and groundwater monitoring wells, analysis of analytical laboratory data, and preparation of an investigation report. Based on the findings of this study, Ms. Leber prepared a Remedial Action Plan and Construction Phase Health and Safety Plan currently pending approval by the New York City Department of Environmental Protection.

APPENDIX D

REPORT FORMS

WEEKLY SAFETY REPORT FORM

Week Ending: ________________ Project Name/Number: __________________________________

Report Date: ________________ Project Manager Name: __________________________________

Summary of any violations of procedures occurring that week: ____________________________________

Summary of any job related injuries, illnesses, or near misses that week: ____________________________

Summary of air monitoring data that week (include and sample analyses, action levels exceeded, and actions taken):

Comments:

Name: ____________________________ Company: __________________________________

Signature: ____________________________ Title: __________________________________

INCIDENT REPORT FORM

Date of Report: ____

Injured: ____

Employer: ____

Site: ______________________ Site Location: ______________________

Report Prepared By: ______________________ ______________________

Signature Title

ACCIDENT/INCIDENT CATEGORY (check all that applies)

___Injury

__ Property Damage

__ On-site Equipment

__ Mechanical

___ Illness

___ Fire

___ Motor Vehicle

___ Spill

___ Near Miss

___ Chemical Exposure

___ Electrical

___ Other

DATE AND TIME OF ACCIDENT/INCIDENT: Narrative report of Accident/Incident: Identify: 1) actions leading to or contributing to the accident/incident; 2) the accident/incident occurrence; and 3) actions following the accident/incident.

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WITNESS TO ACCIDENT/INCIDENT:

Name ______________________ Company: ______________________

Address: ______________________

Phone No.: ______________________

Name ______________________ Company: ______________________

Address: ______________________

Phone No.: ______________________

INJURED - ILL:

Name: ____________________ SSN: ____

Address: ____________________ Age: ____

Length of Service: ____________________ Time on Present Job: _____________________________

Time/Classification: ____

SEVERITY OF INJURY OR ILLNESS:

____ Disabling

____ Medical Treatment

___ Non-disabling

___ First Aid Only

___ Fatality

ESTIMATED NUMBER OF DAYS AWAY FROM JOB: _______________________________

NATURE OF INJURY OR ILLNESS: ____

____

____

____

CLASSIFICATION OF INJURY:

__ Abrasions

__ Bites

__ Blisters

__ Bruises

__ Chemical Burns

__ Cold Exposure

__ Concussion

__ Lacerations

______ Dislocations

______ Faint/Dizziness

______ Fractures

______ Frostbite

______ Heat Burns

______ Heat Exhaustion

______ Heat Stroke

_____ Punctures

_____ Radiation Burns

_____ Respiratory Allergy

_____ Sprains

_____ Toxic Resp. Exposure

_____ Toxic Ingestion

_____ Dermal Allergy

Part of Body Affected: ____

Degree of Disability: ____

Date Medical Care was Received: ____

Where Medical Care was Received: ____

Address (if off-site): ____

(If two or more injuries, record on separate sheets)

PROPERTY DAMAGE:

Description of Damage: ______________________________

Cost of Damage: $ ______________________________

ACCIDENT/INCIDENT LOCATION: ______________________________

ACCIDENT/INCIDENT ANALYSIS: Causative agent most directly related to accident/incident (Object, substance, material, machinery, equipment, conditions)

Was weather a factor?: ______________________________

Unsafe mechanical/physical/environmental condition at time of accident/incident (Be specific):

Personal factors (Attitude, knowledge or skill, reaction time, fatigue):

ON-SITE ACCIDENTS/INCIDENTS:

Level of personal protection equipment required in Site Safety Plan:

Modifications:

Was injured using required equipment?:

If not, how did actual equipment use differ from plan?:

ACTION TAKEN TO PREVENT RECURRENCE: (Be specific. What has or will be done? When will it be done? Who is the responsible party to insure that the correction is made?

ACCIDENT/INCIDENT REPORT REVIEWED BY:

SSO Name Printed

SSO Signature

OTHERS PARTICIPATING IN INVESTIGATION:

Signature

Title

Signature

Title

Signature

Title

ACCIDENT/INCIDENT FOLLOW-UP: Date:

Outcome of accident/incident:

Physician's recommendations:

Date injured returned to work:

Follow-up performed by:

Signature

Title

ATTACH ANY ADDITIONAL INFORMATION TO THIS FORM

APPENDIX E

EMERGENCY HAND SIGNALS

EMERGENCY SIGNALS

In most cases, field personnel will carry portable radios for communication. If this is the case, a transmission that indicates an emergency will take priority over all other transmissions. All other site radios will yield the frequency to the emergency transmissions.

Where radio communications is not available, the following air-horn and/or hand signals will be used:

EMERGENCY HAND SIGNALS

OUT OF AIR, CAN'T BREATH!

Hand gripping throat

LEAVE AREA IMMEDIATELY, NO DEBATE!

(No Picture) Grip partner's wrist or place both hands around waist

NEED ASSISTANCE!

Hands on top of head

OKAY! – I'M ALL RIGHT!

- I UNDERSTAND!

Thumbs up

NO! - NEGATIVE!

Thumbs down

APPENDIX F

EXPANDED COMMUNITY AIR MONITORING AND ODOR/VAPOR CONTROL PLAN

EXPANDED COMMUNITY AIR MONITORING AND ODOR/VAPOR CONTROL PLAN

WEST 61st STREET SITE

New York, New York

AKRF Project Number: 10321

BCP Site ID 231043

Prepared by:

AKRF

440 Park Avenue South, 7th Floor
New York, NY 10016
(212) 696-0670

Prepared for:

Algin Management Co., LLC
64-35 Yellowstone Blvd.
Forest Hills, NY 11375

March 2006

TABLE OF CONTENTS

1.0 INTRODUCTION

This Expanded Community Air Monitoring and Odor/Vapor Control Plan specifies the following:

- Expanded procedures to be implemented to control emissions of vapors, particulate matter, or odors resulting from operations on the Site;
- Expanded procedures for monitoring to detect any emissions from operations on the Site which may impact the surrounding community; and
- The appropriate response measures to be implemented if such emissions are detected.

This Plan will be implemented during the Remedial Investigation (RI) activities only when the air monitoring and response action measures described in Section 4.7 of the Interim Remedial Measure Health and Safety Plan (IRMHASP) are insufficient in preventing repeated exceedances of perimeter monitoring action levels or in preventing off-site nuisance odor impacts. The NYSDEC and NYSDOH will be notified should the implementation of this contingency Expanded Community Air Monitoring and Odor/Vapor Control Plan be required. Procedures intended to detect and respond to conditions which may affect on-site personnel are specified in the IRMHASP for this Site.

2.0 DUST, ODOR, AND VAPOR SUPPRESSION

2.1 Dust Suppression Measures

Dust suppression measures will be implemented during excavation activities associated with potential underground storage tank removals in accordance with the guidelines in NYSDEC Technical and Administrative Guidance Memorandum #4031, Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites. The following dust suppression measures will be implemented:

- Applying water on haul roads.
- Wetting equipment and excavation faces.
- Spraying water on buckets during excavation and dumping.
- Hauling materials in properly tarped or covered containers.
- Restricting vehicle speeds on the Site to ten mph.
- Covering excavated areas and material after excavation activity ceases.
- Reducing the excavation size and/or number of excavations.

2.2 Odor and Vapor Control Measures

Emissions of odors and vapors will be controlled by minimizing, to the extent possible, the exposure of contaminated soil to the atmosphere. Specific measures that will be implemented are:

- Minimizing the size of excavations. Contaminated soil will be excavated by sections to minimize the size of the excavation that is open at any time.
- Promptly backfilling excavations. Adequate volumes of on-site or off-site fill material will be available if it is not possible to backfill with excavated material.
- Promptly removing contaminated soil. Pre-approval will be obtained from disposal facilities to minimize delay in moving soil off-site. Stockpiling of contaminated soil will be avoided to the extent practicable.
- Covering exposed excavated soil surfaces with encapsulant foam if odor is detected. A biodegradable, non-hazardous, non-flammable foam, such as Rusmar A-600, Allied AFT-

400, or equivalent with an appropriate applicator unit will be present on-site during the excavation work. The foam will be used to cover stockpiles and exposed soil surfaces if necessary. In addition, odor neutralizing agents (such as Ecosorb 606 by Lenntech Water) will be applied directly to the soil, or in the air, if odors persist. No long-term invasive activities are planned as part of the Remedial Investigation (RI); therefore, long-term encapsulants and tarps would not be needed.

- Hauling soil only in covered trucks. When a disposal facility has been arranged, a trucking route will be selected that will minimize truck travel through residential areas.

3.0 EXPANDED PERIMETER MONITORING

Expanded perimeter air monitoring will be performed for volatile organic compounds (VOCs) and particulate matter. Since excavations as part of the Remedial Investigation (RI) will be localized, monitoring locations will be at the upwind and downwind boundaries of the exclusion zone.

3.1 Perimeter Monitoring – Volatile Organic Compounds

3.1.1 Monitoring Procedure

Perimeter monitoring for volatile organic compounds (VOCs) will be conducted using an organic vapor meter (OVM) equipped with a photoionization detector (PID). The OVM will be capable of calculating 15-minute running average concentrations and is equipped with an audible alarm to indicate the exceedance of an action level. Monitoring for VOCs at the upwind station will be conducted at the start of each workday and every time the wind direction changes, to establish background conditions. Monitoring for VOCs at the downwind station will be conducted on a continuous basis during excavation and loading operations. Background readings and any readings that trigger response actions will be recorded in the Project log book, which will be available on-site for NYSDEC/NYSDOH review, and the results of air monitoring activities and odor/vapor control measures will be provided in daily reports submitted to the NYSDEC and NYSDOH. The perimeter monitoring locations chosen will be recorded on a Site map submitted with the daily reports.

3.1.2 Response Actions

If the ambient (breathing zone) air concentration of volatile organic compounds (VOCs) at the Site perimeter exceeds five parts per million (ppm) over a 15-minute time weighted running average, but does not exceed 25 ppm, then invasive work activities will be temporarily halted. If VOC levels readily return to below five ppm, then work may resume with continued monitoring. If VOC levels do not readily return to below five ppm, then work will be halted and NYSDEC and NYSDOH will be notified immediately. The source of the VOC emissions will be identified and corrective actions taken to reduce emissions. Work will not resume until VOC levels are below five ppm.

If the ambient (breathing zone) air concentration of VOCs at the Site perimeter exceeds 25 parts per million (ppm) over a 15-minute time weighted running average, or ambient air concentrations do not readily fall below 5 ppm after two consecutive 15-minute time-weighted running averages, then work will be halted and NYSDEC and NYSDOH will be notified immediately. Confirmatory air samples will be collected at the upwind and downwind Site perimeters for laboratory analysis. Samples will be collected over a half-hour period in six-liter SUMMA canisters using flow controllers set at a rate of 0.2 liters per minute. The air samples will be analyzed for VOCs including tentatively identified compounds (TICs) by EPA Method TO-15. The source of the VOC emissions will be identified and corrective actions taken to reduce emissions. Work will not resume until VOC levels are below five ppm and the start-up is approved by NYSDEC and NYSDOH.

3.2 Perimeter Monitoring – Particulates

3.2.1 Monitoring Procedure

Community air monitoring for dust particulates will be conducted using a real time particulate monitor that measures the concentration of airborne respirable particulates less than ten micrometers in size (PM_{10}). The monitor will be capable of calculating 15-minute running average concentrations and is equipped with an audible alarm to indicate exceedance of action levels. Monitoring for particulates at the upwind location will be conducted at the start of each workday and every time the wind direction changes, to establish background conditions. Monitoring at the downwind station will be continuous during soil excavation and loading activities. Background readings and any readings that trigger response actions will be recorded in the Project log book, which will be available on-site for NYSDEC/NYSDOH review.

3.2.2 Response Actions

If downwind PM_{10} concentrations exceed 100 micrograms per cubic meter ($\mu g/m^3$) above background for a 15-minute time-weighted average, then invasive work activities will be temporarily halted and resume only after the source of the dust has been identified, dust-suppression measures have been implemented, and the downwind PM_{10} level is less than 100 $\mu g/m^3$ above background for a 15-minute time-weighted average.

If downwind PM_{10} concentrations exceed 150 $\mu g/m^3$ above background concentrations over a 15-minute time-weighted running average, the NYSDEC and NYSDOH will be notified and the source of the particulates will be identified. Appropriate dust suppression measures will be implemented as described in Section 2.1, and work will not begin until PM_{10} concentration is less than 100 $\mu g/m^3$ above background and the NYSDEC and NYSDOH approve start-up. Confirmatory particulate samples will be collected of ambient air at the upwind and downwind perimeters. These samples will be analyzed in a laboratory for lead, arsenic, and polycyclic aromatic hydrocarbons (PAHs).

4.0 NEIGHBORHOOD ODOR AND VAPOR MONITORING

Neighborhood odor and vapor monitoring will be performed during soil excavation and loading. The frequency of these surveys will be continuous starting at the commencement of work until the success of these odor control measures has been established. The subsequent surveys will be less frequent, based on field observations and measurements, but will occur no less than four times per day. The monitoring will utilize an organic vapor meter (OVM) equipped with a photoionization detector (PID) to measure volatile organic compound (VOC) concentrations in addition to olfactory observations. The OVM will be capable of calculating 15-minute running average concentrations and is equipped with an audible alarm to indicate the exceedance of an action level. To avoid any olfactory fatigue, the monitoring will be performed by a person who has not been working in the work area. The survey will focus on downwind locations and the adjacent sensitive receptors such as schools (adjacent to the north, east, and west of the Site) or residential buildings (adjacent to the west). The results of the surveys will be logged, and the records maintained on-site for inspection by NYSDEC or NYSDOH.

If odors or vapors from the Site are detected off-site, then work will be halted and NYSDEC and NYSDOH will be notified immediately. Confirmatory air samples will be collected at the upwind and downwind Site perimeters for laboratory analysis. Samples will be collected over a half-hour period in six-liter SUMMA canisters using flow controllers set at a rate of 0.2 liters per minute. The air samples will be analyzed for VOCs including tentatively identified compounds (TICs) by EPA Method TO-15.

The source of the emissions will be identified and corrective actions taken to reduce emissions. Work will not resume until the start-up is approved by NYSDEC and NYSDOH.

5.0 ODOR AND VAPOR CONTROL PLAN REVISIONS

If the odor and vapor control measures described in this contingency plan are still not adequate to prevent repeated exceedances of perimeter monitoring action levels, or to prevent off-site impacts as detected by the neighborhood odor and vapor monitoring program, then the invasive activities that resulted in the exceedances will be suspended, and NYSDEC and NYSDOH will be notified. A revised plan for dust, vapor, or odor control with alternative work practices and control measures will be submitted to NYSDEC and NYSDOH. The suspended activities will not be resumed until the revised dust, vapor, or odor control plan is approved by NYSDEC and NYSDOH, and the alternative work practices and control measures are implemented.

APPENDIX B
GLOSSARY OF TERMS (ACRONYMS) USED IN REPORT

Glossary of Terms (Acronyms) Used In Report

AOC	Area of Concern
API	American Petroleum Institute
ARAR	Applicable or Relevant and Appropriate Requirement
ASCE	American Society of Civil Engineers
ASP	Analytical Services Protocol
ASTM	American Society for Testing and Materials
ASTs	Aboveground Storage Tanks
ATSDR	Agency for Toxic Substances and Disease Registry - a federal branch of the Center for Disease Control
B(a)P	Benzo(a)pyrene equivalents
BCP	Brownfields Cleanup Program
BED	Brownfield Eligibility Determination
BHC	Benzene Hexachlorides - a group of pesticides that includes lindane
BNA	Base/Neutral/Acid extractable organics analyzed by GC/MS
BQE	Bronx-Queens Expressway
BSPR	Bureau of Spill Prevention and Response
BTEX	Benzene, Toluene, Ethyl-benzene and Xylene - major components of gasoline
BTX	Benzene, Toluene, and Xylene, common components of many petroleum based products
BUD	Beneficial Use Determination - exempts a material from regulation, allowing it to be beneficially used.
C&D	Construction and Demolition debris
CAMP	Community Air Monitoring Plan
CBS	Chemical Bulk Storage
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act (1980) - the Federal Superfund law
CFR	Code of Federal Regulations
CGI	Combustible Gas Indicator
CLP	Contract Laboratory Protocol
CO	Consent Order
CO_2	Carbon dioxide
COC	Chemical of Concern
CP	Citizen Participation
cPAHs	Carcinogenic Polynuclear (or Polycyclic) Aromatic Hydrocarbons - a class of chemicals commonly found in tar, asphalt and combustion residues – that may cause cancer.
CPP	Citizen Participation Plan
CVOC	Chlorinated Volatile Organic Compound
DEC	Department of Environmental Conservation (New York State) - used interchangeably with NYSDEC or ENCON
DEE	Division of Environmental Enforcement - legal division within DEC responsible for regulatory enforcement

DER	Division of Environmental Remediation (formerly DHWR and DSM) - division within DEC responsible for the Inactive Hazardous Waste Disposal Site Remedial Program, the Voluntary Cleanup Program, the Environmental Restoration (Brownfields) Program, the Spill Prevention and Response Program (including spill remediation, petroleum and chemical bulk storage and major oil storage facility programs), and the Construction Grants program
DFW	Division of Fish and Wildlife - previous name for DFWMR
DFWMR	Division of Fish, Wildlife and Marine Resources (formerly DFW) - division within DEC responsible for assessment and management of our natural resources, regulation of hunting and fishing, and fisheries management.
DHWR	Division of Hazardous Waste Remediation - previous name for DER
DNAPL	Dense (heavier than water) Non-Aqueous Phase Liquid
DOD	United States Department of Defense
DOH	Department of Health (New York State) - interchangeable with NYSDOH
DOW	Division of Water - division within DEC responsible for water pollution control and monitoring of watersheds and waterways
DSHM	Division of Solid and Hazardous Materials - division within DEC responsible for regulation of solid and hazardous wastes
DSM	Division of Spills Management (former Division within DEC responsible for Spills Management, now the Bureau of Spill Prevention and Response within DER)
DUSR	Data Usability Summary Report
ECL	Environmental Conservation Law
EIS	Environmental Impact Statement
ELAP	Environmental Laboratory Approval Program
ENB	Environmental Notice Bulletin (DEC weekly publication)
EP Toxicity	Also known as EP Tox - An Extraction Procedure test to determine the leachability of selected hazardous chemicals. No longer widely used, it has been replaced by TCLP
EPA	Environmental Protection Agency (U.S.) - interchangeable with USEPA
ERP	New York's Environmental Restoration Program - also known as the "Brownfields" program
FID	Flame Ionization Detector
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FOIA	Freedom of Information Act - Federal
FOIL	Freedom of Information Law - NY State
FS	Feasibility Study
FEMA	Federal Emergency Management Agency (U.S.)
FSF	Federal SuperFund
GAC	Granular Activated Carbon
GC	Gas Chromatograph
GPM	Gallons per Minute
GRO	Gasoline Range Organics
GW	Groundwater
HASP	Health and Safety Plan
Haz Mat	Hazardous Materials

HDPE	High-Density Polyethylene (a widely used chemical resistant plastic)
HNu	a type of hand held field instrument used to measure Volatile Organic Compounds
IDL	Instrument Detection Limit
	IDLH - Immediately Dangerous to Life or Health - a critical concentration of air contamination
IP	Ionization Potential
IRM	Interim Remedial Measures
kg	kilogram - a unit of mass
LC	Lethal Concentration
LD	Lethal Dose
LEL	Lower Explosive Limit (see UEL)
LNAPL	Light (lighter than water) Non-Aqueous Phase Liquid
LUST	Leaking Underground Storage Tank
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
MEK	Methyl Ethyl Ketone
mg/kg	milligram/kilogram - a unit of concentration in solids (equivalent to ppm)
mg/L	milligram/Liter - a unit of concentration in liquids (equivalent to ppm)
MGP	Manufactured Gas Plant
MIBK	Methyl Isobutyl Ketone
MOSF	Major Oil Storage Facility
MS	Mass Spectrometer
MSDS	Material Safety Data Sheet
MTBE	Methyl Tertiary Butyl Ether (gasoline constituent)
MW	Monitoring Well
N_2	Nitrogen - typically shipped and used in liquid form
NAPL	Non-Aqueous Phase Liquid
NCP	National Contingency Plan
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
NL	Navigation Law
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NRC	National Response Center
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O_2	Oxygen
OSHA	Occupational Safety and Health Act (U.S.) or Occupational Safety and Health Administration (U.S.)
O&M	Operation and Maintenance
OM&M	Operation, Maintenance, and Monitoring
OU	Operable Unit
OVA	Organic Vapor Analyzer

PA	USEPA Preliminary Assessment
PAHs	Polynuclear Aromatic Hydrocarbons - a class of chemicals commonly found in tar, asphalt and combustion residues - the same as PNA.
Pb	Lead
PBS	Petroleum Bulk Storage
PCBs	Polychlorinated Biphenyls - a class of chemicals known for persistence in the environment
PCE	Perchloroethylene or Tetrachloroethene - one of the most common chemical contaminants, often coming from dry cleaning operations
PCS	Petroleum Contaminated Soil
PEL	Permissible Exposure Limit - an air contaminant level applicable to the work place
Perc	Perchloroethylene - same as PCE
Phase I	A preliminary investigation of site location and history by DEC
Phase I ESA	Phase I Environmental Site Assessment meeting the standards of ASTM.
Phase II	A preliminary investigation of site conditions, possibly including groundwater, surface water and soils sampling
Phase II ESI	Phase II Environmental Site investigation which meets the standards of ASTM
PID	Photo Ionization Detector
PNA	Polynuclear Aromatic hydrocarbons - the same as PAH
ppb	parts per billion
PPE	Personal Protective Equipment
ppm	parts per million
ppt	parts per trillion
PQL	Practical Quantitation Level
PRAP	Proposed Remedial Action Plan
PRP	Potentially Responsible Party (Also RP)
PSA	Preliminary Site Assessment
PVC	Poly Vinyl Chloride
QA	Quality Assurance
QAPP	Quality Assurance Program Plan
QAPjP	Quality Assurance Project Plan
QC	Quality Control
QRCL	Qualified Remediation Consultants List
QWDC	Queens West Development Corporations
RA	Remedial Action
RAWP	Remedial Action Work Plan
RAR	Remedial Alternatives Report - in NY's Brownfields Program
RBCA	Risk-Based Corrective Action
RCRA	Resource Conservation and Recovery Act - federal law that regulates the transfer, storage and disposal of solid and hazardous waste
RD	Remedial Design
RD/RA	Remedial Design / Remedial Action
RECs	Recognized Environmental Conditions – Identified in Phase I ESA
REL	Recommended Exposure Limit

RHWRE	Regional Hazardous Waste Remediation Engineer - head of the hazardous waste remediation unit in each of the DEC's Regional offices
RIR	Remedial Investigation Report
RI/FS	Remedial Investigation / Feasibility Study
RIWP	Remedial Investigation Work Plan
ROD	Record of Decision
RP	Responsible Party
RQ	Reportable Quantity
RSCOs	Recommended Soil Cleanup Objectives
RSE	Regional Spills Engineer - head of petroleum spill response and prevention unit in each of the DEC's Regional offices
RTK	Community Right To Know - Executive Order No. 33 (NYS)
RWP	Remedial Work Plan
SARA	Superfund Amendments Reauthorization Act of 1986 (Federal)
SCBA	Self-Contained Breathing Apparatus
SCGs	Standards, Criteria, and Guidance - the State version of ARARs
SEMO	State Emergency Management Office
SEQRA	State Environmental Quality Review Act
SGC	Short-term Guideline Concentration (Air Toxics)
SI	Site Investigation - in NY's Brownfield Program (Also USEPA Site Investigation)
SI/RAR	Site Investigation/Remedial Alternatives Report
SISD	Spill Information System Database
SMP	Soil Management Plan
SOP	Standard Operating Procedure
SPDES	State Pollution Discharge and Elimination System - the State regulatory system for controlling pollution discharges to waterways and groundwater
SPOTS	Spill Prevention Operations Technology Series (DEC guidance documents)
SPR	Spill Prevention Report
SRF	Spill Response Form
SSF	State SuperFund
SSSALs	Site Specific Soil Action Levels
STARS	Spills Technology And Remediation Series - guidance from DEC for petroleum and chemical spill remediation
STP	Sewage Treatment Plant
SVE	Soil Vapor Extraction or Soil Vacuum Extraction
SVOC	Semi-Volatile Organic Compound
SW	Surface Water
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Pollution Prevention Plan
TAGM	Technical and Administrative Guidance Memorandum - guidance issued by DER for implementation of the hazardous waste site remedial program
TAL	Target Analyte List – usually metals
TCA	Trichloroethane
TCDD	Tetrachlorodibenzo para-dioxin - one of many chlorinated dioxin compounds
TCDF	Tetrachlorodibenzofuran - one of many chlorinated furan compounds

TCE	Trichloroethylene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure - a leaching test used to identify hazardous waste and evaluate petroleum contaminated soils.
THO	Total Halogenated Organic compounds
Title 3	Article 52, Title 3 of the ECL authorizes EQBA grants to municipalities for hazardous waste site cleanup
TLV	Threshold Limit Value - an air contaminant level
TOCs	Total Organic Compounds
TOGS	Technical Operating Guidance Series - from DEC's Division of Water
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act (U.S.)
TSDF	Treatment, Storage or Disposal Facility
UEL	Upper Explosive Limit (see LEL)
µg/kg	microgram/kilogram - a unit of concentration in solids (equivalent to ppb)
µg/L	microgram/Liter - a unit of concentration in liquids (equivalent to ppb)
UL	Underwriters Laboratories
USGS	United States Geological Survey
UST	Underground Storage Tank
VCP	New York State's Voluntary Cleanup Program
VOA	Volatile Organic Analysis or Volatile Organic Analyte
VOC	Volatile Organic Compound
WWTP	Waste Water Treatment Plant

APPENDIX C
QUALITY ASSURANCE PROJECT PLAN

West 61st Street Site
Remedial Work Plan
BCP ID 231043
NEW YORK, NEW YORK

Quality Assurance Project Plan

AKRF Project Number: 10321

Prepared for:

Algin Management Company, LLC
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MARCH 2006

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1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) describes the protocols and procedures that will be followed during implementation of the Remedial Work Plan (RWP) for the West 61st Street Site in New York, New York. The objective of the QAPP is to provide for Quality Assurance (QA) and maintain Quality Control (QC) of environmental sampling and remedial activities conducted under the RWP. Adherence to the QAPP will ensure that defensible data will be obtained during the remediation.

2.0 PROJECT TEAM

The Project Team will be drawn from AKRF professional and technical personnel, and the Volunteer's subcontractors. All field personnel and subcontractors involved in the excavation and removal of lead-contaminated soil, acetone-contaminated soil, underground storage tanks, and petroleum-contaminated materials will have completed a 40-hour training course and an updated 8-hour refresher course that meet the Occupational Safety and Health Administration (OSHA) requirements of 29 CFR Part 1910. The following sections describe the key Project personnel and their responsibilities.

2.1 PROJECT DIRECTOR

The Project Director will be responsible for the general oversight of all aspects of the Project, including scheduling, budgeting, data management, and decision-making regarding the remediation program. The Project Director will communicate regularly with all members of the AKRF Project Team, the New York State Department of Environmental Conservation (NYSDEC), and Algin Management Company, LLC, to ensure a smooth flow of information between involved parties. Michelle Lapin, P.E., Senior Vice President, will serve as the Project Director for the Remedial Work Plan (RWP). Ms. Lapin's resume is included in Appendix A.

2.2 PROJECT MANAGER

The Project Manager will be responsible for directing and coordinating all elements of the Remedial Work Plan (RWP). He will prepare reports and participate in meetings with Algin Management Company, LLC, and/or the New York State Department of Environmental Conservation (NYSDEC). Richard Gardineer, P.E., will serve as the Project Manager for the RWP. Mr. Gardineer's resume is included in Appendix A.

2.3 FIELD TEAM LEADER

The field team leader will be responsible for supervising the daily oversight and health and safety activities in the field, and will ensure adherence to the work plan and Health and Safety Plan (HASP). She will report to the Project Manager on a regular basis regarding daily progress and any deviations from the work plan. The field team leader will be a qualified, responsible person, able to act professionally and promptly during soil disturbing activities. Freda Ponce will be the field team leader for the Remedial Work Plan (RWP). Ms. Ponce's resume is included in Appendix A.

2.4 PROJECT QUALITY ASSURANCE/QUALITY CONTROL OFFICER

The Project Quality Assurance/Quality Control (QA/QC) Officer will be responsible for adherence to the Quality Assurance Project Plan (QAPP). He will review the procedures with all personnel prior to commencing any fieldwork and will conduct periodic Site visits to assess implementation of the procedures. The QA/QC Officer will also be responsible for preparing a Data Usability Summary Report (DUSR) for soil and groundwater analytical results, as described in Section 5.0 of this QAPP. Andrew Rudko, Ph.D., will serve as the QA/QC Officer for the Remedial Work Plan (RWP). Mr. Rudko's resume is included in Appendix A.

2.5 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL OFFICER

The Laboratory Quality Assurance/Quality Control (QA/QC) Officer will be responsible for making sure Quality Control (QC) procedures and checks are followed in the laboratory, and ensuring adherence to laboratory protocols. The Laboratory QA/QC Officer will track the movement of samples from the time they are checked in at the laboratory to the time that analytical results are issued, and will conduct a final check on the analytical calculations and sign off on the laboratory reports. Andrew Rudko, Ph.D., will serve as the Laboratory QA/QC Officer for the Remedial Work Plan (RWP). Mr. Rudko's resume is included in Appendix A.

3.0 STANDARD OPERATING PROCEDURES

The following sections describe the standard operating procedures (SOPs) for the remedial and investigative activities included in the Remedial Work Plan (RWP). During these operations, safety monitoring will be performed as described in the Remediation Health and Safety Plan (RHASP), and field personnel will wear appropriate personal protective equipment (PPE).

3.1 SOIL BORINGS

Borings will be utilized to collect samples for: waste characterization of fill, construction and demolition debris in Lot 8, and native soil; endpoint sampling at the anticipated horizontal and vertical limits of construction excavation; and delineation of the petroleum-contaminated material (fill and native soil) along West 60th Street. Individual grab and composite samples will be collected at each boring location of the fill material, construction and demolition debris, and native soil. Each boring will then be extended downward to the anticipated lower limit of construction excavation, where a grab sample will be collected as an endpoint sample. Borings advanced for the delineation of the petroleum contamination will be extended downward to the bottom of the apparent petroleum-contaminated soil. Three or more grab samples will be collected to provide vertical delineation of the contamination at each location. Endpoint grab samples, located in the areas of the petroleum-contaminated soil, will not be collected until after completion of the removal of the contamination. Endpoint samples in areas that have not been contaminated with petroleum will be collected for laboratory analysis to determine if contaminant concentrations are below the Site Specific Soil Action Levels (SSSALs) and/or the Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs) for a Track 4 and Track 1 Cleanup, respectively.

Soil samples, collected during the pre-remediation sampling, will be collected using a hollow-stem auger (HSA) rotary rig with a split-spoon sampler. The soil samples will be collected by driving a two-foot length of a 1⅝-inch inside diameter split-spoon sampler through the auger and bringing it back to the surface. A second split-spoon sampler will be inserted in the auger and driven an additional two feet. The auger will then be advanced four feet. The location of each sample is listed on Figure 1 of the Sampling Plan (Remedial Work Plan [RWP] Appendix D). All soil samples will be characterized according to the Modified Burmeister soil classification system, and screened for volatile organic compounds (VOCs) using a Thermo 580B Organic Vapor Meter (OVM) equipped with a photoionization detector (PID).

3.1.1 Pre-Remediation Endpoint Sampling

Pre-remediation endpoint samples will be collected by driving a two-foot sampler into the exposed soil at the pre-determined depth, as shown on Table 2 of the Sampling Plan (Appendix D of the Remedial Work Plan [RWP]). The top six inches to one foot of the samples will be collected for analysis. All soil samples will be characterized according to the Modified Burmeister soil classification system, and screened for volatile organic compounds (VOCs) using a Thermo 580B Organic Vapor Meter (OVM) equipped with a photoionization detector (PID).

Additional endpoint samples will be collected during or after remediation at locations: where the analysis of the pre-construction samples indicated the presence of contaminants in concentrations above Site Special Soil Action Levels (SSSALs) or Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs) in the locations of petroleum contamination in the southern portion of the Site along West 60th Street; on sidewalls along the Site boundary, consistent with applicable DER-10 guidance; and where New York State Department of Environmental Conservation (NYSDEC) requires that additional samples are warranted to achieve adequate coverage. These soil samples will be characterized according to the Modified Burmeister soil classification system, and screened for VOCs using a Thermo 580B OVM equipped with a PID.

The endpoint soil samples will be collected using dedicated sampling equipment. One matrix spike/matrix spike duplicate (MS/MSD) sample will be collected and analyzed for every twenty endpoint samples. Field blanks will be collected by pouring laboratory-provided distilled water over the cleaned split-spoon into the sample containers. Trip blanks will accompany the coolers to the field. The soil samples, field blanks, and trip blanks will be placed into laboratory-supplied containers in a chilled cooler, and submitted to Severn Trent Laboratories, Inc. (STL), of Shelton, Connecticut, a New Jersey Department of Environmental Protection (NJDEP)-approved and New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory. The samples will be analyzed using Contract Laboratory Protocol (CLP) Category B Deliverables for Target Compound List (TCL) VOCs, semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals. A Data Usability Summary Resort (DUSR) will be prepared for the endpoint samples.

3.1.2 Waste Characterization Samples

Separate grab and composite samples will be collected from the fill material, native soil, construction and demolition debris, and petroleum-contaminated soil. Split-spoon sampling will be continuous through each layer of each type of material up to a maximum depth based on the requirements of the receiving facility. The depths for 100, 500, and 1,000 cubic yards (cy) per sample analysis for each grid are shown in Table 1 of the Sampling Plan in Appendix D of the Remedial Work Plan (RWP). Each two-foot length will be placed in a bag. At the pre-determined depth (maximum thickness shown in Table 1), a composite sample will be collected from the individual two-foot samples (see Sampling Plan in Appendix D of the RWP). Any required grab sample for volatile organic compounds (VOCs) will be collected from the sample location situated at the approximate midpoint of the depth of the layer being sampled, and immediately placed in a sample container and placed in the cooler. The split-spoon samplers will then be cleaned between layers. This process will be observed for the remaining fill material until a different type of soil is encountered (e.g., fill to native soil, construction and demolition debris to fill, fill to petroleum-contaminated material). The split-spoon samplers are cleaned again and the process is repeated. At the elevation of the vertical limit of excavation, the split-spoon sampler will be cleaned and one grab sample will be collected of the soil beneath the vertical limit of excavation (see Section 3.2). All sampling equipment and the drill rig augers will be decontaminated between sampling locations. The decontamination procedures are described in Section 3.6.

The soil samples will be analyzed for specific analytical parameters dependent upon the receiving facility. The tests for the beneficial use facilities are different from the treatment/disposal facilities. The facilities and their respective analytical requirements are contained in Appendices B and C of the Sampling Plan. The containers, preservatives, and holding times for the different analytical parameters are listed in Table 4 of the Sampling Plan in Appendix D of the RWP. These samples will be analyzed at Severn Trent Laboratories, Inc. (STL). STL is certified by the New Jersey Department of Environmental Protection (NJDEP) to perform these analytical procedures. In addition, if the soil from the Site is transported to the ENCAP Meadowlands Project, a NJDEP-certified subsurface specialist will be supervising the sample collection activities for waste characterization. The analytical procedures will meet Contract Laboratory Protocol for Category A Deliverables. A data Usability Summary Report (DUSR) will not be prepared for the waste characterization analyses.

3.1.3 Delineation of Petroleum-Contamination

Petroleum delineation samples will be installed along West 60th Street, as shown on Figure 1 of the Sampling Plan, contained in Appendix D of the RWP. Each line, perpendicular to West 60th Street, will contain three to five borings heading south to north. The grid lines are spaced approximately 60 feet apart. The hollow-stem auger (HSA) rig will advance a split-spoon sampler through the fill material to the groundwater level, and then continue to the end of the petroleum contamination or to bedrock. Grab samples will be collected approximately three feet above the groundwater table, at or just below the groundwater level, and in clean soil beneath the petroleum contamination or at bedrock, if clean soil is not encountered. The soil will be screened for volatile organic compounds (VOCs) using a photoionization detector (PID). The samplings will be collected using an En Core® Sampler and a 60-milliliter plastic bottle. The samples will be analyzed for VOCs using EPA Method 8260, and for percent solids.

The soil samples slated for analysis will be collected in laboratory-supplied containers, sealed and labeled, and placed in a chilled cooler. The En Core® samples will be analyzed for VOCs via EPA Method 8270 at Severn Trent Laboratories, Inc. (STL) for analysis following New Jersey Department of Environmental Protection (NJDEP) protocols. These samples will be analyzed for Category A Deliverables. A Data Usability Summary Report (DUSR) will not be prepared for the analysis of these samples.

3.2 SOIL SAMPLE COLLECTION

Soil sampling will be conducted according to the following procedures:

- Characterize the sample according to the Modified Burmeister soil classification system.
- If advancing soil borings for endpoint sampling from the bottom of the excavation and/or from the sidewalls, collect an aliquot of soil from each sampling location and place the sample directly in laboratory-supplied jars and place in a cooler.
- If performing endpoint sampling from excavation walls, soil can be placed directly in laboratory-supplied sample jars.

- If collecting a waste characterization sample from a soil stockpile, collect an aliquot of soil from at least five evenly distributed locations, or as required by the receiving facility, and place in a labeled sealable plastic bag to create a single composite sample. If a volatile organic compound (VOC) sample is being collected, the sampling will be a grab sample based on the direction of the receiving facility.
- After selecting which samples will be analyzed in the laboratory, fill the required laboratory-supplied sample jars with the soil from the selected sampling location or labeled sealable plastic bags. Seal and label the sample jars as described in Section 4.3 of this QAPP, and place in an ice-filled cooler.
- Decontaminate any soil sampling equipment between sample locations, as described in Section 3.6 of this QAPP.
- Record boring number, sample depth, and sample observations (evidence of contamination, photoionization detector [PID] readings, soil classification) in a field book and boring log data sheet, if applicable.

3.3 GROUNDWATER MONITORING WELL INSTALLATION AND DEVELOPMENT

If required by the New York State Department of Environmental Conservation (NYSDEC), monitoring wells will be installed at select locations to monitor groundwater conditions within and outside of the soil remediation area. The locations of the proposed wells will be determined at the conclusion of the remediation activities. Both shallow and deep wells would be installed to monitor petroleum- and fill-related contamination, respectively.

Borings for the wells would be installed using 6.25-inch outside diameter hollow-stem augers (HSAs) and a truck-mounted drill rig. All wells would be constructed with two-inch diameter PVC, with ten feet of 0.10-slotted screens. Well screens for the shallow wells would be set with four feet of screen above and six feet of screen below the water table. Well screens for the deep wells would be set just above the surface of the till layer/bedrock interface (whichever is shallower), with a one-foot sump set into the till layer/bedrock to provide a reservoir for silt accumulation. The annular space around the well screen would be backfilled with a sand filter pack extending from the bottom of the well to one to two feet above the screen. The annular space around the well riser would be sealed with bentonite extending one to two feet above the sand filter pack and completed with a non-shrinking cement mixture to approximately one foot below grade. Monitoring wells would be completed using locking, flush-with-grade gate boxes. A cement apron would be set around the gate box or steel casing to prevent drainage of surface runoff toward the well.

Following installation, each monitoring well would be developed via over-pumping or surging and pumping. The purge water would be monitored for turbidity and water quality indicators (i.e., pH, dissolved oxygen, oxidation-reduction potential [ORP], temperature, and specific conductivity), with measurements collected approximately every five minutes. Development would continue until turbidity is less than 50 nephelometric turbidity units (NTUs) for 3 successive readings, or until water quality indicators have stabilized, whichever occurs first. The criteria for stabilization will be three successive readings within ten percent for pH, temperature, and specific conductivity. All monitor well drill cuttings, well development water, decontamination water, and purge water would be containerized in 55-gallon steel drums and handled as described in Section 3.8.

Wells would be installed according to the following procedure:

- Place a PVC riser with a ten-foot length of PVC 0.10-slotted screen at the bottom of the borehole (with a 1-foot sump provided for the deep monitoring wells).
- Install a No. 1 sand filter pack around the well screen to a depth of one to two feet above the top of the screen.
- Install a bentonite seal to a depth of one to two feet above the filter pack.
- Backfill the remainder of the annular space using a bentonite-cement grout.
- Complete the well with a locking cap flush-with-grade curb box set in concrete. Provide a concrete apron around the curb box to direct runoff away from the well.
- Decontaminate the augers prior to and following installation of each well as described in Section 3.6 of this QAPP.
- Document well installation data (location, depth, construction details, water level measurements) in the field book or on field data sheets.

Following well installation, the new wells will be developed according to the following procedure:

- Measure the depth to water using an oil/water interface probe, and the total depth of the well using a weighted tape. Use these measurements to calculate the length of the water column. Calculate the volume of water in the well using 0.163 gallons per foot of water column as the conversion factors for a 2-inch diameter well.
- For the first five minutes of well development, develop the well using a submersible pump and re-circulate the water back into the well to create maximum agitation. This method is intended to remove fines from the sand pack, the adjacent formation, and the well.
- After the first five minutes of well development, develop the well using a submersible pump and discharge the water into five-gallon buckets. Transfer water from the buckets to 55-gallon drums designated for well development water.
- During development, collect periodic samples and analyze for turbidity and water quality indicators (pH, temperature, dissolved oxygen, oxidation-reduction potential [ORP], and specific conductivity), with measurements collected approximately every five minutes.
- Continue developing the well until turbidity is less than 50 NTUs for 3 successive readings, and water quality indicators have stabilized to within 10 percent for pH, temperature, and specific conductivity for 3 successive readings, or until 3 well volumes have been purged from the well.
- Document the volume of water removed and any other observations made during well development in the field book or on field data sheets.
- Decontaminate the equipment prior to and following development at each well location as described in Section 3.6 of this QAPP.

All well development, decontamination, and purge water will be containerized in 55-gallon drums.

3.4 MONITORING WELL SAMPLING

Groundwater samples will be collected at least one week following well development. Low flow sampling techniques will be used, as described in the EPA’s Groundwater Sampling Guidelines for Superfund and Resource Conservation and Recovery Act (RCRA) (EPA 542-S-02-001, May 2002). Sampling will be conducted according to the following procedure:

- Prepare the sampling area by placing plastic sheeting over the well. Cut a hole in the sheeting to provide access to the well cover.
- Remove the locking cap and measure the vapor concentrations in the well with a photoionization detector (PID).
- Measure the depth to water and total well depth, and check for the presence of light non-aqueous phase liquid (LNAPL) or dense non-aqueous phase liquid (DNAPL) using an oil/water interface probe. Measure the thickness of non-aqueous phase liquid (NAPL), if any, and record in field book and well log. If NAPL is present, collect a sample of NAPL using a disposable plastic weighted bailer or similar collection device. Groundwater samples will not be collected from wells containing measurable NAPL.
- Use the water level and total well depth measurements to calculate the length of the mid-point of the water column within the screened interval. For example, for a shallow well where the total depth is 15 feet, screened interval is 5 to 15 feet, and depth to water is 7 feet, the mid-point of the water column within the screened interval would be 11 feet. Similarly, for a deep well where the total depth is 40 feet, screened interval is 30 to 40 feet, and depth to water is 15 feet, the mid-point of the water column within the screened interval would be 35 feet.
- Connect dedicated tubing to either a submersible or bladder pump and lower the pump such that the intake of the pump is set at the mid-point of the water column within the screened interval of the well. Connect the discharge end of the tubing to the flow-through cell of a Hydrolab Quanta multi-parameter (or equivalent) meter. Connect tubing to the output of the cell and place the discharge end of the tubing in a five-gallon bucket.
- Activate the pump at the lowest flow rate setting of the pump.
- Measure the depth to water within the well. The pump flow rate may be increased such that the water level measurements do not change by more than 0.3 feet as compared to the initial static reading. The well-purging rate should be adjusted so as to produce a smooth, constant (laminar) flow rate, and so as not to produce excessive turbulence in the well. The expected targeted purge rate will be around 500 milliliters per minute, and will be no greater than 3.8 liters per minute.
- Transfer discharged water from the 5-gallon buckets to 55-gallon drums designated for well purge water.
- During purging, collect periodic samples and analyze for water quality indicators (e.g., turbidity, pH, temperature, dissolved oxygen, oxidation-reduction potential [ORP], and specific conductivity), with measurements collected approximately every five minutes.
- Continue purging the well until turbidity is less than 50 nephthalometric turbidity units (NTUs) and water quality indicators have stabilized to the extent practicable. The criteria for stabilization will be three successive readings for the parameters and criteria noted in Table 1:

Table 1
Stabilization Criteria

Parameter	Stabilization Criteria
pH	+/- 0.1 pH units
Specific Conductance	+/- 3% mS/cm
ORP/Eh	+/- 10mV
Turbidity	<50 NTU
Dissolved Oxygen	+/- 0.3 mg/l

Notes:
mS/cm = millisievert per centimeter
mV = millivolts
ORP/Eh = oxidation-reduction potential
NTU = nephthalometric turbidity units
mg/l = milligrams per liter

- If the water quality parameters do not stabilize and/or turbidity is greater than 50 NTUs within 2 hours, purging may be discontinued. Efforts to stabilize the water quality for the well must be recorded in the field book, and samples may then be collected as described herein.
- After purging, disconnect the tubing to the inlet of the flow-through cell. Collect groundwater samples directly from the discharge end of the tubing and place into the required sample containers as described in Section 4.3 of this QAPP. Label the containers, as described in Section 4.3 of this QAPP, and place in a chilled cooler. Samples should be collected first for volatile organic compounds (VOCs), then semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and the remaining inorganic analyses.
- Unless the sample is to be filtered at the laboratory, for the dissolved metals sample, collect the water into the plastic filter chamber and seal. Attach a hand pump outfitted with a disposable filter to the chamber, and pump the water through the filter into the appropriate sample container.
- Collect one final field sample and analyze for turbidity and water quality parameters (pH, temperature, dissolved oxygen, oxidation-reduction potential [ORP], and specific conductivity).
- Once sampling is complete, remove the pump and tubing from the well. Disconnect the tubing and place it back in the well for reuse during the next sampling event. Dispose of the sample filter in a 55-gallon drum designated for disposable sampling materials.
- Decontaminate the pump, oil/water interface probe, flow-through cell, and plastic filter chamber, as described in Section 3.6 of this QAPP.
- Record all measurements (depth to water, depth to NAPL, water quality parameters, turbidity), calculations (well volume), and observations in the field book and field data sheet, if applicable.

3.5 AIR SAMPLING

If it is required by the New York State Department of Environmental Conservation (NYSDEC) and/or the New York State Department of Health (NYSDOH), confirmatory air samples will be collected during remediation activities to measure concentrations of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in ambient air at the Site perimeter.

Samples will be analyzed for VOCs using Environmental Protection Agency (EPA) Method TO-15, and for SVOCs using EPA Method TO-13. The air samples to be analyzed for VOCs will be collected using the following procedures:

- Select a downwind perimeter location based on actual wind conditions for the particular day.
- Place a three-liter Summa canister at the selected downwind location and label as described in Section 4.3 of this QAPP. Attach a flow controller, which has been calibrated to collect a three-liter sample over an eight-hour period, to the canister.
- Attach a length of Teflon tubing to the intake for the flow controller, and place the intake for the tubing at breathing height (approximately four feet above grade).
- Record the vacuum reading from the vacuum gauge on the canister at the beginning of the sampling period. Open the valve of the canister and record the time in the field book.
- At the end of the sampling period, record the final vacuum reading and close the valve. Record the time in the field book.
- Wrap the Summa canister in plastic bubble wrap and place in a box for shipment to the laboratory via overnight delivery.

3.6 DECONTAMINATION OF SAMPLING EQUIPMENT

All sampling equipment will be either dedicated or decontaminated between sampling locations. The decontamination procedure will be as follows:

1. Scrub using tap water/Simple Green® mixture and bristle brush.
2. Rinse with tap water.
3. Scrub again with tap water/Simple Green® and bristle brush.
4. Rinse with tap water.
5. Rinse with distilled water.
6. Air-dry the equipment, if possible.

Hollow-stem augers (HSAs) will be decontaminated between monitor well locations by steam cleaning using a tap water/Simple Green® solution. Decontamination will be conducted on plastic sheeting (or equivalent) that will be bermed to prevent discharge to the ground.

3.7 FIELD INSTRUMENTATION

Field personnel will be trained in the proper operation of all field instruments at the start of the field program. Instruction manuals for the equipment will be on file at the Site for referencing proper operation, maintenance, and calibration procedures. The equipment will be calibrated according to manufacturer specifications at the start of each day of fieldwork, if applicable. If an instrument fails calibration, the Project Manager or Quality Assurance/Quality Control (QA/QC) Officer will be contacted immediately to obtain a replacement instrument. A calibration log will be maintained to record the date of each calibration, any failure to calibrate, and corrective actions taken. The photoionization detector (PID) will be calibrated each day using 100 parts per million (ppm) isobutylene standard gas.

3.8 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

All investigation-derived waste (IDW) will be containerized in Department of Transportation (DOT)-approved 55-gallon drums. The drums will be sealed at the end of each work day and labeled with the date, the well or boring number(s), the type of waste (i.e., drill cuttings, development water, or purge water), and the name of an AKRF point-of-contact. Soil samples collected from soil borings will be used for waste characterization of soils. Additional waste characterization soil samples will be collected, if warranted. Grab samples will be collected from drums containing well development and purge water for waste characterization of liquids. The samples will be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), ignitability, corrosivity, reactivity, and lead using Toxicity Characteristic Leaching Procedure (TCLP). All drums will be labeled “pending analysis” until laboratory data is available. Additional analyses may be required by the receiving facility. All IDW will be disposed of or treated according to applicable local, State, and federal regulations.

3.9 SURVEYING AND WATER TABLE READINGS

The groundwater monitoring wells and boring locations will be surveyed by a New York State-licensed surveyor. Three elevation measurements will be taken at each well location; the elevation of the ground beside the well, the elevation on the rim of the gate box or protective casing, and the elevation of the top of the PVC casing. One elevation measurement will be taken at each boring on the north side of the boring location prior to the advancement of borings for the collection of waste characterization samples.

Water table readings will be taken in the groundwater monitoring wells using a Solinst® Water Level Meter - Model 101 or equivalent. The gate boxes will be unlocked and opened at each well location. The Solinst® Water Level Meter will be turned on and sound tested. The probe of the meter will be inserted into the PVC casing. The probe will be lowered down the casing until the meter alarm indicates the probe is at the water table. A reading of the depth from the top of the PVC casing to the groundwater table will be recorded in the field book.

4.0 QUALITY CONTROL AND LABORATORY PROCEDURES

4.1 LABORATORY METHODS

Table 2 summarizes the laboratory methods that will be used to analyze field samples (excluding waste characterization and petroleum delineation samples), and the sample container type, preservation, and applicable holding times. An Environmental Laboratory Approval Program (ELAP)-certified laboratory will be used for all chemical analyses in accordance with DER-10 2.1(b) and 2.1(f). Category B deliverables and Contract Laboratory Protocol (CLP) ELAP certification will be required for confirmatory (post-remediation) samples and final delineation samples, and Category A deliverables (or Spills Category) laboratory data deliverables will be required for all other analyses (e.g., waste characterization sampling).

Table 2
Laboratory Analytical Methods for Analysis Groups

ANALYSIS GROUP	MATRIX	PARAMETER	EPA METHOD	SAMPLE CONTAINERS	PRESERVATION	HOLDING TIMES
SOIL ANALYSIS PARAMETERS	solid	TCL VOCs	8260	2-oz. clear glass Septum	4°C	14 days
		TCL SVOCs	8270 BN	8-oz. clear glass	4°C	14 days
		TAL Metals	1311/6010B/7470A	8-oz. clear glass	4°C	14 days
GROUNDWATER ANALYSIS PARAMETERS	liquid/sludge	TCL VOCs	8260	Two 40-ml clear glass vials	HCl, 4°C	14 days
		TCL SVOCs	8270 BN	3-L amber glass	4°C	7 days
		TAL Metals	6000/7000 series	500-ml plastic	HNO_3, 4°C	6 months (28 days for Hg)
AIR ANALYSIS PARAMETERS	vapor	VOCs	TO-15	Summa canisters	none	14 days
		SVOCs	TO-13	PUF samplers	none	7 days

Notes: TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-volatile organic compounds
TAL = Target Analyte List
BN = Base Neutral
PUF = Polyurethane Foam

4.2 QUALITY CONTROL SAMPLING

In addition to the laboratory analysis of the investigative and remedial soil and groundwater samples, additional analysis will be included for quality control (QC) measures, as required by the Category B sampling techniques (e.g., one set of quality control samples per 20 field samples). These samples will include equipment rinsate blanks, trip blanks, matrix spike/matrix spike duplicates (MS/MSD), and duplicate/blind duplicate samples. Equipment blank, MS/MSD, and duplicate samples will be analyzed for the same parameter set for which the samples will be analyzed. If the requested parameters include volatile organic compounds (VOCs), a trip blank will be analyzed for VOCs only. QC sampling will be performed in accordance with the disposal facility requirements when collecting samples for disposal characterization.

4.3 SAMPLE HANDLING

4.3.1 Sample Identification

All samples will be consistently identified in all field documentation, chain-of-custody (COC) documents, and laboratory reports using an alpha-numeric code. All samples will be identified with a prefix of “W61” to designate the West 61st Street Development Site. Groundwater samples will be identified by the monitoring well number, and soil boring samples will be identified by the soil boring number followed by the sample depth interval (in parentheses). Waste characterization samples collected from the 55-gallon drums will be identified by the drum number (e.g., D-1 or D-2) followed by a sample type designation (e.g., “LQ” for liquid and “SD” for solid). Waste characterization samples collected from soil stockpiles will be identified by the pile number (e.g., SP-1 or SP-2). Air samples will be labeled with “AS,” followed by the date in parentheses.

The designation “MS” will be added at the end of the designation for matrix spike/matrix spike duplicate samples. The field duplicate samples will be labeled with a dummy sample location to ensure that they are submitted as blind samples to the laboratory. The dummy identification will consist of the sample type followed by a letter. For duplicate soil boring samples, the sample depth will be the actual sample depth interval. Trip blanks and field blanks will be identified with “TB” and “FB,” respectively.

Table 3 provides examples of the sampling identification scheme.

Table 3
Examples of Sample Names

Sample Description	Sample Designation
Soil sample collected from five to seven feet at SB-21	W61-SB-21 (5’-7’)
Groundwater sample collected from monitoring well MW-10	W61-MW-10
MS/MSD sample from MW-10	W61-MW-10-MS
Duplicate sample from 12 to 14 feet at S-10	W61-SB-B (12’-14’)
Air sample collected on 9/12/05	W61-AS (9/12/05)

4.3.2 Sample Labeling and Shipping

All sample containers will be provided with labels containing the following information:

- Project identification
- Sample identification
- Date and time of collection
- Analysis(es) to be performed
- Sampler’s initials

Additionally, the air samples will be labeled with the serial number for the flow controller used during sampling. Once the samples are collected and labeled, they will be placed in chilled coolers and stored in a cool area away from direct sunlight to await shipment to the laboratory. Air samples will be placed in coolers that do not contain ice or in cardboard shipping boxes. Soil and groundwater samples will be shipped to the laboratory once to twice per week. At the start and end of each workday, field personnel will add ice to the coolers as needed.

The samples will be prepared for shipment by placing each sample in a sealable plastic bag, then wrapping each container in bubble wrap to prevent breakage, and finally adding freezer packs and/or fresh ice in sealable plastic bags along with the chain-of-custody (COC) form. Samples will be shipped overnight (e.g., via Federal Express) or transported by a laboratory courier. All coolers shipped to the laboratory will be sealed with mailing tape and a COC seal to ensure that the coolers remain sealed during delivery.

4.3.3 Sample Custody

Field personnel will be responsible for maintaining the sample coolers in a secured location until they are picked up and/or sent to the laboratory. The record of possession of samples from the time they are obtained in the field to the time they are delivered to the laboratory or shipped off-site will be documented on chain-of-custody (COC) forms. The COC forms will contain the following information: Project name; names of sampling personnel; sample number; date and time of collection and matrix; and signatures of individuals involved in sample transfer, and the dates and times of transfers. Laboratory personnel will note the condition of the custody seal and sample containers at sample check-in.

5.0 DATA REVIEW

The Quality Assurance/Quality Control (QA/QC) Officer will conduct a review of all analytical data and prepare a Data Usability Summary Report (DUSR) for all samples except waste characterization and petroleum delineation samples, to assess the quality of the data and determine its usability. To assess the data, the QA/QC Officer will:

- Ensure that the data package for all samples, except waste characterization and plume delineation samples, is complete as defined under the requirements for the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) Category B deliverables, and that all data were generated using established and agreed upon protocols.
- Check that all holding times were met.
- Check that all QC data (blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls, and sample data) fall within the protocol's required limits and specifications.
- Compare raw data with results provided in the data summary sheets and QC verification forms.
- Check that the correct data qualifiers were used.
- Evaluate the raw data and confirm the results provided in the data summary sheets and QC verification forms.

Any QC exceedances will be specified in the DUSR, and the corresponding data package QC summary sheet identifying the exceedances will be attached. The DUSR will identify any data deficiencies, analytical protocol deviations, and QC problems, and will discuss their effect on the data. Recommendations for re-sampling and/or reanalysis will be made.

APPENDIX A

RESUME OF PROJECT QA/QC OFFICER, PROJECT DIRECTOR, PROJECT MANAGER, AND FIELD TEAM LEADER

MICHELLE LAPIN, P.E.

SENIOR VICE PRESIDENT

Michelle Lapin is a senior vice president with 20 years of experience in the assessment and remediation of hazardous waste issues. She leads the firm’s Hazardous Materials group and offers more than a decade of experience providing strategic planning and management for clients. Ms. Lapin has been responsible for the administration of technical solutions to contaminated soil, groundwater, and geotechnical problems. Her other duties have included technical and report review, proposal writing, scheduling, budgeting, and acting as liaison between clients and regulatory agencies, and project coordination with federal, state, and local authorities.

Ms. Lapin’s hydrogeologic experience includes performing groundwater investigations, and formulation and administration of groundwater monitoring programs in New York, New Jersey, Connecticut, New Hampshire, Massachusetts, Rhode Island, Virginia, and Maryland. Her experience with groundwater contamination includes Level B hazardous waste site investigations; execution of leaking underground storage tank studies, including hazardous soil removal and disposal; soil and water sampling; soil gas surveys; and wetlands issues. Ms. Lapin is experienced in coordinating and monitoring field programs concerning hazardous waste cell closures. She has directed numerous Phase I, Phase II, and Phase III investigations, many of them in conjunction with developers, law firms, lending institutions, and national retail chains. She is also experienced in the cleanup of contaminated properties under Brownfield Cleanup Program (BCP) regulations.

BACKGROUND

Education

B.S., Civil Engineering, Clarkson University, 1983

M.S., Civil Engineering, Syracuse University, 1985

Professional Registrations

New York State P.E.

State of Connecticut P.E.

Professional Memberships

Member, American Society of Professional Engineers (ASPE), National and CT Chapters

Member, American Society of Civil Engineers (ASCE), National and CT Chapters

Member, Connecticut Business & Industry Association (CBIA), CBIA Environmental Policies Council

Years of Experience

Year started in company: 1994

Year started in industry: 1984

RELEVANT EXPERIENCE

Hudson River Park, New York, NY

Ms. Lapin is directing AKRF’s hazardous materials work during construction of Hudson River Park, a 5-mile linear park along Manhattan’s West Side. As the Hudson River Park Trust’s (HRPT's) environmental consultant, AKRF is overseeing preparation and implementation of additional soil and groundwater investigations (working with both

NYSDEC and NYCDEP), all health and safety activities, removal of both known underground storage tanks and those encountered during construction. Previously, the firm performed hazardous materials assessments as part of the Environmental Impact Statement (EIS) process, including extensive database and historical research, as well as soil and groundwater investigations. Ms. Lapin has been the senior consultant for the soil and groundwater investigations and remediation, and the asbestos investigations and abatement oversight.

Fiterman Hall Deconstruction and Decontamination Project, New York, NY

The 15-story Fiterman Hall building, located at 30 West Broadway between Barclay and Murray Streets, originally constructed as an office building in the 1950s, had served as an extension of the City University of New York (CUNY) Borough of Manhattan Community College (BMCC) since 1993. The building was severely damaged during the September 11, 2001, attack on the World Trade Center (WTC) when 7 WTC collapsed and struck the south façade of the building, resulting in the partial collapse of the southwest corner of the structure. The building was subsequently stabilized, with breaches closed and major debris removed, however extensive mold and WTC dust contaminants remain within the building, which must be taken down. The project requires the preparation of two EASs for the redevelopment of Fiterman Hall—one for the deconstruction and decontamination of the building and one for the construction of a replacement building on the site. AKRF is currently preparing the EAS for the Deconstruction and Decontamination project, which includes the decontamination of the interior and exterior of the building, the removal and disposal of all building contents, and the deconstruction of the existing, approximately 377,000-gross-square-foot partially collapsed structure. Ms. Lapin was the reviewer for the deconstruction and decontamination plans for the EAS. The cleanup plan is due to be submitted shortly to the U.S. Environmental Protection Agency; once approved, remediation work will begin, followed by the deconstruction and rebuilding of Fiterman.

Brooklyn Bridge Park, Brooklyn, NY

AKRF is preparing an EIS and providing technical and planning support services for Brooklyn Bridge Park, which will revitalize the 1.3-mile stretch of the East River waterfront between Jay Street on the north and Atlantic Avenue on the south. The new park, to be completed by 2010, would allow public access to the water's edge, allowing people to enjoy the spectacular views of the Manhattan skyline and New York Harbor. It would also provide an array of passive and active recreational opportunities, including lawns, pavilions, and a marina. As with many waterfront sites around New York City, the lands along the Brooklyn waterfront have a long history of industrial activities. Some of these industries used dangerous chemicals and generated toxic by-products that could have entered the soil and groundwater. In addition, landfilling activities along the shoreline also made use of ash and other waste materials from industrial processes. Based on site inspections and historical maps, government records, and other sources, AKRF is in the process of investigating the potential for the presence for hazardous materials in the park. This information will be compiled into a Phase 1 Environmental Site Assessment report. AKRF will also provide support to the design team related to designing the project to minimize costs related to remediating hazardous materials where possible. Ms. Lapin is serving as senior manager for the hazardous materials investigations, including procuring a Beneficial Use Determination (BUD) from the New York State Department of Environmental Conservation (NYSDEC) for the acceptance of fill materials to the site.

Columbia University Manhattanville Academic Mixed-Use Development, New York, NY

Ms. Lapin is serving as hazardous materials task leader on this EIS for approximately 4 million square feet of new academic, research and neighborhood uses to be constructed north of Columbia University's existing Morningside campus. The work has included Phase I Environmental Site Assessments for the properties within the site boundaries and estimates for upcoming investigation and remediation.

Albert Einstein College of Medicine Center for Genetic and Translational Medicine, Bronx, NY

Ms. Lapin directed the firm's hazardous materials work in connection with the construction a new Center for Genetics and Translational Medicine (CGTM) building on the Bronx campus of the Albert Einstein College of Medicine of Yeshiva University. The building is expected to be opened by 2006. AKRF prepared an

Environmental Assessment Statement (EAS) that examined such issues as land use, zoning, air quality, urban design and visual resources, hazardous materials, traffic, noise, and air quality. Ms. Lapin's work included analysis of the existing conditions and potential impacts that the construction could cause to the environment and human health.

Yonkers Waterfront Redevelopment Project, Yonkers, NY

For this redevelopment along Yonkers Hudson River waterfront, Ms. Lapin headed the remedial investigation and remediation work that included Phase I assessments of 12 parcels, investigations of underground storage tank removals and associated soil remediation, remedial alternatives reports, and remedial work plans for multiple parcels. Several of the city-owned parcels were remediated under a Voluntary Cleanup Agreement; others were administered with state Brownfields grants. Hazardous waste remediation was completed on both brownfield and voluntary clean-up parcels, and construction is underway for mixed-use retail, residential development, and parking.

Davids Island Site Investigations, New Rochelle, NY

Ms. Lapin managed the hazardous materials investigation of Davids Island, the largest undeveloped island on the Long Island Sound in Westchester County. The 80-acre island features pre- and post-Civil War military buildings and parade grounds, and is viewed as a major heritage, tourism, and recreational amenity. The island, formerly known as Fort Slocum, was used by the U.S. military, beginning in the 19th century, as an Army base, hospital, and training center. The island is planned for county park purposes. The investigation included a Phase I site assessment, with historical research going back to the 17th century, a Phase II subsurface investigation, underground storage tank investigations, and asbestos surveys of all remaining structures. Cost estimates were submitted to Westchester County for soil remediation, asbestos abatement, and building demolition.

Site Selection and Installation of 11 Turbine Generators, New York and Long Island, NY

AKRF was retained by the New York Power Authority (NYPA) to assist in the State Environmental Quality Review Act (SEQRA) review of the proposed siting, construction, and operation of 11 single-cycle gas turbine generators in the New York metropolitan area. Ms. Lapin managed the hazardous materials investigation of the sites. The work has included Phase I site assessments, subsurface investigations, and construction health and safety plans.

Cross Westchester (I-287) Expressway Phases V and VI, Westchester County, NY

For the New York State Department of Transportation (NYSDOT), Ms. Lapin served as project manager and was responsible for directing the contaminated materials aspect of the final design effort for the reconstruction of Westchester County's major east-west artery. As part of her duties, Ms. Lapin was responsible for managing the asbestos investigations at eight bridges and wetland delineation along the entire corridor, as well as writing the scope of work and general management of the project.

Shaw's Supermarket, New Fairfield, CT

AKRF is providing consulting services to the developer and owner of a 9-acre site included conducting a remedial investigation and remediation of a site contaminated from former dry cleaning operations and off-site gasoline spills. The investigation included the installation of monitoring wells in three distinct aquifers, geophysical logging, pump tests, and associated data analysis. Ms. Lapin presented the environmental issues and planned remediation to local and state officials during the early stages of the planning process to incorporate their comments into the final remedial design. A remedial action work plan (RAWP) was completed and approved by the Connecticut Department of Environmental Protection within a year to enable redevelopment work for a new supermarket and shopping center. The RAWP included the remediation of soils within the source area and a multi-well pump and treat system for the recovery of non-aqueous and dissolved phase contamination in groundwater. The design of the recovery well system included extensive groundwater modeling to ensure capture of the contaminant plume and the appropriate quantity and spacing of the wells. Ms. Lapin directed the soil removal remedial activities and monitoring for additional potential contamination during construction. In addition, AKRF performed comprehensive pre-demolition asbestos and lead-based paint surveys of the former site structures, and are continuing to provide environmental consulting support for the development of the site. Site development has been completed and a groundwater remediation system was installed during site development. The remediation system is successfully operating. The next phase of work includes and off-site study to determine whether the contamination plume has migrated from the site since area residents use groundwater as a source of drinking water. Ms. Lapin will continue to manage the project through the study and remediation phases.

East 75th/East 76th Street Site, New York, NY

Ms. Lapin served as senior manager for this project that encompassed coordination and direct remediation efforts of this former dry cleaning facility and parking garage prior to the sale of the property and its ultimate redevelopment for use as a private school. A preliminary site investigation identified 20 current and former petroleum and solvent tanks on the property. A soil and groundwater testing program was designed and implemented to identify the presence and extent of contamination resulting from potential tank spills. This investigation confirmed the presence of subsurface petroleum contamination in the soil and solvent contamination from former dry cleaning activities in the bedrock. AKRF completed oversight of the remediation under the State's Voluntary Cleanup Program. Remediation, consisting of tank removals and excavation of contaminated soil and the removal of solvent-contaminated bedrock down to 30 feet below grade, has been completed. AKRF completed oversight of the pre-treatment of groundwater prior to discharge to the municipal sewer system and is currently completing an off-site study to determine impacts to groundwater in downgradient locations.

Former Macy's Site, White Plains, NY

Ms. Lapin managed the pre-demolition work for Tishman Speyer. Work included a Phase I site assessment; subsurface investigation (Phase II), including the analysis of soil and groundwater samples for contamination; a comprehensive asbestos, lead paint, and PCB investigation; radon analysis; and coordination and oversight of the removal of hazardous materials left within the building from previous tenants. Work also included asbestos abatement specifications and specifications for the removal of two 10,000-gallon vaulted fuel-oil underground storage tanks.

Storage Deluxe, Various Locations, NY

Ms. Lapin manages the firm's ongoing work with Storage Deluxe, which includes Phase I and Phase II subsurface investigations, underground storage tank removals and associated remediation, asbestos surveys and abatement oversight, and contaminated soil removal and remediation for multiple sites in the Bronx, Brooklyn, Manhattan, Westchester County, and Long Island.

Home Depot, Various Locations, NY

Ms. Lapin, serving as either project manager or senior manager, has managed the investigations and remediation at multiple Home Depot sites in the five boroughs, Long Island, and Connecticut. The investigations have included Phase I and II site assessments, asbestos and lead paint surveys, abatement specifications and oversight, and soil and groundwater remediation.

Avalon on the Sound, New Rochelle, NY

For Avalon Bay Communities, Ms. Lapin is managing the investigations and remediation of two phases of this residential development, including two luxury residential towers and an associated parking garage. Remediation of the first phase of development (the first residential tower and the parking garage) included gasoline contamination from a former taxi facility, fuel oil contamination from multiple residential underground storage tanks, and chemical contamination from former on-site manufacturing facilities. The remediation and closure of the tank spills was coordinated with the New York State Department of Environmental Conservation (NYSDEC). The initial investigation of the Phase II development—an additional high-rise luxury residential building—detected petroleum contamination. A second investigation was conducted to delineate the extent of the contamination and estimate the costs for remediation. The remediation will be conducted in conjunction with the development plan.

Mill Basin, Gerritsen Inlet, and Paerdegat Basin Bridges, Final Design, Shore Parkway, Brooklyn, NY

Following the preparation of the GEIS for the Belt Parkway Bridges Project, the firm was retained for supplemental work during the final design phase of the project. This included NEPA and SEQRA documentation for three of the bridges—Mill Basin, Gerritsen Inlet, and Paerdegat Basin—which will be federally funded. Ms. Lapin managed the contaminated materials investigation that included a detailed subsurface contaminated materials assessment, both subaqueous and along the upland approaches.

NYSDOT Transportation Management Center (TMC), Hawthorne, NY

AKRF conducted environmental studies for the NYSDOT at the current troopers' headquarters in Hawthorne, NY. The property is the proposed site of a new Transportation Management Center. AKRF completed a comprehensive asbestos survey of the on-site building and prepared asbestos abatement specifications; performed a Phase I site assessment; conducted an eletromagnetic (EM) survey that located two fuel oil underground storage tanks, and developed removal specifications for the two underground storage tanks and an aboveground storage tank.

Metro-North Railroad Poughkeepsie Intermodal Station/Parking Improvement Project, Poughkeepsie, NY

Ms. Lapin served as project manager of the hazardous materials investigation in connection with AKRF's provision of planning and environmental services for parking improvement projects at this station along the Hudson Line. The project included an approximately 600-space garage, additional surface parking, and an intermodal station to facilitate bus, taxi, and kiss-and-ride movements. Ms. Lapin conducted Phase I and II contaminated materials assessments and worked with the archaeologists to locate an historical roundhouse/turntable.

Metro-North Railroad Golden's Bridge Station Parking Project, Westchester County, New York

For Metro-North Railroad, Ms. Lapin managed a Phase I Environmental Site Assessment of a property that has since become the new parking area, used by the existing Golden's Bridge train station. Ms. Lapin also conducted a subsurface (Phase II) investigation of the original parking area, track area, and existing platform for the potential impact of moving tracks in the siding area to extend the existing parking area and adding an access from a proposed overhead walkway (connecting the train station to the new parking area). The study also included an assessment for lead-based paint and asbestos on the platform structures.

RICHARD A. GARDINEER, P.E.

TECHNICAL DIRECTOR

Richard A. Gardineer, P.E., is a technical director who specializes in the assessment and remediation of hazardous and non-hazardous waste facilities. Phase I and Phase II Environmental Assessments, Brownfield site investigations/remediations, landfill closures, and waste classification/handling are Mr. Gardineer's primary areas of responsibility at AKRF. He conducts environmental assessments and investigations that include analyses of waste material, soil, groundwater, surface water, sub-surface soil gas, and indoor air. These investigations typically involve communication with federal, state, and city agencies, including the New York State Department of Conservation (NYSDEC), New York State Department of Health (NYSDOH), the U.S. Environmental Protection Agency (USEPA), the New York City Department of Environmental Protection (NYCDEP), and the New York City Department of Health (NYCDOH).

Prior to joining AKRF, Mr. Gardineer worked as a regulator in the three solid and hazardous waste management programs of NYSDEC for more than 25 years. Mr. Gardineer worked in Region 3 (Lower Hudson Valley) for 16 years as a program supervisor regulating landfills, construction and demolition debris disposal sites, and RCRA C hazardous waste facilities; he also investigated inactive hazardous waste disposal sites under the State Superfund. Mr. Gardineer then served as the Regional Remediation Engineer in the Region 2 New York City Office for 9 years. Mr. Gardineer managed the Environmental Remediation Program, which regulated the investigation and cleanup of hazardous waste, hazardous substances, and petroleum contaminated sites. During Mr. Gardineer's tenure in Region 2, five of the New York City's largest landfills were investigated and/or closed through the State Superfund Grant Program, the Brownfields Program (Voluntary Cleanup) was initiated in New York City, and numerous petroleum contaminated sites were investigated and cleaned up. Throughout his career, Mr. Gardineer has testified as a witness for New York State in a number of legal actions to close illegal landfills, to remediate hazardous waste sites, and to recover funds under the State Superfund.

BACKGROUND

Education

Bachelor of Engineering in Civil Engineering, New York University, 1970

Master of Science in Civil Engineering, New York University, 1973

Professional Certifications

Professional Engineer, licensed in New York State

Years of Experience

Year started in company: 2005

Year started in industry: 1977

RELEVANT EXPERIENCE

Closure of New York City Landfills Under EQBA, Various Locations, NY

Mr. Gardineer and his staff regulated the closure of the Brookfield Avenue, Edgemere, and Pelham Bay Landfills under the Environmental Quality Bond Act of 1986. Activities for each of these inactive hazardous waste landfills included the negotiation/monitoring of the State Assistance Contract, the review/ approval of the Remedial

Investigation Work Plan and Report, the review/approval of the proposed remedy, the preparation of the Proposed Remedial Action Work Plan and the Record of Decision, the preparation of Fact Sheets, the review/approval of the Remedial contract., the review/approval of the Operation and Maintenance Plan, and the participation at public meetings involving the landfill.

New York City School Construction Authority (SCA), Long Island City, NY

Mr. Gardineer's primary duty as a consultant to the SCA was to determine the suitability of potential sites for use as public schools. His activities included reviewing/revising Phase I Environmental Site Assessments, proposed Phase II Scopes of Work, Phase II Environmental Site Assessments, Brownfields Remedial Investigative Work Plans, Indoor Air Quality Studies, remedial contact specifications, and waste disposal plans. Consultation was provided to the SCA regarding specific measures necessary to make each site suitable for use as a school.

Brownfields Program (Voluntary Cleanup), Various Locations, NY

Mr. Gardineer and his staff reviewed plans to clean up and reuse numerous sites in New York City under the Voluntary Cleanup Program. Notable sites included St. George Ballpark in Staten Island (NY Yankee Class A team), the Pfizer Pharmaceutical site in Brooklyn, Queens West Development, Home Depot in Rego Park, Queens, Outlet City in Queens, Sports Authority in Queens, Nassau Metals on Staten Island, and Visy Paper in Staten Island. Mr. Gardineer made a presentation on the Visy Paper site at the Brownfields 2000 Conference in Atlantic City. Activities included the negotiation of the BCP agreement, the review/approval of the Remedial Investigation Work Plan and report, the review/approval of the Remedial Action plan, the review and issuance of Fact Sheets, the recommendation of institutional controls, the review/approval of the Operation and Maintenance Plan, and participation in public meetings.

Inactive Hazardous Waste Disposal Sites (State Superfund Program), Various Locations, NY

Mr. Gardineer supervised the investigation and cleanup of inactive hazardous waste (Superfund) sites in New York City. Activities included supervising and/or participating in environmental sampling efforts at suspected sites, negotiation of Consent Orders, scoping and review of Phase I and Phase II Site Investigations, negotiation and review of Remedial Investigations and Feasibility Studies, preparation of Proposed Remedial Action Plans (PRAPs) and Records of Decision, preparation of Fact Sheets, communications with public officials and participation at public meetings. Notable sites handled in this program included Amtrak Sunnyside yard in Queens, Phelps Dodge in Queens, Arden Woods in Staten Island, Princes Bay in Staten Island, Standard Motor Products in Queens, and the Arthur Kill Generating Station in Staten Island.

Landfill Closure Region 3, Various Locations, NY

Mr. Gardineer managed staff activities leading to the orderly closure of non-complying landfills, construction and demolition debris disposal sites, and other solid waste management facilities in the Lower Hudson Valley (NYSDEC Region 3). Activities included landfill inspections, taking environmental samples (leachate, groundwater, and soil gas), negotiating Consent Orders, and review of closure plans. Mr. Gardineer participated in negotiations with Towns in Dutchess and Ulster Counties to allow for the orderly closure of non-complying landfills in concert with the implementation of the each County's Solid Waste Management Plans. Notable landfills closed during Mr. Gardineer's tenure in Region 3 included landfills operated by the Towns of Clarkstown, Ramapo, and Haverstraw in Rockland County, the Orange County Landfill, and portions of the Al Turi Landfill in Orange County.

Construction and Demolition Debris Disposal Sites, Various Locations, NY

Mr. Gardineer supervised staff in the investigation and closure of numerous non-complying construction and demolition debris disposal sites in the Lower Hudson Valley. Activities included site inspections, the taking of environmental samples (waste material, leachate, groundwater, soil gas), participation in enforcement action, review of closure plans, and supervision of landfill capping.

Solid Waste Management Plans

Mr. Gardineer supervised staff and participated in activities involving the review/approval of Solid Waste Management Plans submitted by six of the seven counties in Region 3. Activities included pre-submission meetings with the counties, scoping the plans, review/approval of the plans, and participation at public meetings.

Part 360 Solid Waste Management Applications

Mr. Gardineer supervised staff and participated in activities involving sanitary landfills, ashfills, construction and demolition debris landfills, resource recovery facilities, transfer stations and composting facility applications for sites in the Lower Hudson River Valley. Mr. Gardineer supervised his staff in the technical review of the applications, participation at permit hearings, preparation of permit conditions, and review of construction certification. Mr. Gardineer has expertise in NYCRR Part 360 (Solid Waste Management Facilities), Part 617 (State Environmental Quality Review Act), and Part 621 (Uniform procedures Act). Notable projects included the Al Turi Landfill, the Orange County Landfill, the Ramapo Landfill, the Westchester County (Sprout Brook) Ashfill (expansion), the Westchester County material Recovery Facility, and the Dutchess County Resource Recovery Facility.

Expert Witness

Mr. Gardineer testified as an expert and fact witness at NYSDEC permit and enforcement hearings, civil litigation in State and Federal Court, Superfund cost recovery cases, and criminal trials. Notable civil litigation cases included the *State of New York v. Town of Ramapo*, *State of New York v. Dow Chemical*, *State of New York v. Frank Sacco* (Tuxedo C+D site), *State of New York v. Thomas Prisco*, and the *State of New York v. Town of Haverstraw.*

FREDA PONCE

GEOLOGIST

Freda Ponce is a geologist with 2 years experience working in environmental consulting. Her current work at AKRF Inc. involves Phase I and Phase II environmental site assessments (ESA). Her Phase II technical expertise involves; soil and groundwater contamination delineation via soil borings and groundwater monitoring, installation and development of groundwater monitoring wells, hazardous soil removal and disposal, soil gas surveys and sampling, and low-flow groundwater sampling. Her hydrogeologic experience includes 72 hour permeability pump tests, and modeling of groundwater contamination plumes using the GMS 4.0 groundwater modeling program. She is also proficient in the use of ArcView GIS to map and model various environmental field data.

Prior to joining AKRF, Ms. Ponce worked for a Hydrogeological consulting firm in Millburn, New Jersey as junior geologist.

BACKGROUND

Education

B.S., Geology, City College of New York 2001

Certifications

40 Hour Hazardous Waste Operations Site Worker 2001

New York State-Licensed Asbestos Inspector 2004

NYC Department of Buildings Inspector License 2004

Years of Experience

Year started in company: 2004

Year started in industry: 2001

RELEVANT EXPERIENCE

Yankees Stadium Site, Phase II, Bronx, NY

Ms. Ponce completed a Phase II subsurface investigation for this property currently in the CEQR process to allow for redevelopment of the site. Ms. Ponce's work included; a geophysical survey, advancement of soil borings installation of groundwater monitoring wells, analysis of analytical laboratory data, and preparation of a subsurface investigation report.

Avalon Phase II, New Rochelle, NY

Ms. Ponce completed a Phase II subsurface investigation for this property to allow for redevelopment of the site. Ms. Ponce's work included; advancement of soil borings, installation of groundwater monitoring wells, analysis of analytical laboratory data, and preparation of a subsurface investigation report. Ms. Ponce was also involved with the oversight of sub-contractors during excavation of contaminated soil at the subject site.

West 61st Phase II, New York, NY

Ms. Ponce completed a Phase II subsurface investigation for this property currently in the Brownfields cleanup program to allow for redevelopment of the site. Ms. Ponce's work included; a geophysical survey, installation and sampling of soil borings and groundwater monitoring wells, installation and sampling of soil gas wells, analysis of analytical laboratory data, and preparation of a subsurface investigation report for submission to applicable regulatory agencies.

325-329 West Broadway, New York, NY

Ms. Ponce conducted a Phase I Environmental Site Assessment in accordance with ASTM E-1527-00 related to the redevelopment of this site. Ms. Ponce coordinated with clients, property owners, and tenants to conduct the site inspection, historical research, regulatory records review, and prepare the Phase I report. Ms. Ponce also completed a Phase II subsurface investigation for this property which included; advancement of soil borings, sampling of groundwater, analysis of analytical laboratory data, and preparation of a subsurface investigation report.

CE Flushing Site, Flushing, NY

Ms. Ponce is serving on a team conducting a Phase II investigation of a large PCB-contaminated former utility property in Flushing, Queens. She has completed field work for several soil boring installations in the contaminant delineation phase of the project.

Queens West, Long Island City, NY

Ms. Ponce conducted field work for a supplemental remedial investigation at this former Blau Gas manufacturing facility on a portion of the Queens West Development site in Long Island City. The work is being conducted as part of a Voluntary Cleanup Agreement with the NYSDEC. Field work activities have included soil borings, and monitoring well sampling. Ms. Ponce also prepared a Supplemental Remedial Investigation Workplan, Health and Safety Plan, and Quality Assurance Protection Plan for further field activities related to be conducted at the project site.

201-205 Saw Mill River Road, Millwood, NY

Ms. Ponce completed a Phase II subsurface investigation for this property to allow for commercial redevelopment of the site. Ms. Ponce's work included the advancement of soil borings, sampling of monitoring wells, analysis of analytical laboratory data, and preparation of a subsurface investigation report.

Zerega Avenue EAS, Bronx, NY

Ms. Ponce completed a subsurface investigation for this property under NYCDEP guidance, to allow for commercial redevelopment of the site. Ms. Ponce's work included the installation and sampling of soil borings, excavation of test pits, installation and sampling of temporary groundwater monitoring wells, soil gas sampling, analysis of field data and laboratory analytical data, and preparation of a subsurface investigation report.

Columbia University Manhattanville Development, New York, NY

As part of the New York City CEQR process, Ms. Ponce conducted a Phase I Environmental Site Assessment in accordance with ASTM E-1527-00 related to the development of approximately 4 million square feet of new academic, research and neighborhood uses to be constructed north of Columbia University's existing Morningside location. Ms. Ponce coordinated with clients, property owners, and tenants to conduct the site inspection, historical research, regulatory records review, and prepare the Phase I report.

27-06 43Rd Avenue, Long Island City, NY

As part of the New York City CEQR process, Ms. Ponce conducted a Phase I Environmental Site Assessment in accordance with ASTM E-1527-00 related to the development of an e-designated site located in Long Island City, New York. Ms. Ponce coordinated with clients, property owners, and tenants to conduct the site inspection, historical research, regulatory records review, and prepare the Phase I report.

312 Warburton Avenue, Yonkers, NY

Ms. Ponce conducted a Phase I Environmental Site Assessment in accordance with ASTM E-1527-00 related to the redevelopment of a site located in along the Yonkers, New York. Ms. Ponce coordinated with clients, property owners, and tenants to conduct the site inspection, historical research, regulatory records review, and prepare the Phase I report.

K. Hovnanian's Four Seasons at Hamptonburgh, Town of Hamptonburgh, NY

Ms. Ponce assisted in writing a groundwater resources chapter as well as a soils, geology, and topography chapter as part of a Draft Environmental Impact Statement (DEIS) for a residential development in the Town of Hamptonburgh, New York. The EIS was conducted in accordance with the State Environmental Quality Review Act and was currently submitted for review by the Town of Hamptonburgh.

ANDREW D. RUDKO, PH.D.

SENIOR VICE PRESIDENT

Andrew D. Rudko, Ph.D., is a senior vice president of AKRF, with more than 25 years of experience in environmental analysis and management, with particular emphasis on hazardous materials, environmental site assessments and audits, and soil and groundwater remediation. Dr. Rudko's current and recent experience includes management of several projects involving Voluntary Cleanup Agreements and Brownfields Cleanup Agreements for assessment and remediation of soil and groundwater contamination problems on major development sites. These include the Queens West Development site, a New York State-sponsored development which extends for three quarters of a mile along the East River waterfront in Queens, New York. The site, which formerly contained an oil refinery, gas plant, paint and varnish factories, and railroad yards, is being redeveloped for residential and commercial uses. Dr. Rudko is also managing the assessment of soil and groundwater on the site of Brooklyn Bridge Park, which is being developed on a stretch of Brooklyn waterfront with a long history or industrial uses.

Dr. Rudko has managed cleanups of many **petroleum and solvent spills.** He is managing ongoing remediation work for chlorinated solvent releases to the groundwater for sites in Harlem, Rego Park, and Springfield Gardens. Some recent spill cleanup sites include a former gasoline station in Downtown Brooklyn, a portion of the Fordham University campus in the Bronx, the Tribeca Hotel site developed by Hartz Mountain Industries in Lower Manhattan, retail sites in Maspeth and Long Island City developed by Forest City Ratner Companies, a site in the Bronx developed by Triangle Equities for the Department of Motor Vehicles, the Rivergate Apartments on East 34th Street in Manhattan, the Tate apartment building on West 23rd Street in Manhattan, and a residential development on Sixth Avenue and 26th Street in Manhattan.

He has been responsible for assessing **impacts on public health** for a number of projects involving the use of hazardous chemicals, biohazards, and radioactive materials. These projects include an engineering and physics research center on the campus of Columbia University, a new laboratory building for biomedical research at Rockefeller University, a new research center for Memorial Sloan Kettering Medical Center and the Audubon Research Park in upper Manhattan.

Dr. Rudko has managed a number of site assessments for New York City Department of Environmental Protection sewer improvement projects. These include the installation of new sewers in the Meadowmere and Warnerville sections of southeastern Queens, the Avenue V Pump Station and associated force mains in Brooklyn, new facilities at the 26th Ward wastewater treatment plant in Brooklyn, and combined sewer outfall abatement projects in Queens and Staten Island.

Dr. Rudko was project director for the site assessment work the firm performed for the New York City School Construction Authority, directing assessments on school sites in the Bronx, Brooklyn, and Queens. Sites included a former gas station, a truck salvage yard, and a former plastics factory. Testing programs were recommended, developed, and implemented for these sites, and remedial actions were recommended where necessary. At the former plastics factory site, the testing program included soil and groundwater sampling, testing of building floors for PCB contamination, and location and removal of old underground gasoline and oil tanks, with screening of surrounding soil for possible petroleum contamination.

BACKGROUND

Education

B.S., Biochemistry, Cornell University, 1965

Ph.D., Biochemistry, Columbia University, 1972

Years experience

With this firm: 21

With other firms: **6**

RELEVANT EXPERIENCE

Gowanus Canal Clean-Up, Brooklyn, NY

Dr. Rudko managed the investigation and remedial design of a former manufactured gas plant site on the Gowanus Canal in Brooklyn. The subsurface remains of three large gasholders filled with coal tar-contaminated soil and debris were cleaned up prior to development of the property.

Queens West Development Project, Queens, NY

Dr. Rudko directed the site assessment work on the 90-acre site of the proposed Queens West development project being sponsored by the Empire State Development Corporation, the New York City Public Development Corporation, and the Port Authority of New York and New Jersey. This site comprises more than 10 blocks of industrial property along the East River in Queens. Former uses on the site include oil refineries, paint manufacturers, and railyards. AKRF developed and implemented extensive soil and groundwater testing programs, and developed remediation plans which have been incorporated into four separate Voluntary Cleanup Agreements.

Brooklyn Bridge Park, Brooklyn, NY

Dr. Rudko is responsible for the site assessment work being performed on this waterfront site which is being developed as a park by New York State and New York City. The site, which stretches from Brooklyn Heights under the Brooklyn Bridge to the Manhattan Bridge, has a long history of industrial uses.

Shea Stadium Redevelopment, Flushing, NY

Dr. Rudko is directing the site assessment work being performed on the proposed site of a new stadium adjacent to the existing Shea Stadium in Flushing, Queens. The area was formerly used as a landfill for the disposal of ash and other wastes. Dr. Rudko previously directed the soil and groundwater testing on the site of the adjacent National Tennis Center.

Home Depot, New Rochelle, NY

Dr. Rudko directed the assessment and remediation work on a 14-acre parcel in New Rochelle, New York that was being developed by Home Depot USA. After extensive review and discussions with the New York State Department of Environmental Conservation (DEC), a remediation agreement was developed and approved that became the model for New York State's Voluntary Cleanup Program. AKRF supervised the implementation of the remediation measures, which included removal of underground storage tanks and associated contaminated soil, and construction of an impermeable cap with a gas venting system for areas with lead contamination.

Home Depot, Rego Park, NY

On another retail site, serious solvent contamination was unexpectedly encountered on a property being developed in Queens, New York. Dr. Rudko managed the design and execution of a testing program, planned a remediation program that would permit development of the site, and assisted in the negotiation of a Voluntary Cleanup Agreement with DEC. Development of the property is now continuing while a groundwater remediation system designed by AKRF's Engineering division is installed as part of the building construction.

18-30 Whitestone Expressway Clean-Up, College Point, NY

Dr. Rudko directed a Voluntary Clean-Up involving the delineation and removal of PCB-contaminated soil from a site in College Point. DEC issued a release letter following the successful completion of this project.

Laundry/Dry Cleaning Plant, New York, NY

Dr. Rudko has been managing the assessment and cleanup of the only listed hazardous waste site in Manhattan, **a** former laundry/dry cleaning plant on Fifth Avenue in Harlem. Remediation has included the removal of contaminated building materials and operation of an innovative sub-slab vapor extraction system. Installation of this system required the development of special techniques for horizontal drilling under the floor of the building.

Jamaica Water Company, Queens, NY

For the New York City Department of Environmental Protection, Dr. Rudko directed fast-track site assessments of 17 properties acquired from the Jamaica Water Company. The assessments, all of which were completed within 2 months, included soil and groundwater testing, asbestos and lead paint surveys, and testing of buildings for mercury contamination.

Columbia University Properties, New York, NY

Dr. Rudko has directed site assessments on many properties being acquired by Columbia University. He managed Phase I, Phase II and remediation work on an old garage at a location on Broadway where Columbia developed a new dormitory. He has managed Phase I site assessments on over twenty properties in the area of Manhattanville where the University is developing a new campus.

Home Depot, Various Locations, NY

Dr. Rudko has been providing environmental consulting services to Home Depot, Inc. in connection with their development of major retail facilities at locations throughout the New York metropolitan area. Many of these locations are former industrial properties that have required remedial actions prior to redevelopment.

New York Times, New York, NY

He directed Phase I and Phase II assessments for the New York Times in preparation for the development of its major new printing facility in New York City. Assessments were prepared for three alternative sites: a former railyard in the Bronx later used as an illegal landfill for demolition debris; a site in Queens comprising six industrial properties, several with multiple tenants; and a large city-owned site in Queens.

Medical Facilities

Medical Care Facilities Finance Agency (MCFFA), New York, NY

Dr. Rudko directed Phase I environmental assessments of several major medical facilities in connection with new financing through bonds issued by MCFFA. Facilities include Presbyterian Hospital, Mt. Sinai Medical Center, St. Lukes/Roosevelt Hospital Center, Brooklyn Hospital, and Syosset Hospital. The firm performed preliminary investigations, including Phase I site assessments, and Phase II assessments if necessary. The firm identified potential environmental liabilities and suggested remediation. For example, for the New York Presbyterian Hospital, AKRF identified several underground tanks remaining on the site, then designed and implemented a remediation plan. For the Syosset Hospital on Long Island, AKRF identified floor drains in basement areas that discharged into old dry wells as a potential environmental liability.

Audubon Research Park, New York, NY

Dr. Rudko directed the hazardous materials assessment for the EIS for a 5.5-acre development that includes the Mary Woodard Lasker Biomedical Research Building, which houses the Audubon Business and Technology Center, and the Russ Berrie Medical Science Pavilion. The Berrie Pavilion houses a community health facility, a comprehensive diabetes center, genetics research and a research program in pediatrics. The Irving Center will house research on cancer, genetics, and cell biology. Dr. Rudko led the analysis of medical waste disposal procedures and potential health concerns associated with chemicals used in the proposed research laboratories.

Memorial Sloan-Kettering Cancer Center (MSKCC), New York, NY
AKRF prepared a comprehensive EIS for the expansion of MSKCC, a state-of-the-art cancer treatment and research center located on the Upper East Side in Manhattan. Dr. Rudko directed the hazardous materials study, which included analyses of radioactive and toxic materials used in the cancer research and treatment facility

Mount Sinai School of Medicine, New York, NY
Dr. Rudko directed a hazardous materials assessment in connection with the EIS for a multi-use building for the Mount Sinai School of Medicine. The site, formerly used for parking, is on the east side of Madison Avenue between 98th and 99th Streets opposite the main portion of the Mount Sinai Medical Center. The 740,000-gross-square-foot structure will contain research labs, clinical labs, psychiatric care beds, administrative offices, an auditorium, a seminar room, a cafeteria, faculty offices, a vivarium, and approximately 300 accessory parking spaces.

Columbia University Center for Engineering and Physical Science Research, New York, NY
Dr. Rudko directed the preparation of an EIS for Columbia University's Center for Engineering and Physical Science Research, located on the south side of 120th Street in Manhattan. The project serves as a center for university, government, and industry partnership in high-technology research. The approximately 200,000-square-foot building contains an auditorium, seminar rooms, laboratories, and offices for research activities in four general areas: telecommunications, microelectronics and electronic materials, intelligent systems and robotics, and parallel and distributed computer systems. In addition, a new central boiler facility and power plant for the campus are located in the lower level of the new building.

Rockefeller University, New York, NY

Dr. Rudko led the analysis of hazardous materials for an Environmental Assessment Statement (EAS) and supplemental studies in connection with a new laboratory building. The proposed building would include approximately chemistry and biomedical research laboratories, an auditorium, office and meeting space, underground parking for approximately 180 cars, a glass wash facility, and truck loading and receiving space. Significant issues for environmental review included hazardous materials and air quality, including the potential effects of a spill within a laboratory on pollutant levels at adjacent buildings and receptor locations.

APPENDIX D
SOIL SAMPLING PLAN

West 61st Street Site

Remedial Work Plan

BCP ID 231043

NEW YORK, NEW YORK

Sampling Plan

AKRF Project Number: 10321

Prepared for:

Algin Management Company, LLC
64-35 Yellowstone Boulevard
Forest Hills, New York 11375

Prepared by:

AKRF, Inc.
440 Park Avenue South, 7th Floor
New York, NY 10016
212-696-0670

MARCH 2006

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1.0 INTRODUCTION

This Sampling Plan (SP) describes the procedures that will be followed to collect environmental samples at the Site during the pre-remediation and post-remediation activities. The media to be sampled is primarily soil, but may be expanded to groundwater, soil vapor, and the outdoor air. The waste characterization samples will consist of fill material, native soil, and construction and demolition debris (in Lot 8). Horizontal and vertical endpoint samples will be collected at the anticipated limit of the projected construction excavation. Delineation samples will be collected to determine the horizontal and vertical extent of the petroleum contamination along West 60th Street. Soil vapor samples may be requested by the New York State Department of Health (NYSDOH) to gain additional soil vapor information in areas where the building foundation is not submerged. Downwind outdoor air samples during excavation will be required by the NYSDOH to verify that vapors and particulates are not affecting downwind off-site locations during excavation activities. All sampling activities and procedures will comply with the requirements in the Remedial Work Plan (RWP), Remedial Health and Safety Plan (RHASP) and the Quality Assurance Project Plan (QAPP) (Appendix C).

The SP has been prepared under the premise that all excavated waste will be loaded directly onto the hauling vehicles and removed immediately from the Site without being stockpiled, and that any significant amount of unacceptable material beneath or at the vertical limits of construction is identified before excavation commences. The classification of the material to be excavated will be accomplished through the collection of separate composite samples of the fill material and native soil at each sample location. In addition, petroleum-contaminated soil is present at and beneath the groundwater level along the southern portion of the Site, and construction and demolition debris is present in Lot 8. The pre-remediation endpoint samples will be collected within six inches to one foot below the anticipated elevation of the vertical limit of construction excavation. The SP also includes borings in the southern portion of the Site (Lots 5, 8, 11, and 13 along West 60th Street), for the purpose of delineating the extent of suspected petroleum contamination. This suspected contamination is based on the information ascertained from the analysis of samples collected from boring B-17, and groundwater monitoring wells MW-6, MW-7, MW-7D, and MW-8. This SP will also include provisions for any additional post-excavation samples needed to demonstrate the removal of the on-site contaminants after excavation has been completed.

2.0 SOIL REUSE AND DISPOSAL

The on-site fill material, native soil, construction and demolition debris in Lot 8, and petroleum-contaminated material will be transported to facilities located in New Jersey and Pennsylvania. The fill material and native soil that meets the chemical and geotechnical criteria for beneficial reuse will be transported to either the ENCAP-Meadowlands Redevelopment Site in Lyndhurst and Rutherford New Jersey or the Former Allied Signal Site in Elizabeth, New Jersey. Material that does not meet the criteria for acceptance for beneficial reuse will be transported to one or more of the following facilities: Soil Safe in Logan, New Jersey; Clean Earth of Philadelphia, Pennsylvania; and/or Clean Earth of Carteret, Inc., of Carteret, New Jersey. The Sampling Plan (SP) will provide specific chemical and geotechnical analyses that will determine which portions of the various types of on-site materials – fill material, native soil, construction and demolition debris, and petroleum-contaminated material – can be accepted at the beneficial use facilities, and which materials and locations must be transported to the treatment and/or disposal facilities. Based on the results of the Remedial Investigation (RI) soil sampling activities, some areas have been determined to be unacceptable for reuse due to elevated lead, polycyclic aromatic hydrocarbon (PAH) concentrations, or petroleum-contamination. The testing in these areas will follow the disposal criteria. The Sampling Program will use a grid (Figure 1) to calculate soil volumes and areas.

3.0 SOIL SAMPLING

To meet the testing requirements of the New Jersey and Pennsylvania facilities for in-situ Site testing and the New York State Department of Environmental Conservation (NYSDEC) pre-excavation endpoint sampling coverage, the Site has been divided into a sampling grid containing 32 boxes, shown on Figure 1. The average area of each grid, excluding grid numbers 21 and 22 located in the northeastern portion of the Site, is 1,750 square feet (average dimensions 42 feet by 42 feet). The dimensions of each grid are slightly different and are shown on Table 1. Grid numbers 21 and 22 each have a larger area (2,500 square feet each) and will be handled differently. The depth of the excavation in grid number 21 will remove almost all of the fill material above the bedrock and grid number 22 endpoint samples will be taken after removal of the fill material. The average volume for each grid is approximately 1,000 cubic yards (cy) per 15-foot depth, or 500 cy per 7.5-foot depth. This volume-to-depth relationship will be utilized in meeting the sampling requirement of the facility receiving the waste material. The volume versus depth relationship for each grid is shown on Table 1.

The testing requirements for the beneficial reuse facilities are different from those for the treatment and disposal facilities. Generally, the beneficial reuse facilities require analysis of Priority Pollutants + 40 (additional parameters). The ENCAP facility also requires a Toxicity Characteristic Leaching Procedure (TCLP) test with analysis for the complete list of parameters listed in 40 CFR Part 261.24. The frequency of testing (cy per test) is based on the known Site information and the presence of Areas of Concern (AOCs). Geotechnical analysis, consisting of sieve, modified proctor, and total organic content, may be required. Testing for treatment and disposal includes volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphynels (PCBs), total organic halogens (TOX), total sulfur, ignitibility, corrosivity, reactivity for sulfide and cyanide, and TCLP – metals and VOCs.

A major consideration for disposal is the presence of petroleum in the soil. The information ascertained from the soil sample collected at boring B-17 and the groundwater samples collected from monitoring wells MW-6, MW-7, and MW-7D indicate the potential presence of petroleum from the southeastern corner of the Site. This sampling program includes advancing borings in the southern portion of Lots 5, 8, 11, 12, and 13, along West 60th Street. These borings and the collected samples will verify the presence and, if found, locate the horizontal and vertical extent of the petroleum contamination in this area. Soil samples collected will be analyzed for VOCs by Environmental Protection Agency (EPA) Method 8260, using the New Jersey Department of Environmental Protection (NJDEP) procedures and analysis at a laboratory certified by both the New York State Department of Health (NYSDOH) and the NJDEP.

Initial endpoint samples will be taken in each of the grids at a projected elevation of the lower limit of excavation. The sample will be collected at approximately elevation 14.0 in the areas of Buildings A, B, and C. The endpoint sample will be collected at elevation 30.0 in locations where the cellar juts outside of the sub-cellar foundation. The sample will be collected at two feet below the finished grade elevation (approximately elevation 40.0) in the courtyard areas. The samples will be collected six inches to one foot beneath elevation 54.0 in grid numbers 22 and 25 in the Eastern Area. Samples 23 and 24 will be collected six inches to one foot below the anticipated excavation for the exhaust system (elevation 39.6). Additional endpoint samples will be collected at the completion of construction excavation: at locations where pre-construction samples contain contaminants above cleanup standards and additional excavation has occurred; along sidewalls exposed from soil excavation around the perimeter of the Site; at locations where petroleum-contaminated soil has been removed; and at other locations selected by the New York State Department of Environmental Conservation (NYSDEC) to achieve desired aerial coverage.

A hollow-stem auger (HSA) will be used to collect the samples due to the nature of the fill material and the presence of construction and demolition debris. A split-spoon sampler will be advanced continually throughout the depth of the boring. Samples of the fill material and native soil will be collected separately. The endpoint sample will be collected at the depth of the anticipated completion of excavation. Each depth is based on the surface elevation and the anticipated excavation elevation. All borings will be surveyed. Coordinates and elevations will be calculated as shown in Table 2. Each type of sample to be collected at each location is shown on Tables 3A and 3B. Table 4 includes the types of analyses, bottles, preservatives and holding times for each parameter.

3.1 Locations and Methodology

3.1.1 Waste Classification Sampling

The overburden material consists of a layer with average thickness of approximately 16 feet of fill material on top of 10 to 20 feet of native soil. The uppermost layer is construction and demolition debris on top of fill material on top of native soil in Lot 8. The fill material consists of brick, gravel, concrete, wood, glass, ash, and slag. The native soil is sand and silt with some gravel. The fill material and native soil will be sampled separately, based on the sampling frequency and method of the selected New Jersey or Pennsylvania facility. Composite samples will be collected of each material (e.g., fill, native soil, soil within the construction and demolition debris, petroleum-contaminated soil) based on the minimum tests per volume. Continuous split-spoon samples will be collected, placed in separate bags, and labeled throughout the fill. Based on the minimum tests per volume, the bags comprising each sample volume will be composited when the maximum depth of the sample is reached. Volatile organic compound (VOC) samples will be collected at the mid-level depth of the grid sample thickness. For example, if the maximum allowable sample volume is 1,000 cubic yards (cy), the sample depth is 15.5 feet. Eight split-spoon samples will be collected and used for the composite sample. The VOC sample will be collected from the split-spoon sample taken at a depth of 7.25 feet below the surface.

Composite samples of the bags will be created by pouring each bag onto a plastic sheet, one at a time. Each successive sample will be poured directly on top of the preceding sample, forming a cone. One-quarter of the pile (as if slicing a pie) will be separated from the pile. The sample will be collected from the separated material. This procedure will be followed through all of the layers encountered to the anticipated limit of construction excavation. If the material collected indicates a change in soil type (e.g., fill to native soil, construction and demolition debris to fill or native soil, clean material to contaminated material), the change will be noted in the boring log. Samples of mixed material will be used only if the material is going to the same disposal facility and can be comingled. All soil samples will be characterized according to the Modified Burmeister soil classification system, and screened for VOCs using a Thermo 580B Organic Vapor Meter (OVM) equipped with a photoionization detector (PID) or equivalent instrument. Sampling protocol will be consistent with the Quality Assurance Project Plan. (QAPP), contained in RWP Appendix C.

3.1.2 Endpoint Sampling

Pre-excavation endpoint sampling will occur twice during the Site remediation process. Endpoint samples will be collected before remediation commences and after completion of the excavation and removal of the on-site materials. The pre-remediation samples will be collected during the collection of the waste classification samples, using the same bore holes. To accomplish this, True North Surveyors, Inc., will establish vertical and horizontal controls for each grid sampling point before the sampling. Waste classification composite and grab samples will be collected at each location, consistent with Section 3.1.1, to the elevation of the lower limit of construction excavation. At each sampling location, the depth to the composite sample will be calculated by subtracting the elevation of the lower limit of construction from the surface elevation. The lower limit of construction excavation is generally as follows: elevation 14.0 under the sub-cellar of

Buildings B and C, and the cellar of Building A; elevation 30.0 under the portion of the cellar in the areas of Buildings A and B, where the cellar juts outside of the sub-cellar foundation (see Figure 1); elevation 37.0 in the courtyard area; elevation 54.0 in the recreation area; and elevation 39.0 in the area of the ventilation system. Table 2 shows the collection depth calculations. At the desired elevation, the split-spoon sampler will be driven downward two feet and the sample will be collected from the upper half of the material in the split-spoon. Endpoint samples will not be collected via the advancement of borings in the areas of petroleum-contaminated soil.

Bedrock will be removed, primarily in the southeastern corner and center of the Site. In these areas, the endpoint sample will be collected from the native soil at the bedrock interface. If the sample meets cleanup standards, bedrock samples may be collected for disposal purposes, but endpoint samples will not be considered necessary. If the soil sample collected at the bedrock interface contains contaminants above cleanup guidelines, the bedrock will be characterized for waste disposal and endpoint samples will be collected from the exposed bedrock at the limit of construction excavation (e.g., elevation 14.0 for the sub-cellar and elevation 30.0 for the cellar).

Additional post-excavation (endpoint) samples will be collected from sidewalls and the bottom after completion of excavation. One sidewall sample will be colleted per 2,500 square feet (50-foot centers), or as directed by the New York State Department of Environmental Conservation (NYSDEC). The bottom sampling points will supplement the pre-excavation samples and address any additional excavation required to remove any undesirable material at locations below the anticipated lower limit of excavation. Bottom samples and sidewall samples in areas of petroleum contamination will be collected consistent with the requirements of DER-10 (samples taken on 30-foot centers and one sample per 900 square feet). All soil samples will be characterized according to the Modified Burmeister soil classification system, and screened for volatile organic compounds (VOCs) using a Thermo 580B Organic Vapor Meter (OVM) equipped with a photoionization detector (PID) or equivalent instrument. Sampling protocol for all endpoint samples collected prior to and after excavation will be consistent with the Quality Assurance Project Plan (QAPP) contained in RWP Appendix C.

3.1.3 Petroleum Delineation Sampling

An estimated additional 30 to 35 borings will be advanced in the southern portion of the Site on Lots 5, 8, 11, 12, and 13, along West 60th Street, to delineate the petroleum-contaminated soil. An estimated three samples will be collected from each boring to determine the vertical and horizontal extent of the contamination. The tentative boring locations are shown on Figure 1. Additional borings, if needed, will be advanced to further delineate the contamination and determine whether an on-site source is present.

The borings will be arranged in rows from south to north (perpendicular to West 60th Street). An estimated three to five borings will be advanced in each row. The first row is located approximately 15 feet west of the western property line of Lot 5. Each row of borings is 60 feet apart. After completing each row, the drill rig will move to the next row to the east. Boring 52A will be located as close to the southern property line as possible, inside the Site along the existing fence. The drilling sequence for each row will start at the fence (boring delineation “A”) for each row, and then proceed to boring delineation “E,” located 50 feet north of the fence. The remaining three borings (“B,” “C,” and “D”) will then be advanced at locations determined by the results of the preceding boring.

At each row, the drill rig will start outside the plume at point A, situated next to the southern Site fence. The rig will then move to point E, located approximately 50 feet north of the fence. If point E is determined to be uncontaminated, the drill rig will move 15 feet south, towards point A, to a new location (point D). If petroleum contamination is not noted at this location (point D), the rig will move another 15 feet south to point C and drill one final time in the row. If petroleum contamination is detected in point D, the drill rig will move seven to eight feet north, towards point E, and drill one final boring for the row. If point E is identified to contain petroleum, the drill rig will move 20 to 25 feet north, and will drill again (point D). If petroleum is not identified in that boring (point D), the rig will move another ten to 15 feet south and advance one final boring (point C). If petroleum is identified in point D, the rig will move another 20 to 25 feet north and advance another boring (point C). If point C is clean, the rig will move approximately 12 feet south and advance one final boring (point B) for the row. If point C is determined to contain petroleum, the rig will move north and drill one final boring for the row.

Samples will be collected above the groundwater level, at the groundwater level, and below the contamination, if possible. The first sample will be collected in the fill material, approximately two to three feet above the water level. The second sample will be collected at or below the groundwater level. If the second sample does not appear to contain petroleum contamination, the boring will stop and no further samples will be collected. If the second sample appears to contain petroleum-contaminated soil, the boring will be advanced to non-petroleum-contaminated soil or bedrock and a third sample will be collected. The soil in the bottom of the split-spoon sampler will be used. All samples will be collected using an En Core® Sampler for volatile organic compounds (VOCs) and a 60-milliliter plastic bottle for percent solids. The locations and instructions are shown in Table 3A.

All soil samples will be characterized according to the Modified Burmeister soil classification system, and screened for VOCs using a Thermo 580B Organic Vapor Meter (OVM) or equivalent instrument equipped with a photoionization detector (PID). A boring log will be maintained for each boring, including the location (depth) of each sample and the apparent distance from the surface to the upper limit of the petroleum contamination. Endpoint samples will be collected after the removal of the petroleum-contaminated soil, consistent with Section 3.1.2.

3.2 Analytical

3.2.1 Waste Classification Sampling

The waste classification will be conducted in accordance with New Jersey Department of Environmental Protection (NJDEP) sampling protocols. Certification that the samples were collected in accordance with these protocols will be provided to NJDEP through the facilities receiving the various materials from the Site. Copies of all analytical reports and certification will be submitted to the New York State Department of Environmental Conservation (NYSDEC). Analysis of the collected samples will be performed by Severn Trent Laboratories (STL). A copy of the company's certificate is included in this report as Appendix A. The laboratory will analyze the samples consistent with New York State Department of Health (NYSDOH) Contract Laboratory Protocol (CLP) – Category A Deliverables. A Data Usability Summary Report (DUSR) will not be prepared for these samples.

The analysis for the beneficial use at the former Allied Signal Site in Elizabeth, New Jersey, includes Priority Pollutants + 40 and a five-gallon soil sample to be analyzed for compaction. The testing rate for the Elizabeth, New Jersey, facility is one sample per

1,000 cy. The analytical and sampling frequency requirements for both beneficial use facilities are included as Appendix B.

The treatment and disposal facilities considered require somewhat similar analyses involving the determination of hazardous waste. Testing involves volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), TCLP full list, ignitability, corrosivity, reactivity (sulfur and cyanide), total organic halogens (TOX), and total sulfur. The frequency of testing varies by parameter from one test per 60 cy, to one test per 800 cy. This process includes composite sampling for non-VOCs, and grab samples for VOCs. The analytical and sampling frequency requirements for Clean Earth Carteret, Clean Earth of Philadelphia, and Soil Safe are included as Appendix C.

3.2.2 Endpoint Sampling

Endpoint samples collected during the pre-remediation sampling and after completion of the excavation will be analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals by Severn Trent Laboratory (STL). STL, a New York State Department of Health (NYSDOH)-approved laboratory, will analyze these samples consistent with NYSDOH Environmental Laboratory Approval Program (ELAP) – Category B Deliverables. Sample preservation and holding times are listed in the Quality Assurance Project Plan (QAPP), found in RWP Appendix C. A Data Usability Summary Report (DUSR) will be prepared for this data.

3.2.3 Petroleum Delineation Sampling

The samples will be collected using an En Core® sampler for volatile organic compounds (VOCs) and a plastic 60-milliliter bottle for percent solids. The collected soil samples will be analyzed for VOCs using Environmental Protection Agency (EPA) Method 8260 and analyzed following New Jersey Department of Environmental Protection (NJDEP) protocol. The samples will be analyzed at Severn Trent Laboratory (STL) using equivalent New York State Department of Health (NYSDOH) Contract Laboratory Protocol (CLP) – Category A Deliverables. A Data Usability Summary Report (DUSR) will not be prepared for this sample analysis.

4.0 STANDARD OPERATING PROCEDURES

The standard operating procedures will be the same as those in the Remedial Investigation (RI), which are included in Quality Assurance Project Plan (QAPP), found in Appendix C of the Remediation Work Plan (RWP). During these operations, safety monitoring will be performed as described in the Remediation Health and Safety Plan (RHASP), and all field personnel will wear appropriate personal protective equipment (PPE).

4.1 Soil Sample Collection

Soil sampling will be conducted according to the following procedures:

- Characterize the sample according to the Modified Burmeister soil classification system.
- If advancing soil borings for endpoint sampling from the bottom of the excavation and/or from the sidewalls, collect an aliquot of soil from each sampling location, place the sample directly in laboratory-supplied jars, and place in a cooler.

- Soil selection will also be based on odors, staining, and photoionization detector (PID) readings.
- If performing endpoint sampling from excavation walls, soil can be placed directly in laboratory-supplied sample jars.
- If collecting a waste characterization sample from a soil stockpile, collect an aliquot of soil from at least five evenly distributed locations on the stockpile and place in a labeled sealable plastic bag to create a single composite sample.
- After selecting which samples will be analyzed in the laboratory, fill the required laboratory-supplied sample jars with the soil from the selected sampling location or labeled sealable plastic bags. Seal and label the sample jars as described in Section 4.3 of the Quality Assurance Project Plan (QAPP), found in Remedial Work Plan (RWP) Appendix C, and place in an ice-filled cooler.
- Decontaminate any soil sampling equipment between sample locations as described in Section 3.6 of the QAPP.
- Record boring number, sample depth, and sample observations (evidence of contamination, photoionization detector [PID] readings, soil classification) in a field logbook and boring log data sheet, if applicable.

4.2 Groundwater Monitoring Well Installation and Development

If required by the New York State Department of Environmental Conservation (NYSDEC), monitoring wells will be installed at select locations to monitor groundwater conditions within and outside of the soil remediation area. The procedures to be followed are included in the Quality Assurance Project Plan (QAPP) found in RWP Appendix C.

4.3 Monitoring Well Sampling

Samples will be collected for analysis at least one week following well development. Parameters will include Target Compound List (TCL) volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals. The sampling methodology is included in the Quality Assurance Project Plan (QAPP) found in RWP Appendix C.

4.4 Air Sampling

If required by the New York State Department of Environmental Conservation (NYSDEC) or the New York State Department of Health (NYSDOH), confirmatory air samples will be collected during remediation activities to measure concentrations of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in ambient air at the Site perimeter. Samples will be analyzed for VOCs using Environmental Protection Agency (EPA) Method TO-15 and SVOCs using EPA Method TO-13. The air samples to be analyzed for VOCs will be collected using the procedures listed in the Quality Assurance Project Plan (QAPP), included in RWP Appendix C.

4.5 Decontamination of Sampling Equipment

All sampling equipment will be either dedicated or decontaminated between sampling locations. The decontamination procedure will be as follows:

1. Scrub using tap water/Simple Green® mixture and bristle brush.
2. Rinse with tap water.
3. Scrub again with tap water/Simple Green® and bristle brush.

4. Rinse with tap water.
5. Rinse with distilled water.
6. Air-dry the equipment, if possible.

Hollow-stem augers (HSAs) will be decontaminated between monitor well locations by steam cleaning using a tap water/Simple Green® solution. Decontamination will be conducted on plastic sheeting (or equivalent) that is bermed to prevent discharge to the ground.

4.6 Field Instrumentation

Field personnel will be trained in the proper operation of all field instruments at the start of the field program. Instruction manuals for the equipment will be on file at the Site for referencing proper operation, maintenance, and calibration procedures. The equipment will be calibrated according to manufacturer's specifications at the start of each day of fieldwork, if applicable. If an instrument fails calibration, the Project Manager (PM) or Quality Assurance/Quality Control (QA/QC) Officer will be contacted immediately to obtain a replacement instrument. A calibration log will be maintained to record the date of each calibration, any failure to calibrate and corrective actions taken. The photoionization detector (PID) will be calibrated each day using 100 parts per million (ppm) isobutylene standard gas.

4.7 Management of Investigation Derived Waste

All investigation-derived waste (IDW) will be containerized in Department of Transportation (DOT)-approved 55-gallon drums. The drums will be sealed at the end of each work day and labeled with the date, the well or boring number(s), the type of waste (i.e., drill cuttings, development water, or purge water), and the name of an AKRF point-of-contact. Soil samples collected from soil borings will be used for waste characterization of soil. Additional waste characterization soil samples will be collected, if warranted. Grab samples will be collected from drums containing well development and purge water for waste characterization of liquids. The samples will be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), lead using Toxicity Characteristic Leaching Procedure (TCLP), polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), ignitability, corrosivity, and reactivity. All drums will be labeled "pending analysis" until laboratory data is available. All IDW will be disposed of or treated according to applicable local, State, and federal regulations.

4.8 Surveying and Water Table Measurement Readings

The boring locations, monitoring well locations (if required), and soil vapor probe locations (if required), will be surveyed by a New York State-licensed surveyor. Three elevation measurements will be taken at each well location: the elevation of the ground beside the well; the elevation on the rim of the gate box or protective casing; and the elevation of the top of PVC casing. One elevation measurement will be taken at each boring, on the north side of the boring location, prior to the advancement of borings for the collection of waste characterization samples.

5.0 QUALITY CONTROL AND LABORATORY PROCEDURES

The laboratory methods are summarized in Section 5.0 of the Quality Assurance Project Plan (QAPP), included in Remedial Work Plan (RWP) Appendix C. Quality Control (QC) sampling for the endpoint samples, sample handling, sample labeling and shipping, and sample custody will be consistent with the procedures outlined in Section 5.0 of the QAPP. The Data Usability Summary Report (DUSR) will be prepared for the endpoint samples, and will follow the procedures listed in Section 5.0 of the QAPP.

TABLES

TABLE 1A
SAMPLING GRID DIMENSIONS AND VOLUMES
WEST 61ST STREET SITE, NEW YORK, NEW YORK

Grid No.	N/S Distance (in feet)	E/W Distance (in feet)	Area (in square feet)	Depth for 100 cubic yards (cy) (in feet)	Depth for 500 cy (in feet)	Depth for 1,000 cy (in feet)
20	33.33	75	2500	1.1	2.2	10.0
21	33.33	75	2500	1.1	2.2	10.0
22	33.33	75	2500	1.1	2.2	10.0
23	33.33	75	2500	1.1	2.2	10.0
24	33.33	75	2500	1.1	2.2	10.0
25	33.33	75	2400	1.1	2.2	10.0
26	40	43.75	1750	1.5	7.7	15.4
27	40	43.75	1750	1.5	7.7	15.4
28	40	43.75	1750	1.5	7.7	15.4
29	40	43.75	1750	1.5	7.7	15.4
30	40	43.75	1750	1.5	7.7	15.4
31	40	43.75	1750	1.5	7.7	15.4
32	40	43.75	1750	1.5	7.7	15.4
33	40	43.75	1750	1.5	7.7	15.4
34	40	43.75	1750	1.5	7.7	15.4
35	40	43.75	1750	1.5	7.7	15.4
36	40	43.75	1750	1.5	7.7	15.4
37	40	43.75	1750	1.5	7.7	15.4
38	40	43.75	1750	1.5	7.7	15.4
39	40	43.75	1750	1.5	7.7	15.4
40	40	43.75	1750	1.5	7.7	15.4
41	40	43.75	1750	1.5	7.7	15.4
42	40	43.75	1750	1.5	7.7	15.4
43	58	31.25	1813	1.5	7.4	14.9
44	58	31.25	1813	1.5	7.4	14.9

TABLE 1A (Continued)
SAMPLING GRID DIMENSIONS AND VOLUMES
WEST 61ST STREET SITE, NEW YORK, NEW YORK

Grid No.	N/S Distance (in feet)[1]	E/W Distance (in feet)[2]	Area (in square feet)	Depth for 100 cubic yards (cy) (in feet)	Depth for 500 cy (in feet)	Depth for 1,000 cy (in feet)
45	58	31.25	1813	1.5	7.4	14.9
46	58	31.25	1813	1.5	7.4	14.9
47	42	42.7	1793	1.5	7.5	15.1
48	42	42.7	1793	1.5	7.5	15.1
49	42	42.7	1793	1.5	7.5	15.1
50	42	42.7	1793	1.5	7.5	15.1
51	42	42.7	1793	1.5	7.5	15.1
52	42	42.7	1793	1.5	7.5	15.1

Comment: Each grid is rectangular in shape.

Notes: [1] The “N/S Distance” represents the distance from the northern boundary of the grid to the southern boundary. The N/S distance is perpendicular to West 60th and West 61st Streets.

[2] The “E/W Distance” represents the distance from the eastern boundary of the grid to the western boundary. The E/W distance is parallel to West 60th and West 61st Streets.

TABLE 1B
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE. NEW YORK, NEW YORK

Grid No.	Depth	Sub-Grid Depth	Soil Type	Type of Sample	Grid Volume (Cubic Yards)
20	6’ – 1 Sampling Grid – Endpoint sampling after removal				
20A	6’	0-6’	Fill	Waste classification	741
21	6’ – 1 Sampling Grid – Endpoint sampling after removal				
21A		0-6’	Fill	Waste Classification	741
22	6’				
22A		0-6’	Fill	Waste classification	741
		6.5’	Fill	Endpoint sampling	
23	6’				
23A		0-6’	Fill	Waste classification	370
		6.5’	Fill	Endpoint sampling	
24	19’ – 2 Sampling grids				
24A		0-6’	Fill	Waste Classification	370
24B		6’-19’	Fill/NS	Beneficial Use	981
		19.5	Fill/NS	Endpoint	
25	19’ – 2 Sampling Grids				
25A		0-6’	Fill	Waste Classification	370
25B		6-19	Fill/NS	Beneficial Use	695
		19.5’	Fill/NS	Endpoint	
26	33.5’ – 3 Sampling sub-grids				
26A		0-6’	Contam. Fill	Waste Classification	389
26B		6’-20’	Fill	Beneficial Use	908
26C		20’-33.5’	NS	Beneficial Use	875
		34’	NS	Endpoint	
27	32.5’ – 2 Sampling sub-grids				
27A		0-16.3’	Fill	Beneficial Use	1,057
27B		16.3’-32.5’	Fill/NS	Beneficial Use	1,050
		33’	NS	Endpoint	
28	30.5 – 2 Sampling sub-grids				
28A		0-15.2’	Fill	Beneficial Ue	986
28B		15.2’-30.5’	Fill/NS	Beneficial Use	992
		31’	NS	Endpoint	
29	28’ – 3 Sampling sub-grids				
29A		0-6’	Contam. Fill	Waste Classification	389
29B		6’-17’	Fill	Beneficial Use	713
29C		17’-28’	Fill/NS	Beneficial Use	713
		29’	NS	Endpoint	
30	33.5’ – 2 Sampling sub-grids				
30A		0-16.8’	Fill	Beneficial Use	1,089
30B		16.8-33.5	Fill/NS	Beneficial Use	1,083

TABLE 1B
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE. NEW YORK, NEW YORK

Grid No.	Depth	Sub-Grid Depth	Soil Type	Type of Sample	Grid Volume (cubic yards)
		34’	NS	Endpoint	
31	32.5’ – 2 Sampling sub-grids				
31A		0-16.3’	Fill	Beneficial Use	1,057
31B		16.3’-33.5’	Fill/NS	Beneficial Use	1,053
		34’	NS	Endpoint	
32	31’ – 2 Sampling sub-grids				
32A		0-15.5’	Fill	Beneficial Use	1,005
32B		15.5’-31.0’	Fill/NS	Beneficial Use	1,005
		31,5’	NS	Endpoint	
33	26’ – 2 Sampling sub-grids				
		4’	Fill	Endpoint	
33A		0-13’	Fill	Beneficial Use	843
		10’	Fill	Endpoint	
33B		13’-26’	Fill/NS	Fill/NS	843
		26.5’	NS	Endpoint	
34	33.5’ – 2 Sampling sub-grids				
34A		0-15’	Fill	Beneficial Use	973
34B		15’-25’	NS	Beneficial Use	649
		26’	NS/BR	Endpoint	
35	32.5’ – 2 Sampling sub-grids				
35A		0-16.3’	Fill	Beneficial Use	1,057
35B		16.3’-32.5’	Fill/NS	Beneficial Use	1,053
		33’	Fill	Endpoint	
36	31.5’- 2 Sampling sub-grids				
36A		0-15.8’	Fill	Beneficial Use	1,024
36B		15.8’-35.5’	Fil/NS	Beneficial Use	1,018
		36.0’	NS	Endpoint	
37	28’ – 2 Sampling sub-grids				
		5’	Fill	Endpoint	
37A		0-14’	Fill	Beneficial Use	908
		12’	Fill	Endpoint	
37B		14’-28’	NS	Beneficial Use	908
		28.5	NS	Endpoint	
38	24’ – 2 Sampling sub-grids				
38A		0-12’	Fill	Beneficial Use	778
38B		12’-24’	NS	Beneficial Use	778
		24.5’	NS/BR	Endpoint	
39	22’ – 2 Sampling sub-grids				
39A		0-11’	Fill	Beneficial Use	713

TABLE 1B
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE. NEW YORK, NEW YORK

Grid No.	Depth	Sub-Grid Depth	Soil Type	Type of Sample	Grid-Volume (Cubic Yards)
39B		11’-22’	Fill/NS	Beneficial Use	713
			NS/BR	Endpoint	
40	24’ – 2 Sampling sub-grids				
40A		0-12’	Fill	Beneficial Use	778
40B		12’-24’	Fill/NS	Beneficial Use	778
		24.5’	NS/BR	Endpoint	
41	30’ – 2 Sampling sub-grids				
41A		0-15’	Fill	Beneficial Use	973
41B		15’-30’	Fill/NS	Beneficial Use	973
		30.5’	NS/BR	Endpoint	
42	29’ – 2 Sampling sub-grids				
42A		0-15.5’	Fill	Beneficial Use	1,005
		16’-16.5’	NS	Endpoint	
42B		15.5-31	NS	Beneficial Use	1,005
		31.5	NS	Endpoint	
43	25’ – 2 Sampling sub-grids				
43A		0-14’	C+D	Waste Classification	941
		14.5’	NS	Endpoint	
43B		14’-25’	NS	Beneficial Use	739
		25.5’	NS	Endpoint	
44	23’ – 2 Sampling sub-grids				
44A		0-14’	C+D	Waste Classification	941
		14.5’	NS	Endpoint	
44B		14’-23’	NS	Beneficial Use	605
		23.5	NS	Endpoint	
45	21’ – 2 Sampling sub-grids				
45A		0-6’	Fill/Petroleum	Waste Class. Pet.	403
45B		6’-21’	Fill/NS	Beneficial Use	1,008
		21.5’	NS	Endpoint	
46	28’ – 2 Sampling sub-grids – Endpoint sampling after removal				
46A		0-6’	Fill	Waste Classification	403
46B		6’-19’	Fill/NS	Beneficial Use	873
		19.5’	NS	Endpoint	
46C		19’-28’	NS/BR	Waste Class.Pet.	605
47	27’ – 3 Sampling sub-grids – Endpoint sampling after removal				
47A		0-10’	Fill	Beneficial Use	665
47B		10’-19’	Fill/NS	Waste Class.	598
47C		19’-27’	NS/BR	Waste Class. Pet.	532
48	28’ – 2 Sampling sub-grids – Endpoint sampling after removal				

TABLE 1B
SAMPLING GRIDS AND SUB-GRIDS
WEST 61ST STREET SITE. NEW YORK, NEW YORK

Grid No.	Depth	Sub-Grid Depth	Soil Type	Type of Sample	Grid Volume (cubic yards)
48A		0-14’	Fill	Beneficial Use	930
48B		14’-26’	Fill/NS	Waste Class. Pet.	806
49	27’ – 3 Sampling sub-grids – Endpoint sampling after removal				
49A		0-9’	Fill	Beneficial Use	598
49B		9’-17’	Fill/NS	Waste Class. Pet.	531
49C		17’-25’	NS/BR	Waste Class.Pet.	531
50	24’ – 2 Sampling sub-grids – Endpoint sampling after removal				
50A		0-12’	C+D	Waste Class. Pet.	797
50B		12’-24’	C+D/Fill/NS	Waste Class. Pet	797
51	24’ – 2 Sampling sub-grids – Endpoint sampling after removal				
51A		0-12’	Fill/NS	Waste Class. Pet.	797
51B		12’-24’	Fill	Waste Class. Pet	797
52	28’ – 3 Sampling Grids – Endpoint sampling after removal				
52A		0-6’	Fill	Waste Classification	399
52B		6’-17’	Fill/NS	Waste Class. Pet.	731
52C		17’-28’	NS	Waste Class. Pet.	731

Notes:

Beneficial Use - Sampling for acceptance at former Allied Signal Site in Elizabeth, NJ.
Waste Classification – Sampling for acceptance at Clean Earth of Philadelphia, Penn.
Waste Class. Pet. – Sampling For acceptance at Clean Earth of Carteret, NJ.
Endpoint – Sampling for NYSDEC cleanup criteria.
C+D – Construction and demolition debris as defined in 6 NYCRR Section 360-1.
Fill – Fill material previously brought to the Site.
NS – Native Soil – sand and silt with some gravel.
BR – Bedrock
Depth – Depth of excavation to final grade or to remove known petroleum contamination.
Sub-grid – Division of grid by elevation (depth range) to achieve 1,000 cubic yard volumes.

TABLE 2
ENDPOINT SAMPLING GRID COORDINATES, ELEVATIONS, AND DEPTHS
WEST 61ST STREET SITE, NEW YORK, NEW YORK

Grid No.	Boring Number	North Coordinate	East Coordinate	*Surface Elevation	Lower Limit of Construction Elevation	**Depth to Endpoint Sample (in feet)
20	20	183.0	413.0		54.0	
21	21	150.0	413.0		54.0	
22	22	117.0	413.0		54.0	
23	23	183.0	338.0		39.6	
24	24	150.0	325.0		39.6	
25	25	117.0	325.0		54.0	
26	26	181.8	278.0		14.0	
27	27	181.0	234.0		14.0	
28	28	181.0	191.0		14.0	
29	29	181.0	147.0		14.0	
30	30	141.0	278.0		14.0	
31	31	141.0	234.0		14.0	
32	32	141.0	191.0		14.0	
33	33	141.0	147.0		37.0	
34	34	101.0	270.0		30.0	
35	35	101.0	234.0		14.0	
36	36	101.0	191.0		14.0	
37	37	101.0	147.0		30.0	
38	38	61.0	270.0		30.0	
39	39	21.0	270.0		14.0	
40	40	61.0	234.0		14.0	
41	41	61.0	191.0		14.0	
42	42	72.0	147.0		14.0 37.0	
43	43	75.0	109.0		14.0 37.0	
44	44	82.0	78.0		14.0 37.0	

TABLE 2 (Continued)
ENDPOINT SAMPLING GRID COORDINATES, ELEVATIONS, AND DEPTHS
WEST 61ST STREET SITE, NEW YORK, NEW YORK

Grid No.	Boring Number	North Coordinate	East Coordinate	*Surface Elevation	Lower Limit of Construction Elevation	**Depth to Endpoint Sample (in feet)
45	45	70.0	47.0		14.0	
46	46	70.0	16.0		14.0	
47	47	21.0	235.0		14.0	
48	48	21.0	192.0		14.0	
49	49	21.0	149.0		14.0	
50	50	21.0	197.0		14.0	
51	51	21.0	64.0		14.0	
52	52	21.0	21.0		14.0	

Comment: Each grid is rectangular in shape.

Notes: 1) The southwestern corner of Lot 5 has been designated as coordinate (0,0) [North, East]. All Site coordinates are related to these coordinates.

2) The elevations are based on the Manhattan Borough Datum.

3) * The surface elevation will be measured by a licensed surveyor for each coordinate listed.

4) ** The depth to endpoint sample will be computed by subtracting the lower limit of construction elevation from the surface elevation.

TABLE 3A
SAMPLING AND ANALYTICAL PROGRAM
WEST 61st STREET SITE, NEW YORK, NEW YORK

Location	Depth of Sample	Soil Type	Sample Type	Purpose of Sample / Parameters
B-20 B-21 B-22 B-23 B-24 B-25	0-6’ 0-6’ 0-21’ 0-21’ 0-6’	Fill	Grab and composite	Waste characterization parameters for soil unacceptable for beneficial reuse. Waste characterization for beneficial use parameters.
			Grab	Post-excavation endpoint sample collected at anticipated bottom of excavation – New York Stated Department of Environmental Conservation (NYSDEC) parameters (Target Compound List [TCL] – volatile organic compounds [VOCs], semi-volatile organic compounds [SVOCs], pesticides, polychlorinated biphenyls [PCBs], and Target Analyte List [TAL] Metals – Category B Deliverables.
B-26 B-29	0-6’	Fill	Grab and composite	Waste characterization parameters for soil unacceptable for beneficial use
	6’ to limit of excavation	Fill and native soil	Grab and/or composite	Waste characterization for beneficial use parameters
	Limit of excavation	Native soil	Grab	Post-excavation sample – NYSDEC endpoint parameters
B-27, 28, B-30 through B-38, B-40 through B-46	Surface to limit of excavation	Fill and native soil	Grab and/or composite	Waste characterization for beneficial reuse parameters
	Limit of excavation	Fill or native soil	Grab	Post-excavation sample – NYSDEC parameters
B-39 B-47 B-48 B-49 B-52	0-10’	Fill and native soil	Grab and/or composite	Waste characterization for beneficial reuse parameters
	10’ to bedrock	Fill and native soil	Grab and composite	Waste characterization parameters for petroleum-contaminated soil
B-50, B-51	0-10’	C&D and fill	Grab and/or composite	Waste characterization parameters for soil unacceptable for beneficial reuse
	10’ to bedrock	Fill, C&D, and native soil	Grab and Composite	Waste characterization parameters for petroleum-contaminated soil
Grids 39, 47-52	Sidewalls and bottom of excavation	Fill and native soil	Grab	Post-excavation samples – NYSDEC endpoint parameters along exposed sidewalls and bottom after removal of petroleum-contaminated soil in accordance with DER-10

Notes:
1) Waste characterization parameters for beneficial use, and for material both unacceptable for beneficial reuse and petroleum-contaminated material, are located in Attachments B and C, respectively.
2) C&D - Construction and demolition debris as defined in 6 New York Code of Rules and Regulations (NYCRR) Subpart 360-1.
3) Depth to limit of excavation is shown in Table 2.
4) Composite samples vary in number and representative volume based on the facility.

TABLE 3B
SAMPLING AND ANALYTICAL PROGRAM – PETROLEUM DELINEATION
WEST 61st STREET SITE, NEW YORK, NEW YORK

Location	Depth of Sample	Soil Type	Sample Type	Purpose of Sample / Parameters
B-39A through B-39E	10’ to bedrock	Fill and native soil	Grab	Investigate to determine the horizontal and aerial extent of petroleum contamination. Collect one sample at a depth two to three feet above the groundwater. Collect a second soil sample at or below the groundwater interface. If the interface appears to be uncontaminated, the boring is considered to be completed and the two samples will be analyzed for confirmation. If contamination is evident at or below the groundwater interface, continue drilling until uncontaminated soil is identified or bedrock is encountered. Collect a sample from the uncontaminated soil or soil at the bedrock interface. These samples will be analyzed for volatile organic compounds (VOCs) using Environmental Protection Agency (EPA) Method 8260, following New Jersey Department of Environmental Protection (NJDEP) Protocol.
B-47A through B-47E	10’ to bedrock	Fill and native soil	Grab	
B-48A through B-48E	10 ‘ to bedrock	Fill and native soil	Grab	
B-49A through B-49E	10’ to bedrock	Fill and native soil	Grab	
B-50A through B-50E	10’ to bedrock	Fill, C&D, and native soil	Grab	
B-51A through B-51E	10’ to bedrock	Fill, C&D, and native soil	Grab	
B-52A through B-52E	10’ to bedrock	Fill and native soil	Grab	

Notes:
1) C&D – Construction and demolition debris as defined in 6 New York Code of Rules and Regulations (NYCRR) Subpart 360-1.
2) NJDEP – New Jersey Department of Environmental Protection

TABLE 4A
NJDEP LABORATORY ANALYTICAL METHODS AND REQUIREMENTS
West 61st Street Site; New York, NY

MATRIX	PARAMETER	EPA METHOD	SAMPLE CONTAINERS	MINIMUM SAMPLE VOLUME REQUIRED	PRESERVATION/ STORAGE TEMPERATURE	HOLDING TIMES
SOIL SAMPLES	***Full TCLP***					
	TCLP VOCs	SW-846 8260	One 2-oz. widemouth glass, cap lined with Teflon	25g	none/cool to 4ºC	14 days
	TCLP SVOCs	SW-846 8270	One 8-oz. widemouth glass, cap lined with Teflon	100g		14 days
	TCLP Metals	SW-846 6010				Mercury: 28 days; All other metals: 180 days
	TCLP Pesticides	SW-846 8081				14 days
	TCLP Herbicides	SW-846 8151				14 days
	Misc. Parameters					
	Total Metals	SW-846 6010	One 8-oz. widemouth glass, cap lined with Teflon	30g	none/cool to 4ºC	Mercury: 28 days; All other metals: 180 days
	Percent Moisture	ASTM D-2216	One 4-oz. widemouth glass, cap lined with Teflon	10g		As soon as possible
	Paint Filter	SW-846 9095		100g		None specified
	PAH	SW-846 8270	One 8-oz. widemouth glass, cap lined with Teflon	30g		14 days to extraction, 40 days to analyze
	PCBs	SW-846 8082				
	VOC (NY)	SW-846 8260	One 2-oz. widemouth glass, lined with septum	5g		14 days
	VOC (NJ)		One 5-g EnCore Sampler + One 60-mL plastic	5g + 10g		48 hours to transfer EnCore, 14 days to analyze
	TPH-GRO	SW-846 8015	One 2-oz. widemouth glass, cap lined with Teflon	5g		14 days
	TPH-DRO		One 8-oz. widemouth glass, cap lined with Teflon	50g		14 days to extraction, 40 days to analyze
	Ignitability	SW-846 1030	One 4-oz. widemouth glass, cap lined with Teflon	30g		As soon as possible
	Corrosivity	SW-846 9045		20g		Immediately
	Reactive Cyanide	SW-846 7332				14 days
	Reactive Sulfide	SW-846 7342		50g		7 days
	Total Sulfur	ASTM D-129	One 2-oz. widemouth glass, cap lined with Teflon	3g		
	Priority Pollutants + 40, plus 5					
	Total Cyanide	SW-846 9012	One 4-oz. widemouth glass, cap lined with Teflon	20g	none/cool to 4ºC	14 days
	Phenols	SW-846 9066		30g		28 days
	Pesticides, including methoxychlor	SW-846 8081	One 8-oz. widemouth glass, cap lined with Teflon			14 days to extraction, 40 days to analyze
	PCBs	SW-846 8082				
	Metals, including Barium	SW-846 6010				Mercury: 28 days; All other metals: 180 days
	SVOCs	SW-846 8270				14 days to extraction, 40 days to analyze
	VOCs, including Total Xylenes	SW-846 8260	One 5-g EnCore Sampler + One 60-mL plastic	5g + 10g		48 hours to transfer EnCore, 14 days to analyze
	Hexavalent/Trivalent Chromium	SW-846 7196/6010B	One 4-oz. widemouth glass, cap lined with Teflon	50g		28 days
	Total Cyanide	SW-846 9012		20g		14 days

TABLE 4A
NJDEP LABORATORY ANALYTICAL METHODS AND REQUIREMENTS
West 61st Street Site; New York, NY

MATRIX	PARAMETER	EPA METHOD	SAMPLE CONTAINERS	MINIMUM SAMPLE VOLUME REQUIRED	PRESERVATION/ STORAGE TEMPERATURE	HOLDING TIMES
WATER SAMPLES (Field Blanks)	***Misc. Parameters***					
	Total Metals	SW-846 6010/7470	One 500-mL plastic bottle	250mL	HNO_3/N/A	Mercury: 28 days; All other metals: 180 days
	Paint Filter	SW-846 9095	One 500-mL glass bottle	100mL	none/cool to 4°C	None specified
	PAH	SW-846 8270	Two 1-L amber glass bottle with Teflon-lined lid	1L		7 days to extraction, 40 days to analyze
	PCBs	SW-846 8082				
	VOCs	SW-846 8260	Two 40-mL glass VOA vial, cap lined with Teflon	40mL	HCl/cool to 4°C	14 days
	TPH-GRO	SW-846 8015				
	TPH-DRO		Two 1-L amber glass bottle with Teflon-lined lid	1L	none/cool to 4°C	7 days to extraction, 40 days to analyze
	Ignitability	SW-846 1020	One 250-mL plastic bottle	25mL		None specified
	Corrosivity	SW-846 9040	One 100-mL plastic bottle			As soon as possible
	Reactive Cyanide	SW-846 7332	One 500-mL plastic bottle			14 days
	Reactive Sulfide	SW-846 7342				
	Total Sulfur	ASTM D-129 modified		3mL	Zn Acetate + NaOH/cool to 4°C	7 days
	Total Organic Halogens (TOX)	SW-846 9020	One 500-mL glass bottle with Teflon-lined lid	250mL	H_2SO_4/cool to 4°C	28 days
	Priority Pollutants + 40, plus 5					
	Total Cyanide	SW-846 9012	One 500-mL plastic bottle	100mL	NaOH/cool to 4°C	14 days
	Phenols	SW-846 420.2	One 500-mL glass bottle with Teflon-lined lid		H_2SO_4/cool to 4°C	
	Pesticides, including methoxychlor	SW-846 8081	Two 1-L amber glass bottle with Teflon-lined lid	1L	none/cool to 4°C	7 days to extraction, 40 days to analyze
	PCBs	SW-846 8082				
	Total Metals, including Barium	SW-846 6010/7470	One 500-mL plastic bottle	250mL	HNO_3/N/A	Mercury: 28 days; All other metals: 180 days
	Filtered Metals					
	SVOCs	SW-846 8270	Two 1-L amber glass bottle with Teflon-lined lid	1L	none/cool to 4°C	7 days to extraction, 40 days to analyze
	VOCs, including Total Xylenes	SW-846 8260	Two 40-mL glass VOA vial, cap lined with Teflon	40mL	HCl/cool to 4°C	14 days
	TOC (average quads)	SW-846 9060	Two 40-mL glass VOA vial, cap lined with Teflon	40mL	H_2SO_4/cool to 4°C	28 days
	Hexavalent/Trivalent Chromium	SW-846 7196/6010B	One 500-mL plastic bottle (Cr_6) + *below*	100mL	none/cool to 4°C	24 hours
			One 500-mL plastic bottle (Cr_3) + *above*			

NOTES:

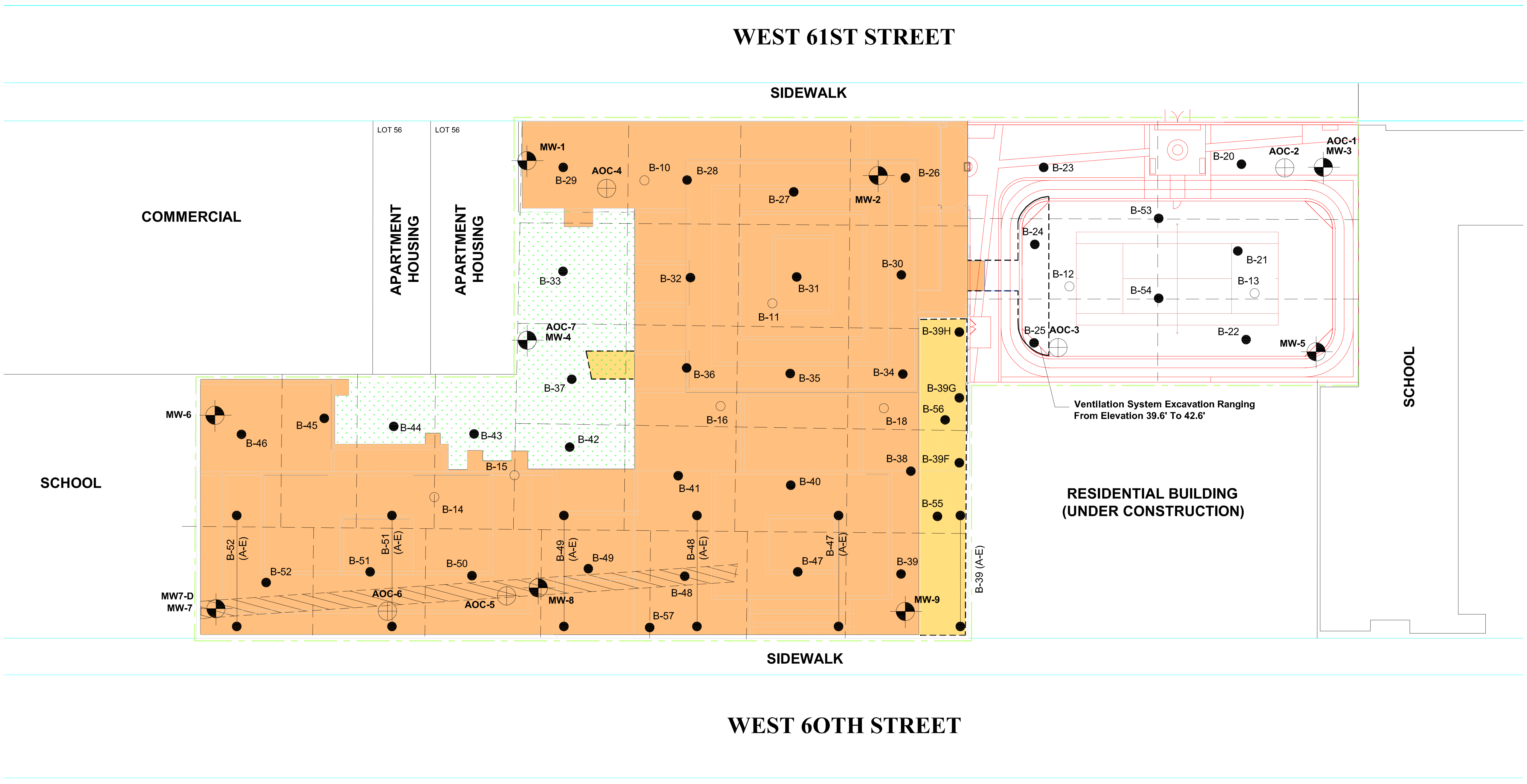
* Filtering of samples for dissolved metals analysis will be performed in the laboratory.

TABLE 4B
NYSDEC LABORATORY ANALYTICAL METHODS AND REQUIREMENTS FOR ENDPOINT SAMPLING
West 61st Street Site; New York, NY

MATRIX	PARAMETER	EPA METHOD	SAMPLE CONTAINERS	PRESERVATION	HOLDING TIMES
SOIL SAMPLES	TCL VOCs	8260	2 oz. clear glass Septum	4°C	14 days
	TCL SVOCs	8270	8 oz. clear glass	4°C	14 days
	TAL Metals	1311 / 6010B / 7470A		4°C	6 months (28 days for Hg)
	PCBs	8081		4°C	14 days
	Pesticides	8082		4°C	14 days
GROUNDWATER SAMPLES	TCL VOCs	8260	(2) 40 ml clear glass vial	HCl, 4°C	14 days
	TCL SVOCs	8270	(2) 1L amber glass	4°C	7 days
	PCBs	8081	(2) 1L amber glass	4°C	7 days
	Pesticides	8082			
	TAL Metals (total)	6000/7000 series	500 mL plastic	HNO_3, 4°C	6 months (28 days for Hg)
	TAL Metals (dissolved)*	6000/7000 series	500 mL plastic	4°C	ASAP
TANK EXCAVATION ENDPOINT SAMPLES	STARS VOCs + MTBE	8021	2 oz. clear glass Septum	4°C	14 days
	STARS SVOCs	8270	4 oz. clear glass	4°C	14 days

NOTES:
* Filtering of samples for dissolved metals analysis will be performed in the laboratory.
ASAP - As soon as possible

FIGURES



Legend:

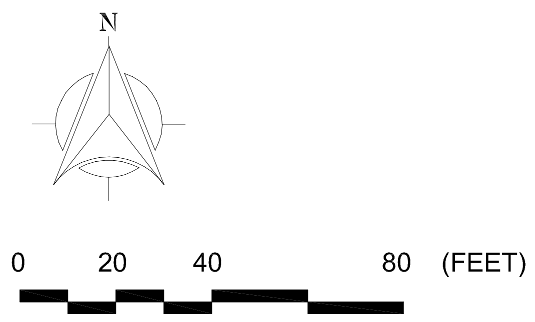
—	GRID BOUNDARY
⊕	AREA OF CONCERN
═	PROPOSED BUILDING
UST	UNDERGROUND STORAGE TANK
AST	ABOVEGROUND STORAGE TANK
🟩	COURTYARD EXCAVATION TO ELEVATION 37.0
🟧	SUB-CELLAR EXVACATION TO ELEVATION 14.5 (MBD)
🟨	CELLAR EXCAVATION TO ELEVATION 30.0 (MBD)

◐	EXISTING GROUNDWATER MONITORING WELL INSTALLED DURING REMEDIAL INVESTIGATION. SOIL AND GROUNDWATER SAMPLES COLLECTED.
○	BORING DRILLED DURING REMEDIAL INVESTIGATION. SOIL SAMPLES COLLECTED.
● B-51	BORING LOCATION FOR WASTE CHARACTERIZATION AND ENDPOINT SAMPLING
● B-51 (A-E)	BORING LOCATIONS FOR PETROLEUM INVESTIGATION

EACH GRID IS APPROXIMATELY 1,000 CUBIC YARDS PER 16 FT DEPTH

Notes:

AOC-1	ELEVATED LEAD IN SAMPLE B/MW-3 (0-2")
AOC-2	ONE OR MORE USTS NEAR GATEHOUSE
AOC-3	ONE OR MORE USTS IN SOUTHWEST CORNER OF PARKING LOT
AOC-4	ONE OR MORE POTENTIAL USTS ON LOT 53
AOC-5	ESTIMATED EXTENT OF PETROLEUM-CONTAMINATED SOIL AND/OR GROUNDWATER
AOC-6	POSSIBLE VAULTED 1,050-GALLON TANK IN BASEMENT OF LOT 8
AOC-7	ELEVATED ACETONE IN SAMPLE B/MW-4 (12-14)



NOTE: ELEVATIONS IN MANHATTAN BOROUGH DATUM (MBD)

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

West 61st Street Site
New York, New York

PROPOSED SAMPLE LOCATIONS FOR WASTE CHARACTERIZATION, PETROLEUM INVESTIGATION, AND ENDPOINT SAMPLING

DATE	03.15.06
SCALE	As Shown
PROJECT No.	10321
FIGURE No.	1

2006 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\10321 - Algin Properties W. 60th St\Figures\RAWP Figures\RWP_SP_Figure_1_grid.dwg

APPENDIX A
SEVERN TRENT LABORATORY NJDEP LABORATORY CERTIFICATION

State of New Jersey
Department of Environmental Protection

Certifies Tha[illegible]

ST[illegible]

Lab[illegible]cation [illegible]

[illegible]et the requireme[illegible]

Reg[illegible]ing The [illegible] Of
Laboratories An[illegible] Measu[illegible]C. 7:18 et. seq.

having [illegible] compliant [illegible] the
National Env[illegible]al Labora[illegible]Conference

is hereby appr[illegible]
State [illegible]tified Environm[illegible]ory
to perform the analy[illegible] indicated on the An[illegible] Parameter List
which mu[illegible] this [illegible]valid

Expiration [illegible]une 30, 2006

Michael Miller for JFA
Joseph F. Aiello, Chief
Office of Quality Assurance

NJDEP is a NELAP Recognized Accrediting Authority

THIS CERTIFICATE IS TO BE CONSPICUOUSLY DISPLAYED AT THE LABORATORY WITH THE ANNUAL CERTIFIED PARAMETER LIST IN A LOCATION ON THE PREMISES VISIBLE TO THE PUBLIC

APPENDIX B
BENEFICIAL USE FACILITIES TESTING PROTOCOL

Table - 1

General Fill Acceptance Criteria - Former Allied Signal Site
Elizabeth, New Jersey

Contaminant	CASRN	(RDCSCC)	(NRDCSCC)	(IGWSCC)	Maximum Onsite Concentration	Revised Final Acceptance Criteria	Rationale
Acenaphthene	83-32-9	3400	10000(c)	100		10000	NRDCSCC
Acetone (2-propanone)	67-64-1	1000(d)	1000(d)	100		100	IGWSCC
Acrylonitrile	107-13-1	1	[illegible]	1		1	IGWSCC
Aldrin	309-00-2	0.04	0.17	50		0.17	NRDCSCC
Anthracene	120-12-7	10000(c)	10000(c)	100		10000	NRDCSCC
Antimony	7440-36-0	14	340	(h)	1660	1660	M.O.C.
Arsenic	7440-38-2	20 (e)	20 (e)	(h)	49	50	M.O.C.
Barium	7440-39-3	700	47000(n)	(h)		47000	NRDCSCC
Benzene	71-43-2	3	13	1		1	IGWSCC
Benzo(b)fluoranthene (3,4-Benzofluoranthene)	205-99-2	0.9	4	50	14	14	M.O.C.
Benzo(a)anthracene (1,2-Benzanthracene)	56-55-3	0.9	4	500	25	13	M.O.C.
Benzo(a)pyrene (BaP)	50-32-8	0.66(f)	0.66(f)	100	8.8	8.3	M.O.C.
Benzo(k)fluoranthene	207-08-9	0.9	4	500	5	5	M.O.C.
Benzyl Alcohol	100-51-6	10000(c)	10000(c)	50		50	IGWSCC
Beryllium	7440-41-7	1(i) 2(g)	1(i) 2 (c)	(h)	4.6	4.6	M.O.C.
Bis(2-chloroethyl) ether	111-44-4	0.66(f)	3	10		3	NRDCSCC
Bis(2-chloroisopropyl)ether	108-60-1	2300	10000(c)	10		10000	NRDCSCC
Bis(2-ethylhexyl) phthalate	117-81-7	49	210	100		210	NRDCSCC
Bromodichloromethane (Dichlorobromomethane)	75-27-4	11	46	1		1	IGWSCC
Bromoform	75-25-2	86	370	1		1	IGWSCC
Bromomethane (Methyl bromide)	74-83-9	79	1000 (d)	1		1	IGWSCC
2-Butanone (Methyl ethyl ketone) (MEK)	78-93-3	1000 (d)	1000 (d)	50		50	IGWSCC
Butylbenzyl phthalate	85-68-7	1100	10000 (c)	100		10000	NRDCSCC
Cadmium	7440-43-9	(l) 39	100	(h)		100	NRDCSCC
Carbon tetrachloride	56-23-5	2 (k)	4 (k)	1	1000	1	IGWSCC
4-Chloroaniline (p-Chloroaniline)	106-47-8	230	4200	(r)		4200	NRDCSCC
Chlorobenzene	108-90-7	37	680	1		1	IGWSCC
Chloroform	67-66-3	19 (k)	28 (k)	1	1500	1	IGWSCC
4-Chloro-3-methyl phenol (p-Chloro-m-cresol)	59-50-7	10000 (c)	10000 (c)	100		10000	NRDCSCC
Chloromethane (Methyl chloride)	74-87-3	520	1000 (d)	10		10	IGWSCC
2-Chlorophenol (o-Chlorophenol)	95-57-8	280	5200	10		5200	NRDCSCC
Chromium – hexavalent (VI)	18540-29-9	240; 270 (b) (l)	6100; 20 (g); (l)	(h)		60 (v)	NRDCSCC
Chromium – trivalent (III)	16065-83-1	120,000	(l)	(h)		120000 / 60 (v)	NRDCSCC
Chrysene	218-01-9	9	40	500		40	NRDCSCC
Copper	7440-50-8	600 (n)	600 (n)	(h)		600	NRDCSCC
Cyanide	57-12-5	1100	21000 (o)	(h)		21000	NRDCSCC
4,4'-DDD (p,p'-TDE)	72-54-8	3	12	50		12	NRDCSCC
4,4'-DDE (p,p'-DDX)	72-55-9	2	9	50		9	NRDCSCD
4,4'-DDT	50-29-3	2	9	500		9	NRDCSCC
Dibenz(a,h)anthracene	53-70-3	0.66 (f)	0.66 (f)	100	0.93	0.93	M.O.C.
Dibromochloromethane (Chlorodibromomethane)	124-48-1	110	1000 (d)	1		1	IGWSCC
Di-n-butyl phthalate	84-74-2	5700	10000 (c)	100		10000	NRDCSCC
Di-n-octyl phthalate	117-84-0	1100	10000 (c)	100		10000	NRDCSCC
1,2-Dichlorobenzene (o-Dichlorobenzene)	95-50-1	5100	10000 (c)	50		10000	NRDCSCC
1,3-Dichlorobenzene (m-Dichlorobenzene)	541-73-1	5100	10000 (c)	100		10000	NRDCSCC

Table - 1
General Fill Acceptance Criteria - Former Allied Signal Site
Elizabeth, New Jersey

Contaminant	CASRN	(RDCSCC)	(NRDCSCC)	(IGWSCC)	Maximum Onsite Concentration	Revised Final Acceptance Criteria	Rationale
1,4-Dichlorobenzene (p Dichlorobenzene)	106-46-7	570	10000 (c)	100		10000	NRDCSCC
3,3'-Dichlorobenzidine	91-94-1	2	6	100		6	NRDCSCC
1,1-Dichloroethane	75-34-3	570	1000 (d)	10	1400	10	IGWSCC
1,2-Dichloroethane	107-06-2	6	24	1	1700	1	IGWSCC
1,1-Dichloroethene	75-35-4	8	150	10		10	IGWSCC
1,2-Dichloroethene (trans)	156-60-5	1000 (d)	1000 (d)	50		50	IGWSCC
1,2-Dichloroethene (cis)	156-59-2	79	1000 (d)	1		1	IGWSCC
2,4-Dichlorophenol	120-83-2	170	3100	10		3100	NRDCSCC
1,2-Dichloropropane	78-87-5	10	43	(r)		10	IGWSCC
1,3-Dichloropropene (cis and trans)	542-75-6	4	5 (f)	1		1	IGWSCC
Dieldrin	60-57-1	0.042	0.18	50		0.18	NRDCSCC
Diethyl phthalate	84-66-2	10000 (c)	10000 (c)	50		10000	NRDCSCC
2,4-Dimethyl phenol	105-67-9	1100	10000 (c)	10		10000	NRDCSCC
Dimethyl phthalate	131-11-3	10000 (c)	10000 (c)	50		10000	NRDCSCC
2,4-Dinitrophenol	51-28-5	110	2100	10		2100	NRDCSCC
Dinitrotoluene (2,4-/2,6-mixture)	25321-14-6	1 (f)	4 (f)	10 (f)		4	NRDCSCC
Endosulfan	115-29-7	340	6200	50		6200	NRDCSCC
Endrin	72-20-8	17	310	50		310	NRDCSCC
Ethylbenzene	100-41-4	1000 (d)	1000 (d)	100		100	IGWSCC
Fluoranthene	206-44-0	2300	10000 (c)	100		10000	NRDCSCC
Fluorene	86-73-7	2300	10000 (c)	100		10000	NRDCSCC
Heptachlor	76-44-8	0.15	0.65	50		0.65	NRDCSCC
Hexachlorobenzene	118-74-1	0.66 (f)	2	100		100	NRDCSCC
Hexachlorobutadiene	87-68-3	1	21	100		21	NRDCSCC
Hexachlorocyclopentadiene	77-47-4	400	7300	100		7300	NRDCSCC
Hexachloroethane	67-72-1	6	100	100		100	NRDCSCC
Indeno(1,2,3-cd)pyrene	193-39-5	0.9	4	500		4	NRDCSCC
Isophorone	78-59-1	1100	10000 (c)	50		10000	NRDCSCC
Lead	7439-92-1	400 (p)	600 (q)	(h)	613	613	M.O.C.
Lindane (gamma BHC) (gamma-HCH)	58-89-9	0.52	2.2	50		2.2	NRDCSCC
2-Methylphenol (o-creosol)	95-48-7	2800	10000 (c)	(r)		10000	NRDCSCC
4-Methylphenol (p-creosol)	106-44-5	2800	10000 (c)	(r)		10000	NRDCSCC
Methoxychlor	72-43-5	280	5200	50		5200	NRDCSCC
Mercury	7439-97-6	14	270	(h)		270	NRDCSCC
4-Methyl-2-pentanone (MIBK)	108-10-1	1000 (d)	1000 (d)	50		50	IGWSCC
Methylene chloride (Dichloromethane)	75-09-2	49	210	1		1	IGWSCC
Naphthalene	91-20-3	230	4200	100		4200	NRDCSCC
Nickel	7440-02-0	250	2400 (k) (n)	(h)		2400	NRDCSCC
Nitrobenzene	98-95-3	28	520	10		520	NRDCSCC
N-Nitrosodiphenylamine	86-30-6	140	600	100		600	NRDCSCC
N-Nitrosodi-n-propylamine	621-64-7	0.66 (f)	0.66 (f)	10		0.66	NRDCSCC
PCBs (Polychlorinated biphenyls)	1336-36-3	0.49	2	50	150	2	Below IGWSCC and M.O.C.
Pentachlorophenol	87-86-5	6	24	100		24	NRDCSCC
Phenol	108-95-2	10000 (c)	10000 (c)	50		10000	NRDCSCC
Pyrene	129-00-0	1700	10000 (c)	100		10000	NRDCSCC
Selenium	7782-49-2	63	3100 (n)	(h)		3100	NRDCSCC
Silver	7440-22-4	110	4100 (n)	(h)		4100	NRDCSCC
Styrene	100-42-5	23	97	100		100	IGWSCC
1,1,1,2-Tetrachloroethane	630-20-6	170	310	1		1	IGWSCC
1,1,2,2-Tetrachloroethane	79-34-5	34	70 (k)	1	17000	1	IGWSCC

Table - 1
General Fill Acceptance Criteria - Former Allied Signal Site
Elizabeth, New Jersey

Contaminant	CASRN	(RDCSCC)	(NRDCSCC)	(IGWSCC)	Maximum Onsite Concentration	Revised Final Acceptance Criteria	Rationale
Tetrachloroethane (Tetrachloroethylene) (PCE)	127-18-4	4 (k)	6 (k)	1	26	1	IGWSCC
Thallium	7440-28-0	2 (i)	2 (i)	(h)		2	NRDCSCC
Toluene	108-88-3	1000 (d)	1000 (d)	500		500	IGWSCC
Total Organic Contaminant Compounds	NA	10,000	10,000	—		10,000 (t)	
Total VOCs	NA	1,000	1,000	—		1000	
Toxaphene	8001-35-2	0.10 (k)	0.2 (k)	50		0.2	NRDCSCC
1,2,4-Trichlorobenzene	120-82-1	68	1200	100		100	IGWSCC
1,1,1-Trichloroethane	71-55-6	210	1000 (d)	50		50	IGWSCC
1,1,2-Trichloroethane	79-00-5	22	420	1		1	IGWSCC
Trichloroethene (Trichloroethylene) (TCE)	79-01-6	23	54 (k)	1	2100	1	IGWSCC
2,4,5-Trichlorophenol	95-95-4	5600	10000 (c)	50		10000	NRDCSCC
2,4,6-Trichlorophenol	88-06-2	62	270	10		270	NRDCSCC
Vanadium	7440-62-2	370	7100 (n)	(h)		7100	NRDCSCC
Vinyl chloride	75-01-4	2	7	10		10	IGWSCC
Xylenes (Total)	1330-20-7	410	1000 (d)	[10] 67 (s)		67	IGWSCC
Zinc	7440-66-6	1500 (m)	1500 (m)	(h)		1500	NRDCSCC

NJDEP Clean Up Criteria Notes

(a) Criteria are health based using an incidental ingestion exposure pathway except where noted below.
(b) Criteria are subject to change based on site specific factors (e.g., aquifer classification, soil type, natural background, environmental impacts, etc.).
(c) Health based criterion exceeds the 10,000 mg/kg maximum for total organic contaminants.
(d) Health based criterion exceeds the 1000 mg/kg maximum for total volatile organic contaminants.
(e) Cleanup standard proposal was based on natural background.
(f) Health based criterion is lower than analytical limits; cleanup criterion based on practical quantitation level.
(g) Criterion based on the inhalation exposure pathway.
(h) The impact to ground water values for inorganic constituents will be developed based upon site specific chemical and physical parameters.
(i) Site specific determination required for SCC for the allergic contact dermatitis exposure pathway.
(j) Contaminant not regulated for this exposure pathway.
(k) Criteria based on inhalation exposure pathway, which yielded a more stringent criterion than the incidental ingestion exposure pathway.
(l) No criterion derived for this contaminant.
(m) Criterion based on ecological (phytotoxicity) effects.
(n) Level of the human health based criterion is such that evaluation for potential environmental impacts on a site by site basis is recommended.
(o) Level of the criterion is such that evaluation for potential acute exposure hazard is recommended.
(p) Criterion based on the USEPA Integrated Exposure Uptake Biokinetic (IEUBK) model utilizing the default parameters. The concentration is considered to
(q) Criteria were derived from a model developed by the Society for Environmental Geochemistry and Health (SEGH) and were designed to be protective for
(r) Insufficient information available to calculate impact to ground water criteria.
(s) Criterion based on new drinking water standard.

Site Specific Material Acceptance Criteria Notes

(t) NA

ENCAP - MEADOWLANDS REDEVELOPMENT SITE

MATERIALS TESTING REQUIREMENTS - BELOW BARRIER LAYER

MATERIAL TYPE	ENVIRONMENTAL ANALYSIS			GEOTECHNICAL ANALYSIS*				
	Full TCLP	Full PP+40 & EnCap Parameters (Note 1)	SAMPLE FREQUENCY	GRAIN SIZE	MODIFIED PROCTOR	% WOOD	TOTAL ORGANIC CONTENT	VOID VOLUME
Recycled Masonry (Brick, Block, & Glass)	-	-	NA	X	-	-	-	X
Recycled Asphalt	-	-	NA	X	-	-	-	-
Water Treatment Plant Residuals (Note 2)	X	X	1 TCLP & 1 PP sample per 5000 cu. yds (composite of 1 sample per 1000 cu. yds). (Note 2).	X	X	-	-	-
Construction & Demolition Screenings (CDS)	X	X	1 TCLP & 1 PP sample per 2000 cu. yds (composite of 1 sample per 500 cu. yds), with *volatile organic analysis (PPVO and TCLPVO) at 1 discrete sample per 500 cu.yds.* (Note 3)	X	X	X	X	-
Construction Site Fill	X	X	1 TCLP & 1 PP sample per 5000 cu. yds (composite of 1 sample per 1000 cu. yds), with volatile organic analysis (PPVO and TCLPVO) at 1 discrete sample per 5000 cu.yds. (Note 4)	X	X	-	X	-
Materials from Area of Concern as defined by N.J.A.C. 7:26E-3.9 (f)	X	X	1 TCLP & 1 PP sample per 5000 cu. yds (composite of 1 sample per 1000 cu. yds), with volatile organic analysis (PPVO and TCLPVO) at 1 discrete sample per 5000 cu.yds. (Note 4).	X	X	-	X	-
Materials from Area of Concerns as defined by N.J.A.C. 7:26E-3.9 (a-e)	X	X	A minimum of 1 TCLP & 1 PP sample per 500 cu.yds (composite of 1 sample per 100 cu. yds), with volatile organic analysis (PPVO and TCLPVO) at 1 discrete sample per 500 cu.yds. (Note 4).	X	X	-	X	-
Chipped Tires	Not Required if from clean source (Note 5). If tire chips are soiled or have been stored outside for more than 1 year, see sample frequency.		1 TCLP & 1 PP sample per 5000 cu. yds (composite of 1 sample per 1000 cu. yds), with volatile organic analysis (PPVO and TCLPVO) at 1 discrete sample per 5000 cu.yds.	X	-	-	-	-

KEY:

TCLP = Toxicity Characteristic Leaching Procedure

PP = Priority Pollutants

TCLPVO = Toxicity Characteristic Leaching Procedure Volatile Organics

PPVO = Priority Pollutant Volatile Organics

X = Analysis Required

- = No Analysis Required

*Geotechnical Methods: Geotechnical analysis will be performed at a frequency of 1 composite sample per 10,000 cy.

Grain Size Analysis = ASTM D421

Modified Proctor Test = ASTM D698 & D1557

Void Volume must be determined by volumetric displacement methods.

Percent Wood by dry weight.

Total Organic Content (TOC) = ASTM D2974

Environmental Notes:

NOTE 1	A PP+40 test does not include all parameters on the NJDEP's Soil Cleanup Criteria (SCC) list. All samples requiring a PP+40 shall additionally be analyzed for the remaining parameters on the SCC list, and for TPHC. For a full list of parameters (besides TPHC) and their acceptance limits, refer to the table herein entitled "Approved Soil Acceptance Criteria".
NOTE 2	Volatile organic analysis is not required for Water Treatment Plant Residuals.
NOTE 3	After 10,000 cy of CDS materials from a single CDS source has been sampled, analyzed, and shown not to exceed the site's acceptance criteria, a reduced sampling frequency may be applied to that specific CDS source. The reduced testing frequency shall consist of one composite sample per 10,000 cy (generated from 1 discrete sample every 1,000 cy), with volatile analysis (PPVO and TCLPVO) at 1 discrete sample per 1,000 cy.
NOTE 4	Site specific requirements will apply. Submit to the Review Engineer all characterization performed prior to excavation at its original site by sampling procedures and analytical requirements in accordance with the Technical Requirements for Site Remediation (NJAC 7:26E).
NOTE 5	If the tire chips have been stored outside for over one year in an environment unprotected from the elements, or intermixed with soils or other materials, the tires will need to be analyzed for Full TCLP and Full PP+40. See Sample Frequency above.

APPROVED SOIL ACCEPTANCE CRITERIA
EnCap Meadowlands Redevelopment Site

Parameter	NJDEP Non-Residential Soil Cleanup Criteria (ppm)	Alternate Acceptance Criteria (ppm) (Note 1)	Parameter Category*	Parameters Not Included in a PP+40
Acenaphthene	10000	—	S	
Acetone	1000	—	V	X
Acrylonitrile	5	—	V	
Aldrin	0.17	—	P	
Anthracene	10000	—	S	
Antimony	340	680	M	
Arsenic	20	100	M	
Barium	47000	—	M	X
Benzene	13	—	V	
Benzo(b)fluoranthene	4	Note 2	S	
Benzo(a)anthracene	4	Note 2	S	
Benzo(a)pyrene	0.66	Note 2	S	
Benzo(k)fluoranthene	4	Note 2	S	
Benzyl Alcohol	10000	—	S	X
Beryllium	2	10	M	
Bis(2-chloroethyl)ether	3	30	S	
Bis(2-chloroisopropyl)ether	10000	—	S	
Bis(2-ethylhexyl)phthalate	210	—	S	
Bromodichloromethane	46	—	V	
Bromoform	370	—	V	
Bromomethane	1000	—	V	
2-Butanone (MEK)	1000	—	V	X
Butylbenzyl phthalate	10000	—	S	
Cadmium	100	200	M	
Carbon tetrachloride	4	—	V	
4-Chloroaniline	4200	—	S	X
Chlorobenzene	680	—	V	
Chloroform	28	—	V	
4-Chloro-3-methyl phenol	10000	—	S	
Chloromethane	1000	—	V	
2-Chlorophenol	5200	—	S	
Chromium - hexavalent (VI)	20	—	M	X
Chromium - trivalent (III)	—	—	M	X
Chrysene	40	Note 2	S	
Copper	600	4000	M	
Cyanide	21000	—	M	
4,4'-DDD	12	—	P	
4,4'-DDE	9	—	P	
4,4'-DDT	9	—	P	
Dibenz(a,h)anthracene	0.66	Note 2	S	
Dibromochloromethane	1000	—	V	
Di-n-butyl phthalate	10000	—	S	
Di-n-octyl phthalate	10000	—	S	
1,2-Dichlorobenzene	10000	—	S	
1,3-Dichlorobenzene	10000	—	S	

APPROVED SOIL ACCEPTANCE CRITERIA
EnCap Meadowlands Redevelopment Site

Parameter	NJDEP Non-Residential Soil Cleanup Criteria (ppm)	Alternate Acceptance Criteria (ppm) (Note 1)	Parameter Category*	Parameters Not Included in a PP+40
1,4-Dichlorobenzene	10000	—	S	
3,3'-Dichlorobenzidine	6	30	S	
1,1-Dichloroethane	1000	—	V	
1,2-Dichloroethane	24	—	V	
1,1-Dichloroethene	150	—	V	
1,2-Dichloroethene (trans)	1000	—	V	
1,2-Dichloroethene (cis)	1000	—	V	X
2,4-Dichlorophenol	3100	—	S	
1,2-Dichloropropane	43	—	V	
1,3-Dichloropropene (cis and trans)	5	—	V	
Dieldrin	0.18	—	P	
Diethyl phthalate	10000	—	S	
2,4-Dimethyl phenol	10000	—	S	
Dimethyl phthalate	10000	—	S	
2,4-Dinitrophenol	2100	—	S	
Dinitrotoluene(2,4-/2,6-mixture)	4	**20**	**S**	
Endosulfan	6200	—	P	
Endrin	310	—	P	
Ethylbenzene	1000	—	V	
Fluoranthene	10000	—	S	
Fluorene	10000	—	S	
Heptachlor	0.65	**6.5**	**P**	
Hexachlorobenzene	2	**20**	**S**	
Hexachlorobutadiene	21	**105**	**S**	
Hexachlorocyclopentadiene	7300	—	S	
Hexachloroethane	100	—	S	
Indeno(1,2,3-cd)pyrene	4	**40**	**S**	
Isophorone	10000	—	S	
Lead	600	**1200**	**M**	
Lindane (gamme BHC)	2.2	—	P	
2-Methylphenol	10000	—	S	X
4-Methylphenol	10000	—	S	X
Methoxychlor	5200	—	P	X
Mercury	270	—	M	
4-Methyl-2-pentanone	1000	—	V	X
Methylene chloride	210	—	V	
Naphthalene	4200	—	S	
Nickel	2400	—	M	
Nitrobenzene	520	—	S	
N-Nitrosodiphenylamine	600	—	S	
N-Nitrosodi-n-propylamine	0.66	**6.6**	**S**	
PCBs (Polychlorinated biphenyls)	2	—	P	
Pentachlorophenol	24	**110**	**S**	
Phenol	10000	—	S	
Pyrene	10000	—	S	

APPROVED SOIL ACCEPTANCE CRITERIA
EnCap Meadowlands Redevelopment Site

Parameter	NJDEP Non-Residential Soil Cleanup Criteria (ppm)	Alternate Acceptance Criteria (ppm) (Note 1)	Parameter Category*	Parameters Not Included in a PP+40
Selenium	3100	—	M	
Silver	4100	—	M	
Styrene	97	—	V	X
1,1,1,2-Tetrachloroethane	310	—	V	
1,1,2,2-Tetrachloroethane	70	—	V	
Tetrachloroethene	6	—	V	
Thallium	2	**10**	M	
Toluene	1000	—	V	
Toxaphene	0.2	—	P	
1,2,4-Trichlorobenzene	1200	—	S	
1,1,1-Trichloroethane	1000	—	V	
1,1,2-Trichloroethane	420	—	V	
Trichloroethene	54	—	V	
2,4,5-Trichlorophenol	10000	—	S	X
2,4,6-Trichlorophenol	270	—	S	
Vanadium	7100	—	M	X
Vinyl chloride	7	—	V	
Xylenes (Total)	1000	—	V	X
Zinc	1500	**3000**	M	

*Parameter Category: M = Metal or inorganic, S = Semi-volatile, P = Pesticide

NOTE 1: Soil acceptance criteria for the EnCap site includes NJDEP Non-Residential Direct Contact Soil Cleanup Criteria, and AAC values where applicable. AAC values are in bold.

NOTE 2: The sum of these PAHs may not exceed 200 ppm and the concentration of any individual PAH may not be 15 times greater than its NRDCSCC. Additionally, these concentrations shall not exceed the Impact to Ground Water Soil Cleanup Criteria (IGWSCC).

APPENDIX C
TREATMENT AND DISPOSAL FACILITIES TESTING PROTOCOL

Analytical Requirements For Clean Earth of Carteret, Inc.

I. Contaminated Soil from Residential Source:

- TPH every 100 cubic yards (150 tons) - *NJ Method GC/FID OQA-QAM-025 or SW-846 Method 8015*
- VO Scan every 800 cubic yards (1200 tons) - *SW-846 Method 8260*

II. Contaminated Soil from Commercial Source:

- TPH every 100 cubic yards (150 tons) - *NJ Method GC/FID OQA-QAM-025 or SW-846 Method 8015*
- VO Scan every 800 cubic yards (1200 tons) - *SW-846 Method 8260*
- PCB's every 800 cubic yards (1200 tons)
- TCLP RCRA Metals every 800 cubic yards (1200 tons)
- RCRA Characteristics (Ignitability, Corrosivity, Reactivity) every 800 cubic yards (1200 tons)
- PAH's every 800 cubic yards (1200 tons) - *SW-846 Method 8270*

Notes:

1. Total TPH not to exceed 10,000 PPM/vol.
2. All Incoming Soil must be RCRA Non-Hazardous.
3. All Analysis must be performed by a New Jersey Certified Laboratory.
4. TPH Sampling Frequency: (5) 20 yard grabs composited for each 100 yards of material.
5. Other Sampling Frequency: (8) 100 yard grabs composited for each 800 yards of material.
6. Percent Moisture not to exceed 15 percent. (No Free Liquids – Must Pass Paint Filter Test).
7. PAH constituents exceeding NJNRDSCC are evaluated on a case-by-case basis.

Clean Earth of Philadelphia

Analytical Acceptance Requirements

Non-Petroleum Sources

Frequency	Sample Type	Analysis	Method	Limit
First 90 Tons	Grab	Volatile Organics	8260B	<30,000
		TCLP Volatile Organics	1311/8260B	TCLP Limits
Second 90 Tons	Grab	Volatile Organics	8260B	<30,000
		TCLP Volatile Organics	1311/8260B	TCLP Limits
Every 180 tons thereafter	Grab	Volatile Organics	8260B	<30,000
		TCLP Volatile Organics	1311/8260B	TCLP Limits
Every 900 Tons	Composite	Semivolatile Organics	8270C	<400,000
		TCLP Metals**	1311/6010	TCLP Limits
		Ignitibility	1010	negative
		Corrosivity	9040	>2 - <12.5
		Reactivity-Sulfide/Cyanide	SW-846 7.3	RCRA Limits
		PCBs	8082	<50
		TOX	9023	<1000
		Total Sulfur	ASTM D129	None
		TCLP Organics***	1311/8000	TCLP Limits

**Includes As, Ba, Cd, Cr, Cu, Hg, Ni, Pb, Se, Ag, Zn

Coal Tar Sources

Frequency	Sample Type	Analysis	Method	Limit
First 90 Tons	Grab	Volatile Organics	8260B	<30,000
		TPH- DRO to C-44	8015M*	<400,000
		Semivolatile Organics	8270C	<400,000
Second 90 Tons	Grab	Volatile Organics	8260B	<30,000
		TPH- DRO to C-44	8015M*	<400,000
		Semivolatile Organics	8270C	<400,000
Every 180 tons thereafter	Grab	Volatile Organics	8260B	<30,000
		TPH- DRO to C-44	8015M*	<400,000
		Semivolatile Organics	8270C	<400,000
Every 900 Tons	Composite	TCLP Metals**	1311/6010	TCLP Limits
		Ignitibility	1010	negative
		Corrosivity	9040	>2 - <12.5
		Reactivity-Sulfide/Cyanide	SW-846 7.3	RCRA Limits
		PCBs	8082	<50
		Total Sulfur	ASTM D129	None
		TCLP Organics***	1311/8000	TCLP Limits

**Includes As, Ba, Cd, Cr, Cu, Hg, Ni, Pb, Se, Ag, Zn

Method 418.1M cannot be used for coal tar sources

*** Includes VOA, Semivoa, pesticides, herbicides

Soil Safe, Inc. - Logan, NJ Facility
Non-Hazardous Material Approval Procedures

Bridgeport Facility Acceptance Criteria – Minimum Analytical Requirements

EPA 8260 (VOC)	(at least 1 analysis per every 800 yd^3)
EPA 1311 (TCLP Metals)	(at least 1 representative composite sample per site) (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver) As Ba Cd Cr Pb Hg Se Ag
EPA 8082 (PCB)	(at least 1 representative composite sample per site)
Total Metals	(at least 1 representative composite sample per every 800 yd^3) (Arsenic, Beryllium, Cadmium, Chromium, Lead, Nickel, Mercury & Zinc) As Be Cd Cr Pb Ni Hg Zn
Moisture	(at least 1 representative composite sample per every 800 yd^3)
EPA 9095 Paint Filter	(at least 1 representative composite sample per every 800 yd^3)
EPA 8270 (PAH)	(**for industrial sites only****, 1 per every 800 yd^3)
EPA 8015 (TPH)	**EITHER** GRO for gasoline contaminated soils (1 per every 100 yd^3) Acceptance level – less than 30,000 ppm **OR** DRO for other petroleum contaminated soils (1 per every 100 yd^3) Acceptance level – less than 30,000 ppm

Note: Other tests may be required depending on source of contamination.

An authorized representative of Soil Safe Incorporated will review the analytical results. If approved for recycling at the facility, **an Approval Number will be provided and must be on the incoming manifest or the shipment will be rejected at the facility.**

Only after Soil Safe verifies that the soil meets all acceptance criteria, following confirmatory analysis performed after arrival at the facility, will Soil Safe Inc. assume ownership and/or responsibility for the soil.

APPENDIX E
SOIL MANAGEMENT PLAN

West 61st Street Site

BCP ID 231043

NEW YORK, NEW YORK

Soil Management Plan

AKRF Project Number: 10321

Prepared for:

Algin Management Company, LLC
64-35 Yellowstone Boulevard
Forest Hills, New York 11375

Prepared by:

AKRF Engineering, P.C.
440 Park Avenue South
New York, NY 10016
212-696-0670

MARCH 2006

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FIGURES

APPENDIX

1.0 INTRODUCTION

The West 61st Street Site (the "Site") consists of approximately 1.4 acres, located between West 60th and 61st Streets. The Site is on a block situated between West End Avenue and Amsterdam Avenue in Manhattan, New York (Remedial Work Plan [RWP] Figure 1). These parcels are currently occupied by vacant land, except for the northeastern corner of the Site, which is presently used as a commercial parking lot. Residential, industrial, institutional (school), and commercial properties are present in the surrounding neighborhood.

A Phase I Environmental Site Assessment (ESA) performed by AKRF, Inc. (AKRF) in June 2003 identified Recognized Environmental Conditions (RECs) for the Site, including former and current land use and potential underground storage tanks. In October 2004, West 60th Street Associates, LLC and West End Enterprises, LLC (the Volunteer), submitted an application to participate in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP). The Brownfield Cleanup Agreement for the Site was signed by the Volunteer in March 2005, and has been subsequently executed by NYSDEC. Under this agreement, the Volunteer prepared and submitted a Remedial Investigation Work Plan (RIWP), dated April 2005, which included the Phase I ESA, and a subsequent RIWP Addendum, dated June 2005, which were approved by the NYSDEC. These documents were prepared in compliance with NYSDEC Division of Environmental Remediation guidance document DER-10 and included digital submittals.

The Remedial Investigation (RI) commenced in late summer of 2005 and was completed in early November. The Remedial Investigation Report (RIR) indicated that the Site did not contain hazardous waste (other than one sample that contained an elevated lead concentration), nor did the Site pose a significant threat to the public health and the environment. The groundwater leaving the southwestern corner of the Site contained benzene and two pesticides (4,4'-DDD and heptachlor epoxide) in concentrations slightly above their respective groundwater standards. Several metals were also detected whose unfiltered (total metal) sample concentrations were above groundwater quality standards. Volatile organic compounds (VOCs) were present in the soil vapor collected at five locations around the Site, but were not considered to have an adverse health effect on the area surrounding the Site. Seven on-site Areas of Concern (AOCs) were identified in the RIR. Three identified AOCs are suspected locations of underground storage tanks, identified during the geophysical survey. A fourth tank, located in the basement of a former building, was not verified during the RI field work, but is still considered to be an AOC. The analysis of soil samples collected at two locations indicated the presence of lead and acetone in concentrations warranting removal. The lead was further tested through the Toxicity Characteristic Leaching Procedure (TCLP), and was determined to be a characteristic hazardous waste. The acetone is considered to be a non-hazardous industrial waste. The final on-site AOC identified was an area of apparent petroleum-contaminated soil and groundwater along West 60th Street.

Prior to commencing the Remedial Work Plan (RWP), an Interim Remedial Measure (IRM) Work Plan, will begin to clean up five of the AOCs. The IRM will excavate and remove tanks at the three locations (AOC-2, AOC-3, and AOC-4). All liquids, semi-solids, and solids will be removed from the tanks. The tanks will be cleaned and removed and any contaminated soil will be removed. Each material will be transported to an approved disposal, processing, or recovery facility. Post-excavation samples will be collected to verify that all contamination has been removed from the surrounding area. The lead-contaminated and acetone-affected soil will be excavated and transported off-site to approved disposal facilities. Post-excavation samples will be collected to verify that all contaminated or affected soil has been removed to applicable NYSDEC standards. This work will be undertaken with an approved Remediation Health and Safety Plan (RHASP), including a Community Air Monitoring Plan (CAMP). The RWP will begin after the completion of the IRM activities.

This Soil Management Plan (SMP) has been included as an appendix to the RWP to describe the procedures and protocols for disturbance of soil and groundwater at the Site during planned Site remediation, Site redevelopment, and long-term use (if a Track 4 Cleanup is selected). It will be applied in conjunction with a Site-specific RHASP and Air Monitoring Work Plan, which are being submitted as part of the RWP.

2.0 SITE DESCRIPTION

2.1 Site Location

The West 61st Street Site (the "Site") consists of approximately 62,500 square feet located on West 60th and 61st Streets between West End Avenue and Amsterdam Avenue in Manhattan, New York (Remedial Work Plan [RWP] Figure 1). Specifically, the study Site consists of Block 1152, Lots 5, 8, 10, 11, 12, 13, 43, 52, 53, and 55 (RWP Figure 2).

2.2 Site and Vicinity Characteristics

The Site is located in an area currently going through a transformation from residential, industrial, and commercial establishments, to schools and residential buildings containing first floor retail uses (stores). Past and present commercial establishments in the area have included gasoline stations, automobile repair shops, a fabric/button manufacturer that generated hazardous wastes, and a railyard. The immediate area around the Site currently contains residential buildings, three schools, a community center, and an auto repair shop.

2.3 Nearby Public Areas of Concern

There are a number of residences and schools in close proximity to the Site. Residences and a public school are located across West 61st Street from the Site. Another public school is located adjacent to Lot 43, along West 61st Street, at the intersection of West 61st Street and Amsterdam Avenue. A residential building is being constructed adjacent to Lot 13, along West 60th Street. A New York City Parks Department pool is located across West 60th Street. A charter school is located on West 60th Street adjacent to Lot 5. There is presently new building construction at the southeastern corner of West 60th Street and West End Avenue, and on the west side of West End Avenue between West 60th and 61st Streets. The immediate area is shown on Figure 2 of the Remediation Work Plan (RWP); the surrounding area is shown on the Land Use Plan (RWP Figure 8).

2.4 Description of Contemplated Site Use

The proposed development on the Site is a multi-tenant residential complex with low-rise and high-rise structures located on the "Main Area" of the Site, between West 60th and 61st Streets. A two-level underground parking garage would be situated beneath two of the buildings (Buildings B and C). A recreation area, consisting of a tennis court and track, would be constructed on the "Eastern Area" of the Site, along West 60th Street. The layout of these contemplated uses is shown on Remedial Work Plan (RWP) Figure 15.

2.5 Site Geology, Hydrogeology, and Subsurface Characteristics

The surface topography at the Site and the surrounding area slopes downward from east to west towards the Hudson River. Based on a Site survey by True North Surveyors, Inc., the property lies at an elevation of approximately 61 feet at its highest point, sloping westerly to an elevation of approximately 32 feet at its lowest point, based on the Borough of Manhattan Datum (RWP Figure 6). Geotechnical engineering borings performed by RA Consultants (RWP Appendix P) indicate that the bedrock surface is variable and ranges from elevation 40.8 feet in the northeastern corner to elevation 0 along West 61st Street near the northwestern corner of the Site (RWP Figure 9). Depth to bedrock varies from 9.5 to 45 feet below existing ground surface. The geotechnical investigation indicated that the bedrock appears to undulate as well as slope. The bedrock consists of highly-weathered schist that is part of the Manhattan Formation.

The information gathered from the overburden and bedrock groundwater monitoring wells identified groundwater at depths of approximately 10 to 16 feet below grade. In the bedrock aquifer, the groundwater elevations ranged from elevation 51 in the northeastern corner of the Site to elevation 31 in the southeastern corner. Based on this information, the estimated flow direction in the bedrock aquifer appears to be slightly towards the southwest. Groundwater was not encountered in the overburden aquifer in the Eastern Area of the Site. The groundwater ranged from elevation 30 to elevation 15 in the central portion to the western perimeter of the Site. Groundwater in the overburden aquifer appears to flow from the northeast to the southwest, ultimately discharging into the Hudson River. The groundwater flow at the Site is likely affected by one or more factors, which may include current and past pumping of groundwater; past filling activities; underground utilities and other subsurface openings or obstructions such as basements or underground parking garages; bedrock geology; and other factors. Groundwater in New York County is not used as a source of potable water.

2.6 Nature and Extent of Contamination

2.6.1 Soil Contamination

The overburden soil at the Site, excluding the northeastern area located along West 61st Street, consists of two distinct layers. The upper layer, ranging from approximately 3 to 16 feet, is urban fill material, consisting of rock, brick, gravel, silt, wood, and glass, with ash and slag. The lower layer is native soil, composed of sand and silt with some gravel. The urban fill material was placed directly on the bedrock in the Eastern Area of the Site (presently used as a parking lot). The native soil varies in thickness from 6 to 26 feet in the Main Area of the Site, located between West 60th and 61st Streets. The two layers differ in chemical composition. Semi-volatile organic compounds (SVOCs), including carcinogenic polycyclic aromatic hydrocarbons (cPAHs), were detected in the 28 samples collected at the surface and below grade. The concentrations of one or more cPAHs at 20 sample locations were above the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs). Surficial samples of the fill material contained one volatile organic compound (VOC) (acetone); no other VOCs were detected in the fill material. The fill material did not contain pesticides or polychlorinated biphenyls (PCBs). Each fill sample contained at least one metal above the Eastern US background range. Zinc was identified in every sample at concentrations above the Eastern US background range. Other metals detected in concentrations above the Eastern US background range included aluminum, barium, cadmium, calcium, chromium, copper, lead, magnesium, mercury, and nickel. The native soil did not contain VOCs, SVOCs, pesticides, or PCBs. One or two metals were present in concentrations above Eastern US background concentrations. Two of the 14 native soil samples contained one VOC each; acetone and xylenes (total). Three samples contained one or more cPAHs (SVOCs). Eleven of the 14 native soil samples collected contained one or more metals in concentrations above the Eastern US background ranges. Zinc was the most prevalent. Other metals present in the native soil in concentrations above the Eastern US background ranges were aluminum, barium, cadmium, calcium, chromium, lead, magnesium, mercury, and nickel.

The analytical data from boring B-17 and observations of staff during the drilling of the geotechnical and environmental borings in the southern portion of the Site along West 60th Street indicate the presence of a petroleum substance in the soil. Elevated cPAHs were present in the two samples of native soil collected from boring B-17 at depths just above and below the apparent groundwater level. The source of this contamination has not been identified. Acetone was detected in soil samples collected at two locations, MW-4 (12'-14') and MW-6 (0-2'). The Remedial Work Plan (RWP) includes: additional proposed soil sampling to provide in-situ sampling of the fill material and native soil at and above elevation 14.5 for classification and disposal options; and determining the horizontal and vertical extent of the petroleum contamination along West 60th Street.

2.6.2 Groundwater Contamination

The groundwater flows through the Site generally from the east and northeast towards the southwest. The groundwater in the eastern (parking lot) and southeastern portions of the Site is present in the bedrock only. No volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, or polychlorinated biphenyls (PCBs) were detected at concentrations above New York Code of Rules and Regulations (NYCRR) Section 703.5, Groundwater Quality Standards and/or Technical and Operational Guidance Series (TOGS) 1.1.1. Four metals (aluminum, iron, manganese, and sodium) were present in the groundwater samples collected from these upgradient bedrock monitoring wells in concentrations above groundwater standards. Due to the sharp decrease in elevation of the bedrock, the bedrock groundwater discharges into the Site overburden (fill and native soil). Metals were detected in filtered and unfiltered samples taken from "intermediate" groundwater monitoring wells MW-1, MW-4, and MW-8. In two of these wells (MW-1 and MW-4), no VOCs, SVOCs, pesticides, or PCBs were detected above groundwater standards. The sample collected from MW-8 contained four VOCs (benzene, toluene, ethylbenzene, and xylenes [total]) in concentrations above groundwater standards. One SVOC (naphthalene) was detected at a concentration above its groundwater standard. MW-8 is approximately 80 feet downgradient of boring B-17, the location of the petroleum-contaminated material. This petroleum appears to be flowing on the groundwater table towards the southwestern corner of the Site. The samples collected from downgradient groundwater monitoring wells MW-6, MW-7, and MW-7D contained ten metals (aluminum, cadmium, chromium, iron, lead, magnesium, manganese, nickel, selenium, and sodium), analyzed from unfiltered samples, in concentrations above groundwater standards. Two pesticides (4,4'-DDD in MW-7 and heptachlor epoxide in MW-7D) were present in concentrations above groundwater standards. Benzene was present in a sample collected from MW-7 at a concentration of 2.0 micrograms per liter [µg/L], above the groundwater standard of 1.0 µg/L. The presence of benzene in the groundwater at location MW-7 indicates that the petroleum contamination has migrated to the southwestern corner of the Site.

2.6.3 Soil Gas

Volatile organic compounds (VOCs) were detected in the soil vapor probes installed and sampled around the perimeter of the Site. The sample collected from soil vapor probe

SG-3D, located near MW-8, contained one tentatively identified compound (TIC) (unknown VOC) at a concentration of 14,000 parts per billion per (1 Liter) volume (ppbv). This vapor probe was installed at a depth of approximately 12 feet below the surface, and was located in the area of the apparent petroleum contamination plume. This area will be excavated to bedrock as part of the construction of the parking garage. Samples collected from the other soil vapor probes contained numerous VOCs in concentrations ranging from one microgram per cubic meter [$\mu g/m^3$] to 390 $\mu g/m^3$, with a few TICs, ranging up to 690 ppbv. A number of the VOCs detected in the soil vapor were not found in the soil or groundwater. This indicates the existence of apparent off-site source(s) of VOCs, which have migrated beneath the Site. In all but two locations, the southeastern and northeastern corners (parking lot) of the Site, the construction of the cellar and sub-cellar will result in the removal of the fill material and, therefore, the structures will be below the groundwater level, thus eliminating any need for soil vapor management. In the northeastern corner of the Site, the area will be covered with asphaltic concrete, paving block, and/or two feet of soil for recreation and outdoor use. Therefore, soil vapor management will not be required. A cellar will be constructed to elevation 30 in the southeastern corner of the Site. The structure will be placed directly onto bedrock in half of this section. Native soil will remain beneath the structure in the remainder of the section. This area will be further evaluated during the remedial design process to determine whether soil vapor management is needed.

3.0 SUMMARY OF REMEDY

The selected remedy for the Site involves excavating and disposing of fill material, construction and demolition (C&D) debris in Lot 8, and native soil that contains contaminant concentrations exceeding the Site Specific Soil Action Levels (SSSALs), as defined in the Remedial Work Plan (RWP), or the Recommended Soil Cleanup Objectives (RSCOs) in Division of Environmental Remediation Technical and Administrative Guidance Memorandum (TAGM) #4046, dependent upon the cleanup track (Track 4 or Track 1, respectively) selected. The anticipated limits of the soil removal are shown on RWP Figure 5. Based on the potential presence of petroleum (normally containing volatile organic compounds [VOCs]) in the on-site soil and groundwater, nuisance odors may be encountered during the excavation activities. A Remedial Health and Safety Plan (RHASP), including a Community Air Monitoring Plan (CAMP), will be implemented to ensure protection of Site workers and the surrounding community. The floor slabs of the cellar in Building A and the sub-cellars in Buildings B and C will be below the groundwater table. A membrane will be placed beneath the slabs to prevent groundwater infiltration into the buildings. The two sections of the cellar in Buildings B and C jut outside of the sub-cellar foundation. Although these small areas are approximately ten feet above the groundwater table, the soil vapor concentrations in these areas are not significant, and the residents using these buildings will reside on the second floor and above, a membrane vapor barrier will be installed beneath these floor slabs. If a Track 4 Cleanup is selected, institutional controls, such as an environmental easement, will be implemented to prevent exposure to residual contamination that is left in place following soil removal.

4.0 SOIL MANAGEMENT

The intended soil handling at the Site is to load the excavated material destined for off-site disposal directly onto the hauling vehicles. To accomplish this, a pre-excavation in-situ sampling program will be undertaken to collect composite samples of the fill material, construction and demolition (C&D) debris in

Lot 8, native soil, and petroleum-contaminated material. The sampling protocol (e.g., sampling frequency, sampling parameters, sample location) will be consistent with the requirements of the receiving facilities and appropriate State regulatory agencies governing the receiving facilities. Stockpiling of excavated material will occur only if the material is considered for reuse at the Site, or if the trucks are not present for immediate loading. Excavated material destined for off-site use or disposal will not reside on the Site for more than 72 hours, if possible.

Site remediation may involve disturbing large volumes of petroleum-contaminated soil, with excavations extending below the water table into intervals where light non-aqueous phase liquids (LNAPLs) may be present. However, no LNAPL or dense non-aqueous phase liquid (DNAPL) was detected during the Remedial Investigation (RI). More stringent soil management requirements will be specified during the removal of the petroleum-contaminated material. Site redevelopment and future maintenance activities will occur after all of the petroleum-contaminated material has been removed from the Site, and only fill and native soil will remain. Then, less stringent soil management procedures will be required. The following sections describe the measures that will be taken to minimize impacts to human health and the environment during both small- and large-scale soil disturbance activities.

All soil management activities will be monitored by AKRF personnel. Michelle Lapin, P.E., will serve as the Project Director. Richard Gardineer, P.E., will serve as the Project Manager. Freda Ponce and/or Jessica Leber will be at the Site, monitoring the soil excavation, stockpiling, and loading activities; collecting soil samples for waste classification and endpoint verification; and collecting air samples and conducting air monitoring. Copies of their resumes are found in Appendix A.

4.1 Site Preparation

Prior to conducting any intrusive activities, excluding the activities addressed in the Interim Remedial Measure (IRM) Work Plan for Site remediation and redevelopment activities, a Site plan will be prepared that defines the work zone(s), designated entry points, soil stockpile staging areas, decontamination zones, and truck routes, as applicable. The Site plan will be updated as necessary to reflect any changes in operations during the course of the intrusive work. The existing fence will be maintained during remediation activities to ensure access control to the Site. Necessary sediment and erosion control measures will be installed prior to any intrusive activities.

4.2 Soil Excavation and Stockpiling

The New York State Department of Environmental Conservation (NYSDEC) will be notified a minimum of one week prior to the initiation of any soil disturbance activities.

4.2.1 Excavation Requirements

Excavations for remediation, Site development, and future maintenance will be considered open excavations and will be managed according to applicable local, State, and federal regulations. All entrance gates will be closed and locked overnight. Fencing will be maintained to prevent unauthorized access.

4.2.2 Fill

The upper on-site layer, ranging in thickness up to approximately 16 feet, containing rock, brick, concrete, wood, glass, ash, and slag, is considered to be a fill material. Fill material is not petroleum-contaminated, but may contain concentrations of polycyclic aromatic hydrocarbons (PAHs) and metals. During Site remediation, excavated fill may be stockpiled for on-site use only if a Track 4 Cleanup is selected and the compounds present in the fill are less than the Site Specific Soil Action Levels (SSSALs). All soil stockpiling and handling will be conducted as described in Section 4.2.8. Characterization for on-site reuse and off-site disposal will be conducted as described in Section 4.3. Preliminary estimates indicate that approximately 30,000 cubic yards (cy) of fill material will be excavated and removed from the Site.

4.2.3 Petroleum-Contaminated Soil

Petroleum-contaminated soil consists of soil containing low levels of benzene, toluene, ethyl-benzene, and xylene (BTEX), with relatively lower naphthalene and polycyclic aromatic hydrocarbon (PAH) concentrations. The lateral and vertical extents of petroleum-contaminated soil that exceed the Site Specific Soil Action Levels (SSSALs) and Technical and Administrative Guidance Memorandum (TAGM) #4046 will be determined during the petroleum delineation and waste characterization sampling as described the Sampling Plan (Remedial Work Plan [RWP] Appendix D). During remediation activities, the petroleum-contaminated material will be excavated, loaded directly onto trucks to the extent feasible, and disposed of off-site as non-hazardous petroleum-contaminated waste, based on pre-characterization sampling, conducted as described in Section 2.0 of the Sampling Plan. Preliminary estimates indicate that approximately 5,000 cubic yards (cy) of petroleum-contaminated soil will be excavated and removed from the Site.

4.2.4 Construction and Demolition Debris/Municipal Waste – Lot 8

Test trenches excavated into the building's basement on Lot 8 during the Remedial Investigation (RI) indicated the presence of construction and demolition (C&D) debris, as defined in 6 New York Code of Rules and Regulations (NYCRR) Part 360. During remediation activities, this material will be excavated, loaded directly onto trucks to the extent feasible, and disposed of off-site as C&D debris, or possibly, dependent upon the presence of non-structural material, as a non-hazardous municipal solid waste. Preliminary estimates indicate that 1,500 cubic yards (cy) of C&D debris will be excavated and removed from the Site.

4.2.5 Native Soil

The soil samples collected from the Remedial Investigation (RI) borings indicated the presence of a layer of sand and silt with some gravel beneath the fill material overlying bedrock. Based on testing data gathered thus far, this native soil in the northern area of the Site, located along West 61st Street, is not considered contaminated and meets the Division of Environmental Remediation Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs). The native soil in the southern portion of the Site, located along West 60th Street, may be affected by the petroleum contamination. Pre-excavation sampling throughout the Site will determine the presence and extent of petroleum-contaminated native soil in the southern portion of the Site. Uncontaminated native soil meeting the TAGM #4046 RSCOs may be stockpiled for reuse throughout the Site. Native soil containing contaminants in concentrations above TAGM #4046 RSCOs, but below the Site Specific Soil Action Levels (SSSALs), may be stockpiled for reuse, if a Track 4 Cleanup is selected. Preliminary estimates indicate that approximately 13,000 cubic yards (cy) of uncontaminated native soil will be excavated to achieve the desired final elevations.

Some of this material may be used for on-site backfilling. The remainder will be transported to a beneficial use facility in New Jersey.

4.2.6 Bedrock

Bedrock is present at elevations above the final grade (elevation 14 for the sub-cellar and elevation 30 for the cellar) in areas along the southeastern Site boundary and in the central portion of the Site. In some areas, ten feet of bedrock will be removed. Split-spoon samples will be collected at the bedrock interface as part of the pre-construction sampling. In the areas where the overburden soil at the bedrock interface is not contaminated, the bedrock will be either loaded directly onto the hauling vehicles, or stockpiled and tested, dependent upon the testing requirements of the receiving facility. If the soil above the bedrock exceeds the Site Specific Soil Action Levels (SSSALs) or Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs), the bedrock will be stockpiled and sampled for waste characterization. Preliminary estimates indicate that 3,000 cubic yards (cy) of bedrock will be removed and transported off-site.

4.2.7 Soil Segregation

Spot elevations will be taken during remediation activities to determine the limits of the specified excavation areas and to segregate the fill, petroleum-contaminated soil, construction and demolition (C&D) debris, and native soil, if these materials are stockpiled for off-site disposal. A qualified environmental professional, representing the property owner/developer, will be on-site to monitor all remediation activities and to direct the contractor in segregating soil in the transition zones at the top and bottom of the fill, native soil, petroleum-contaminated material, and C&D debris layers. Monitoring will include inspecting soil for staining, sheen, odors, or other evidence of contamination, and field screening for the presence of volatile organic compounds (VOCs) with a photoionization detector (PID). Excavated material containing both petroleum and fill, sand/silt with gravel, and C&D debris will be disposed of as a petroleum waste. Soil in intervals containing fill and native soil will be classified as fill.

4.2.8 Stockpile Management

All petroleum-contaminated material excavated during remediation activities will be loaded directly onto trucks for off-site disposal to the extent feasible; however, temporary stockpiling may be required in addition to in-situ dewatering to drain the soils before they will be accepted by the receiving facility. If this occurs, a plastic sheet will be placed in the area where this material will be stockpiled, and above the petroleum-contaminated material after the pile has been formed. After removal of the pile, any soil beneath the pile that appears to have come into contact with liquid from the pile will be excavated and removed as a petroleum-contaminated material. If stockpiling of petroleum-contaminated material occurs in areas that have reached the vertical limit of construction elevation, endpoint samples will be collected and analyzed consistent with the spacing requirements for petroleum spills in Division of Environmental Remediation guidance memorandum DER-10.

Pre-tested and New York State Department of Environmental Conservation (NYSDEC)-approved clean imported fill material to be used as backfill may also be temporarily stockpiled on-site during remediation, redevelopment, and future maintenance activities. This material will be tested off-site prior to receipt at the Site. Uncontaminated native soil meeting Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs) may be stockpiled for on-site filling. If a Track 4 Cleanup is selected, on-site fill material meeting Site Specific Soil Action Levels (SSSALs) may be stockpiled for use as fill. Each material stockpiled for use as a backfill will be approved by the NYSDEC prior to its transportation and placement in an on-site stockpile.

All soil stockpiles will have side slopes not to exceed a slope of two-to-one, and will be placed on a base consisting of a double layer of minimum eight-mil plastic sheeting that will be bermed with hay bales and/or silt fence at the edges. Stockpiles will be kept covered whenever loading operations are not occurring with appropriately anchored tarps that will be routinely inspected for damage and replaced as needed. Screening and processing operations for soil or construction and demolition (C&D) debris will not be performed on-site without prior approval from NYSDEC. If stockpiling becomes a necessity, a Stockpile Management Plan will be prepared and submitted to NYSDEC.

4.3 Soil Characterization

Soil will be pre-characterized prior to commencement of soil excavation, excluding the Interim Remedial Measure (IRM) activities. The sampling protocol will be approved by the State regulatory agency governing the reuse, recycling, or disposal facilities accepting the on-site materials. The protocol is included in the Sampling Plan (Remedial Work Plan [RWP] Appendix D). Soil borings and sample collection will be monitored by AKRF, Inc., and possibly Environmental Remedies, Inc., of Middlesex, New Jersey, or another professional certified in the State of New Jersey to perform subsurface evaluation, if the EnCap Meadowlands facility is selected as a receiving facility. The soil samples will be analyzed at Severn Trent Laboratories, Inc. (STL), a New Jersey- and New York-certified laboratory.

4.3.1 Petroleum-Contaminated Material

Petroleum-contaminated material will be pre-characterized prior to the start of remediation activities to allow for direct loading and disposal. This will occur in two activities. The vertical and horizontal extent of the suspected petroleum contamination in the southern area of the Site, located along West 60th Street, will be delineated through the soil borings and collection of two or three soil samples per boring. If a New Jersey facility is chosen as the receiving facility, these samples will be analyzed for volatile organic compounds (VOCs) (Environmental Protection Agency [EPA] Method 8260), using New Jersey Department of Environmental Protection (NJDEP) protocol. Additional samples will be collected for disposal criteria for the facility receiving this waste material. Pre-characterization sampling will be conducted at grid locations shown on Figure 1 of Remedial Work Plan (RWP) Appendix D. The frequency of the sampling and the analytical parameters will be determined based on the requirements of the selected disposal facilities. It is anticipated that all petroleum-contaminated material will be disposed of as non-hazardous waste.

4.3.2 Fill

Fill materials will be pre-characterized prior to the start of the remediation activities to allow for direct loading and disposal. Sampling and analysis of the in-situ fill will be consistent with the sampling protocol provided by the disposal facility. Each sample collected from soil borings will be a representative or composite of the entire depth of the material. The volume of each grid shown on Figure 1 of the Sampling Plan (Remedial

Work Plan [RWP] Appendix D) is approximately 500 cubic yards (cy) per 7.5-foot depth, and 1,000 cy per 15-foot depth.

4.3.3 Native Soil

The native soil will be pre-characterized prior to the start of remediation excavation activities to allow for direct loading and disposal or reuse. Sampling and analysis of the in-situ fill will be consistent with the sampling protocol provided by the disposal facility. Each sample collected from soil borings will be a representative or composite sample of the entire depth of the material. The native soil sample will be collected at a lower elevation from the same borehole as the fill material. The volume of the sampling grid is the same as that of the fill material. The volume-to-depth relationship is approximately 500 cubic yards (cy) for a 7.5-foot depth, and 1,000 cy for a 15-foot depth.

4.3.4 Construction and Demolition Debris/Municipal Waste – Lot 8

The buried building debris will be pre-characterized prior to the start of remediation excavation activities to allow for direct loading and disposal. Sampling and analysis of the in-situ fill will be consistent with the sampling protocol provided by the disposal facility. Each sample will be collected from soil borings. The sample collected will be a representative or composite sample of the entire depth of the material sampled. The volume of the sampling grid is the same as that of the fill material. The volume-to-depth relationship is approximately 500 cubic yards (cy) for a 7.5-foot depth, and 1,000 cy for a 15-foot depth.

4.3.5 Discovered Waste Material

Additional waste material discovered from the analysis of the pre-construction samples, or uncovered during construction excavation activities, will be sampled for Target Compound List (TCL) volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), Target Analyte List (TAL) metals, Toxicity Characteristic Leaching Procedure (TCLP) – full list, reactivity (cyanide and sulfur), pH, ignitability, and any other tests required by the disposal facility. One sample will be collected for every 500 cubic yards (cy) of material. Post-excavation samples will be collected as one sample for approximately every 900 square feet along the sidewalls and bottom. The parameters selected will be based on the results of the waste classification sampling.

4.3.6 Bedrock

Initial bedrock classification will be based on the level of contamination in overburden native soil located at the bedrock-soil interface. If no contaminants are present in soil at concentrations above Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs), the bedrock will be considered uncontaminated. Additional sampling and analysis will be conducted to meet receiving facility requirements as required.

4.3.7 Imported Backfill

Any off-site material used as backfill must be either from a New York State Department of Transportation (NYSDOT)-approved source, or must qualify as "exempt fill" under New York Code of Rules and Regulations (NYCRR) Section 360-7.1. The material will be clean and free of debris, cinders, combustibles, wood, roots, organic material, and any staining or odors. The "exempt fill" will not be placed in grass or ornamental garden areas within two feet of the surface unless it has been analyzed and found to contain no contaminants in concentrations above the Recommended Soil Cleanup Objectives (RSCOs) of New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Document (TAGM) #4046.

Off-site soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes, or petroleum products. If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use. Documented virgin soils will not be sampled prior to use as backfill on the Site.

Non-virgin off-site soils will be tested via collection of one composite sample per 500 cubic yards (cy) of material from each source area. Samples will be analyzed for volatile organic compounds (VOCs) using Environmental Protection Agency (EPA) Method 8260; semi-volatile organic compounds (SVOCs) using EPA Method 8270, Target Analyte List (TAL) metals using EPA Method 6000/7000 series; polychlorinated biphenyls (PCBs) using EPA Method 8082; pesticides using EPA Method 8081,; and herbicides using EPA Method 8151. Soils will be considered appropriate for use as on-site backfill if contaminant concentrations are less than applicable RSCOs in NYSDEC TAGM #4046.

If more than 1,000 cubic yards (cy) of soil are imported from a given off-site, non-virgin soil source area, and both samples of the first 1,000 cy meet the limits described above, the sample collection frequency will be reduced to one composite sample for every 2,500 cy of additional soil from the same source, up to 5,000 cy. For sources greater than 5,000 cy, sampling frequency may be reduced to one sample per 5,000 cy, provided that all earlier samples meet the prescribed limits.

4.4 Cover System

At the conclusion of Site remediation activities, all excavated areas above the sidewalk elevations along West 60th and 61st Streets will be temporarily stabilized to prevent wind and water erosion. At the conclusion of Site redevelopment activities, all disturbed areas will be covered with: on-site buildings; asphalt or concrete sidewalks, a paved recreation area (tennis court and track), or pavers (walkway); or landscaped with a minimum of two feet of clean fill and vegetation, thereby capping all on-site soils.

4.5 Erosion Control/Stormwater Management

Proven soil conservation practices will be incorporated into construction and development plans to mitigate soil erosion, off-site sediment migration, and water pollution from erosion. Typical measures that may be applicable at various stages of the Project include the use of hay bales, silt fences, sewer inlet protection, a stabilized construction entrance, dust control measures, and sediment basins.

Smaller-scale soil disturbances for future utility maintenance and landscaping conducted after the completion of Site redevelopment are not anticipated to require coverage under the general State Pollution Discharge and Elimination System (SPDES) Permit or preparation of a Storm Water Pollution Prevention Plan (SWPPP). However, best management practices, such as the placement of straw bales and silt fencing around soil stockpiles and/or the use of polyethylene liners and covers, will be implemented during small-scale soil disturbance.

4.6 Air Quality Monitoring

All soil excavation during remediation activities will be conducted within a containment structure to control fugitive dust and vapors. Air monitoring will be performed within the structure, as required under the Site-specific Remediation Health and Safety Plan (RHASP), to ensure worker protection. Perimeter air quality monitoring will be performed at upwind and downwind locations around the perimeter of the Site, as specified in the Air Monitoring Plan, before and during remedial activities, to ensure that dust and vapors are being controlled by the containment structure and air handling system. Dust suppression and vapor mitigation measures will be implemented as indicated by particulate monitoring, and may include spraying foam and/or Biosolve on open excavations; applying water on haul roads; spraying water on equipment during excavation; restricting vehicle speeds to ten miles per hour; covering excavated areas and stockpiles with plastic sheeting; and minimizing the excavation size and number of open excavations.

Subsequent to remediation, only small-scale soil disturbance will be required for Site development, including excavation for elevator pits and utility vaults. In addition, future maintenance and landscaping work is anticipated to require only small-scale disturbance of the historic fill material or capped soils. Therefore, only work zone monitoring will be conducted during these redevelopment and future maintenance activities, as specified in the RHASP.

4.7 Construction Water Management

Remediation and construction dewatering will be performed in accordance with federal, State, and local regulations. Produced water will be treated, if necessary, and discharged to the sanitary sewer under a New York City Department of Environmental Protection (NYCDEP) sewer connection permit. Prior to discharge of on-site collected water into the combined sewer system, all on-site collected water, including water pumped from excavations, will be sent to a sedimentation tank to reduce the particulates (suspended and total solids).

4.8 Access Control

As described in Section 4.1, existing fencing and gates will be upgraded (where necessary) and maintained around any areas of the Site where soils are disturbed and obvious access points will be established. Unauthorized persons will not be allowed access to the work zones while excavation or handling of potentially contaminated soil is taking place.

5.0 OFF-SITE DISPOSAL/HAUL ROUTES

5.1 Receiving Facilities

The on-site fill material and native soil determined to meet the beneficial use chemical and physical criteria will be transported to either the EnCap Meadowlands Facility, located in the Boroughs of Lyndhurst and Rutherford, New Jersey, or the former Allied Signal Site in Elizabeth, New Jersey. The on-site fill material and native soil not meeting the criteria will be transported to one or more of the following facilities: Soil Safe, located in Logan, New Jersey; Clean Earth of

Carteret, located in Carteret, New Jersey; or Clean Earth of Philadelphia, located in Philadelphia, Pennsylvania.

5.2 Transportation Routes

There are two available routes from the Site to the receiving facilities in New Jersey and Pennsylvania – the Lincoln Tunnel, and the George Washington Bridge via the Cross Bronx Expressway. The Cross Bronx Expressway would also provide access to receiving facilities on Long Island or Connecticut (New England). The route from the Site to the Lincoln Tunnel (Figure 1) is as follows:

East on West 60th or 61st Streets to Amsterdam (10th) Avenue);
North on Amsterdam Avenue to West 66th Street;
West on West 66th Street to West End (11th) Avenue;
South on West End Avenue to West 40th Street;
East on West 40th Street - exit right to Lincoln Tunnel entrance ramp.

The route from the Site to the Cross Bronx Expressway/George Washington Bridge (Figure 2) is as follows:

East on West 60th or 61st Streets to Amsterdam (10th) Avenue;
North on Amsterdam Avenue to West 66th Street;
West on West 66th Street to West End (11th) Avenue;
North on West End Avenue to West 79th Street;
West on West 79th Street to Riverside Drive;
North on Riverside Drive to West 165th Street;
Exit on right ramp, located approximately 800 feet north of West 165th Street;
Follow signs to either the George Washington Bridge or the Cross Bronx Expressway.

Truck management practices will include measures to prevent contaminants from leaving the Site into the neighborhood during loading and exiting the Site, minimize truck noises and odors, and minimize traffic congestion. These measures are presented in Remedial Work Plan (RWP) Section 4.2.5.

6.0 HEALTH AND SAFETY

All work that involves soil disturbance will be performed in accordance with all applicable local, State, and federal regulations to protect worker health and safety. The Site-specific Remediation Health and Safety Plan (RHASP), included as Appendix A in the Remediation Work Plan (RWP), submitted simultaneously with this Soil Management Plan, provides details of personnel protection, air monitoring and particulate response levels, vapor emission response programs for the Site, and other health and safety protocols, procedures, and requirements. The RHASP will be implemented during all remediation, redevelopment, and future maintenance work.

7.0 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

7.1 Analytical Data

All pre-construction and post-construction endpoint samples collected during Site remediation and redevelopment activities will be analyzed using the most recent New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) at Severn Trent Laboratories, Inc. (STL), certified through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP). Analytical data for the endpoint samples will be submitted in ASP Category B data packages, including documentation of laboratory Quality Assurance/Quality Control (QA/QC) procedures that will provide legally defensible data in a court of law. The laboratory will maintain this certification for the duration of this Project. A Data Usability Summary Report (DUSR) will be prepared.

Waste characterization and petroleum delineation samples will be sent to STL. STL, a New Jersey Department of Environmental Protection (NJDEP)-certified laboratory, will meet the specific laboratory analytical protocols of New Jersey, where the receiving facilities are located. AKRF, Inc. will submit the appropriate materials to the NJDEP to certify that the samples were collected in an acceptable manner.

Sampling and decontamination will be conducted according to established Standard Operating Procedures (SOPs) provided in the Remedial Work Plan (RWP). Procedures for chain-of-custody (COC), laboratory instrumentation calibrations, laboratory analyses, reporting of data, internal quality control (QC), and corrective actions shall be followed as per NYSDEC ASP, and as per the laboratory’s Quality Assurance (QA) Plan. Where appropriate, trip blanks, field blanks, field duplicates, and matrix spike/matrix spike duplicate (MS/MSD) samples shall be collected at a rate of five percent (one sample per up to 20 samples) for endpoint samples, and will be used to assess the quality of the data.

8.0 NOTIFICATION AND REPORTING

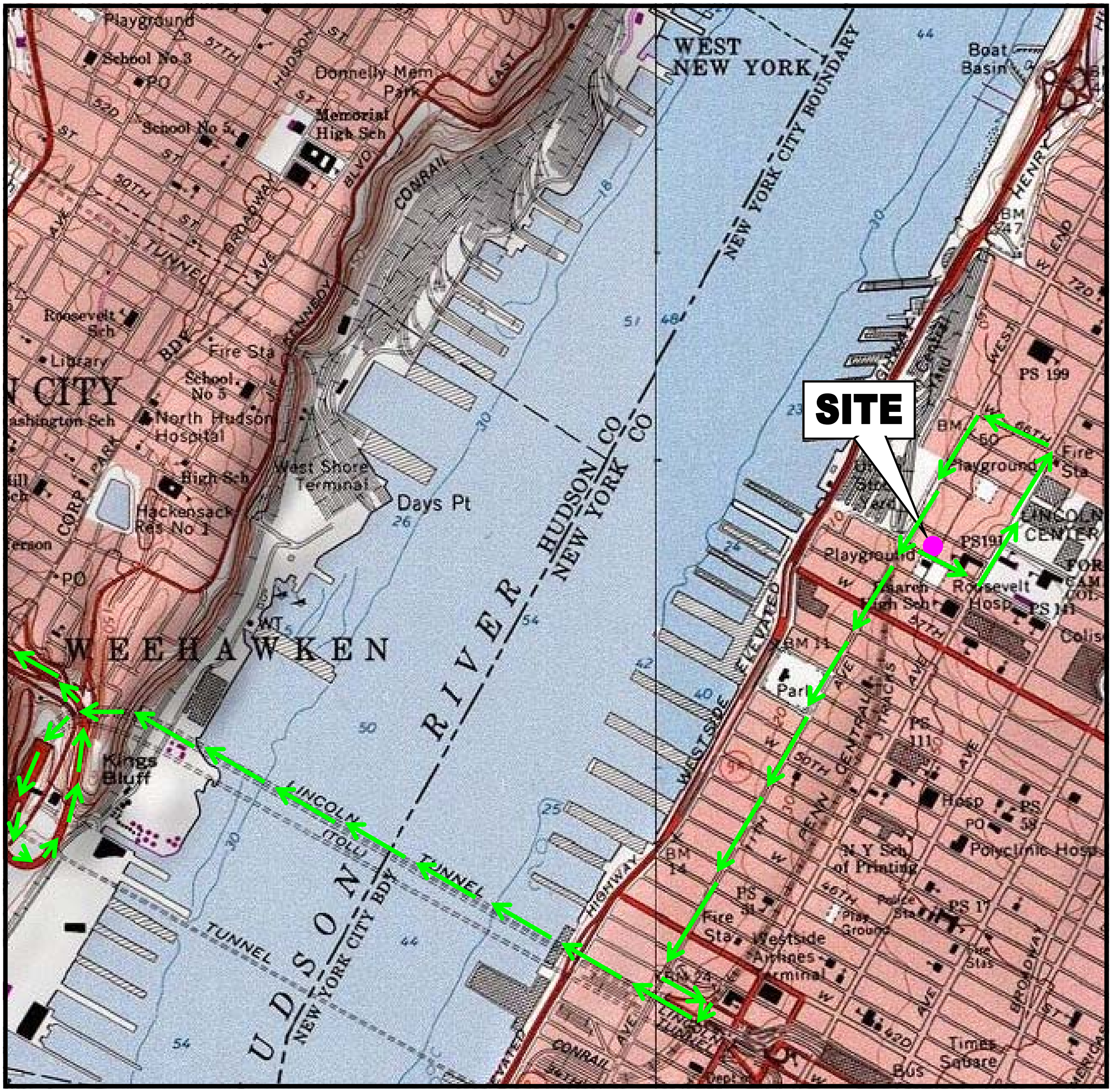
The following minimum notification and reporting requirements shall be followed by the developer prior to and following Site development, as appropriate:

- Prior to initiation of the remedial action, the developer will submit a Notice of Intent for Stormwater Discharge Associated with Construction Activity (General Permit #GP-02-01).
- The New York State Department of Environmental Conservation (NYSDEC) will be notified that sub-grade activities are being initiated a minimum of one week in advance of construction.
- A Final Remediation Report, stamped by a New York State-licensed Professional Engineer, will be prepared and submitted to the NYSDEC and New York State Department of Health (NYSDOH) no later than 90 days following completion of the soil remediation activities. A second report will be submitted no later than 90 days following completion of redevelopment activities to document soil management and installation of soil vapor barrier/collection systems.
- Prior to any discharge of construction water to the on-site sanitary sewer, an application for a discharge permit must be submitted to the appropriate parties.

Notification contacts are as follows:

Name	**Agency**	**Address**	**Telephone**
Mr. Dan Walsh	NYSDEC	Solid & Haz Waste – Reg. 2 1 Hunter's Point Plaza 47-40 21st Street Long Island City, NY 11101	718-482-4996
Mr. Shaminder Chawla	NYSDEC	Solid & Haz Waste – Reg. 2 1 Hunter's Point Plaza 47-40 21st Street Long Island City, NY 11101	718-482-4897
Mr. Joe Maloughney	NYSDEC	Div. of Env. Remediation 625 Broadway Albany, NY 12233	518-402-9564
Ms. Julia Guastella	NYSDOH	Div. of Env. Health River Street Troy, NY 12180	518-402-7880

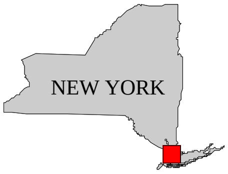
FIGURES



SCALE IN FEET

0’ 1000’ 2000’ 4000’

SCALE: 1”=2000’



QUADRANGLE

SOURCE:
USGS TOPOGRAPHIC MAP - CENTRAL PARK, N.Y.
QUADRANGLE - DATED 1966, PHOTOREVISED 1979

N

West 61st Street Site
New York, New York

HAUL ROUTE TO LINCOLN TUNNEL

AKRF, Inc.

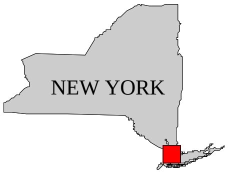
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
03.06.06

PROJECT No.
10321

FIGURE No.
1

2002 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\10321 - Algin Properties W. 60th St\Figures\Truck_Route_LT.pub



QUADRANGLE

SCALE IN FEET

0’ 1000’ 2000’ 4000’

SCALE: 1”=2000’

N

SOURCE:
USGS TOPOGRAPHIC MAP - CENTRAL PARK, N.Y.
QUADRANGLE - DATED 1966, PHOTOREVISED 1979

West 61st Street Site
New York, New York

HAUL ROUTE TO CROSS BRONX EXPRESSWAY AND GEORGE WASHINGTON BRIDGE

AKRF, Inc.

Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
03.07.06

PROJECT No.
10321

FIGURE No.
2

APPENDIX A
RESUMES OF ENVIRONMENTAL MONITORING PERSONNEL

MICHELLE LAPIN, P.E.

SENIOR VICE PRESIDENT

Michelle Lapin is a senior vice president with 20 years of experience in the assessment and remediation of hazardous waste issues. She leads the firm's Hazardous Materials group and offers more than a decade of experience providing strategic planning and management for clients. Ms. Lapin has been responsible for the administration of technical solutions to contaminated soil, groundwater, and geotechnical problems. Her other duties have included technical and report review, proposal writing, scheduling, budgeting, and acting as liaison between clients and regulatory agencies, and project coordination with federal, state, and local authorities.

Ms. Lapin's hydrogeologic experience includes performing groundwater investigations, and formulation and administration of groundwater monitoring programs in New York, New Jersey, Connecticut, New Hampshire, Massachusetts, Rhode Island, Virginia, and Maryland. Her experience with groundwater contamination includes Level B hazardous waste site investigations; execution of leaking underground storage tank studies, including hazardous soil removal and disposal; soil and water sampling; soil gas surveys; and wetlands issues. Ms. Lapin is experienced in coordinating and monitoring field programs concerning hazardous waste cell closures. She has directed numerous Phase I, Phase II, and Phase III investigations, many of them in conjunction with developers, law firms, lending institutions, and national retail chains. She is also experienced in the cleanup of contaminated properties under Brownfield Cleanup Program (BCP) regulations.

BACKGROUND

Education

B.S., Civil Engineering, Clarkson University, 1983

M.S., Civil Engineering, Syracuse University, 1985

Professional Registrations

New York State P.E.

State of Connecticut P.E.

Professional Memberships

Member, American Society of Professional Engineers (ASPE), National and CT Chapters

Member, American Society of Civil Engineers (ASCE), National and CT Chapters

Member, Connecticut Business & Industry Association (CBIA), CBIA Environmental Policies Council

Years of Experience

Year started in company: 1994

Year started in industry: 1984

RELEVANT EXPERIENCE

Hudson River Park, New York, NY

Ms. Lapin is directing AKRF's hazardous materials work during construction of Hudson River Park, a 5-mile linear park along Manhattan's West Side. As the Hudson River Park Trust's (HRPT's) environmental consultant, AKRF is overseeing preparation and implementation of additional soil and groundwater investigations (working with both

NYSDEC and NYCDEP), all health and safety activities, removal of both known underground storage tanks and those encountered during construction. Previously, the firm performed hazardous materials assessments as part of the Environmental Impact Statement (EIS) process, including extensive database and historical research, as well as soil and groundwater investigations. Ms. Lapin has been the senior consultant for the soil and groundwater investigations and remediation, and the asbestos investigations and abatement oversight.

Fiterman Hall Deconstruction and Decontamination Project, New York, NY

The 15-story Fiterman Hall building, located at 30 West Broadway between Barclay and Murray Streets, originally constructed as an office building in the 1950s, had served as an extension of the City University of New York (CUNY) Borough of Manhattan Community College (BMCC) since 1993. The building was severely damaged during the September 11, 2001, attack on the World Trade Center (WTC) when 7 WTC collapsed and struck the south façade of the building, resulting in the partial collapse of the southwest corner of the structure. The building was subsequently stabilized, with breaches closed and major debris removed, however extensive mold and WTC dust contaminants remain within the building, which must be taken down. The project requires the preparation of two EASs for the redevelopment of Fiterman Hall—one for the deconstruction and decontamination of the building and one for the construction of a replacement building on the site. AKRF is currently preparing the EAS for the Deconstruction and Decontamination project, which includes the decontamination of the interior and exterior of the building, the removal and disposal of all building contents, and the deconstruction of the existing, approximately 377,000-gross-square-foot partially collapsed structure. Ms. Lapin was the reviewer for the deconstruction and decontamination plans for the EAS. The cleanup plan is due to be submitted shortly to the U.S. Environmental Protection Agency; once approved, remediation work will begin, followed by the deconstruction and rebuilding of Fiterman.

Brooklyn Bridge Park, Brooklyn, NY

AKRF is preparing an EIS and providing technical and planning support services for Brooklyn Bridge Park, which will revitalize the 1.3-mile stretch of the East River waterfront between Jay Street on the north and Atlantic Avenue on the south. The new park, to be completed by 2010, would allow public access to the water's edge, allowing people to enjoy the spectacular views of the Manhattan skyline and New York Harbor. It would also provide an array of passive and active recreational opportunities, including lawns, pavilions, and a marina. As with many waterfront sites around New York City, the lands along the Brooklyn waterfront have a long history of industrial activities. Some of these industries used dangerous chemicals and generated toxic by-products that could have entered the soil and groundwater. In addition, landfilling activities along the shoreline also made use of ash and other waste materials from industrial processes. Based on site inspections and historical maps, government records, and other sources, AKRF is in the process of investigating the potential for the presence for hazardous materials in the park. This information will be compiled into a Phase 1 Environmental Site Assessment report. AKRF will also provide support to the design team related to designing the project to minimize costs related to remediating hazardous materials where possible. Ms. Lapin is serving as senior manager for the hazardous materials investigations, including procuring a Beneficial Use Determination (BUD) from the New York State Department of Environmental Conservation (NYSDEC) for the acceptance of fill materials to the site.

Columbia University Manhattanville Academic Mixed-Use Development, New York, NY

Ms. Lapin is serving as hazardous materials task leader on this EIS for approximately 4 million square feet of new academic, research and neighborhood uses to be constructed north of Columbia University's existing Morningside campus. The work has included Phase I Environmental Site Assessments for the properties within the site boundaries and estimates for upcoming investigation and remediation.

Albert Einstein College of Medicine Center for Genetic and Translational Medicine, Bronx, NY

Ms. Lapin directed the firm's hazardous materials work in connection with the construction a new Center for Genetics and Translational Medicine (CGTM) building on the Bronx campus of the Albert Einstein College of Medicine of Yeshiva University. The building is expected to be opened by 2006. AKRF prepared an

Environmental Assessment Statement (EAS) that examined such issues as land use, zoning, air quality, urban design and visual resources, hazardous materials, traffic, noise, and air quality. Ms. Lapin's work included analysis of the existing conditions and potential impacts that the construction could cause to the environment and human health.

Yonkers Waterfront Redevelopment Project, Yonkers, NY

For this redevelopment along Yonkers Hudson River waterfront, Ms. Lapin headed the remedial investigation and remediation work that included Phase I assessments of 12 parcels, investigations of underground storage tank removals and associated soil remediation, remedial alternatives reports, and remedial work plans for multiple parcels. Several of the city-owned parcels were remediated under a Voluntary Cleanup Agreement; others were administered with state Brownfields grants. Hazardous waste remediation was completed on both brownfield and voluntary clean-up parcels, and construction is underway for mixed-use retail, residential development, and parking.

Davids Island Site Investigations, New Rochelle, NY

Ms. Lapin managed the hazardous materials investigation of Davids Island, the largest undeveloped island on the Long Island Sound in Westchester County. The 80-acre island features pre- and post-Civil War military buildings and parade grounds, and is viewed as a major heritage, tourism, and recreational amenity. The island, formerly known as Fort Slocum, was used by the U.S. military, beginning in the 19th century, as an Army base, hospital, and training center. The island is planned for county park purposes. The investigation included a Phase I site assessment, with historical research going back to the 17th century, a Phase II subsurface investigation, underground storage tank investigations, and asbestos surveys of all remaining structures. Cost estimates were submitted to Westchester County for soil remediation, asbestos abatement, and building demolition.

Site Selection and Installation of 11 Turbine Generators, New York and Long Island, NY

AKRF was retained by the New York Power Authority (NYPA) to assist in the State Environmental Quality Review Act (SEQRA) review of the proposed siting, construction, and operation of 11 single-cycle gas turbine generators in the New York metropolitan area. Ms. Lapin managed the hazardous materials investigation of the sites. The work has included Phase I site assessments, subsurface investigations, and construction health and safety plans.

Cross Westchester (I-287) Expressway Phases V and VI, Westchester County, NY

For the New York State Department of Transportation (NYSDOT), Ms. Lapin served as project manager and was responsible for directing the contaminated materials aspect of the final design effort for the reconstruction of Westchester County's major east-west artery. As part of her duties, Ms. Lapin was responsible for managing the asbestos investigations at eight bridges and wetland delineation along the entire corridor, as well as writing the scope of work and general management of the project.

Shaw's Supermarket, New Fairfield, CT

AKRF is providing consulting services to the developer and owner of a 9-acre site included conducting a remedial investigation and remediation of a site contaminated from former dry cleaning operations and off-site gasoline spills. The investigation included the installation of monitoring wells in three distinct aquifers, geophysical logging, pump tests, and associated data analysis. Ms. Lapin presented the environmental issues and planned remediation to local and state officials during the early stages of the planning process to incorporate their comments into the final remedial design. A remedial action work plan (RAWP) was completed and approved by the Connecticut Department of Environmental Protection within a year to enable redevelopment work for a new supermarket and shopping center. The RAWP included the remediation of soils within the source area and a multi-well pump and treat system for the recovery of non-aqueous and dissolved phase contamination in groundwater. The design of the recovery well system included extensive groundwater modeling to ensure capture of the contaminant plume and the appropriate quantity and spacing of the wells. Ms. Lapin directed the soil removal remedial activities and monitoring for additional potential contamination during construction. In addition, AKRF performed comprehensive pre-demolition asbestos and lead-based paint surveys of the former site structures, and are continuing to provide environmental consulting support for the development of the site. Site development has been completed and a groundwater remediation system was installed during site development. The remediation system is successfully operating. The next phase of work includes and off-site study to determine whether the contamination plume has migrated from the site since area residents use groundwater as a source of drinking water. Ms. Lapin will continue to manage the project through the study and remediation phases.

East 75th/East 76th Street Site, New York, NY

Ms. Lapin served as senior manager for this project that encompassed coordination and direct remediation efforts of this former dry cleaning facility and parking garage prior to the sale of the property and its ultimate redevelopment for use as a private school. A preliminary site investigation identified 20 current and former petroleum and solvent tanks on the property. A soil and groundwater testing program was designed and implemented to identify the presence and extent of contamination resulting from potential tank spills. This investigation confirmed the presence of subsurface petroleum contamination in the soil and solvent contamination from former dry cleaning activities in the bedrock. AKRF completed oversight of the remediation under the State's Voluntary Cleanup Program. Remediation, consisting of tank removals and excavation of contaminated soil and the removal of solvent-contaminated bedrock down to 30 feet below grade, has been completed. AKRF completed oversight of the pre-treatment of groundwater prior to discharge to the municipal sewer system and is currently completing an off-site study to determine impacts to groundwater in downgradient locations.

Former Macy's Site, White Plains, NY

Ms. Lapin managed the pre-demolition work for Tishman Speyer. Work included a Phase I site assessment; subsurface investigation (Phase II), including the analysis of soil and groundwater samples for contamination; a comprehensive asbestos, lead paint, and PCB investigation; radon analysis; and coordination and oversight of the removal of hazardous materials left within the building from previous tenants. Work also included asbestos abatement specifications and specifications for the removal of two 10,000-gallon vaulted fuel-oil underground storage tanks.

Storage Deluxe, Various Locations, NY

Ms. Lapin manages the firm's ongoing work with Storage Deluxe, which includes Phase I and Phase II subsurface investigations, underground storage tank removals and associated remediation, asbestos surveys and abatement oversight, and contaminated soil removal and remediation for multiple sites in the Bronx, Brooklyn, Manhattan, Westchester County, and Long Island.

Home Depot, Various Locations, NY

Ms. Lapin, serving as either project manager or senior manager, has managed the investigations and remediation at multiple Home Depot sites in the five boroughs, Long Island, and Connecticut. The investigations have included Phase I and II site assessments, asbestos and lead paint surveys, abatement specifications and oversight, and soil and groundwater remediation.

Avalon on the Sound, New Rochelle, NY

For Avalon Bay Communities, Ms. Lapin is managing the investigations and remediation of two phases of this residential development, including two luxury residential towers and an associated parking garage. Remediation of the first phase of development (the first residential tower and the parking garage) included gasoline contamination from a former taxi facility, fuel oil contamination from multiple residential underground storage tanks, and chemical contamination from former on-site manufacturing facilities. The remediation and closure of the tank spills was coordinated with the New York State Department of Environmental Conservation (NYSDEC). The initial investigation of the Phase II development—an additional high-rise luxury residential building—detected petroleum contamination. A second investigation was conducted to delineate the extent of the contamination and estimate the costs for remediation. The remediation will be conducted in conjunction with the development plan.

Mill Basin, Gerritsen Inlet, and Paerdegat Basin Bridges, Final Design, Shore Parkway, Brooklyn, NY

Following the preparation of the GEIS for the Belt Parkway Bridges Project, the firm was retained for supplemental work during the final design phase of the project. This included NEPA and SEQRA documentation for three of the bridges—Mill Basin, Gerritsen Inlet, and Paerdegat Basin—which will be federally funded. Ms. Lapin managed the contaminated materials investigation that included a detailed subsurface contaminated materials assessment, both subaqueous and along the upland approaches.

NYSDOT Transportation Management Center (TMC), Hawthorne, NY

AKRF conducted environmental studies for the NYSDOT at the current troopers' headquarters in Hawthorne, NY. The property is the proposed site of a new Transportation Management Center. AKRF completed a comprehensive asbestos survey of the on-site building and prepared asbestos abatement specifications; performed a Phase I site assessment; conducted an eletromagnetic (EM) survey that located two fuel oil underground storage tanks, and developed removal specifications for the two underground storage tanks and an aboveground storage tank.

Metro-North Railroad Poughkeepsie Intermodal Station/Parking Improvement Project, Poughkeepsie, NY

Ms. Lapin served as project manager of the hazardous materials investigation in connection with AKRF's provision of planning and environmental services for parking improvement projects at this station along the Hudson Line. The project included an approximately 600-space garage, additional surface parking, and an intermodal station to facilitate bus, taxi, and kiss-and-ride movements. Ms. Lapin conducted Phase I and II contaminated materials assessments and worked with the archaeologists to locate an historical roundhouse/turntable.

Metro-North Railroad Golden's Bridge Station Parking Project, Westchester County, New York

For Metro-North Railroad, Ms. Lapin managed a Phase I Environmental Site Assessment of a property that has since become the new parking area, used by the existing Golden's Bridge train station. Ms. Lapin also conducted a subsurface (Phase II) investigation of the original parking area, track area, and existing platform for the potential impact of moving tracks in the siding area to extend the existing parking area and adding an access from a proposed overhead walkway (connecting the train station to the new parking area). The study also included an assessment for lead-based paint and asbestos on the platform structures.

RICHARD A. GARDINEER, P.E.

TECHNICAL DIRECTOR

Richard A. Gardineer, P.E., is a technical director who specializes in the assessment and remediation of hazardous and non-hazardous waste facilities. Phase I and Phase II Environmental Assessments, Brownfield site investigations/remediations, landfill closures, and waste classification/handling are Mr. Gardineer's primary areas of responsibility at AKRF. He conducts environmental assessments and investigations that include analyses of waste material, soil, groundwater, surface water, sub-surface soil gas, and indoor air. These investigations typically involve communication with federal, state, and city agencies, including the New York State Department of Conservation (NYSDEC), New York State Department of Health (NYSDOH), the U.S. Environmental Protection Agency (USEPA), the New York City Department of Environmental Protection (NYCDEP), and the New York City Department of Health (NYCDOH).

Prior to joining AKRF, Mr. Gardineer worked as a regulator in the three solid and hazardous waste management programs of NYSDEC for more than 25 years. Mr. Gardineer worked in Region 3 (Lower Hudson Valley) for 16 years as a program supervisor regulating landfills, construction and demolition debris disposal sites, and RCRA C hazardous waste facilities; he also investigated inactive hazardous waste disposal sites under the State Superfund. Mr. Gardineer then served as the Regional Remediation Engineer in the Region 2 New York City Office for 9 years. Mr. Gardineer managed the Environmental Remediation Program, which regulated the investigation and cleanup of hazardous waste, hazardous substances, and petroleum contaminated sites. During Mr. Gardineer's tenure in Region 2, five of the New York City's largest landfills were investigated and/or closed through the State Superfund Grant Program, the Brownfields Program (Voluntary Cleanup) was initiated in New York City, and numerous petroleum contaminated sites were investigated and cleaned up. Throughout his career, Mr. Gardineer has testified as a witness for New York State in a number of legal actions to close illegal landfills, to remediate hazardous waste sites, and to recover funds under the State Superfund.

BACKGROUND

Education

Bachelor of Engineering in Civil Engineering, New York University, 1970

Master of Science in Civil Engineering, New York University, 1973

Professional Certifications

Professional Engineer, licensed in New York State

Years of Experience

Year started in company: 2005

Year started in industry: 1977

RELEVANT EXPERIENCE

Closure of New York City Landfills Under EQBA, Various Locations, NY

Mr. Gardineer and his staff regulated the closure of the Brookfield Avenue, Edgemere, and Pelham Bay Landfills under the Environmental Quality Bond Act of 1986. Activities for each of these inactive hazardous waste landfills included the negotiation/monitoring of the State Assistance Contract, the review/ approval of the Remedial

Investigation Work Plan and Report, the review/approval of the proposed remedy, the preparation of the Proposed Remedial Action Work Plan and the Record of Decision, the preparation of Fact Sheets, the review/approval of the Remedial contract., the review/approval of the Operation and Maintenance Plan, and the participation at public meetings involving the landfill.

New York City School Construction Authority (SCA), Long Island City, NY

Mr. Gardineer's primary duty as a consultant to the SCA was to determine the suitability of potential sites for use as public schools. His activities included reviewing/revising Phase I Environmental Site Assessments, proposed Phase II Scopes of Work, Phase II Environmental Site Assessments, Brownfields Remedial Investigative Work Plans, Indoor Air Quality Studies, remedial contact specifications, and waste disposal plans. Consultation was provided to the SCA regarding specific measures necessary to make each site suitable for use as a school.

Brownfields Program (Voluntary Cleanup), Various Locations, NY

Mr. Gardineer and his staff reviewed plans to clean up and reuse numerous sites in New York City under the Voluntary Cleanup Program. Notable sites included St. George Ballpark in Staten Island (NY Yankee Class A team), the Pfizer Pharmaceutical site in Brooklyn, Queens West Development, Home Depot in Rego Park, Queens, Outlet City in Queens, Sports Authority in Queens, Nassau Metals on Staten Island, and Visy Paper in Staten Island. Mr. Gardineer made a presentation on the Visy Paper site at the Brownfields 2000 Conference in Atlantic City. Activities included the negotiation of the BCP agreement, the review/approval of the Remedial Investigation Work Plan and report, the review/approval of the Remedial Action plan, the review and issuance of Fact Sheets, the recommendation of institutional controls, the review/approval of the Operation and Maintenance Plan, and participation in public meetings.

Inactive Hazardous Waste Disposal Sites (State Superfund Program), Various Locations, NY

Mr. Gardineer supervised the investigation and cleanup of inactive hazardous waste (Superfund) sites in New York City. Activities included supervising and/or participating in environmental sampling efforts at suspected sites, negotiation of Consent Orders, scoping and review of Phase I and Phase II Site Investigations, negotiation and review of Remedial Investigations and Feasibility Studies, preparation of Proposed Remedial Action Plans (PRAPs) and Records of Decision, preparation of Fact Sheets, communications with public officials and participation at public meetings. Notable sites handled in this program included Amtrak Sunnyside yard in Queens, Phelps Dodge in Queens, Arden Woods in Staten Island, Princes Bay in Staten Island, Standard Motor Products in Queens, and the Arthur Kill Generating Station in Staten Island.

Landfill Closure Region 3, Various Locations, NY

Mr. Gardineer managed staff activities leading to the orderly closure of non-complying landfills, construction and demolition debris disposal sites, and other solid waste management facilities in the Lower Hudson Valley (NYSDEC Region 3). Activities included landfill inspections, taking environmental samples (leachate, groundwater, and soil gas), negotiating Consent Orders, and review of closure plans. Mr. Gardineer participated in negotiations with Towns in Dutchess and Ulster Counties to allow for the orderly closure of non-complying landfills in concert with the implementation of the each County's Solid Waste Management Plans. Notable landfills closed during Mr. Gardineer's tenure in Region 3 included landfills operated by the Towns of Clarkstown, Ramapo, and Haverstraw in Rockland County, the Orange County Landfill, and portions of the Al Turi Landfill in Orange County.

Construction and Demolition Debris Disposal Sites, Various Locations, NY

Mr. Gardineer supervised staff in the investigation and closure of numerous non-complying construction and demolition debris disposal sites in the Lower Hudson Valley. Activities included site inspections, the taking of environmental samples (waste material, leachate, groundwater, soil gas), participation in enforcement action, review of closure plans, and supervision of landfill capping.

Solid Waste Management Plans

Mr. Gardineer supervised staff and participated in activities involving the review/approval of Solid Waste Management Plans submitted by six of the seven counties in Region 3. Activities included pre-submission meetings with the counties, scoping the plans, review/approval of the plans, and participation at public meetings.

Part 360 Solid Waste Management Applications

Mr. Gardineer supervised staff and participated in activities involving sanitary landfills, ashfills, construction and demolition debris landfills, resource recovery facilities, transfer stations and composting facility applications for sites in the Lower Hudson River Valley. Mr. Gardineer supervised his staff in the technical review of the applications, participation at permit hearings, preparation of permit conditions, and review of construction certification. Mr. Gardineer has expertise in NYCRR Part 360 (Solid Waste Management Facilities), Part 617 (State Environmental Quality Review Act), and Part 621 (Uniform procedures Act). Notable projects included the Al Turi Landfill, the Orange County Landfill, the Ramapo Landfill, the Westchester County (Sprout Brook) Ashfill (expansion), the Westchester County material Recovery Facility, and the Dutchess County Resource Recovery Facility.

Expert Witness

Mr. Gardineer testified as an expert and fact witness at NYSDEC permit and enforcement hearings, civil litigation in State and Federal Court, Superfund cost recovery cases, and criminal trials. Notable civil litigation cases included the *State of New York v. Town of Ramapo*, *State of New York v. Dow Chemical*, *State of New York v. Frank Sacco* (Tuxedo C+D site), *State of New York v. Thomas Prisco*, and the *State of New York v. Town of Haverstraw.*

FREDA PONCE

GEOLOGIST

Freda Ponce is a geologist with 2 years experience working in environmental consulting. Her current work at AKRF Inc. involves Phase I and Phase II environmental site assessments (ESA). Her Phase II technical expertise involves; soil and groundwater contamination delineation via soil borings and groundwater monitoring, installation and development of groundwater monitoring wells, hazardous soil removal and disposal, soil gas surveys and sampling, and low-flow groundwater sampling. Her hydrogeologic experience includes 72 hour permeability pump tests, and modeling of groundwater contamination plumes using the GMS 4.0 groundwater modeling program. She is also proficient in the use of ArcView GIS to map and model various environmental field data.

Prior to joining AKRF, Ms. Ponce worked for a Hydrogeological consulting firm in Millburn, New Jersey as junior geologist.

BACKGROUND

Education

B.S., Geology, City College of New York 2001

Certifications

40 Hour Hazardous Waste Operations Site Worker 2001

New York State-Licensed Asbestos Inspector 2004

NYC Department of Buildings Inspector License 2004

Years of Experience

Year started in company: 2004

Year started in industry: 2001

RELEVANT EXPERIENCE

Yankees Stadium Site, Phase II, Bronx, NY

Ms. Ponce completed a Phase II subsurface investigation for this property currently in the CEQR process to allow for redevelopment of the site. Ms. Ponce's work included; a geophysical survey, advancement of soil borings installation of groundwater monitoring wells, analysis of analytical laboratory data, and preparation of a subsurface investigation report.

Avalon Phase II, New Rochelle, NY

Ms. Ponce completed a Phase II subsurface investigation for this property to allow for redevelopment of the site. Ms. Ponce's work included; advancement of soil borings, installation of groundwater monitoring wells, analysis of analytical laboratory data, and preparation of a subsurface investigation report. Ms. Ponce was also involved with the oversight of sub-contractors during excavation of contaminated soil at the subject site.

West 61st Phase II, New York, NY

Ms. Ponce completed a Phase II subsurface investigation for this property currently in the Brownfields cleanup program to allow for redevelopment of the site. Ms. Ponce's work included; a geophysical survey, installation and sampling of soil borings and groundwater monitoring wells, installation and sampling of soil gas wells, analysis of analytical laboratory data, and preparation of a subsurface investigation report for submission to applicable regulatory agencies.

325-329 West Broadway, New York, NY

Ms. Ponce conducted a Phase I Environmental Site Assessment in accordance with ASTM E-1527-00 related to the redevelopment of this site. Ms. Ponce coordinated with clients, property owners, and tenants to conduct the site inspection, historical research, regulatory records review, and prepare the Phase I report. Ms. Ponce also completed a Phase II subsurface investigation for this property which included; advancement of soil borings, sampling of groundwater, analysis of analytical laboratory data, and preparation of a subsurface investigation report.

CE Flushing Site, Flushing, NY

Ms. Ponce is serving on a team conducting a Phase II investigation of a large PCB-contaminated former utility property in Flushing, Queens. She has completed field work for several soil boring installations in the contaminant delineation phase of the project.

Queens West, Long Island City, NY

Ms. Ponce conducted field work for a supplemental remedial investigation at this former Blau Gas manufacturing facility on a portion of the Queens West Development site in Long Island City. The work is being conducted as part of a Voluntary Cleanup Agreement with the NYSDEC. Field work activities have included soil borings, and monitoring well sampling. Ms. Ponce also prepared a Supplemental Remedial Investigation Workplan, Health and Safety Plan, and Quality Assurance Protection Plan for further field activities related to be conducted at the project site.

201-205 Saw Mill River Road, Millwood, NY

Ms. Ponce completed a Phase II subsurface investigation for this property to allow for commercial redevelopment of the site. Ms. Ponce's work included the advancement of soil borings, sampling of monitoring wells, analysis of analytical laboratory data, and preparation of a subsurface investigation report.

Zerega Avenue EAS, Bronx, NY

Ms. Ponce completed a subsurface investigation for this property under NYCDEP guidance, to allow for commercial redevelopment of the site. Ms. Ponce's work included the installation and sampling of soil borings, excavation of test pits, installation and sampling of temporary groundwater monitoring wells, soil gas sampling, analysis of field data and laboratory analytical data, and preparation of a subsurface investigation report.

Columbia University Manhattanville Development, New York, NY

As part of the New York City CEQR process, Ms. Ponce conducted a Phase I Environmental Site Assessment in accordance with ASTM E-1527-00 related to the development of approximately 4 million square feet of new academic, research and neighborhood uses to be constructed north of Columbia University's existing Morningside location. Ms. Ponce coordinated with clients, property owners, and tenants to conduct the site inspection, historical research, regulatory records review, and prepare the Phase I report.

27-06 43Rd Avenue, Long Island City, NY

As part of the New York City CEQR process, Ms. Ponce conducted a Phase I Environmental Site Assessment in accordance with ASTM E-1527-00 related to the development of an e-designated site located in Long Island City, New York. Ms. Ponce coordinated with clients, property owners, and tenants to conduct the site inspection, historical research, regulatory records review, and prepare the Phase I report.

312 Warburton Avenue, Yonkers, NY

Ms. Ponce conducted a Phase I Environmental Site Assessment in accordance with ASTM E-1527-00 related to the redevelopment of a site located in along the Yonkers, New York. Ms. Ponce coordinated with clients, property owners, and tenants to conduct the site inspection, historical research, regulatory records review, and prepare the Phase I report.

K. Hovnanian's Four Seasons at Hamptonburgh, Town of Hamptonburgh, NY

Ms. Ponce assisted in writing a groundwater resources chapter as well as a soils, geology, and topography chapter as part of a Draft Environmental Impact Statement (DEIS) for a residential development in the Town of Hamptonburgh, New York. The EIS was conducted in accordance with the State Environmental Quality Review Act and was currently submitted for review by the Town of Hamptonburgh.

JESSICA LEBER

ENVIRONMENTAL SCIENTIST

Since joining AKRF, Ms. Leber has performed Phase I and Phase II environmental site assessments, remediation oversight, and other hazardous material investigations. She has previous experience in laboratory work and data review, and recently graduated with a degree in environmental chemistry from Columbia University.

BACKGROUND

Education

B.A., Environmental Chemistry, Columbia University, 2004

Professional Registrations

40 Hour Hazardous Waste Operations Site Worker, 2004 - Current

New York State-Licensed Asbestos Inspector, 2004 - Current

Professional Memberships

Member, American Chemical Society, 2004-2005

Years experience

With this firm: 1

With other firms: 0

RELEVANT EXPERIENCE

Queens West Development, Long Island City, NY

Ms. Leber conducted investigation activities at a Brownfields Cleanup Program site on a portion of the Queens West Development site in Long Island City. She has supervised ongoing remediation activities including the excavation of contaminated soil within a containment structure, removal of storage tanks, and health and safety and community air monitoring.

Brooklyn Arena/Atlantic Yards Development, Brooklyn, NY

As part of the New York City CEQR process, Ms. Leber served on a team of Hazmat staff conducting Phase I Environmental Site Assessments related to the potential development of eight city blocks for the Atlantic Yards Arena. Ms. Leber is preparing the hazardous materials analysis for the Environmental Impact Statement and will eventually compose the Construction Phase Health and Safety Plan for this project.

CE Flushing Site, Flushing, NY

Ms. Leber is serving on a team conducting an investigation and remediation of a large PCB-contaminated former utility property in Flushing, Queens. She has completed several hundred soil boring installations in the contaminant delineation phase of the project and has aided in preparing documents for the site's transfer from the State Voluntary Cleanup Program to the State Brownfield Cleanup Program.

329 Gold Street, Brooklyn, NY

Ms. Leber prepared the Department of Environmental Protection approved sampling protocol for a Phase II subsurface investigation on a site with auto-related uses undergoing conversion to a high rise structure. Ms. Leber is coordinating and conducting the implementation of this sampling protocol.

APPENDIX F
WATERPROOFING/VAPOR BARRIER TECHNICAL SPECIFICATION AND INFORMATION SHEETS

www.graceconstruction.com

Below Grade Waterproofing

PRODUCT INFORMATION

Bituthene® System 4000

Self-adhesive HDPE waterproofing membrane with super tacky compound for use with patented, water-based System 4000 Surface Conditioner

Advantages

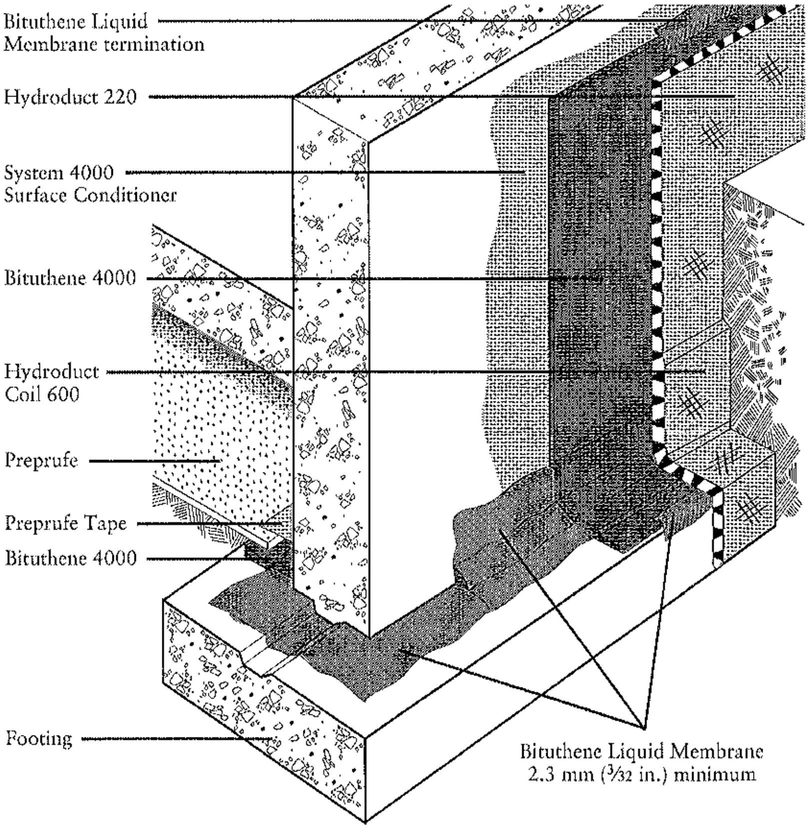
- **Excellent adhesion** – special adhesive compound engineered to work with high tack System 4000 Surface Conditioner
- **Cold applied** – simple application to substrates, especially at low temperatures
- **Reduced inventory and handling costs** – System 4000 Surface Conditioner is included with each roll of membrane
- **Wide application temperature range** – excellent bond to self and substrate from -4°C (25°F) and above
- **Overlap security** – minimizes margin for error under site conditions
- **Cross laminated, high density polyethylene carrier film** – provides high tear strength, puncture and impact resistance
- **Flexible** – accommodates minor structural movements and will bridge shrinkage cracks
- **RIPCORD®** – this Split Release on Demand feature allows the splitting of the membrane into two (2) pieces for ease of installation in detailed areas

Description

Bituthene® System 4000 is a 1.5 mm (1/16 in.) flexible, pre-formed waterproof membrane which combines a high performance, cross laminated, HDPE carrier film with a unique, super tacky, self-adhesive rubberized asphalt compound.

System 4000 Surface Conditioner is a unique, water-based, latex surface treatment which imparts an aggressive, high tack finish to the treated substrate. It is specifically formulated to bind site dust and concrete efflorescence, thereby providing a suitable surface for the Bituthene System 4000 Waterproofing Membrane.

Conveniently packaged in each roll of membrane, System 4000 Surface Conditioner promotes good initial adhesion and, more importantly, excellent permanent adhesion of the Bituthene System 4000 Waterproofing Membrane.



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The VOC (Volatile Organic Compound) content of this product is 125 g/L.

Architectural and Industrial Maintenance Regulations limit the VOC content in products classified as Architectural Coatings. Refer to Technical Letters at www.graceconstruction.com for most current list of allowable limits.

Use

Bituthene is ideal for waterproofing concrete, masonry and wood surfaces where in-service temperatures will not exceed 57°C (135°F). It can be applied to foundation walls, tunnels, earth sheltered structures and split slab construction, both above and below grade. (For above grade applications, see "Above Grade Waterproofing Bituthene System 4000.")

Bituthene is 1.5 mm (1/16 in.) thick, 0.9 m (3 ft) wide and 20 m (66.7 ft) long and is supplied in rolls. It is unrolled sticky side down onto concrete slabs or applied onto vertical concrete faces primed with System 4000 Surface Conditioner. Continuity is achieved by overlapping a minimum 50 mm (2 in.) and firmly rolling the joint.

Bituthene is extremely flexible. It is capable of bridging shrinkage cracks in the concrete and will accommodate minor differential movement throughout the service life of the structure.

Application Procedures

Safety, Storage and Handling Information

Bituthene products must be handled properly. Vapors from solvent-based primers and mastic are harmful and flammable. For these products, the best available information on safe handling, storage, personal protection, health and environmental considerations has been gathered. Material Safety Data Sheets (MSDS) are available at www.graceconstruction.com and users should acquaint themselves with this information. Carefully read detailed precaution statements on product labels and the MSDS before use.

Surface Preparation

Surfaces should be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Concrete must be properly dried (minimum 7 days for normal structural concrete and 14 days for lightweight structural concrete).

If time is critical, Bituthene Primer B2 may be used to allow priming and installation of membrane on damp surfaces or green concrete. Priming may begin in this case as soon as the concrete will maintain structural integrity. Use form release agents which will not transfer to the concrete. Remove forms as soon as possible from below horizontal slabs to prevent entrapment of excess moisture. Excess moisture may lead to blistering of the membrane. Cure concrete with clear, resin-based curing compounds which do not contain oil, wax or pigment. Except with Primer B2, allow concrete to thoroughly dry following rain. Do not apply any products to frozen concrete.

Repair defects such as spalled or poorly consolidated areas. Remove sharp protrusions and form match lines. On masonry surfaces, apply a parge coat to rough concrete block and brick walls or trowel cut mortar joints flush to the face of the concrete blocks.

Temperature

- Apply Bituthene System 4000 Membrane and Conditioner only in dry weather and when air and surface temperatures are -4°C (25°F) or above.
- Apply Bituthene Primer B2 in dry weather above -4°C (25°F). (See separate product information sheet.)

Conditioning

Bituthene System 4000 Surface Conditioner is ready to use and can be applied by spray or roller. For best results, use a pump-type air sprayer with fan tip nozzle, like the Bituthene System 4000 Surface Conditioner Sprayer, to apply the surface conditioner.

Apply Bituthene System 4000 Surface Conditioner to clean, dry, frost-free surfaces at a coverage rate of 7.4 m^2/L (300 ft^2/gal). Coverage should be uniform. Surface conditioner should not be applied so heavily that it puddles or runs. **Do not apply conditioner to Bituthene membrane.**

Allow Bituthene System 4000 Surface Conditioner to dry one hour or until substrate returns to its original color. At low temperatures or in high humidity conditions, dry time may be longer.

Bituthene System 4000 Surface Conditioner is clear when dry and may be slightly tacky. In general, conditioning should be limited to what can be covered within 24 hours. In situations where long dry times may prevail, substrates may be conditioned in advance. Substrates should be reconditioned if significant dirt or dust accumulates.

Before surface conditioner dries, tools should be cleaned with water. After surface conditioner dries, tools should be cleaned with mineral spirits. Mineral spirits is a combustible liquid which should be used only in accordance with manufacturer's recommendations. **Do not use solvents to clean hands or skin.**

Corner Details

The treatment of corners varies depending on the location of the corner. For detailed information on Bituthene Liquid Membrane, see separate product information sheet.

- At wall to footing inside corners –

  Option 1: Apply membrane to within 25 mm (1 in.) of base of wall. Treat the inside corner by installing a 20 mm (¾ in.) fillet of Bituthene Liquid Membrane. Extend Bituthene Liquid Membrane at least 65 mm (2½ in.) onto footing, and 65 mm (2½ in.) onto wall membrane.

  Option 2: Treat the inside corner by installing a 20 mm (¾ in.) fillet of Bituthene Liquid Membrane. Apply 300 mm (12 in.) wide strip of sheet membrane centered over fillet. Apply wall membrane over inside corner and extend 150 mm (6 in.) onto footing. Apply 25 mm (1 in.) wide troweling of Bituthene Liquid Membrane over all terminations and seams within 300 mm (12 in.) of corner.
- At footings where the elevation of the floor slab is 150 mm (6 in.) or more above the footing, treat the inside corner either by the above two methods or terminate the membrane at the base of the wall. Seal the termination with Bituthene Liquid Membrane.

Joints

Properly seal all joints with waterstop, joint filler and sealant as required. Bituthene membranes are not intended to function as the primary joint seal. Allow sealants to fully cure. Pre-strip all slab and wall cracks over 1.5 mm (1⁄16 in.) wide and all construction and control joints with 230 mm (9 in.) wide sheet membrane strip.

Application on Horizontal Surfaces

(Note: Preprufe® pre-applied membranes are strongly recommended for below slab or for any application where the membrane is applied before concreting. See Preprufe product information sheets.)

Apply membrane from the low point to the high point so that laps shed water. Overlap all seams at least 50 mm (2 in.). Stagger all end laps. Roll the entire membrane firmly and completely as soon as possible. Use a linoleum roller or standard water-filled garden roller less than 760 mm (30 in.) wide, weighing a minimum of 34 kg (75 lbs) when filled. Cover the face of the roller with a resilient material such as a 13 mm (½ in.) plastic foam or two wraps of indoor-outdoor carpet to allow the membrane to fully contact the primed substrate. Seal all T-joints and membrane terminations with Bituthene Liquid Membrane at the end of the day.

Protrusions and Drains

Apply membrane to within 25 mm (1 in.) of the base of the protrusion. Apply Bituthene Liquid Membrane 2.5 mm (0.1 in.) thick around protrusion. Bituthene Liquid Membrane should extend over the membrane a minimum of 65 mm (2½ in.) and up the penetration to just below the finished height of the wearing course.

Vertical Surfaces

Apply membrane in lengths up to 2.5 m (8 ft). Overlap all seams at least 50 mm (2 in.). On higher walls apply membrane in two or more sections with the upper overlapping the lower by at least 50 mm (2 in.). Roll all membrane with a hand roller.

Terminate the membrane at grade level. Press the membrane firmly to the wall with the butt end of a hardwood tool such as a hammer handle or secure into a reglet. Failure to use heavy pressure at terminations can result in a poor seal. A termination bar may be used to ensure a tight seal. Terminate the membrane at the base of the wall if the bottom of the interior floor slab is at least 150 mm (6 in.) above the footing. Otherwise, use appropriate inside corner detail where the wall and footing meet.

Membrane Repairs

Patch tears and inadequately lapped seams with membrane. Clean membrane with a damp cloth and dry. Slit fishmouths and repair with a patch extending 150 mm (6 in.) in all directions from the slit and seal edges of the patch with Bituthene Liquid Membrane. Inspect the membrane thoroughly before covering and make any repairs.

Drainage

Hydroduct® drainage composites are recommended for both active drainage and protection of the membrane. See Hydroduct product information sheets.

Protection of Membrane

Protect Bituthene membranes to avoid damage from other trades, construction materials or backfill. Place protection immediately in temperatures above 25°C (77°F) to avoid potential for blisters.

- On vertical applications, use Hydroduct 220 Drainage Composite. Adhere Hydroduct 220 Drainage Composite to membrane with Hydroduct Tape. Alternative methods of protection are to use 25 mm (1 in.) expanded polystyrene or 6 mm (¼ in.) extruded polystyrene that has a minimum compressive strength of 55 kN/m^2 (8 lbs/in.^{2}). Such alternatives do not provide positive drainage to the system. If 6 mm (¼ in.) extruded polystyrene protection board is used, backfill should not contain sharp rock or aggregate over 50 mm (2 in.) in diameter. Adhere polystyrene protection board with Hydroduct Tape.
- In mud slab waterproofing, or other applications where positive drainage is not desired and where reinforced concrete slabs are placed over the membrane, the use of 6 mm (¼ in.) hardboard or 2 layers of 3 mm (⅛ in.) hardboard is recommended.

Insulation

Always apply Bituthene membrane directly to primed or conditioned structural substrates. Insulation, if used, must be applied over the membrane. Do not apply Bituthene membranes over lightweight insulating concrete.

Backfill

Place backfill as soon as possible. Use care during backfill operation to avoid damage to the waterproofing system. Follow generally accepted practices for backfilling and compaction. Backfill should be added and compacted in 150 mm (6 in.) to 300 mm (12 in.) lifts.

For areas which cannot be fully compacted, a termination bar is recommended across the top termination of the membrane.

System 4000 Surface Conditioner Sprayer

The Bituthene System 4000 Surface Conditioner Sprayer is a professional grade, polyethylene, pump-type, compressed air sprayer with a brass fan tip nozzle. It has a 7.6 L (2 gal) capacity. The nozzle orifice and spray pattern have been specifically engineered for the optimum application of Bituthene System 4000 Surface Conditioner.

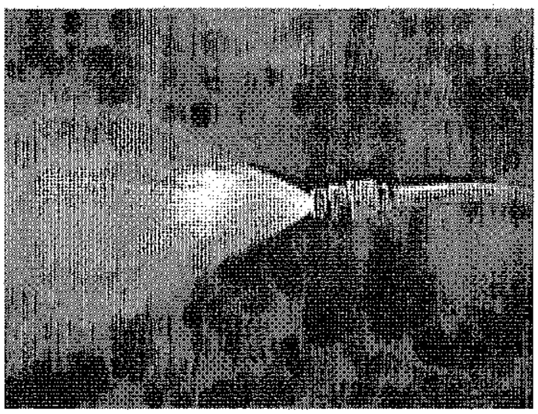
Hold nozzle 450 mm (18 in.) from substrate and squeeze handle to spray. Spray in a sweeping motion until substrate is uniformly covered.

Sprayer should be repressurized by pumping as needed. For best results, sprayer should be maintained at high pressure during spraying.

To release pressure, invert the sprayer and spray until all compressed air is released.

Maintenance

The Bituthene System 4000 Surface Conditioner Sprayer should perform without trouble for an extended period if maintained properly.



Sprayer should not be used to store Bituthene System 4000 Surface Conditioner. The sprayer should be flushed with clean water immediately after spraying. For breaks in the spray operation of one hour or less, invert the sprayer and squeeze the spray handle until only air comes from the nozzle. This will avoid clogging.

Should the sprayer need repairs or parts, call the maintenance telephone number on the sprayer tank (800-323-0620).

Supply

Bituthene System 4000	0.9 m x 20 m roll (18.6 m²) 3 ft x 66.7 ft (200 ft²)
Roll weight	38 kg (83 lbs) gross
Palletization	25 rolls per pallet
Storage	Store upright in dry conditions below +35°C (95°F).
System 4000 Surface Conditioner	1 x 2.3 L (0.625 gal) bottle in each roll of System 4000 Membrane
Ancillary Products	
Surface Conditioner Sprayer	7.6 L (2 gal) capacity professional grade sprayer with specially engineered nozzle
Bituthene Liquid Membrane	5.7 L (1.5 gal) pail/125 pails per pallet or 15.1 L (4 gal) pail/ 48 pails per pallet
Hydroduct Tape	2.5 cm x 61.0 m (1 in. x 200 ft) roll/6 rolls per carton
Bituthene Mastic	12 – 0.9 L (30 oz) tubes/carton or 18.9 L (5 gal) pail/36 pails per pallet
Complementary Material	
Hydroduct	See separate data sheets
Equipment by others:	Soft broom, utility knife, brush or roller for priming

Placing Steel

When placing steel over properly protected membrane, use concrete bar supports (dobies) or chairs with plastic tips or rolled feet to prevent damage from sharp edges. Use special care when using wire mesh, especially if the mesh is curled.

Approvals

- City of Los Angeles Research Report RR 24386
- U.S. Department of Housing and Urban Development (HUD) HUD Materials Release 628E

Warranty

Five year material warranties covering Bituthene and Hydroduct products are available upon request. Contact your Grace sales representative for details.

Technical Services

Support is provided by full time, technically trained Grace representatives and technical service personnel, backed by a central research and development staff.

Physical Properties for Bituthene 4000 Membrane

Property	Typical Value	Test Method
Color	Dark gray-black	
Thickness	1.5 mm ($\frac{1}{16}$ in.) nominal	ASTM D3767 – method A
Flexibility, 180° bend over 25 mm (1 in.) mandrel at -32°C (-25°F)	Unaffected	ASTM D1970
Tensile strength, membrane, die C	2240 kPa (325 lbs/in.^{2}) minimum	ASTM D412 modified[1]
Tensile strength, film	34.5 MPa (5,000 lbs/in.^{2}) minimum	ASTM D882 modified[1]
Elongation, ultimate failure of rubberized asphalt	300% minimum	ASTM D412 modified[1]
Crack cycling at -32°C (-25°F), 100 cycles	Unaffected	ASTM C836
Lap adhesion at minimum application temperature	880 N/m (5 lbs/in.)	ASTM D1876 modified[2]
Peel strength	1576 N/m (9 lbs/in.)	ASTM D903 modified[3]
Puncture resistance, membrane	222 N (50 lbs) minimum	ASTM E154
Resistance to hydrostatic head	70 m (210 ft) of water	ASTM D5385
Permeance	2.9 ng/m^{2}sPa (0.05 perms) maximum	ASTM E96, section 12 – water method
Water absorption	0.1% maximum	ASTM D570

Footnotes:

1. The test is run at a rate of 50 mm (2 in.) per minute.
2. The test is conducted 15 minutes after the lap is formed and run at a rate of 50 mm (2 in.) per minute at 5°C (40°F).
3. The 180° peel strength is run at a rate of 300 mm (12 in.) per minute.

Physical Properties for System 4000 Surface Conditioner

Property	Typical Value
Solvent type	Water
Flash point	>60°C (>140°F)
VOC* content	125 g/L
Application temperature	-4°C (25°F) and above
Freeze thaw stability	5 cycles (minimum)
Freezing point (as packaged)	-10°C (14°F)
Dry time (hours)	1 hour**

* Volatile Organic Compound

** Dry time will vary with weather conditions

For Technical Assistance call toll free at 866-333-3SBM (3726).

Visit our web sites at www.graceconstruction.com

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BIT-220E Printed in USA 3/06 FA/LI/4M

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Section 07135
Pre-applied Integrally Bonded Sheet Membrane Waterproofing

PART 1 — GENERAL

1.01 SUMMARY

A. The Work of this Section includes, but is not limited to, pre-applied sheet membrane waterproofing that forms an integral bond to poured concrete for the following applications:

1. Vertical Applications: Membrane applied against soil retention system prior to placement of concrete foundation walls;
2. Horizontal Applications: Membrane applied on prepared subbase prior to placement of concrete slabs.

B. Related sections include, but are not limited to, the following:

1. Section 02200 – Earthwork
2. Section 02350 – Piles and Caissons
3. Section 03100 – Concrete Formwork
4. Section 03300R – Cast-In-Place Concrete

NOTE TO SPECIFIER: For vertical applications, coordinate with concrete formwork section to require one-sided wall forming system to minimize punctures to the sheet membrane waterproofing during formwork installation.

1.02 SUBMITTALS

A. Submit manufacturer’s product data, installation instructions and membrane samples for approval.

1.03 REFERENCE STANDARDS

A. The following standards and publications are applicable to the extent referenced in the text.

B. American Society for Testing and Materials (ASTM):

C 836	Standard Specification for High Solids, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course
D 412	Standard Test Methods for Rubber Properties in Tension
D 570	Standard Test Method for Water Absorption of Plastics
D 903	Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
D 1434	Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting
D 1876	Standard Test Method for Peel Release of Adhesives (T-Peel)
D 1970	Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection

D 3767	Standard Practice for Rubber - Measurements of Dimensions
D 5385	Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes
E 96	Standard Test Methods for Water Vapor Transmission of Materials
E 154	Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover

1.04 QUALITY ASSURANCE

A. Manufacturer: Sheet membrane waterproofing system shall be manufactured and marketed by a firm with a minimum of 20 years experience in the production and sales of sheet membrane waterproofing. Manufacturers proposed for use but not named in these specifications shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past 5 years.

B. Installer: A firm which has at least 3 years experience in work of the type required by this section.

C. Materials: For each type of material required for the work of this section, provide primary materials which are the products of one manufacturer.

D. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details and flashing.

E. Schedule Coordination: Schedule work such that membrane will not be left exposed to weather for longer than that recommended by the manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer’s instructions. Protect from damage from weather, excessive temperature and construction operations. Remove and dispose of damaged material in accordance with applicable regulations.

1.06 PROJECT CONDITIONS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials used. Proceed with installation only when the substrate construction and preparation work is complete and in condition to receive sheet membrane waterproofing.

1.07 WARRANTY

A. Sheet Membrane Waterproofing: Provide written five year material warranty issued by the membrane manufacturer upon completion of work.

PART 2 — PRODUCTS

2.01 MATERIALS

A. Pre-applied Integrally Bonded Sheet Waterproofing Membrane: Preprufe® 300R Membrane by Grace Construction Products, a 1.2mm (0.046 in) nominal thickness composite sheet membrane comprising 0.8 mm (0.030 in.) of high density polyethylene film, and layers of specially formulated synthetic adhesive layers. The membrane shall form an integral and permanent bond to poured concrete to prevent water migration at the interface of the membrane and structural concrete. Provide membrane with the following physical properties:

PHYSICAL PROPERTIES FOR PREPRUFE 300R MEMBRANE:

Property	Test Method	Typical Value
Color		White
Thickness	ASTM D 3767 Method A	1.2 mm (0.046 in.) nominal
Low Temperature Flexibility	ASTM D 1970	Unaffected at -23°C (-10°F)
Elongation	ASTM D 412 Modified[1]	>300%
Crack Cycling at -23°C (-10°F), 100 Cycles	ASTM C 836	Unaffected
Tensile Strength, Film	ASTM D 412	27.6 MPa (4,000 lbs/in.^{2}) minimum
Peel Adhesion to Concrete	ASTM D 903 Modified[2]	880 N/m (5.0 lbs/in.)
Lap Adhesion	ASTM D 1876 Modified[3]	440 N/m (2.5 lbs/in.)
Resistance to Hydrostatic Head	ASTM D 5385 Modified[4]	>70 m (231 ft)
Puncture Resistance	ASTM E 154	990 N (180 lbs) minimum
Permeance	ASTM E 96 Method B	<0.6 ng/m^{2}sPa (0.01 perms)
Water Absorption	ASTM D 570	<0.5%

Footnotes:

1. *Elongation of membrane is run at a rate of 50 mm (2 in.) per minute.*
2. *Concrete is cast against the protective coating surface of the membrane and allowed to cure (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 50 mm (2 in.) per minute at room temperature.*
3. *The test is conducted 15 minutes after the lap is formed as per manufacturer's instructions and run at a rate of 50 mm (2 in.) per minute at -4°C (25°F).*
4. *Hydrostatic head tests are performed by casting concrete against the membrane with a lap. Before the concrete sets a 3 mm (0.125 in.) spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to a head of 70 m (231 ft) of water which is the limit of the apparatus.*

.

B. Pre-applied Integrally Bonded Sheet Waterproofing Membrane: Preprufe® 160R Membrane by Grace Construction Products, a 1.0mm (0.032 in) nominal thickness composite sheet membrane comprising 0.4 mm (0.016 in.) of high density polyethylene film, and layers of specially formulated synthetic adhesive layers. The membrane shall form an integral and permanent bond to poured concrete to prevent water migration at the interface of the membrane and structural concrete. Provide membrane with the following physical properties:

PHYSICAL PROPERTIES FOR PREPRUFE 160R MEMBRANE:

Property	Test Method	Typical Value
Color		White
Thickness	ASTM D 3767 Method A	1.0 mm (0.032 in.) nominal
Low Temperature Flexibility	ASTM D 1970	Unaffected at -23°C (-10°F)
Elongation	ASTM D 412 Modified[1]	>300%
Crack Cycling at -23°C (-10°F), 100 Cycles	ASTM C 836	Unaffected
Tensile Strength, Film	ASTM D 412	27.6 MPa (4,000 lbs/in.^{2})
Peel Adhesion to Concrete	ASTM D 903 Modified[2]	880 N/m (5.0 lbs/in.)
Lap Adhesion	ASTM D 1876 Modified[3]	440 N/m (2.5 lbs/in.)
Resistance to Hydrostatic Head	ASTM D 5385 Modified[4]	>70 m (231 ft)
Puncture Resistance	ASTM E 154	445 N (100 lbs)
Permeance	ASTM E 96 Method B	<0.6 ng/m^{2}sPa (0.01 perms)
Water Absorption	ASTM D 570	<0.5%

Footnotes:

1. *Elongation of membrane is run at a rate of 50 mm (2 in.) per minute.*
2. *Concrete is cast against the protective coating surface of the membrane and allowed to cure (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 50 mm (2 in.) per minute at room temperature.*
3. *The test is conducted 15 minutes after the lap is formed as per manufacturer's instructions and run at a rate of 50 mm (2 in.) per minute at -4°C (25°F).*
4. *Hydrostatic head tests are performed by casting concrete against the membrane with a lap. Before the concrete sets a 3 mm (0.125 in.) spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to a head of 70 m (231 ft) of water which is the limit of the apparatus.*

PART 3 — EXECUTION

3.01 EXECUTION

A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the Contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 INSTALLATION, VERTICAL APPLICATIONS

A. Substrates shall be smooth and sound. Suitable substrates include Hydroduct® Drainage Composites by Grace Construction Products or plywood.

B. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:

1. Apply membrane with the HDPE film facing the prepared soil retention system (wood lagging, sheet piling, gunite, shotcrete, etc.). Remove the release liner and fasten membrane along uncoated edge to Hydroduct drainage composite with large head nails or to plywood with large head nails or staples.
2. Apply succeeding sheets by overlapping the previous sheet 75 mm (3 in.) along the uncoated edge of the membrane. Side laps must be firmly rolled to ensure a tight seal.
3. Overlap the ends of the membrane 75 mm (3 in.). Apply Preprufe® Tape centered over the end lap and roll firmly to ensure a tight seal. Remove release liner.

3.03 INSTALLATION, HORIZONTAL APPLICATIONS

A. Earth and stone substrates shall be well compacted to produce an even, solid substrate. Remove loose aggregate or sharp protrusions. Concrete substrates shall be smooth or broom finished and monolithic. Fill gaps or voids greater than 13 mm (0.5 in.). Remove standing water prior to membrane applications.

B. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:

  1. Apply membrane with the HDPE film facing the prepared substrate. Remove the release liner during application.
  2. Apply succeeding sheets by overlapping the previous sheet 75 mm (3 in.) along the uncoated edge of the membrane. Lap area must be firmly rolled to ensure a tight seal.
  3. Overlap the ends of the membrane a minimum of 75 mm (3 in.) and apply Preprufe® Tape centered over the lap and roll firmly to ensure a tight seal.

3.04 PROTECTION

A. Protect membrane in accordance with manufacturer's recommendations until placement of concrete. Inspect for damage just prior to placement of concrete and make repairs in accordance with manufacturer's recommendations.

END OF SECTION

W.R. Grace & Co.-Conn. 62 Whittemore Avenue Cambridge, MA 02140

Section 07135
Sheet Membrane Waterproofing

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All of the Contract Documents, including General and Supplementary Conditions and Division 1 General Requirements, apply to the work of this section.

1.02 SUMMARY

A. The work of this section includes, but is not limited to, the following:

1. Rubberized asphalt sheet membrane waterproofing system
2. Prefabricated drainage composite
3. Protection board

B. Related Sections: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:

1. Section 02710 - Drainage Composites
2. Section 02712 - Subsurface Drainage Pipe
3. Section 03300 - Cast-In-Place Concrete
4. Section 04200 - Unit Masonry
5. Section 05810 - Expansion Joint Cover Assemblies
6. Section 07150 - Dampproofing
7. Section 07600 - Flashing and Sheet Metal
8. Section 07900 - Joint Sealers
9. Section 15400 - Drains

1.03 REFERENCE STANDARDS

A. The following standards and publications are applicable to the extent referenced in the text.

B. American Society for Testing and Materials (ASTM)

C 836 Standard Specification for High Solids, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course

D 412 Standard Test Methods for Rubber Properties in Tension

D 570 Standard Test Method for Water Absorption of Plastics

D 882 Standard Test Methods for Tensile Properties of Thin Plastic Sheeting

D 903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds

D 1876 Standard Test Method for Peel Release of Adhesives (T-Peel)

D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection

D 3767 Standard Practice for Rubber - Measurements of Dimensions

D 5385 Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes

E 96 Standard Test Methods for Water Vapor Transmission of Materials

E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's product data, installation instructions, use limitations and recommendations. Include certification of data indicating VOC (Volatile Organic Compound) content of all components of waterproofing system.

B. Samples: Submit representative samples of the following for approval:

1. Sheet membrane

2. Protection board

3. Prefabricated drainage composite

1.05 QUALITY ASSURANCE

A. Manufacturer: Sheet membrane waterproofing system shall be manufactured and marketed by a firm with a minimum of 20 years experience in the production and sales of self-adhesive sheet membrane waterproofing. Manufacturers proposed for use but not named in these specifications shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past 5 years.

B. Installer: A firm which has at least 3 years experience in work of the type required by this section.

C. Materials: For each type of material required for the work of this section, provide primary materials which are the products of one manufacturer.

D. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details and flashing.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver materials and products in labeled packages. Store and handle in strict compliance with manufacturer's instructions, recommendations and material safety data sheets. Protect from damage from sunlight, weather, excessive temperatures and construction operations. Remove damaged material from the site and dispose of in accordance with applicable regulations.

1. Do not double-stack pallets of membrane on the job site. Provide cover on top and all sides, allowing for adequate ventilation.

2. Protect mastic and adhesive from moisture and potential sources of ignition.

3. Store drainage composite or protection board flat and off the ground. Provide cover on top and all sides.

4. Protect surface conditioner from freezing.

B. Sequence deliveries to avoid delays, but minimize on-site storage.

1.07 PROJECT CONDITIONS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.

B. Proceed with installation only when substrate construction and preparation work is complete and in condition to receive sheet membrane waterproofing.

1.08 WARRANTY

A. Sheet Membrane Waterproofing: Provide written 5 year material warranty issued by the membrane manufacturer upon completion of the work.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Sheet Membrane Waterproofing System: Bituthene® System 4000 Membrane by Grace Construction Products; a self-adhesive, cold-applied composite sheet consisting of a thickness of 1.4 mm (0.056 in.) of rubberized asphalt and 0.1 mm (0.004 in.) of cross-laminated, high density polyethylene film specially formulated for use with water-based surface conditioner. Provide rubberized asphalt membrane covered with a release sheet which is removed during installation. No special adhesive or heat shall be required to form laps.

B. Sheet Membrane Waterproofing

PHYSICAL PROPERTIES FOR BITUTHENE SYSTEM 4000 MEMBRANE:

Property
Test Method
Typical Value

Color

Dark gray-black

Thickness
ASTM D 3767 Method A
1.5 mm (0.060 in.) nominal

Flexibility, 180° bend over
25 mm (1 in.) mandrel at
-43°C (-45°F)
ASTM D 1970
Unaffected

Tensile Strength, Membrane
Die C
ASTM D 412 Modified1
2240 kPa (325 lbs/in.2) minimum

Tensile Strength, Film
ASTM D 882 Modified1
34.5 MPa (5,000 lbs/in.2) minimum

Elongation, Ultimate Failure of Rubberized Asphalt
ASTM D 412 Modified1
300% minimum

Crack Cycling at -32°C (-25°F), 100 Cycles
ASTM C 836
Unaffected

Lap Adhesion at Minimum Application Temperature
ASTM D 1876 Modified2
880 N/m (5 lbs/in.)

Peel Strength
ASTM D 903 Modified3
1576 N/m (9 lbs/in.)

Puncture Resistance, Membrane
ASTM E 154
222 N (50 lbs) minimum

Resistance to Hydrostatic Head
ASTM D 5385
70 m (231 ft) of water

Permeance

ASTM E 96,
Section 12 - Water Method
2.9 ng/m2sPa
(0.05 perms) maximum

Water Absorption
ASTM D 570
0.1% maximum

Footnotes:
1. The test is run at a rate of 50 mm (2 in.) per minute.
2. The test is conducted 15 minutes after the lap is formed and run at a rate of 50 mm (2 in.) per minute at -4°C (25°F).
3. The 180° peel strength is run at a rate of 300 mm (12 in.) per minute.

C. Prefabricated Drainage Composite: (Hydroduct® 220) (Hydroduct® 660) Drainage Composite by Grace Construction Products. Drainage Composite shall be designed to promote positive drainage while serving as a protection course.

NOTE TO SPECIFIER: The following are product selection guidelines for Hydroduct Drainage Composites. Consult the "Product Summary" and "System Components" section of the Waterproofing Systems Manual North American Edition for complete information. Hydroduct 220: All vertical applications. Hydroduct 660: All horizontal applications. THE APPROPRIATE HYDRODUCT DRAINAGE COMPOSITE MAY ALSO SERVE AS PROTECTION FOR ALL BITUTHENE MEMBRANES.

D. Protection Board:

1. Expanded Polystyrene Protection Board: 25 mm (1 in.) thick for vertical applications with the following characteristics. Adhere to waterproofing membrane with Bituthene Protection Board Adhesive.

   Normal Density: 16 kg/m3 (1.0 lb/ft3)

   Thermal Conductivity, K factor: 0.24 at 5°C (40°F), 0.26 at 24°C (75°F)

   Thermal Resistance, R-Value: 4 per 25 mm (1 in.) of thickness.

2. Asphalt Hardboard: A premolded semi-rigid protection board consisting of bitumen, mineral core and reinforcement. Provide 3 mm (0.125 in.) thick hardboard on horizontal surfaces not receiving steel reinforced slab. Where steel reinforcing bars are to be used, apply two layers of 3 mm (0.125 in.) thick hardboard or one layer of 6 mm (0.25 in.) thick hardboard.

E. Miscellaneous Materials: Surface conditioner, mastic, liquid membrane, tape and accessories specified or acceptable to manufacturer of sheet membrane waterproofing.

PART 3 - EXECUTION

3.01 EXAMINATION

A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 PREPARATION OF SUBSTRATES

A. Refer to manufacturer's literature for requirements for preparation of substrates. Surfaces shall be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods which are acceptable to manufacturer of sheet membrane waterproofing.

B. Cast-In-Place Concrete Substrates:

1. Do not proceed with installation until concrete has properly cured and dried
(minimum 7 days for normal structural concrete and minimum 14 days for lightweight structural concrete).

NOTE TO SPECIFIER: If time is critical Bituthene® Primer B2 may be used to allow priming and installation of membrane sooner than 7 days. Priming may begin in this case as soon as the concrete will maintain structural integrity.

2. Fill form tie rod holes with concrete and finish flush with surrounding surface.

3. Repair bugholes over 13 mm (0.5 in.) in length and 6 mm (0.25 in.) deep and finish flush with surrounding surface.

4. Remove scaling to sound, unaffected concrete and repair exposed area.

5. Grind irregular construction joints to suitable flush surface.

C. Masonry Substrates: Apply waterproofing over concrete block and brick with smooth trowel-cut mortar joints or parge coat.

D. Wood Substrates: Apply waterproofing membrane over securely fastened sound surface. All joints and fasteners shall be flush to create a smooth surface.

E. Related Materials: Treat joints and install flashing as recommended by waterproofing manufacturer.

3.03 INSTALLATION

A. Refer to manufacturer's literature for recommendations on installation, including but not limited to, the following:

1. Apply surface conditioner at rate recommended by manufacturer. Recoat areas not waterproofed if contaminated by dust. Mask and protect adjoining exposed finish surfaces to protect those surfaces from excessive application of surface conditioner.

2. Delay application of membrane until surface conditioner is completely dry. Dry time will vary with weather conditions.

3. Seal daily terminations with troweled bead of mastic.

4. Apply protection board and related materials in accordance with manufacturer's recommendations.

3.04 CLEANING AND PROTECTION

A. Remove any masking materials after installation. Clean any stains on materials which would be exposed in the completed work.

B. Protect completed membrane waterproofing from subsequent construction activities as recommended by manufacturer.

www.graceconstruction.com

Below Grade Waterproofing

PRODUCT INFORMATION

Preprufe® 300R & 160R

Pre-applied waterproofing membranes that bond integrally to poured concrete for use below slabs or behind basement walls on confined sites.

Advantages

- **Forms a unique continuous adhesive bond to concrete poured against it** – prevents water migration and makes it unaffected by ground settlement beneath slabs
- **Fully-adhered watertight laps** and detailing
- **Provides a barrier to water, moisture and gas** – physically isolates the structure from the surrounding ground
- **BBA Certified** for basement Grades 2, 3, & 4 to BS 8102:1990
- **Zero permeance** to moisture
- **Solar reflective** – reduced temperature gain
- **Simple and quick to install** – requiring no priming or fillets
- **Can be applied to permanent formwork** – allows maximum use of confined sites
- **Self protecting** – can be trafficked immediately after application and ready for immediate placing of reinforcement
- **Unaffected by wet conditions** – cannot activate prematurely
- **Inherently waterproof, non-reactive system:**
    - not reliant on confining pressures or hydration
    - unaffected by freeze/thaw, wet/dry cycling
- **Chemical resistant** – effective in most types of soils and waters, protects structure from salt or sulphate attack

Description

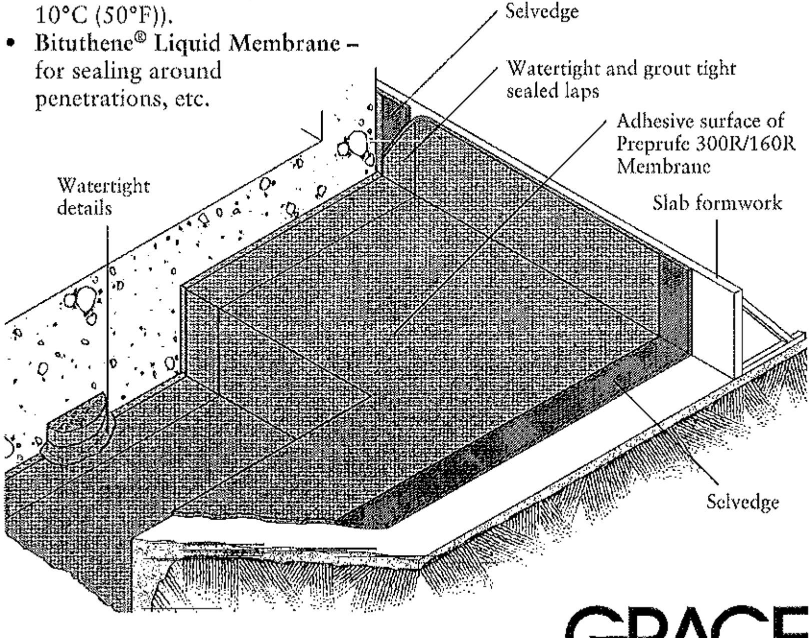
Preprufe® 300R & 160R membranes are unique composite sheets comprising a thick HDPE film, an aggressive pressure sensitive adhesive and a weather resistant protective coating. Unlike conventional non-adhering membranes, which are vulnerable to water ingress tracking between the unbonded membrane and structure, the unique Preprufe bond to concrete prevents ingress or migration of water around the structure.

The Preprufe R System includes:

- **Preprufe 300R** – heavy-duty grade for use below slabs and on rafts (i.e. mud slabs). Designed to accept the placing of heavy reinforcement using conventional concrete spacers.
- **Preprufe 160R** – thinner grade for blindside, zero property line applications against soil retention systems.
- **Preprufe Tape LT** – for covering cut edges, roll ends, penetrations and detailing (temperatures between -4°C (25°F) and +30°C (86°F)).
- **Preprufe Tape HC** – as above for use in Hot Climates (minimum 10°C (50°F)).
- **Bituthene® Liquid Membrane** – for sealing around penetrations, etc.

Preprufe 300R & 160R membranes are applied either horizontally to smooth prepared concrete, carton forms or well rolled and compacted sand or crushed stone substrate; or vertically to permanent formwork or adjoining structures. Concrete is then cast directly against the adhesive side of the membranes. The specially developed Preprufe adhesive layers work together to form a continuous and integral seal to the structure.

Preprufe can be returned up the inside face of slab formwork but is not recommended for conventional twin-sided formwork on walls, etc. Use Bituthene self-adhesive membrane or Procor® fluid applied membrane to walls after removal of formwork for a fully bonded system to all structural surfaces.



BBA BRITISH BOARD OF AGREMENT
CERTIFICATE No. 97/3326

GRACE
Construction Products

Installation

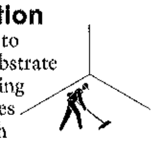
The most current application instructions, detail drawings and technical letters can be viewed at www.graceconstruction.com. Technical letters are provided for the following subjects to assist in the installation of Preprufe:

- Chemical Resistance
- Minimizing Concrete Shrinkage and Curling
- Rebar Chairs on Preprufe 300R Membrane
- Removal of Formwork Placed Against Preprufe Membranes
- Winter Lap Sealing and the use of Preprufe Tape LT

For other technical information contact your local Grace representative.

Preprufe 300R & 160R membranes are supplied in rolls 1.2 m (4 ft) wide, with a selvedge on one side to provide self-adhered laps for continuity between rolls. The rolls of Preprufe Membrane and Preprufe Tape are interwound with a disposable plastic release liner which must be removed before placing reinforcement and concrete.

Substrate Preparation



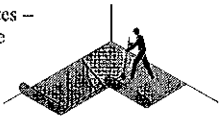
All surfaces – It is essential to create a sound and solid substrate to eliminate movement during the concrete pour. Substrates must be regular and smooth with no gaps or voids greater than 12 mm (0.5 in.). Grout around all penetrations such as utility conduits, etc. for stability.

Horizontal – The substrate must be free of loose aggregate and sharp protrusions. Avoid curved or rounded substrates. The surface does not need to be dry, but standing water must be removed.

Vertical – Use concrete, plywood, insulation or other approved facing to sheet piling to provide support to the membrane. Board systems such as timber lagging must be close butted to provide support and not more than 12 mm (0.5 in.) out of alignment.

Membrane Installation

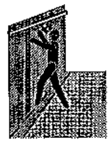
Preprufe can be applied at temperatures of -4°C (25°F) or above. When installing Preprufe in cold or marginal weather conditions <13°C (55°F) the use of Preprufe Tape LT is recommended at all laps and detailing. Preprufe Tape LT should be applied to clean, dry surfaces and the release liner must be removed immediately after application.



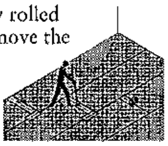
Horizontal substrates – Place the membrane HDPE film side to the substrate with the clear plastic release liner facing towards the concrete pour. End laps should be staggered to avoid a build up of layers. Leave plastic release liner in position until overlap procedure is completed.

Accurately position succeeding sheets to overlap the previous sheet 75 mm (3 in.) along the marked selvedge. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Peel back the plastic release liner from between the overlaps as the two layers are bonded together. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller. Completely remove the plastic liner to expose the protective coating. Any initial tack will quickly disappear.

Refer to Grace Tech Letters for information on suitable rebar chairs for Preprufe.

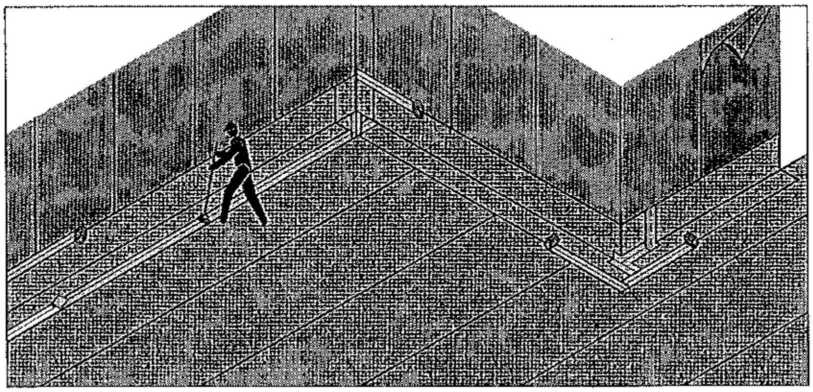


Vertical substrates – Mechanically fasten the membrane vertically using fasteners appropriate to the substrate with the the clear plastic release liner facing towards the concrete pour. The membrane may be installed in any convenient length. Secure the top of the membrane using a batten such as a termination bar or similar 50 mm (2 in.) below the top edge. Fastening can be made through the selvedge so that the membrane lays flat and allows firmly rolled overlaps. Immediately remove the plastic release liner. Any additional fasteners must be covered with a patch of Preprufe Tape.



Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Roll firmly to ensure a watertight seal.

Roll ends and cut edges – Overlap all roll ends and cut edges by a minimum 75 mm (3 in.) and ensure the area is clean and free from contamination, wiping with a damp cloth if necessary. Allow to dry and apply Preprufe Tape LT (or HC in hot climates) centered over the lap and roll firmly. Immediately remove printed plastic release liner from the tape.



Details

Refer to Preprufe Field Application Manual, Section V Application Instructions or visit www.graceconstruction.com. This Manual gives comprehensive guidance and standard details for:

- internal and external corners
- penetrations
- tiebacks
- columns
- grade beam pilecaps
- tie-ins
- terminations

Membrane Repair

Inspect the membrane before installation of reinforcement steel, formwork and final placement of concrete. The membrane can be easily cleaned by jet washing if required. Repair damage by wiping the area with a damp cloth to ensure the area is clean and free from dust, and allow to dry. Repair small punctures (12 mm (0.5 in.) or less) and slices by applying Preprufe Tape centered over the damaged area and roll firmly. Remove the release liner from the tape. Repair holes and large punctures by applying a patch of Preprufe membrane, which extends 150 mm (6 in.) beyond the damaged area. Seal all edges of the patch with Preprufe Tape, remove the release liner from the tape and roll firmly. Any areas of damaged adhesive should be covered with Preprufe Tape. Remove printed plastic release liner from tape. Where exposed selvedge has lost adhesion or laps have not been sealed, ensure the area is clean and dry and cover with fresh Preprufe Tape, rolling firmly. Alternatively, use a hot air gun or similar to activate adhesive and firmly roll lap to achieve continuity.

Pouring of Concrete

Ensure the plastic release liner is removed from all areas of Preprufe R Membrane and Tape.

It is recommended that concrete be poured within 56 days (42 days in hot climates) of application of the membrane. Concrete must be placed and compacted carefully to avoid damage to the membrane. Never use a sharp object to consolidate the concrete.

Removal of Formwork

Preprufe membranes can be applied to removable formwork, such as slab perimeters, elevator and lift pits, etc. Once the concrete is poured the formwork must remain in place until the concrete has gained sufficient compressive strength to develop the surface bond. Preprufe membranes are not recommended for conventional twin-sided wall forming systems.

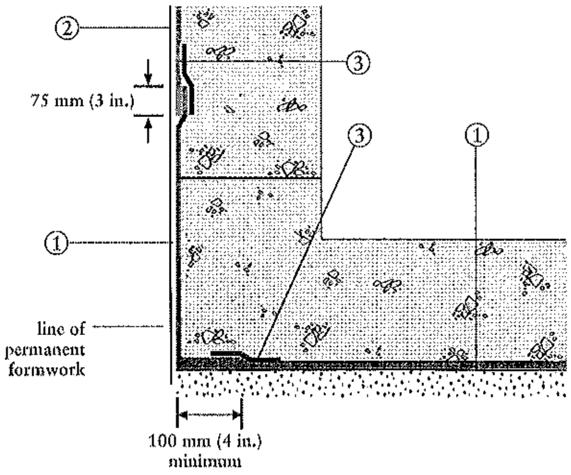
A minimum concrete compressive strength of 10 N/mm^2 (1500 psi) is recommended prior to stripping formwork supporting Preprufe membranes. Premature stripping may result in displacement of the membrane and/or spalling of the concrete.

As a guide, to reach the minimum compressive strength stated above, a structural concrete mix with an ultimate strength of 40 N/mm^2 (6000 psi) will typically require a cure time of approximately 6 days at an average ambient temperature of -4°C (25°F), or 2 days at 21°C (70°F).

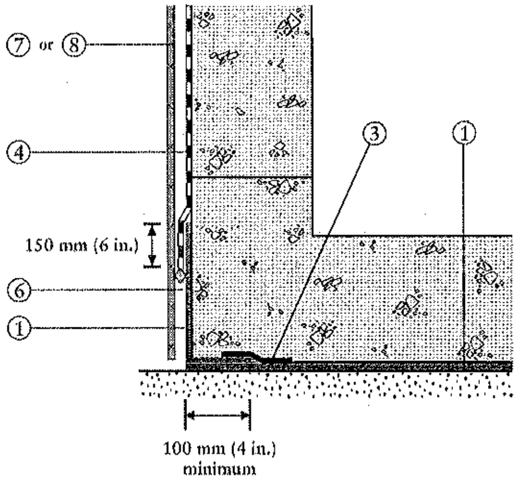
Detail Drawings

Details shown are typical illustrations and not working details. For a list of the most current details, visit us at www.graceconstruction.com. For technical assistance with detailing and problem solving please call toll free at 866-333-3SBM (3726).

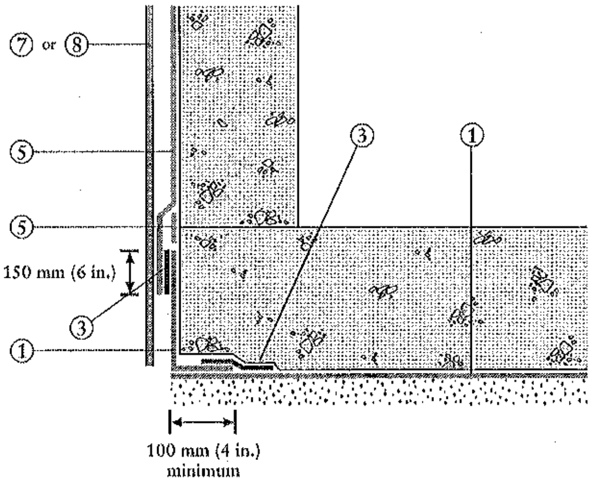
Wall base detail against permanent shutter



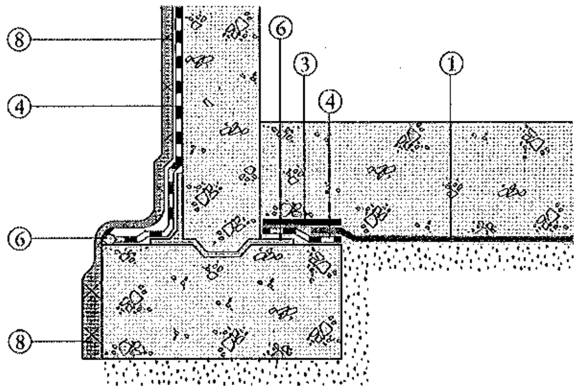
Bituthene wall base detail (Option 1)



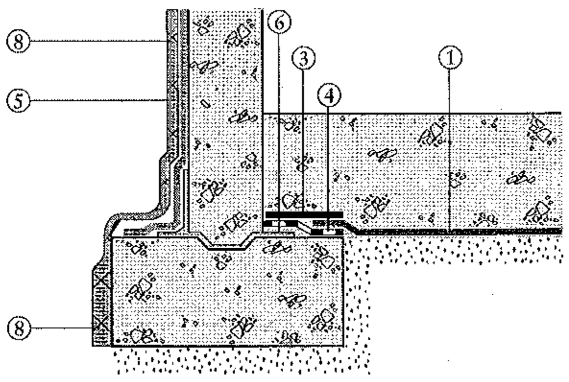
Procor wall base detail (Option 1)



Bituthene wall base detail (Option 2)



Procor wall base detail (Option 2)



1 Preprufe 300R
2 Preprufe 160R
3 Preprufe Tape
4 Bituthene
5 Procor
6 Bituthene Liquid Membrane
7 Protection
8 Hydroduct®

Supply

Dimensions (Nominal)	Preprufe 300R Membrane	Preprufe 160R Membrane	Preprufe Tape (LT or HC*)
Thickness	1.2 mm (0.046 in.)	0.8 mm (0.032 in.)	
Roll size	1.2 m x 30 m (4 ft x 98 ft)	1.2 m x 35 m (4 ft x 115 ft)	100 mm x 15 m (4 in. x 49 ft)
Roll area	36 m^2 (392 ft^2)	42 in^2 (460 ft^2)	
Roll weight	50 kg (108 lbs)	42 kg (92 lbs)	2 kg (4.3 lbs)
Minimum side/end laps	75 mm (3 in.)	75 mm (3 in.)	75 mm (3 in.)

*LT denotes Low Temperature (between -4°C (25°F) and +30°C (86°F))
HC denotes Hot Climate (>+10°C (50°F))

Ancillary Products

Bituthene Liquid Membrane – 5.7 liter (1.5 US gal) or 15.1 liter (4 US gal)

Physical Properties

Property	Typical Value 300R	Typical Value 160R	Test Method
Color	white	white	
Thickness	1.2 mm (0.046 in.) nominal	0.8 mm (0.032 in.) nominal	ASTM D3767
Low temperature flexibility	Unaffected at -23°C (-10°F)	Unaffected at -23°C (-10°F)	ASTM D1970
Resistance to hydrostatic head, minimum	70 m (231 ft)	70 m (231 ft)	ASTM D5385, modified[1]
Elongation, minimum	300%	300%	ASTM D412, modified[2]
Tensile strength, film, minimum	27.6 MPa (4000 psi)	27.6 MPa (4000 psi)	ASTM D412
Crack cycling at -23°C (-10°F), 100 cycles	Unaffected	Unaffected	ASTM C836
Puncture resistance, minimum	990 N (221 lbs)	445 N (100 lbs)	ASTM E154
Peel adhesion to concrete, minimum	880 N/m (5.0 lbs/in.) width	880 N/m (5.0 lbs/in.) width	ASTM D903, modified[3]
Lap peel adhesion	440 N/m (2.5 lbs/in.) width	440 N/m (2.5 lbs/in.) width	ASTM D1876, modified[4]
Permeance to water vapor Transmission, maximum	0.01 perms (0.6 ng/(Pa × s × m^2))	0.01 perms (0.6 ng/(Pa × s × m^2))	ASTM E96, method B
Water absorption, maximum	0.5%	0.5%	ASTM D570
Methane permeability	9.1 mls/m^2/day	N/A	University of London, QMW College[3]
Permeability[5] (hydraulic conductivity)	K=<1.4 x 10^{-11}cm.s^{-1}	K=<1.4 x 10^{-11}cm.s^{-1}	ASTM D5084-90

Footnotes:

1. Hydrostatic head tests of Preprufe Membranes are performed by casting concrete against the membrane with a lap. Before the concrete cures, a 3 mm (0.125 in.) spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to the head indicated.
2. Elongation of membrane is run at a rate of 50 mm (2 in.) per minute.
3. Concrete is cast against the protective coating surface of the membrane and allowed to properly dry (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 50 mm (2 in.) per minute at room temperature.
4. The test is conducted 15 minutes after the lap is formed (per Grace published recommendations) and run at a rate of 50 mm (2 in.) per minute at -4°C (25°F).
5. Result is lower limit of apparatus. Membrane therefore considered impermeable.

Specification Clauses

Preprufe 300R or 160R shall be applied with its adhesive face presented to receive fresh concrete to which it will integrally bond. Only Grace Construction Products approved membranes shall be bonded to Preprufe 300R/160R. All Preprufe 300R/160R system materials shall be supplied by Grace Construction Products, and applied strictly in accordance with their instructions. Specimen performance and formatted clauses are also available.

NOTE: Use Preprufe Tape to tie-in Procor with Preprufe.

Health and Safety

Refer to relevant Material Safety data sheet. Complete rolls should be handled by a minimum of two persons.

For Technical Assistance call toll free at 866-333-3SBM (3726).

Visit our web site at www.graceconstruction.com

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PF-111D Printed in USA 3/06 FA/LI/4M

GRACE
Construction Products

APPENDIX G
REMEDIAL INVESTIGATION SOIL, GROUNDWATER, AND SOIL VAPOR ANALYTICAL RESULTS

TABLE 5A
VOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	MW-1 (0-2')	MW-1 (15'-17')	MW-2 (0-2')	MW-2 (12'-14')	B/MW-3 (0-2')	B/MW-3 (7'-9')	MW-4(0-2)
Lab Sample ID	**RSCO[1]**	210785-013	210785-014	210785-001	210785-002	210723-004	210723-005	210785-015
Dilution		1	1	1	1	1	1	1
Date Sampled		9/14/2005	9/14/2005	9/12/2005	9/12/2005	9/8/2005	9/8/2005	9/15/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
Carbon disulfide	2,700	1.9 U	2.1 U	2 **UJ**	2.3 U	36 **J**	2.8 **J**	1.8 U
Acetone	200	13 **UJ**	49 **UJ**	29 **UJ**	16 **UJ**	14 **UJ**	17 **UJ**	6.8 **UJ**
Methylene chloride	100	18 **UJ**	27 **UJ**	18 **UJ**	8.7 **UJ**	4.9 **UJ**	4.9 **UJ**	65 **UJ**
Methyl-tert-butyl-ether (MTBE)	120	0.34 U	0.38 UH	0.35 **UJ**	0.41 U	0.36 U	0.33 U	0.31 U
cis-1 2-Dichloroethene	NS	1.4 U	1.5 U	1.4 **UJ**	1.6 U	1.4 U	1.3 U	1.3 U
2-Butanone (MEK)	300	2.6 U	2.9 U	2.7 **UJ**	3.1 U	2.8 U	2.5 U	2.4 U
Benzene	60	1.6 U	1.8 U	2.1 J	1.9 U	2.4 J	1.5 U	2.7 J
Trichloroethene	700	5.1 J	6.3	2 J	2.3 U	2 U	1.9 U	33
4-Methyl-2-pentanone (MIBK)	1,000	1.1 U	1.3 U	2.9 J	1.4 UH	1.2 U	1.1 U	1 U
Toluene	1,500	2.2 J	2.3 J	11 **J**	2.3 U	20	2.5 J	2.6 J
Tetrachloroethene	1,400	2.2 **UJ**	2.4 **UJ**	2.2 U	2.6 U	2.3 **UJ**	2.1 **UJ**	2 **UJ**
Ethylbenzene	5,500	2 U	2.3 U	2.1 U	2.5 U	6.5	2.2 J	1.9 U
Styrene	NS	1.1 U	1.3 U	1.6 J	1.4 U	1.2 **UJ**	1.1 **UJ**	1 U
Xylenes (total)	1,200	5.1 **UJ**	5.6 **UJ**	6.8 **J**	6.2 U	96 **UJ**	26 **UJ**	4.7 **UJ**
Total VOCs	**10,000**	7.3	8.6	26.4	ND	64.9	7.5	38.3

TABLE 5A
VOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	MW-4(12-14)	B/MW-5(0-2)	B/MW-5(5-7)	MW-6(2-4)	MW-6(15-17)	MW-7(0-2)	MW-7(6-8)
Lab Sample ID	**RSCO^1**	210785-016	210723-008	210723-009	210941-007	210941-008	210941-005	210941-006
Dilution		1	1	1	1	1	5	1
Date Sampled		9/15/2005	9/9/2005	9/9/2005	9/22/2005	9/22/2005	9/21/2005	9/21/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
Carbon disulfide	2,700	4.3 J	1.9 U	1.7 U	1.9 **UJ**	1.9 U	10 U	2.1 U
Acetone	200	**270 J**	13 **UJ**	6.6 **UJ**	28 **R**	12 **R**	**710 J**	12 **U**
Methylene chloride	100	31 **UJ**	8.1 **UJ**	4.4 **UJ**	34 **J**	13 **J**	61 **J**	29 **J**
Methyl-tert-butyl-ether (MTBE)	120	1.1 J	0.34 U	0.3 U	0.33 **UJ**	0.34 **UJ**	1.8 **UJ**	0.37 U
cis-1 2-Dichloroethene	NS	1.6 U	1.4 U	1.2 U	1.3 U	1.4 U	7.3 U	1.5 U
2-Butanone (MEK)	300	3 **UJ**	2.6 U	2.3 U	2.5 **R**	2.6 **R**	14 **R**	2.8 **UJ**
Benzene	60	1.8 U	1.6 U	1.4 U	1.5 **UJ**	1.6 U	8.5 U	1.7 U
Trichloroethene	700	16 **J**	8	1.7 U	7 **J**	1.9 U	10 U	5.5 J
4-Methyl-2-pentanone (MIBK)	1,000	1.5 J	1.1 U	1 U	1.1 U	1.1 **UJ**	6.1 **UJ**	1.2 U
Toluene	1,500	2.2 U	1.9 U	1.7 U	5 **J**	1.9 U	10 U	2.1 U
Tetrachloroethene	1,400	2.5 **UJ**	2.2 **UJ**	1.9 **UJ**	2.1 U	2.2 U	12 U	2.3 U
Ethylbenzene	5,500	2.3 U	2.1 U	1.8 U	2.6 **J**	2.1 U	11 U	2.2 U
Styrene	NS	1.3 U	1.1 **UJ**	1 **UJ**	1.1 **R**	1.1 **R**	6.1 **R**	1.2 U
Xylenes (total)	1,200	5.9 **UJ**	5.1 **UJ**	4.5 **UJ**	15 **J**	5.1 U	27 U	5.5 U
Total VOCs	**10,000**	292.9	8	ND	63.6	13	771	34.5

TABLE 5A
VOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	MW-8(0-2)	MW-8(13-15)	MW-9(0-2)	MW-9(12-14)	B-10(0.5-2.5)	B-10(15-15.5)	B-11(0-2)
Lab Sample ID	**RSCO**[1]	210941-001	210941-002	210785-006	210785-007	210785-017	210785-018	210810-004
Dilution		1	1	1	1	1	1	1
Date Sampled		9/19/2005	9/19/2005	9/13/2005	9/13/2005	9/15/2005	9/15/2005	9/16/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
Carbon disulfide	2,700	1.9 U	110 **U**	1.9 U	1.9 U	2 U	2.2 U	2 U
Acetone	200	7.7 **U**	450 **R**	27 **UJ**	7.8 **UJ**	21 **UJ**	32 **U**	12 **U**
Methylene chloride	100	24 **UJ**	280 **U**	22 **UJ**	18 **UJ**	8.3 **UJ**	29 **U**	11 **UJ**
Methyl-tert-butyl-ether (MTBE)	120	0.33 U	35 U	0.34 U	0.33 U	0.34 U	0.38 U	0.36 U
cis-1 2-Dichloroethene	NS	1.3 U	71 U	1.4 U	1.3 U	1.4 U	1.5 U	1.4 U
2-Butanone (MEK)	300	2.5 **U**	140 U	2.6 U	2.5 U	2.6 U	2.9 U	2.8 **UJ**
Benzene	60	1.6 U	47 U	1.6 U	1.5 U	1.6 U	1.8 U	1.7 U
Trichloroethene	700	2.5 J	82 U	8 **J**	3.9 J	2 U	12	2.4 J
4-Methyl-2-pentanone (MIBK)	1,000	1.1 U	82 **UJ**	1.5 **J**	1.1 U	1.2 J	1.3 U	1.2 U
Toluene	1,500	1.9 U	35 U	1.9 U	1.9 U	2 U	2.2 U	2 U
Tetrachloroethene	1,400	2.1 U	59 U	2.1 U	2.1 U	2.2 **UJ**	2.4 **U**	2.3 U
Ethylbenzene	5,500	2 U	120 U	2 U	2 U	2.1 U	2.3 U	2.2 U
Styrene	NS	1.1 U	59 U	1.1 U	1.1 U	1.1 U	1.3 U	1.2 U
Xylenes (total)	1,200	5 U	120 U	5.1 U	5 U	5.2 **UJ**	5.7 **U**	5.4 U
Total VOCs	**10,000**	2.5	ND	9.5	3.9	1.2	12	2.4

TABLE 5A
VOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	B-11(12-14)	B-11(25-27)	B-12(0-2)	B-12(2-4)	B-12(11-13)	B-13(0-2)	B-13(6-8)
Lab Sample ID	**RSCO[1]**	210810-005	210810-006	210723-001	210723-002	210723-003	210723-010	210723-011
Dilution		1	1	1	1	1	1	1
Date Sampled		9/16/2005	9/16/2005	9/8/2005	9/8/2005	9/8/2005	9/9/2005	9/9/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
Carbon disulfide	2,700	2 U	1.9 U	3 **J**	2 U	1.9 U	2 U	2.2 **R**
Acetone	200	5.7 **U**	12 **U**	16 **UJ**	13 **UJ**	9.5 **UJ**	11 **UJ**	220 **J**
Methylene chloride	100	14 **UJ**	8.9 **UJ**	10 **UJ**	4.8 **UJ**	4.9 **UJ**	8.1 **UJ**	5.4 **R**
Methyl-tert-butyl-ether (MTBE)	120	0.35 U	0.34 U	0.36 U	0.35 U	0.33 U	0.35 U	0.38 **R**
cis-1 2-Dichloroethene	NS	1.4 U	1.3 U	1.4 U	1.4 U	1.3 U	1.4 U	1.5 **R**
2-Butanone (MEK)	300	2.7 **UJ**	2.6 **UJ**	2.7 U	2.7 U	2.5 U	2.7 U	2.9 **R**
Benzene	60	1.7 U	1.6 U	1.7 U	1.6 U	1.5 U	1.6 U	1.8 **R**
Trichloroethene	700	3.9 J	2 J	4.8 J	2 U	1.9 U	2 J	2.2 **R**
4-Methyl-2-pentanone (MIBK)	1,000	1.2 U	1.1 U	1.2 U	1.2 U	1.1 U	1.2 U	1.3 **R**
Toluene	1,500	2 U	1.9 U	2 **UJ**	2 U	1.9 U	2 **UJ**	2.2 **R**
Tetrachloroethene	1,400	2.2 U	2.1 U	2.3 **UJ**	2.2 **UJ**	2.1 **UJ**	7.2 **J**	2.4 **R**
Ethylbenzene	5,500	2.1 U	2 U	2.1 **UJ**	2.1 U	2 U	2.1 **UJ**	2.3 **R**
Styrene	NS	1.2 U	1.1 U	1.2 **UJ**	1.2 **UJ**	1.1 **UJ**	1.2 **UJ**	1.3 **R**
Xylenes (total)	1,200	5.3 U	5.1 U	5.3 **UJ**	5.3 **UJ**	5 **UJ**	5.3 **UJ**	5.7 **R**
Total VOCs	**10,000**	3.9	2	7.8	ND	ND	9.2	220

TABLE 5A
VOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	B-14(0-2)	B-14(15-17)	B-14(20-22)	B-15(0-2)	B-15(13-13.5)	B-16(0-2)	B-16(10-12)
Lab Sample ID	**RSCO**[1]	210941-011	210941-012	210941-013	210941-003	210941-004	210785-008	210785-011
Dilution		1	1	1	1	1	1	1
Date Sampled		9/23/2005	9/23/2005	9/23/2005	9/19/2005	9/19/2005	9/14/2005	9/14/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
Carbon disulfide	2,700	1.9 U	1.8 U	2.3 U	1.9 U	2.1 U	1.9 U	1.9 U
Acetone	200	80 **J**	27 **R**	28 **R**	7.7 **U**	24 **U**	16 **UJ**	15 **UJ**
Methylene chloride	100	6.1 **J**	8 **J**	8.9 **J**	15 **UJ**	5.5 **UJ**	13 **UJ**	19 **UJ**
Methyl-tert-butyl-ether (MTBE)	120	0.34 **UJ**	0.32 **UJ**	0.4 **UJ**	0.33 U	0.8 **J**	0.33 U	0.34 U
cis-1 2-Dichloroethene	NS	1.3 U	1.3 U	1.6 U	1.3 U	1.5 U	1.3 U	1.4 U
2-Butanone (MEK)	300	2.6 **R**	2.4 **R**	3.1 **R**	2.5 **UJ**	2.8 **UJ**	2.6 **UJ**	2.6 U
Benzene	60	1.6 U	1.5 U	1.9 U	1.5 U	1.7 U	1.6 U	1.6 U
Trichloroethene	700	1.9 U	1.8 U	2.3 U	4.6 J	2.1 U	11 **J**	4.4 J
4-Methyl-2-pentanone (MIBK)	1,000	1.1 **UJ**	1.1 **UJ**	1.3 **UJ**	1.1 U	1.2 U	1.2 J	1.1 U
Toluene	1,500	4.1 J	1.8 U	2.3 U	1.9 U	2.1 U	1.9 U	1.9 U
Tetrachloroethene	1,400	2.1 **UJ**	2 U	2.5 U	2.1 U	2.3 U	2.1 **UJ**	2.2 **UJ**
Ethylbenzene	5,500	2 **UJ**	1.9 U	2.4 U	2 U	2.2 U	2 U	2 U
Styrene	NS	1.1 **R**	1.1 **R**	1.3 **R**	1.1 U	1.2 U	1.1 U	1.1 U
Xylenes (total)	1,200	6.5	4.7 U	6 U	5 U	5.5 U	5 **UJ**	5.1 **UJ**
Total VOCs	**10,000**	90.2	8	8.9	4.6	0.8	12.2	4.4

TABLE 5A
VOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	B-16(24-26)	B-17(0-2)	B-17(14-16)	B-17(18-20)	B-18(0-2)	B-18(14.5-16.5)	B-18(28-30)
Lab Sample ID	**RSCO[1]**	210785-012	210810-001	210810-002	210810-003	210785-003	210785-004	210785-005
Dilution		1	1	1	2	1	1	1
Date Sampled		9/14/2005	9/16/2005	9/16/2005	9/16/2005	9/12/2005	9/12/2005	9/12/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
Carbon disulfide	2,700	2 U	1.8 U	2 U	200 U	1.8 U	2.2 U	1.9 U
Acetone	200	25 **UJ**	13 **U**	10 **U**	600 **UJ**	11 **UJ**	15 **UJ**	10 **UJ**
Methylene chloride	100	16 **UJ**	19 **UJ**	6.9 **UJ**	460 **U**	18 **UJ**	28 **UJ**	12 **UJ**
Methyl-tert-butyl-ether (MTBE)	120	0.36 U	0.32 U	0.36 U	67 U	0.33 U	0.39 U	0.33 U
cis-1 2-Dichloroethene	NS	1.4 U	1.3 U	1.4 U	130 U	1.3 U	1.5 U	1.3 U
2-Butanone (MEK)	300	2.8 U	2.5 **UJ**	2.8 **UJ**	270 U	2.5 U	3 U	2.6 U
Benzene	60	2.6 J	1.5 U	1.7 U	89 U	1.5 U	1.8 U	1.6 U
Trichloroethene	700	3.1 J	13	6.3	160 U	23	17	1.9 U
4-Methyl-2-pentanone (MIBK)	1,000	1.2 U	1.1 U	1.2 U	160 U	1.1 U	1.3 U	1.1 U
Toluene	1,500	3.2 J	1.8 U	2 U	67 U	1.8 U	2.2 U	1.9 U
Tetrachloroethene	1,400	2.3 **UJ**	2 U	2.3 U	110 U	2.1 **UJ**	2.4 **UJ**	2.1 U
Ethylbenzene	5,500	2.2 U	1.9 U	2.2 U	2,400	2 U	2.3 U	2 U
Styrene	NS	1.2 U	1.1 U	1.2 U	110 U	1.1 U	1.3 U	1.1 U
Xylenes (total)	1,200	5.4 **UJ**	4.8 U	5.4 U	**6,500**	4.9 U	5.8 U	5 U
Total VOCs	**10,000**	8.9	13	6.3	8900	23	17	ND

TABLE 5A
VOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1 - Recommended Soil Clean-up Objectives listed in NYSDEC Technical and Adminstrative Guidance Memorandum (TAGM) #4046 (exceedances indicated in bold.)

µg/kg - micrograms per kilogram = parts per billion (ppb).

U - Compound not detected.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

H - concentration was calculated using manual alternate peak selection.

NS - No standard.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the samle and meet quality control criteria. The presence or absence of the analyte cannot be verified.

(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**NYSDEC** **RSCO**[1] **µg/Kg**	MW-1(0-2) 210785-013 1 9/14/2005 µg/Kg	MW-1(15-17) 210785-014 1 9/14/2005 µg/Kg	MW-2(0-2) 210785-001 2 9/12/2005 µg/Kg	MW-2(12-14) 210785-002 1 9/12/2005 µg/Kg	B/MW-3(0-2) 210723-004 1 9/8/2005 µg/Kg	B/MW-3(7-9) 210723-005 1 9/8/2005 µg/Kg	MW-4(0-2) 210785-015 1 9/15/2005 µg/Kg
Isophorone	4,400	130 U	73 U	260 U	79 U	70 U	64 U	240 U
Naphthalene	13,000	130 U	70 U	**15,000**	75 U	100 J	61 U	230 U
2-Methylnaphthalene	36,400	120 **UJ**	65 U	9,000 **J**	70 U	170 J	93 JH	210 **UJ**
Acenaphthylene	41,000	240 J	50 U	10,000	54 U	400	44 U	160 U
Acenaphthene	50,000	170 J	67 U	240 U	73 U	64 U	59 U	220 U
Dibenzofuran	6,200	120 U	65 U	910 J	70 U	61 U	57 U	210 U
Fluorene	50,000	160 J	52 U	190 U	57 U	85 J	46 U	170 U
n-Nitrosodiphenylamine	NS	110 U	61 U	220 U	66 U	58 U	53 U	200 U
Phenanthrene	50,000	2,300	48 U	3,300	52 U	1,500	42 U	160 U
Anthracene	50,000	540 J	67 U	1,700	73 U	510	59 U	220 U
Carbazole	NS	110 U	60 U	220 U	65 U	73 J	52 U	200 U
Di-n-butyl phthalate	8,100	97 U	54 U	1,000 J	58 U	51 U	47 U	180 U
Fluoranthene	50,000	4,400	51 U	2,800	56 U	2,600	45 U	390 J
Pyrene	50,000	6,000	56 U	7,100	61 U	2,500	49 U	180 U
Butyl benzyl phthalate	50,000	95 U	52 U	190 U	57 U	50 U	46 U	170 U
Benzo(a)anthracene	224 or MDL	**2,800**	55 U	**4,100**	60 U	**1,600**	48 U	180 U
Chrysene	400	**3,600**	51 U	**7,400**	56 U	**1,600**	45 U	410 J
Bis(2-ethylhexyl)phthalate	50,000	110 J	54 U	190 U	58 U	51 U	47 U	180 U
Benzo(b)fluoranthene	1,100	**1,800**	110 U	**5,100**	120 U	**1,500**	99 U	370 U
Benzo(k)fluoranthene	1,100	**2,000**	45 U	**8,200**	49 U	520	40 U	150 U
Benzo(a)pyrene	61 or MDL	**2,600**	50 U	**6,000**	54 U	**1,200**	44 U	160 U
Indeno(1 2 3-cd)pyrene	3,200	1,900	41 U	**9,800**	45 U	770 **J**	36 U	140 U
Dibenzo(a h)anthracene	14 or MDL	**590 J**	45 U	**3,400 J**	49 U	**260 J**	40 U	150 **UJ**
Benzo(ghi)perylene	50,000	1,900	45 U	9,900	49 U	750 **J**	40 U	790 J
Total SVOCs	**500,000**	**31,110**	**ND**	**104,710**	**ND**	**16,138**	**93**	**1,590**
B(a)P Equivalents (EPA)-mg/kg		1.3	ND	**5.4**	ND	0.7	ND	0.0004
B(a)P Equivalents (NYSDEC) - mg/kg		1.3	ND	**5.5**	ND	0.7	ND	0.0041
cPAH		15,260	0	44,000	ND	7,450	ND	410

TABLE 5B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	MW-4(12-14)	B/MW-5(0-2)	B/MW-5(5-7)	MW-6(2-4)	MW-6(15-17)	MW-7(0-2)	MW-7(6-8)
Lab Sample ID	**RSCO**[1]	210785-016	210723-008	210723-009	210941-007	210941-008	210941-005	210941-006
Dilution		1	1	1	4	1	4	2
Date Sampled		9/15/2005	9/9/2005	9/9/2005	9/22/2005	9/22/2005	9/21/2005	9/21/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
Isophorone	4,400	77 U	68 U	60 U	3,100	65 U	280 U	140 U
Naphthalene	13,000	73 U	65 U	57 U	240 U	62 U	270 U	130 U
2-Methylnaphthalene	36,400	68 U	60 U	53 U	230 U	57 U	250 U	120 U
Acenaphthylene	41,000	53 U	47 U	53 J	180 U	44 U	190 U	990
Acenaphthene	50,000	71 U	63 U	55 U	240 U	59 U	260 U	130 U
Dibenzofuran	6,200	68 U	60 U	53 U	230 U	57 U	250 U	120 U
Fluorene	50,000	55 U	49 U	68 J	180 U	46 U	200 U	120 J
n-Nitrosodiphenylamine	NS	64 U	57 U	50 U	210 U	54 U	240 U	120 U
Phenanthrene	50,000	50 U	75 J	370	400 J	42 U	1,600	2,500
Anthracene	50,000	71 U	63 U	83 J	240 U	59 U	260 U	560 J
Carbazole	NS	63 U	56 U	49 U	210 U	53 U	230 U	190 J
Di-n-butyl phthalate	8,100	56 U	72 J	44 U	190 U	48 U	1,200 J	100 U
Fluoranthene	50,000	54 U	120 J	350	500 J	45 U	1,200 J	7,300
Pyrene	50,000	59 U	130 J	280 J	510 J	50 U	940 J	6,000
Butyl benzyl phthalate	50,000	55 U	49 U	43 U	180 U	46 U	2,400	100 U
Benzo(a)anthracene	224 or MDL	58 U	51 U	150 J	**230** J	49 U	**460** J	**3,900**
Chrysene	400	54 U	85 J	160 J	240 J	45 U	**490** J	**4,300**
Bis(2-ethylhexyl)phthalate	50,000	56 U	2,000	44 U	190 U	48 U	12,000	420 J
Benzo(b)fluoranthene	1,100	120 U	110 U	180 J	400 U	100 U	440 U	4,800
Benzo(k)fluoranthene	1,100	47 U	42 U	58 J	160 U	40 U	180 U	1,900
Benzo(a)pyrene	61 or MDL	53 U	**77** J	**140 J**	180 U	44 U	**360** J	**4,100**
Indeno(1 2 3-cd)pyrene	3,200	44 U	68 J	89 **J**	150 U	37 U	230 J	3,000
Dibenzo(a h)anthracene	14 or MDL	47 U	42 U	**37 UJ**	160 U	40 **UJ**	180 **UJ**	**590 J**
Benzo(ghi)perylene	50,000	47 U	42 U	81 **J**	160 U	40 **UJ**	180 **UJ**	3,100 **J**
Total SVOCs	**500,000**	**ND**	**2,627**	**2,099**	**4,980**	**ND**	**21,240**	**43,770**
B(a)P Equivalents (EPA)-mg/kg		ND	0.08	0.22	0.02	ND	**4.17**	1.96
B(a)P Equivalents (NYSDEC) - mg/kg		ND	0.08	0.22	0.03	ND	**4.17**	2.00
cPAH		ND	162	814	470	ND	13,540	18,258

TABLE 5B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	MW-8(0-2)	MW-8(13-15)	MW-9(0-2)	MW-9(12-14)	B-10(0.5-2.5)	B-10(15-15.5)
Lab Sample ID	**RSCO**[1]	210941-001	210941-002	210785-006	210785-007	210785-017	210785-018
Dilution		4	1	4	1	5	1
Date Sampled		9/19/2005	9/19/2005	9/13/2005	9/13/2005	9/15/2005	9/15/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound							
Isophorone	4,400	290 J	68 U	260 U	63 U	340 U	75 U
Naphthalene	13,000	380 J	64 U	250 U	60 U	910 J	72 U
2-Methylnaphthalene	36,400	230 U	60 U	230 U	56 U	660 J	67 U
Acenaphthylene	41,000	180 U	46 U	180 U	43 U	230 U	51 U
Acenaphthene	50,000	240 U	62 U	240 U	58 U	1,200 J	69 U
Dibenzofuran	6,200	230 U	60 U	230 U	56 U	560 J	67 U
Fluorene	50,000	190 U	49 U	190 U	45 U	1,300 J	54 U
n-Nitrosodiphenylamine	NS	220 U	57 U	220 U	52 U	290 U	63 U
Phenanthrene	50,000	180 J	64 J	170 **UJ**	41 U	17,000	49 U
Anthracene	50,000	240 U	62 U	240 U	58 U	2,500	69 U
Carbazole	NS	210 U	55 U	210 U	51 U	590 J	62 U
Di-n-butyl phthalate	8,100	190 U	50 U	190 U	46 U	250 U	55 U
Fluoranthene	50,000	270 J	69 J	180 U	44 U	10,000	53 U
Pyrene	50,000	260 J	61 J	200 U	48 U	14,000	58 U
Butyl benzyl phthalate	50,000	220 J	49 U	190 U	45 U	250 U	54 U
Benzo(a)anthracene	224 or MDL	200 U	51 U	190 U	47 U	**5,500**	57 U
Chrysene	400	190 J	47 U	180 U	44 U	**7,500**	53 U
Bis(2-ethylhexyl)phthalate	50,000	320 J	50 U	190 U	46 U	260 J	55 U
Benzo(b)fluoranthene	1,100	400 U	110 U	400 U	98 U	**4,300**	120 U
Benzo(k)fluoranthene	1,100	160 U	42 U	160 U	39 U	210 U	46 U
Benzo(a)pyrene	61 or MDL	180 U	46 U	180 U	43 U	**3,500**	51 U
Indeno(1 2 3-cd)pyrene	3,200	150 U	38 U	150 U	36 U	1,000 **J**	43 **UJ**
Dibenzo(a h)anthracene	14 or MDL	160 U	42 **UJ**	160 U	39 U	**500 J**	46 **UJ**
Benzo(ghi)perylene	50,000	160 U	42 **UJ**	160 U	39 U	2,100 **J**	46 **UJ**
Total SVOCs	**500,000**	**2,110**	**278**	**ND**	**ND**	**73,380**	**ND**
B(a)P Equivalents (EPA)-mg/kg		0.0002	ND	ND	ND	1.64	ND
B(a)P Equivalents (NYSDEC) - mg/kg		0.0019	ND	ND	ND	1.71	ND
cPAH		390	ND	ND	ND	22,510	ND

TABLE 5B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**NYSDEC** **RSCO**[1] **µg/Kg**	B-11(0-2) 210810-004 1 9/16/2005 µg/Kg	B-11(12-14) 210810-005 1 9/16/2005 µg/Kg	B-11(25-27) 210810-006 1 9/16/2005 µg/Kg	B-12(0-2) 210723-001 1 9/8/2005 µg/Kg	B-12(2-4) 210723-002 1 9/8/2005 µg/Kg	B-12(11-13) 210723-003 1 9/8/2005 µg/Kg	B-13(0-2) 210723-010 5 9/9/2005 µg/Kg
Isophorone	4,400	72 U	70 U	65 U	270 U	69 U	64 U	670 U
Naphthalene	13,000	200 J	66 U	62 U	290 J	390	60 U	640 U
2-Methylnaphthalene	36,400	290 J	61 U	57 U	240 U	61 U	56 U	590 U
Acenaphthylene	41,000	79 J	47 U	72 **J**	190 U	90 J	43 U	760 J
Acenaphthene	50,000	66 U	64 U	59 U	250 U	63 U	58 U	1,200 J
Dibenzofuran	6,200	63 U	61 U	57 U	240 U	61 U	56 U	710 J
Fluorene	50,000	51 U	50 U	46 U	200 U	50 U	46 U	1,200 J
n-Nitrosodiphenylamine	NS	64 J	58 U	54 U	230 U	58 U	53 U	560 U
Phenanthrene	50,000	400	98 J	280 J	2,300	840	41 U	17,000
Anthracene	50,000	79 J	64 U	77 J	480 J	190 J	58 U	2,900 J
Carbazole	NS	58 U	57 U	53 U	280 J	56 U	52 U	1,500 J
Di-n-butyl phthalate	8,100	750	51 U	48 U	380 J	51 U	47 U	490 U
Fluoranthene	50,000	550	98 J	670	3,900	1,300	45 U	21,000
Pyrene	50,000	270 J	120 J	770	3,700	1,500	49 U	23,000
Butyl benzyl phthalate	50,000	51 U	50 U	46 U	200 U	50 U	46 U	480 U
Benzo(a)anthracene	224 or MDL	220 J	72 J	**540**	**2,200**	**820**	48 U	**12,000**
Chrysene	400	**450**	77 J	**490**	**2,300**	**990**	45 U	**12,000**
Bis(2-ethylhexyl)phthalate	50,000	52 U	51 U	50 J	200 U	180 J	47 U	490 U
Benzo(b)fluoranthene	1,100	350 **J**	110 U	570	**3,200**	960	99 U	**12,000**
Benzo(k)fluoranthene	1,100	97 **J**	43 U	170 **J**	880 J	490	39 U	**3,500 J**
Benzo(a)pyrene	61 or MDL	**150** J	**74** J	**480**	**2,500**	**930**	43 U	**11,000**
Indeno(1 2 3-cd)pyrene	3,200	69 **J**	53 **J**	370 **J**	1,800 **J**	630 **J**	36 U	**6,600**
Dibenzo(a h)anthracene	14 or MDL	44 U	43 U	**94 J**	**480 J**	**170 J**	39 U	**1,400** J
Benzo(ghi)perylene	50,000	90 **J**	66 **J**	460 **J**	1,900 **J**	680 **J**	39 U	7,400
Total SVOCs	**500,000**	**4,108**	**658**	**5,093**	**26,590**	**10,160**	**ND**	**135,170**
B(a)P Equivalents (EPA)-mg/kg		0.18	0.54	2.74	2.14	0.46	ND	**4.63**
B(a)P Equivalents (NYSDEC) - mg/kg		0.19	0.55	2.75	2.16	0.47	ND	**4.74**
cPAH		1,380	276	2,714	13,360	4,990	ND	58,500

TABLE 5B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	B-13(6-8)	B-14(0-2)	B-14(15-17)	B-14(20-22)	B-15(0-2)	B-15(13-13.5)	B-16(0-2)
Lab Sample ID	**RSCO**[1]	210723-011	210941-011	210941-012	210941-013	210941-003	210941-004	210785-008
Dilution		1	4	1	1	4	1	1
Date Sampled		9/9/2005	9/23/2005	9/23/2005	9/23/2005	9/19/2005	9/19/2005	9/14/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound								
Isophorone	4,400	76 U	260 U	63 U	79 U	270 J	73 U	130 U
Naphthalene	13,000	72 U	1,400 J	60 U	75 U	270 J	69 U	120 U
2-Methylnaphthalene	36,400	67 U	1,100 J	56 U	70 U	230 U	64 U	120 **UJ**
Acenaphthylene	41,000	52 U	340 J	43 U	54 U	180 U	50 U	170 J
Acenaphthene	50,000	69 U	360 J	58 U	73 U	240 U	66 U	120 U
Dibenzofuran	6,200	67 U	460 J	56 U	70 U	230 U	64 U	120 U
Fluorene	50,000	54 U	540 J	45 U	57 U	180 U	52 U	93 U
n-Nitrosodiphenylamine	NS	63 U	220 U	53 U	66 U	210 U	60 U	110 U
Phenanthrene	50,000	190 J	4,800	120 J	52 U	620 J	47 U	180 J
Anthracene	50,000	69 U	1,100 J	58 U	73 U	240 U	66 U	120 U
Carbazole	NS	62 U	730 J	52 U	65 U	210 U	59 U	110 U
Di-n-butyl phthalate	8,100	55 U	**11,000**	46 U	58 U	190 U	53 U	96 U
Fluoranthene	50,000	210 J	5,000	140 J	55 U	780 J	51 U	290 J
Pyrene	50,000	200 J	3,200	170 J	61 U	680 J	56 U	380 **J**
Butyl benzyl phthalate	50,000	54 U	4,300	45 U	57 U	180 U	52 U	400 J
Benzo(a)anthracene	224 or MDL	120 J	**1,800**	76 J	59 U	**350** J	54 U	200 J
Chrysene	400	130 J	**1,900**	73 J	55 U	**430** J	51 U	340 J
Bis(2-ethylhexyl)phthalate	50,000	55 U	6,600 **UJ**	53 J	58 U	280 **J**	53 U	150 J
Benzo(b)fluoranthene	1,100	140 J	**1,900**	98 U	120 U	400 U	110 U	200 U
Benzo(k)fluoranthene	1,100	62 J	660 J	39 U	49 U	160 U	45 U	80 U
Benzo(a)pyrene	61 or MDL	**120** J	**1,300** J	**66** J	54 U	**240** J	50 U	89 U
Indeno(1 2 3-cd)pyrene	3,200	100 **J**	900 J	36 **UJ**	45 **UJ**	150 U	41 U	440 J
Dibenzo(a h)anthracene	14 or MDL	**47 UJ**	**240** J	39 **UJ**	49 **UJ**	160 U	45 **UJ**	80 **UJ**
Benzo(ghi)perylene	50,000	130 **J**	770 J	39 **UJ**	49 **UJ**	160 U	45 **UJ**	510 **J**
Total SVOCs	**500,000**	**1,402**	**43,800**	**698**	**ND**	**3,920**	**ND**	**3,060**
B(a)P Equivalents (EPA)-mg/kg		1.38	0.77	0.06	ND	0.09	ND	0.06
B(a)P Equivalents (NYSDEC) - mg/kg		1.38	0.79	0.06	ND	0.09	ND	0.07
cPAH		714	8,700	215	ND	1,020	ND	980

TABLE 5B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	B-16(10-12)	B-16(24-26)	B-17(0-2)	B-17(14-16)	B-17(18-20)	B-18(0-2)	B-18(14.5-16.5)	B-18(28-30)
Lab Sample ID	**RSCO[1]**	210785-011	210785-012	210810-001	210810-002	210810-003	210785-003	210785-004	210785-005
Dilution		1	1	1	5	1	2	1	1
Date Sampled		9/14/2005	9/14/2005	9/16/2005	9/16/2005	9/16/2005	9/12/2005	9/12/2005	9/12/2005
Units	**µg/Kg**	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
Compound									
Isophorone	4,400	130 U	71 U	400 **J**	720 U	64 U	260 U	76 U	63 U
Naphthalene	13,000	1,000	68 U	120 U	1,700 J	61 U	240 U	72 U	60 U
2-Methylnaphthalene	36,400	440 J	63 U	110 U	1,000 J	57 U	480 J	67 U	56 U
Acenaphthylene	41,000	340 J	49 U	87 U	6,200	44 U	1,600	52 U	43 U
Acenaphthene	50,000	570 J	65 U	120 U	660 U	130 J	230 U	69 U	58 U
Dibenzofuran	6,200	580 J	63 U	110 U	1,000 J	57 U	770 J	67 U	56 U
Fluorene	50,000	600 J	51 U	91 U	560 J	190 J	870 J	54 U	45 U
n-Nitrosodiphenylamine	NS	110 U	59 U	110 U	600 U	54 U	210 U	63 U	53 U
Phenanthrene	50,000	8,200 **J**	78 J	180 J	29,000	340 J	6,900 **J**	49 U	41 U
Anthracene	50,000	1,500	65 U	120 U	4,100	59 U	1,900	69 U	58 U
Carbazole	NS	810	58 U	100 U	2,100 J	52 U	800 J	62 U	52 U
Di-n-butyl phthalate	8,100	98 U	52 U	93 U	530 U	47 U	190 U	56 U	46 U
Fluoranthene	50,000	9,800	110 J	430 J	49,000	45 U	6,800	53 U	44 U
Pyrene	50,000	8,300 **J**	55 U	320 J	31,000	140 J	4,500	58 U	49 U
Butyl benzyl phthalate	50,000	96 U	51 U	91 U	510 U	46 U	180 U	54 U	45 U
Benzo(a)anthracene	224 or MDL	**3,500**	54 U	**270** J	**17,000**	48 U	**2,300**	57 U	47 U
Chrysene	400	**4,200**	50 U	290 J	**23,000**	45 U	**2,500**	53 U	44 U
Bis(2-ethylhexyl)phthalate	50,000	1,600 M	52 U	2000	530 U	47 U	190 U	56 U	46 U
Benzo(b)fluoranthene	1,100	**3,000** H	110 U	360 J	**23,000**	100 U	**2,700** H	120 U	98 U
Benzo(k)fluoranthene	1,100	**3,200**	44 U	140 J	**9,800**	40 U	**2,200**	47 U	39 U
Benzo(a)pyrene	61 or MDL	**3,800**	49 U	**320** J	**19,000**	44 U	**2,700**	52 U	43 U
Indeno(1 2 3-cd)pyrene	3,200	2,500	40 U	170 **J**	**11,000 J**	36 **UJ**	2,100	43 U	36 U
Dibenzo(a h)anthracene	14 or MDL	**780**	44 U	78 U	**2,800** J	40 U	160 U	47 U	39 U
Benzo(ghi)perylene	50,000	2,600	44 U	280 **J**	12,000 **J**	40 **UJ**	2,200	47 U	39 U
Total SVOCs	**500,000**	**57,320**	**188**	**5,160**	**243,260**	**800**	**41,320**	**ND**	**ND**
B(a)P Equivalents (EPA)-mg/kg		1.77	ND	**19.08**	**8.07**	ND	0.79	ND	ND
B(a)P Equivalents (NYSDEC) - mg/kg		1.80	ND	**19.08**	**8.27**	ND	0.81	ND	ND
cPAH		17,180	ND	6,668	105,600	ND	14,660	ND	ND

TABLE 5B
SEMIVOLATILE ORGANIC COMPOUNDS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
1 - Recommended Soil Clean-up Objectives listed in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046 (exceedances indicated in bold).
ug/Kg - micrograms per kilogram = parts per billion (ppb).
U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
H - concentration was calculated using manual alternate peak selection.
NS - No standard.
UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5C
PESTICIDES AND PCBs IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	MW-1(0-2)	MW-1(15-17)	MW-2(0-2)	MW-2(12-14)	B/MW-3(0-2)	B/MW-3(7-9)
Lab Sample ID	**RSCO**[1]	210785-013	210785-014	210785-001	210785-002	210723-004	210723-005
Dilution		1	1	5	1	1	1
Date Sampled		9/14/2005	9/14/2005	9/12/2005	9/12/2005	9/8/2005	9/8/2005
Units	**ug/Kg**	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
Pesticides							
beta-BHC	200	0.3 U	0.34 U	1.5 U	0.37 U	1 **U**	0.29 U
delta-BHC	300	0.12 **UJ**	0.13 **UJ**	21 **J**	0.14 **UJ**	0.12 **UJ**	0.11 **UJ**
gamma-BHC (Lindane)	60	0.17 U	0.19 U	0.87 U	0.21 U	0.18 U	0.17 U
Heptachlor	100	0.17 U	0.19 U	0.86 U	0.2 U	0.18 U	0.16 U
Aldrin	41	0.4 U	0.45 U	8.6 **U**	0.49 U	0.42 U	0.39 U
Heptachlor epoxide	20	5.7 **J**	0.14 U	**43**	0.16 U	14 **J**	0.12 U
Endosulfan I	900	0.16 U	0.18 U	0.84 U	0.2 U	0.17 U	0.16 U
Dieldrin	44	0.36 U	0.4 U	1.8 U	0.44 U	0.38 U	0.35 U
4 4'-DDE	2,100	0.49 U	0.54 U	2.5 U	0.59 U	76 **J**	1.6 **J**
Endrin	100	1 U	1.1 U	87	1.2 U	1.1 U	0.97 U
Endosulfan II	900	0.19 U	0.21 U	0.97 U	0.23 U	33 **J**	0.19 U
4 4'-DDD	2,900	0.43 **UJ**	0.48 **UJ**	2.2 **UJ**	0.52 **UJ**	0.45 U	0.42 U
Endosulfan sulfate	1,000	20 **J**	0.22 U	23 **J**	0.24 U	44 **J**	0.35 **U**
4 4'-DDT	2,100	0.35 **UJ**	0.39 **UJ**	1.8 **UJ**	0.42 **UJ**	0.37 **UJ**	0.34 **UJ**
Methoxychlor	<10,000	86 **J**	2.6 **UJ**	12 **UJ**	2.9 **UJ**	150 **J**	2.3 U
alpha-Chlordane	NS	0.85 **U**	0.14 U	15 **J**	0.15 U	0.13 U	0.12 U
gamma-Chlordane	540	0.1 U	0.11 U	0.52 U	0.12 U	0.11 U	0.099 U
Endrin ketone	NS	0.16 U	0.18 U	0.82 U	0.2 U	0.17 U	0.16 U
PCBs							
Aroclor 1242	NS	3.3 U	3.7 U	3.4 U	4.1 U	3.6 U	3.3 U
Aroclor 1248	NS	3 U	3.4 U	3.1 U	3.7 U	3.2 U	2.9 U
Aroclor 1254	NS	1.4 U	1.5 U	1.4 U	1.7 U	1.4 U	1.3 U
Aroclor 1260	NS	36	5 U	4.6 U	5.4 U	4.7 U	4.4 U
Total PCBs	1,000/10,000*	36	ND	ND	ND	ND	ND

TABLE 5C
PESTICIDES AND PCBs IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**NYSDEC** **RSCO[1]** **ug/Kg**	MW-4(0-2) 210785-015 1 9/15/2005 ug/Kg	MW-4(12-14) 210785-016 1 9/15/2005 ug/Kg	B/MW-5(0-2) 210723-008 1 9/9/2005 ug/Kg	B/MW-5(5-7) 210723-009 1 9/9/2005 ug/Kg	MW-6(2-4) 210941-007 1 9/22/2005 ug/Kg	MW-6(15-17) 210941-008 1 9/22/2005 ug/Kg
Pesticides							
beta-BHC	200	0.28 **UJ**	0.35 U	0.31 U	0.27 U	0.37 **U**	0.31 U
delta-BHC	300	0.11 **UJ**	0.13 **UJ**	0.12 **UJ**	0.1 **UJ**	0.11 **UJ**	0.12 **UJ**
gamma-BHC (Lindane)	60	0.16 U	0.2 U	0.17 U	0.15 U	0.16 U	0.17 U
Heptachlor	100	0.16 **UJ**	0.19 U	0.17 U	0.15 U	0.16 U	0.17 U
Aldrin	41	0.37 **UJ**	0.46 U	0.41 U	0.36 U	0.38 U	0.4 U
Heptachlor epoxide	20	0.47 **UJ**	0.15 U	0.13 U	0.14 **U**	1.4 **U**	0.13 U
Endosulfan I	900	0.15 U	0.19 U	0.17 U	0.15 U	15	0.17 U
Dieldrin	44	0.33 U	0.42 U	0.37 U	0.32 U	0.34 U	0.36 U
4 4'-DDE	2,100	0.45 U	0.56 U	0.93 J	2.5 J	0.47 U	0.49 U
Endrin	100	0.93 U	1.2 U	1 U	0.9 U	0.95 U	1 U
Endosulfan II	900	2.4 J	0.22 U	0.58 **J**	0.39 J	3.2 J	0.19 U
4 4'-DDD	2,900	0.4 **UJ**	0.49 **UJ**	0.43 U	0.38 U	0.41 U	0.43 U
Endosulfan sulfate	1,000	1.7 **U**	0.22 U	0.2 U	0.5 **U**	2.4 **U**	0.2 U
4 4'-DDT	2,100	0.32 **UJ**	0.4 **UJ**	0.35 **UJ**	0.31 **UJ**	0.33 **UJ**	0.35 U
Methoxychlor	<10,000	2.2 **UJ**	2.7 **UJ**	2.4 U	3 **U**	9.6 **J**	2.4 U
alpha-Chlordane	NS	0.24 **U**	0.14 U	0.13 U	0.11 U	0.12 U	0.12 U
gamma-Chlordane	540	0.095 **UJ**	0.12 U	0.1 U	0.092 U	0.098 U	0.1 U
Endrin ketone	NS	0.15 **UJ**	0.19 U	0.16 U	0.15 U	0.15 U	0.16 U
PCBs							
Aroclor 1242	NS	3.1 U	3.9 U	3.4 U	3 U	3.2 U	3.4 U
Aroclor 1248	NS	2.8 U	3.5 U	3.1 U	2.7 U	2.9 U	3.1 U
Aroclor 1254	NS	14 **J**	1.6 U	1.4 U	1.2 U	7.9 **U**	1.4 U
Aroclor 1260	NS	7.1 **J**	5.2 U	4.5 U	4 U	4.3 U	4.5 U
Total PCBs	1,000/10,000*	21.1	ND	ND	ND	0	ND

TABLE 5C
PESTICIDES AND PCBs IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	MW-7(0-2)	MW-7(6-8)	MW-8(0-2)	MW-8(13-15)	MW-9(0-2)	MW-9(12-14)	B-10(0.5-2.5)
Lab Sample ID	**RSCO[1]**	210941-005	210941-006	210941-001	210941-002	210785-006	210785-007	210785-017
Dilution		5	10	1	1	1	1	1
Date Sampled		9/21/2005	9/21/2005	9/19/2005	9/19/2005	9/13/2005	9/13/2005	9/15/2005
Units	**ug/Kg**	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound								
Pesticides								
beta-BHC	200	2.6 **U**	3.2 U	0.98 **U**	0.32 U	0.3 U	0.3 U	0.31 U
delta-BHC	300	0.61 **UJ**	1.2 **UJ**	0.11 **UJ**	0.12 **UJ**	0.12 **UJ**	0.11 **UJ**	0.12 **UJ**
gamma-BHC (Lindane)	60	0.91 U	1.8 U	0.16 U	0.18 U	0.17 U	0.17 U	0.17 U
Heptachlor	100	0.89 U	1.8 U	0.16 U	0.18 U	0.17 U	0.16 U	0.17 U
Aldrin	41	2.1 U	4.5 **U**	6.2 **J**	0.42 U	0.4 U	0.39 U	0.41 U
Heptachlor epoxide	20	2.3 **U**	3.6 **U**	0.99 **U**	0.13 U	0.18 **U**	0.13 U	0.66 **U**
Endosulfan I	900	63	110 M	16 **J**	0.52 **J**	0.17 U	0.16 U	0.17 U
Dieldrin	44	1.9 U	3.8 U	5.3 **J**	0.38 U	0.36 U	0.35 U	0.37 U
4 4'-DDE	2,100	30	5.2 U	12 **J**	0.51 U	0.49 U	0.48 U	0.49 U
Endrin	100	5.3 U	11 U	1.1 **U**	1 U	1 U	0.98 U	1 U
Endosulfan II	900	1 U	2 U	0.18 U	0.2 U	0.19 U	0.19 U	1.9 **U**
4 4'-DDD	2,900	13 **U**	4.5 U	12 **J**	0.45 U	0.43 **UJ**	0.42 **UJ**	0.43 **UJ**
Endosulfan sulfate	1,000	7.7 **U**	14 **U**	0.19 U	0.2 U	0.19 U	0.19 U	2.6 **U**
4 4'-DDT	2,100	43 **J**	3.7 **UJ**	22 **J**	0.36 U	0.35 **UJ**	0.34 **UJ**	0.35 **UJ**
Methoxychlor	<10,000	13 **UJ**	73 **J**	27 **J**	2.5 U	2.4 **UJ**	2.3 **UJ**	9.6 **UJ**
alpha-Chlordane	NS	4.9 **U**	1.3 U	**3.5 J**	0.13 U	0.12 U	0.12 U	0.13 U
gamma-Chlordane	540	0.54 U	1.1 U	2.5 **J**	0.11 U	0.1 U	0.1 U	0.1 U
Endrin ketone	NS	0.86 U	1.7 U	9.7 **J**	0.17 U	0.16 U	0.16 U	0.16 U
PCBs								
Aroclor 1242	NS	3.6 U	3.6 U	72	3.5 U	3.4 U	3.3 U	3.4 U
Aroclor 1248	NS	58 **J**	3.2 U	2.9 U	3.2 U	3 U	3 U	3.1 U
Aroclor 1254	NS	85 **J**	9 **U**	1.3 U	1.4 U	1.4 U	1.3 U	1.4 U
Aroclor 1260	NS	25	4.8 U	17 **U**	4.7 U	4.5 U	4.4 U	4.5 U
Total PCBs	1,000/10,000*	168	ND	ND	ND	ND	ND	ND

TABLE 5C
PESTICIDES AND PCBs IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	B-10(15-15.5)	B-11(0-2)	B-11(12-14)	B-11(25-27)	B-12(0-2)	B-12(2-4)	B-12(11-13)
Lab Sample ID	**RSCO**[1]	210785-018	210810-004	210810-005	210810-006	210723-001	210723-002	210723-003
Dilution		1	1	1	1	5	2	1
Date Sampled		9/15/2005	9/16/2005	9/16/2005	9/16/2005	9/8/2005	9/8/2005	9/8/2005
Units	**ug/Kg**	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound								
Pesticides								
beta-BHC	200	0.34 U	0.32 **UJ**	2 **J**	0.59 **UJ**	1.6 U	0.61 U	0.29 U
delta-BHC	300	0.13 **UJ**	0.12 **UJ**	0.18 **UJ**	0.12 **UJ**	1.9 **U**	0.84 **U**	0.13 **U**
gamma-BHC (Lindane)	60	0.19 U	0.18 U	0.18 U	0.17 U	0.89 U	0.35 U	0.17 U
Heptachlor	100	0.19 U	0.18 **UJ**	0.21 **J**	0.17 **UJ**	0.88 U	0.34 U	0.16 U
Aldrin	41	0.45 U	0.42 U	0.42 U	0.4 U	2.1 U	0.81 U	0.39 U
Heptachlor epoxide	20	0.14 U	1.4 **UJ**	1.3 **UJ**	1.1 **UJ**	2.2 **U**	0.85 **U**	0.29 **U**
Endosulfan I	900	0.19 U	0.17 **UJ**	0.17 **UJ**	0.16 **UJ**	0.86 U	0.33 U	0.16 U
Dieldrin	44	0.4 U	0.38 U	0.38 U	0.36 U	1.9 U	0.73 U	0.35 U
4 4'-DDE	2,100	0.55 U	3.1 **J**	7.4 **J**	1.7 **U**	30 **J**	11 **J**	5.6
Endrin	100	1.1 U	1.1 **UJ**	1 **UJ**	1 **UJ**	5.2 U	3.9 **J**	0.97 U
Endosulfan II	900	0.21 U	0.2 U	1.3 **U**	0.19 U	1 U	4.1 J	1.1 **U**
4 4'-DDD	2,900	0.48 **UJ**	0.45 U	0.45 U	0.43 U	2.2 **UJ**	0.87 **UJ**	0.42 U
Endosulfan sulfate	1,000	0.22 U	2.7 **J**	3.7 **U**	1 **U**	7.9 **U**	4 **U**	1.3 **U**
4 4'-DDT	2,100	0.39 **UJ**	0.37 U	0.36 **UJ**	0.35 **UJ**	1.8 **R**	0.7 **R**	0.34 **UJ**
Methoxychlor	<10,000	2.7 **UJ**	2.5 **UJ**	5.5 **UJ**	5.1 **UJ**	32 **UJ**	12 **UJ**	4.8 **U**
alpha-Chlordane	NS	0.14 U	0.61 **UJ**	0.51 **UJ**	0.45 **UJ**	1 **U**	0.25 U	0.12 U
gamma-Chlordane	540	0.11 U	0.11 U	0.11 U	0.1 U	0.53 U	0.21 U	0.1 U
Endrin ketone	NS	0.18 U	0.17 U	0.17 U	0.16 U	0.84 U	0.33 U	0.16 U
PCBs								
Aroclor 1242	NS	3.8 U	3.5 U	3.5 U	3.3 U	3.5 U	3.4 U	3.3 U
Aroclor 1248	NS	3.4 U	3.2 U	3.2 U	3 U	3.1 U	3.1 U	2.9 U
Aroclor 1254	NS	1.5 U	24 **J**	1.4 U	1.4 U	1.4 **U**	1.4 U	1.3 U
Aroclor 1260	NS	5 U	61 **J**	4.7 U	4.5 U	26 **J**	4.5 U	4.4 U
Total PCBs	1,000/10,000*	ND	85	ND	ND	26	ND	ND

TABLE 5C
PESTICIDES AND PCBs IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**NYSDEC** **RSCO**[1] **ug/Kg**	B-13(0-2) 210723-010 10 9/9/2005 ug/Kg	B-13(6-8) 210723-011 1 9/9/2005 ug/Kg	B-14(0-2) 210941-011 10 9/23/2005 ug/Kg	B-14(15-17) 210941-012 1 9/23/2005 ug/Kg	B-14(20-22) 210941-013 1 9/23/2005 ug/Kg	B-15(0-2) 210941-003 1 9/19/2005 ug/Kg	B-15(13-13.5) 210941-004 1 9/19/2005 ug/Kg
Pesticides								
beta-BHC	200	6.8 **U**	0.34 U	4.5 **U**	0.28 U	0.35 U	0.29 U	0.33 U
delta-BHC	300	1.2 **UJ**	0.17 **U**	1.2 **UJ**	0.11 **UJ**	0.13 **UJ**	0.11 **UJ**	0.13 **UJ**
gamma-BHC (Lindane)	60	1.8 U	0.19 U	1.7 U	0.16 U	0.2 U	0.17 U	0.19 U
Heptachlor	100	1.7 U	0.19 U	1.7 U	0.16 **U**	0.2 U	2 **J**	0.18 U
Aldrin	41	4.1 U	0.45 U	4 U	0.37 U	0.47 U	0.39 U	0.44 U
Heptachlor epoxide	20	16 **U**	0.29 **U**	5.7 **U**	0.12 **U**	0.15 U	0.36 **U**	0.14 U
Endosulfan I	900	1.7 U	0.19 U	160	1.6 **J**	0.19 U	8.9 **J**	0.18 U
Dieldrin	44	3.7 U	0.41 U	3.6 U	0.33 U	0.42 U	0.35 U	0.39 U
4 4'-DDE	2,100	260 **J**	2.6 J	83	0.92 J	0.57 U	14 **J**	0.53 U
Endrin	100	49 **U**	1.1 U	10 U	0.93 U	1.2 U	0.97 U	1.1 U
Endosulfan II	900	43 **J**	0.22 U	1.9 U	0.18 U	0.22 U	0.19 U	0.21 U
4 4'-DDD	2,900	4.4 **UJ**	0.48 U	4.3 U	0.4 U	0.5 U	0.42 U	0.47 U
Endosulfan sulfate	1,000	53 **J**	0.5 **U**	25 **U**	0.18 U	0.23 U	0.19 U	0.21 U
4 4'-DDT	2,100	3.6 **R**	0.39 **UJ**	3.5 **UJ**	0.32 U	0.4 U	31 **J**	0.38 U
Methoxychlor	<10,000	260 **J**	3.3 **U**	130 **J**	2.2 U	2.8 U	11 **J**	2.6 U
alpha-Chlordane	NS	1.3 U	0.14 U	1.2 U	0.55 **U**	0.14 U	36 **J**	0.14 U
gamma-Chlordane	540	1.1 U	0.12 U	1 U	0.24 **J**	0.12 U	20 **J**	0.11 U
Endrin ketone	NS	1.7 U	0.18 U	1.6 U	0.15 U	0.19 U	3.5 **J**	0.18 U
PCBs								
Aroclor 1242	NS	3.5 U	3.8 U	3.4 U	3.1 U	3.9 U	3.3 U	3.7 U
Aroclor 1248	NS	3.1 U	3.4 U	120	2.8 U	3.5 U	2.9 U	3.3 U
Aroclor 1254	NS	1.4 U	1.5 U	180 **J**	4.4 **U**	1.6 U	1.3 U	1.5 U
Aroclor 1260	NS	4.6 U	5 U	54 **J**	4.2 U	5.2 U	12 J	4.9 U
Total PCBs	1,000/10,000*	ND	ND	354	ND	ND	12	ND

TABLE 5C
PESTICIDES AND PCBs IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	B-16(0-2)	B-16(10-12)	B-16(24-26)	B-17(0-2)	B-17(14-16)	B-17(18-20)	B-18(0-2)
Lab Sample ID	**RSCO[1]**	210785-008	210785-011	210785-012	210810-001	210810-002	210810-003	210785-003
Dilution		1	1	1	1	1	1	5
Date Sampled		9/14/2005	9/14/2005	9/14/2005	9/16/2005	9/16/2005	9/16/2005	9/12/2005
Units	**ug/Kg**	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound								
Pesticides								
beta-BHC	200	0.37 J	0.74 **U**	0.32 U	0.28 U	0.37 **UJ**	0.3 **UJ**	1.5 U
delta-BHC	300	0.11 **UJ**	0.12 **U**	0.12 **UJ**	0.11 **UJ**	0.12 **UJ**	0.11 **UJ**	1.9 J
gamma-BHC (Lindane)	60	0.17 U	0.17 U	0.18 U	0.16 U	0.18 U	0.31 **U**	17 **J**
Heptachlor	100	0.21 J	0.17 U	0.18 U	0.16 U	0.18 **UJ**	0.17 **UJ**	0.81 U
Aldrin	41	0.89 J	0.4 U	0.43 U	0.37 U	0.42 U	0.39 U	1.9 U
Heptachlor epoxide	20	3.1 **J**	0.85 **U**	0.14 U	0.47 **U**	2 **J**	0.39 **UJ**	1.5 **U**
Endosulfan I	900	0.16 U	0.16 U	0.18 U	0.15 U	0.17 **UJ**	0.16 **UJ**	0.79 U
Dieldrin	44	14 **J**	2.6 J	0.39 U	1.8 **J**	0.38 U	0.35 U	1.7 U
4 4'-DDE	2,100	0.48 U	11	0.52 U	0.45 U	24 **J**	0.48 U	2.3 U
Endrin	100	0.99 U	0.99 U	1.1 U	0.93 U	1.1 **UJ**	0.98 **UJ**	4.8 U
Endosulfan II	900	11 **J**	0.19 U	0.2 U	0.18 U	0.2 U	0.19 U	0.92 U
4 4'-DDD	2,900	0.43 **UJ**	0.42 **UJ**	0.46 **UJ**	0.51 **UJ**	0.45 U	0.45 **U**	2.1 **UJ**
Endosulfan sulfate	1,000	4 **J**	5.1 **UJ**	0.21 U	2 **U**	8.2 **J**	0.73 **U**	9.1 **U**
4 4'-DDT	2,100	13 **J**	0.34 **UJ**	0.37 **UJ**	0.32 **UJ**	0.37 U	0.34 **UJ**	1.7 **UJ**
Methoxychlor	<10,000	2.4 **UJ**	16 J	2.5 **UJ**	6.5 **U**	64 **J**	2.3 **UJ**	57 **J**
alpha-Chlordane	NS	8.7 **J**	1.4 **U**	0.13 U	0.11 U	1.8 **UJ**	0.12 **UJ**	0.59 U
gamma-Chlordane	540	11 **J**	0.1 U	0.11 U	1 **J**	1.9 **U**	0.1 U	0.54 **U**
Endrin ketone	NS	4.9 **J**	0.16 U	0.17 U	0.15 U	0.17 U	0.16 U	0.78 U
PCBs								
Aroclor 1242	NS	3.3 U	3.3 U	3.6 U	3.1 U	3.6 U	3.3 U	3.2 U
Aroclor 1248	NS	3 U	3 U	3.2 U	2.8 U	3.2 U	3 U	2.9 U
Aroclor 1254	NS	1.4 U	1.3 U	1.5 U	4.4 **J**	1.4 U	1.3 U	1.3 U
Aroclor 1260	NS	4.5 U	9.7 **J**	4.8 U	4.2 U	140	4.4 U	160 **J**
Total PCBs	1,000/10,000*	ND	9.7	ND	4.4	140	ND	160

TABLE 5C
PESTICIDES AND PCBs IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	B-18(14.5-16.5)	B-18(28-30)
Lab Sample ID	**RSCO**[1]	210785-004	210785-005
Dilution		1	1
Date Sampled		9/12/2005	9/12/2005
Units	**ug/Kg**	ug/Kg	ug/Kg
Compound			
Pesticides			
beta-BHC	200	0.34 U	0.29 U
delta-BHC	300	0.13 **UJ**	0.11 **UJ**
gamma-BHC (Lindane)	60	0.19 U	0.17 U
Heptachlor	100	0.19 U	0.16 U
Aldrin	41	0.45 U	0.39 U
Heptachlor epoxide	20	0.14 U	0.12 U
Endosulfan I	900	0.18 U	0.16 U
Dieldrin	44	0.4 U	0.35 U
4 4'-DDE	2,100	0.54 U	0.47 U
Endrin	100	1.1 U	0.97 U
Endosulfan II	900	0.39 **U**	0.18 U
4 4'-DDD	2,900	0.48 **UJ**	0.41 **UJ**
Endosulfan sulfate	1,000	0.86 **U**	0.19 U
4 4'-DDT	2,100	0.39 **UJ**	0.34 **UJ**
Methoxychlor	<10,000	2.6 **UJ**	2.3 **UJ**
alpha-Chlordane	NS	0.14 U	0.12 U
gamma-Chlordane	540	0.11 U	0.099 U
Endrin ketone	NS	0.18 U	0.16 U
PCBs			
Aroclor 1242	NS	3.7 U	3.2 U
Aroclor 1248	NS	3.4 U	2.9 U
Aroclor 1254	NS	1.5 U	1.3 U
Aroclor 1260	NS	5 U	4.3 U
Total PCBs	1,000/10,000*	ND	ND

TABLE 5C
PESTICIDES AND PCBs IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:

1 - Recommended Soil Clean-up Objectives listed in NYSDEC Technical and Adminstrative Guidance Memorandum (TAGM) #4046 (exceedances indicated in bold).

ug/kg - micrograms per kilogram = parts per billion (ppb).

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

M - Concentration calculated using manual integration.

NS - No Standard

* RSCO is 1,000 ug/kg for surface soil (<2 feet below grade) and 10,000 ug/kg for subsurface soil (>2 feet below grade).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the samle and meet quality control criteria. The presence or absence of the analyte cannot be verified.

(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	MW-1(0-2)	MW-1(15-17)	MW-2(0-2)	MW-2(12-14)	B/MW-3(0-2)	B/MW-3(7-9)	MW-4(0-2)
Lab Sample ID	**RSCO**[1]	**Background**[2]	210785-013	210785-014	210785-001	210785-002	210723-004	210723-005	210785-015
Dilution			1	1	5	1	1	1	1
Date Sampled			9/14/2005	9/14/2005	9/12/2005	9/12/2005	9/8/2005	9/8/2005	9/15/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	3,810 **J**	9,290 **J**	4,380 **J**	11,200 **J**	3,430 **J**	6,760 **J**	1,000 **J**
Antimony	SB	N/A	1.2 **UJ**	1.3 **UJ**	1.4 **UJ**	1.3 **UJ**	1.7 **UJ**	1.4 **UJ**	1.3 **R**
Arsenic	7.5 or SB	3-12	7.4 **J**	4.1 **J**	**16.8**	2.3 **J**	11.3 **J**	2.7 **J**	2.5 **J**
Barium	300 or SB	15-600	**864** **J**	19.6 **J**	244 **J**	96.5 **J**	**2,930**	114	96.4 **R**
Beryllium	0.16 or SB	0-1.75	0.51 U	0.56 U	0.61 U	0.61 **J**	0.75 U	0.63 U	0.56 **UJ**
Cadmium	1 or SB	0.1-1	**2** B	1.1 U	**4.2**	1.2 U	**1.8** **J**	1.3 U	1.1 U
Calcium	SB	130-35,000	**44,300**	565	5,510	1,610	**91,400**	13,100	**125,000** *
Chromium	10 or SB	1.5-40	15.8	13	17.2	16.3	18.4	15.3	3.8 **J**
Cobalt	30 or SB	2.5-60	2.6	7.5	2.4	7.4	2.9 **J**	10.1	1.9 **J**
Copper	25 or SB	1-50	30.2	15.2	**166**	15.6	16.8	29.4	11.5
Iron	2,000 or SB	2,000-550,000	10,800	20,500	23,000	19,300	7,310	17,600	4,940
Lead	SB [3]	200-500[3]	**803**	7.7 **J**	475	18.3	**2,980**	427	89.2
Magnesium	SB	100-5,000	**9,900**	3,070	651	3,540	4,690	3,190	**82,100**
Manganese	SB	50-5,000	187	291	111	314	146	110	135
Mercury	0.1 or SB	0.001-0.2	**0.87**	0.039 B	**0.3**	0.058	**2.5**	0.16	0.013 U
Nickel	13 or SB	0.5-25	18.2	14.7	13.4	17.8	11.4	23.5	9.6 **J**
Potassium	SB	8,500-43,000	677	386	329	1,220	1,060 **J**	3,940 **J**	426 **J**
Selenium	2 or SB	0.1-3.9	1.6 U	1.8 U	1.9 U	1.9 U	2.4 U	2 U	1.8 U
Silver	SB	N/A	0.32 U	0.36 U	0.53 **J**	0.37 U	0.48 U	0.4 U	0.36 **UJ**
Sodium	SB	6,000-8,000	346 **J**	202 **J**	352 **J**	91.6 **J**	234 **J**	252 **J**	210 **J**
Thallium	150	1-300	1.3 **UJ**	1.5 **UJ**	1.6 **UJ**	1.5 **UJ**	2 U	1.7 U	1.5 **R**
Vanadium	SB	N/A	22	15.3	19.7	22.4	11	15.7	24.3 **J**
Zinc	20 or SB	9-50	**565** **J**	35.3 **J**	**435** **J**	**51.4** **J**	2,060	**469**	**70.4**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	MW-4(12-14)	B/MW-5(0-2)	B/MW-5(5-7)	MW-6(2-4)	MW-6(15-17)	MW-7(0-2)	MW-7(6-8)
Lab Sample ID	**RSCO[1]**	**Background[2]**	210785-016	210723-008	210723-009	210941-007	210941-008	210941-005	210941-006
Dilution			1	1	1	1	1	5	10
Date Sampled			9/15/2005	9/9/2005	9/9/2005	9/22/2005	9/22/2005	9/21/2005	9/21/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	8,440 **J**	5,960 **J**	6,760 **J**	15,800	10,800	3,840	5,180
Antimony	SB	N/A	1.5 **R**	1.3 **UJ**	1.3 **UJ**	1.5 **UJ**	1.3 **UJ**	1.6 **UJ**	1.3 **UJ**
Arsenic	7.5 or SB	3-12	3.4 **J**	3.3 **J**	1.3 U	5 **J**	1.8 **J**	3.7 B	6.3 **J**
Barium	300 or SB	15-600	96.6 **R**	93.3	143	214 **J**	91.9 **J**	193 **J**	**922 J**
Beryllium	0.16 or SB	0-1.75	0.66 **UJ**	0.57 U	0.55 U	0.64 U	0.58 U	0.69 U	0.57 U
Cadmium	1 or SB	0.1-1	1.3 U	1.1 U	1.1 U	1.3 U	1.2 U	1.4 U	1.1 U
Calcium	SB	130-35,000	2,850	**47,200**	2,240	**68,400**	1,280	**100,000**	**67,500**
Chromium	10 or SB	1.5-40	13.1 **J**	11.3	14	105 **R**	25.2 **R**	19 **R**	21 **R**
Cobalt	30 or SB	2.5-60	5.7	4.6	6.8	12.9 **J**	11 **J**	5 **J**	5 **J**
Copper	25 or SB	1-50	18.6	17.4	16	39.8 **J**	34.8 **J**	11.9 **J**	15 **J**
Iron	2,000 or SB	2,000-550,000	15,600	10,200	15,900	34,500	18,400	16,400	12,300
Lead	SB[3]	200-500[3]	70.6	56.9	48.3	90.5 **J**	32.4 **J**	417 **J**	292 **J**
Magnesium	SB	100-5,000	2,670	**6,920**	3,710	**13,900**	4,220	**5,180**	**5,030**
Manganese	SB	50-5,000	260	306	77.8	511	193	167	158
Mercury	0.1 or SB	0.001-0.2	0.15	0.19	0.072	**0.59 J**	0.083 **J**	0.17 **J**	**0.36 J**
Nickel	13 or SB	0.5-25	14 **J**	10.3	17.9	48.6 **J**	**25.2 J**	7.4 **J**	14.6 **J**
Potassium	SB	8,500-43,000	694 **J**	2,570 **J**	4,350 **J**	7,290 **J**	2,850 **J**	984 **J**	1,800 **J**
Selenium	2 or SB	0.1-3.9	2.1 U	1.8 U	1.8 U	2.1 U	1.9 U	2.2 U	1.8 U
Silver	SB	N/A	0.42 **UJ**	0.36 U	0.35 U	0.41 **UJ**	0.37 **UJ**	0.44 **UJ**	0.36 **UJ**
Sodium	SB	6,000-8,000	105 **J**	335 **J**	139 **J**	676 **J**	104 **J**	2,380 **J**	356 **J**
Thallium	150	1-300	1.7 **UJ**	1.5 U	2.8 **J**	1.7 U	1.5 U	1.8 U	1.5 U
Vanadium	SB	N/A	16.2 **J**	16.4	14	39.9 **J**	30.5 **J**	11.4 **J**	18.3 **J**
Zinc	20 or SB	9-50	**53.5**	**84.6**	**98.5**	**195 J**	**58.1 J**	**210 J**	**878 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	MW-8(0-2)	MW-8(13-15)	MW-9(0-2)	MW-9(12-14)	B-10(0.5-2.5)	B-10(15-15.5)	B-11(0-2)
Lab Sample ID	**RSCO[1]**	**Background[2]**	210941-001	210941-002	210785-006	210785-007	210785-017	210785-018	210810-004
Dilution			1	1	1	1	1	1	1
Date Sampled			9/19/2005	9/19/2005	9/13/2005	9/13/2005	9/15/2005	9/15/2005	9/16/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	8,500	15,100	5,990 **J**	6,770 **J**	5,400 **J**	8,810 **J**	2,680 **J**
Antimony	SB	N/A	1.3 **UJ**	1.1 **UJ**	1.6 **UJ**	1.4 **UJ**	1.4 **R**	1.5 **R**	1.5 **UJ**
Arsenic	7.5 or SB	3-12	4.4 **J**	2.5 **J**	3.2 **J**	2.7 **J**	3 **J**	1.6 U	**14.6**
Barium	300 or SB	15-600	184 *N	165 **J**	58.5 **J**	18.7 **J**	263 **R**	109 **R**	261 **J**
Beryllium	0.16 or SB	0-1.75	0.57 U	0.46 U	0.68 U	0.63 U	0.59 **UJ**	0.67 **UJ**	0.65 U
Cadmium	1 or SB	0.1-1	1.1 U	0.93 U	1.4 U	1.3 U	1.2 U	1.3 U	**7.7**
Calcium	SB	130-35,000	**42,500**	5,730	**86,600**	1,100	**56,200**	2,530	9,240
Chromium	10 or SB	1.5-40	27.6 **R**	107 **R**	17.1	9	10.4 **J**	13.1 **J**	11.2
Cobalt	30 or SB	2.5-60	3.9 **J**	12.5 **J**	3.8	6.5	2.6	5.9	26.3
Copper	25 or SB	1-50	13.9 **J**	33.8 **J**	17	27.4	11.1	17.1	**116**
Iron	2,000 or SB	2,000-550,000	12,800	34,900	15,900	14,300	6,590	15,400	8,770
Lead	SB [3]	200-500[3]	**510 J**	133 **J**	6 **J**	6 **J**	277	85.1	364
Magnesium	SB	100-5,000	3,320	**7,500**	**5,210**	2,960	3,800	2,540	632
Manganese	SB	50-5,000	200	402	209	340	179	278	117
Mercury	0.1 or SB	0.001-0.2	1.5 **J**	0.099 **J**	0.015 U	0.018 **J**	0.14	**0.46**	0.12
Nickel	13 or SB	0.5-25	10.4 **J**	**30.9 J**	7.9	15.8	8.6 **J**	12.5 **J**	**34.4**
Potassium	SB	8,500-43,000	932 **J**	7,560 **J**	681	369	753 **J**	470 **J**	248 **J**
Selenium	2 or SB	0.1-3.9	1.8 U	1.7 **J**	2.2 U	2 U	1.9 U	2.1 U	2.1 U
Silver	SB	N/A	0.36 **UJ**	0.3 **UJ**	0.44 U	0.41 U	0.38 **UJ**	0.43 U	0.41 U
Sodium	SB	6,000-8,000	900 **J**	308 **J**	823 **J**	35.5 **J**	679 **J**	182 **J**	274 **J**
Thallium	150	1-300	1.5 U	2.2 **J**	1.8 **UJ**	1.7 **UJ**	1.6 **UJ**	1.8 **UJ**	1.7 **UJ**
Vanadium	SB	N/A	17.4 **J**	48 **J**	17.4	10.9	12.1 **J**	14.9 **J**	13.7
Zinc	20 or SB	9-50	**155 J**	**1,440 J**	48 **J**	30.6 **J**	**276**	47.3	**812 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	B-11(12-14)	B-11(25-27)	B-12(0-2)	B-12(2-4)	B-12(11-13)	B-13(0-2)	B-13(6-8)	B-14(0-2)
Lab Sample ID	**RSCO[1]**	**Background[2]**	210810-005	210810-006	210723-001	210723-002	210723-003	210723-010	210723-011	210941-011
Dilution			1	1	5	2	1	10	1	10
Date Sampled			9/16/2005	9/16/2005	9/8/2005	9/8/2005	9/8/2005	9/9/2005	9/9/2005	9/23/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	10,900 **J**	9,160 **J**	6,030 **J**	**5,340 J**	8,620 **J**	4,080 **J**	6,210 **J**	7,940
Antimony	SB	N/A	1.2 **UJ**	1.5 **UJ**	5.2 **J**	1.3 **UJ**	3.3 **J**	1.6 **UJ**	1.5 **UJ**	1.5 **UJ**
Arsenic	7.5 or SB	3-12	4.6 **J**	4.7 **J**	**16.6**	10.1	4.2 **J**	**12.9**	5 **J**	5.5 **J**
Barium	300 or SB	15-600	130 **J**	285 **J**	**817**	387	**4,100**	**1,450**	**982**	314 **J**
Beryllium	0.16 or SB	0-1.75	0.54 U	0.66 U	0.71 U	0.55 U	0.56 U	0.71 U	0.64 U	0.64 U
Cadmium	1 or SB	0.1-1	1.1 U	1.3 U	**14.5**	1.1 U	**6.1**	1.4 U	1.3 U	1.3 U
Calcium	SB	130-35,000	24,000	8,490	**44,300**	20,000	27,800	**45,700**	**64,700**	**78,600**
Chromium	10 or SB	1.5-40	19.1	26.9	32.9	17.7	22.3	12.2	12.9	**53.6 R**
Cobalt	30 or SB	2.5-60	8.7	10.9	3.8	5.5	9	4.1	5.9	6.5 **J**
Copper	25 or SB	1-50	**54.3**	33.8	**297**	128	**69.6**	24.5	29.9	44.3 **J**
Iron	2,000 or SB	2,000-550,000	19,400	23,000	13,000	34,500	20100	15,800	13,200	14,200
Lead	SB [3]	200-500[3]	**672**	153	**1,500**	**1,760**	**786**	**821**	498	423 **J**
Magnesium	SB	100-5,000	4,520	3,920	4690	**5,400**	**5,960**	3,130	**7,270**	**5,770**
Manganese	SB	50-5,000	418	281	167	393	275	302	319	197
Mercury	0.1 or SB	0.001-0.2	**0.43**	0.02 **J**	**0.27**	0.34	0.18	**0.54**	**0.33**	0.11 **J**
Nickel	13 or SB	0.5-25	19.5	21.7	18.2	15.4	22.3	24.2	14	12.5 **J**
Potassium	SB	8,500-43,000	2,250	1,910	604 **J**	1,210 **J**	6,820 **J**	1,000 **J**	2,310 **J**	1,680 **J**
Selenium	2 or SB	0.1-3.9	1.7 U	2.1 U	2.4 **J**	1.8 U	1.8 U	2.3 U	2 U	2.1 U
Silver	SB	N/A	0.34 U	0.42 U	1.1 **J**	0.61 **J**	0.36 U	0.46 U	0.41 U	0.41 **UJ**
Sodium	SB	6,000-8,000	212 **J**	152 **J**	465 **J**	294 **J**	310 **J**	353 **J**	364 **J**	1,230 **J**
Thallium	150	1-300	1.4 **UJ**	1.7 **UJ**	1.9 U	1.5 U	1.5 U	1.9 U	1.7 U	1.7 U
Vanadium	SB	N/A	25.6	18.6	24.1	17.1	26.2	22.8	16.2	21.2 **J**
Zinc	20 or SB	9-50	**87.7 J**	**183 J**	**1,100**	**284**	**1,740**	**809**	**1,070**	**442 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	B-14(15-17)	B-14(20-22)	B-15(0-2)	B-15(13-13.5)	B-16(0-2)	B-16(10-12)	B-16(24-26)
Lab Sample ID	**RSCO**[1]	**Background**[2]	210941-012	210941-013	210941-003	210941-004	210785-008	210785-011	210785-012
Dilution			1	1	1	1	1	1	1
Date Sampled			9/23/2005	9/23/2005	9/19/2005	9/19/2005	9/14/2005	9/14/2005	9/14/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	8,340	9,110	8,050	11,400	6,140 **J**	7,960 **J**	12,900 **J**
Antimony	SB	N/A	1.3 **UJ**	1.3 **UJ**	1.3 **UJ**	1.2 **UJ**	1.3 **UJ**	1.1 **UJ**	1.4 **UJ**
Arsenic	7.5 or SB	3-12	1.4 U	3.1 **J**	5.5 **J**	4.6 **J**	9.6	3.7 **J**	2.4 **J**
Barium	300 or SB	15-600	103	87.4	166 **J**	102 **J**	139 **J**	99.9 **J**	75.7 **J**
Beryllium	0.16 or SB	0-1.75	0.57 U	0.73 **J**	0.57 U	0.53 U	0.57 U	0.49 U	0.61 U
Cadmium	1 or SB	0.1-1	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	0.97 U	1.2 U
Calcium	SB	130-35,000	4,970 **J**	2,830	**62,300**	11,700	**52,200**	9,350	1,750
Chromium	10 or SB	1.5-40	**179**	14.2	27 **R**	17.3 **R**	20.4	17.5	25.2
Cobalt	30 or SB	2.5-60	10	9	6 **J**	8.6 **J**	3.5	6.2	12.6
Copper	25 or SB	1-50	**67.8**	12.8	22.1 **J**	14.4 **J**	21.5	27.1	20.1
Iron	2,000 or SB	2,000-550,000	37,300	13,800	17,400	28,800	13,700	15,900	28,400
Lead	SB [3]	200-500[3]	20.6	31.8	232 **J**	7.7 **J**	84.2	134	27
Magnesium	SB	100-5,000	4,410	1,640	3,970	3,320	4,790	3,250	**5,240**
Manganese	SB	50-5,000	301	293	193	1,020	178	240	314
Mercury	0.1 or SB	0.001-0.2	0.064 **J**	0.11 **J**	0.13 **J**	0.021 **J**	0.087	**0.7**	0.051
Nickel	13 or SB	0.5-25	21.2	18.2	11.6 **J**	17 **J**	14.1	13.7	22
Potassium	SB	8,500-43,000	5,550 **J**	360 **J**	1,140 **J**	726 **J**	1,260	1,530	2,240
Selenium	2 or SB	0.1-3.9	1.8 **UJ**	1.9 **UJ**	1.8 U	1.7 U	1.8 U	1.6 U	1.9 U
Silver	SB	N/A	0.37 U	0.38 U	0.37 **UJ**	0.34 **U**	0.36 U	0.31 U	0.39 U
Sodium	SB	6,000-8,000	169 **J**	108 **J**	809 **J**	224 **J**	1,000 **J**	221 **J**	216 **J**
Thallium	150	1-300	1.5 **R**	1.6 **R**	1.5 U	2.2 **J**	1.5 **UJ**	1.3 **UJ**	1.6 **UJ**
Vanadium	SB	N/A	25	16	35.4 **J**	21.1 **J**	20.6	20.1	30.2
Zinc	20 or SB	9-50	**90.9 J**	**49.9 J**	**127 J**	35.9 **J**	**103 J**	**118 J**	**56 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**NYSDEC**	**Eastern US**	B-17(0-2)	B-17(14-16)	B-17(18-20)	B-18(0-2)	B-18(14.5-16.5)	B-18(28-30)
Lab Sample ID	**RSCO[1]**	**Background[2]**	210810-001	210810-002	210810-003	210785-003	210785-004	210785-005
Dilution			1	1	1	5	1	1
Date Sampled			9/16/2005	9/16/2005	9/16/2005	9/12/2005	9/12/2005	9/12/2005
Units	**mg/Kg**	**mg/Kg**	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Aluminum	SB	33,000	3,070 **J**	2,950 **J**	**46,600 J**	7,240 **J**	7,390 **J**	7,170 **J**
Antimony	SB	N/A	1 **UJ**	1.2 **UJ**	1.3 **UJ**	1.3 **UJ**	1.6 **UJ**	1.1 **UJ**
Arsenic	7.5 or SB	3-12	1.8 **J**	7.7 **J**	3.5 **J**	3.8 **J**	1.7 U	1.6 **J**
Barium	300 or SB	15-600	27.7 **J**	**936 J**	278 **J**	119 **J**	62.5 **J**	36.2 **J**
Beryllium	0.16 or SB	0-1.75	0.46 U	0.54 U	0.58 U	0.56 U	0.69 U	0.69 **J**
Cadmium	1 or SB	0.1-1	0.92 U	**1.2 J**	**3.2 J**	1.1 U	1.4 U	0.96 U
Calcium	SB	130-35,000	27,200	**66,100**	5,180	**55,400**	1,170	870
Chromium	10 or SB	1.5-40	7.6	15.1	**278**	15.1	12.1	13.9
Cobalt	30 or SB	2.5-60	2.9	2.8	38	4.5	6	11.7
Copper	25 or SB	1-50	15.2	17	28.5	26.8	14.2	22.2
Iron	2,000 or SB	2,000-550,000	6,480	6,380	70,600	11,800	13,100	22,800
Lead	SB [3]	200-500[3]	27.9	**2,580**	18.9	88.2	25.6	6.8 **J**
Magnesium	SB	100-5,000	**6,560**	1,970	**38,700**	4,980	2,440	3,390
Manganese	SB	50-5,000	196	147	1,420	177	150	402
Mercury	0.1 or SB	0.001-0.2	0.077	**0.81**	0.029 **J**	0.096	**0.21**	0.013 U
Nickel	13 or SB	0.5-25	6.9	14.1	**135**	12.9	19.6	**25.3**
Potassium	SB	8,500-43,000	499	726	20,200	1,660	564	1,480
Selenium	2 or SB	0.1-3.9	1.5 U	1.7 U	1.9 U	1.8 U	2.2 U	1.5 U
Silver	SB	N/A	0.29 U	0.35 U	0.37 U	0.36 U	0.44 U	0.31 U
Sodium	SB	6,000-8,000	132 **J**	560 **J**	1,580 **J**	582 **J**	72.9 **J**	98.1 **J**
Thallium	150	1-300	1.2 **UJ**	1.4 **UJ**	1.5 UN	1.5 **UJ**	1.8 **UJ**	1.3 **UJ**
Vanadium	SB	N/A	13.7	10	165 **R**	21.7	13.3	12.8
Zinc	20 or SB	9-50	43.9 **J**	**461 J**	**125 J**	**310 J**	38.2 **J**	**68.6 J**

TABLE 5D
METALS IN SOIL
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
1 - Recommended Soil Clean-up Objectives listed in NYSDEC Technical and Adminstrative Guidance Memorandum (TAGM) #4046
2 - From TAGM #4046 (exceendances indicated in bold).
3 - Background levels for lead vary widely. Average background levels in metropolitan or suburban areas or near highways typically range from 200-500 ppm.
SB - Site Background
mg/kg - milligrams per kilogram = parts per million (ppm)
U - Compound not detected.
B - Value obtained from a reading that was less than the Contract Required Detection Limit (CRDL).
N - MS/MSD spike recovery exceeds control limits.
N/A - Not Available.
UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
R - The sample results are rejected due to serious deficiencies in the ability to analyze the samle and meet quality control criteria. The presence or absence of the analyte cannot be verified.
(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5E
VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient Water Qual. Standards**[1]	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
Lab Sample ID		210941-015	210941-014	210941-016	211066-007	211066-005	210941-017	211066-002
Dilution		1	1	1	1	1	1	1
Date Sampled		9/28/2005	9/28/2005	9/28/2005	10/7/2005	10/6/2005	9/28/2005	10/10/2005
Units	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound								
Carbon disulfide	50	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
Acetone	50	1.4 **UJ**	1.4 **UJ**	1.4 **UJ**	1.4 **UJ**	1.4 **UJ**	1.5 **UJ**	1.4 **UJ**
Methylene chloride	5	0.4 **UJ**	0.4 **UJ**	0.4 **UJ**	0.4 **U**	0.4 **U**	0.76 **UJ**	0.4 **U**
Methyl-tert-butyl-ether (MTBE)	10	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	2.6 J	0.3 U
2-Butanone (MEK)	50	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Chloroform	7	0.7 U	0.7 U	2.8 J	0.7 U	1.1 J	0.7 U	0.7 U
Benzene	1	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.76 J
Trichloroethene	5	0.7 U	1.5 J	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Toluene	5	0.3 U	0.3 U	0.3 U	0.44 J	0.64 J	0.3 U	1.5 J
Ethylbenzene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total VOCs	10,000	ND	1.5	2.8	0.44	1.74	2.6	2.26

TABLE 5E
VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient**	MW-7D	MW-8	MW-9	UST	TB -1	FB - 1
Lab Sample ID	**Water Qual.**	211066-003	211066-004	211066-006	211066-008	210723-006	210723-007
Dilution	**Standards**[1]	1	1	1	200	1	1
Date Sampled		10/10/2005	10/10/2005	10/7/2005	10/10/2005	9/8/2005	9/9/2005
Units	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
Carbon disulfide	50	0.9 U	0.9 U	0.9 U	180 **UJ**	0.9 **UJ**	0.9 **UJ**
Acetone	50	24 **UJ**	1.4 **UJ**	5.4 **UJ**	**12,000 J**	1.4 **UJ**	1.4 **UJ**
Methylene chloride	5	0.4 **U**	0.4 **U**	0.4 **U**	**280 U**	2.5 **J**	0.7 **J**
Methyl-tert-butyl-ether (MTBE)	10	6.5	0.3 U	0.3 U	60 U	0.3 U	0.3 U
2-Butanone (MEK)	50	16	1.2 U	1.2 U	**9,400**	1.2 **UJ**	6.3 **J**
Chloroform	7	0.7 U	0.7 U	1.5 J	140 U	0.7 U	0.7 U
Benzene	1	**2** J	**20**	0.44 J	**15,000**	0.4 U	0.4 U
Trichloroethene	5	0.7 U	0.7 U	0.7 U	140 U	0.7 U	0.7 U
Toluene	5	1.9 J	**5.8**	0.55 J	**16,000**	0.3 U	0.3 U
Ethylbenzene	5	1 U	**8.2**	1 U	**740** J	1 U	1 U
Xylenes (total)	5	2.3 J	**33**	1.1 J	**4,100**	1 U	1 U
Total VOCs	10,000	28.7	67	3.59	**57,240**	2.5	7

TABLE 5E
VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient Water Qual. Standards[1]**	FB - 2	TB - 2	FB - 3	TB - 3	FB - 4	TB - 4
Lab Sample ID		210785-009	210785-010	210785-019	210785-020	210941-009	210941-010
Dilution		1	1	1	1	1	1
Date Sampled		9/14/2005	9/14/2005	9/16/2005	9/15/2005	9/23/2005	9/23/2005
Units	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
Carbon disulfide	50	0.9 U	2 J	0.9 U	0.9 U	0.9 U	0.9 U
Acetone	50	2.4 **J**	1.9 **J**	2.4 **J**	1.8 **J**	4.2 **J**	2.8 **UJ**
Methylene chloride	5	3.6 **UJ**	4.3 **UJ**	1.3 **UJ**	1.4 **UJ**	1.1 **UJ**	1.2 **UJ**
Methyl-tert-butyl-ether (MTBE)	10	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Butanone (MEK)	50	8.4 J	1.2 U	8 J	1.2 U	9.4 J	1.2 U
Chloroform	7	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Benzene	1	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Trichloroethene	5	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Toluene	5	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Ethylbenzene	5	1 U	1 U	1 U	1 U	1 U	1 U
Xylenes (total)	5	1.1 J	1 U	1 U	1 U	1 U	1 U
Total VOCs	10,000	11.9	3.9	10.4	1.8	13.6	ND

TABLE 5E
VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient**	FB - 5	TB - 5	FB - 6
Lab Sample ID	**Water Qual.**	210941-018	210941-019	211066-001
Dilution	**Standards**[1]	1	1	1
Date Sampled		9/30/2005	9/30/2005	10/10/2005
Units	**ug/L**	ug/L	ug/L	ug/L
Compound				
Carbon disulfide	50	0.9 U	0.9 U	0.9 U
Acetone	50	3.6 **J**	2.7 **J**	4.4 **J**
Methylene chloride	5	0.65 **UJ**	2.8 **UJ**	0.47 **U**
Methyl-tert-butyl-ether (MTBE)	10	0.3 U	0.3 U	0.3 U
2-Butanone (MEK)	50	7.7 J	1.2 U	1.2 U
Chloroform	7	0.7 U	0.7 U	0.7 U
Benzene	1	0.4 U	0.4 U	0.4 U
Trichloroethene	5	0.7 U	0.7 U	0.7 U
Toluene	5	0.3 U	0.3 U	0.3 U
Ethylbenzene	5	1 U	1 U	1 U
Xylenes (total)	5	1 U	1 U	1 U
Total VOCs	10,000	11.3	2.7	4.4

TABLE 5E
VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:

1 - NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values for Class GA groundwater (exceedances indicated in bold).

ug/L - micrograms per liter = parts per billion (ppb)

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria.
The result is less than the quantitation limit but greater than zero.The concentration given is an approximate value.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5F
SEMIVOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient Water Qual. Standards**[1]	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
Lab Sample ID		210941-015	210941-014	210941-016	211066-007	211066-005	210941-017	211066-002
Dilution		1	1	1	1	1	1	1
Date Sampled		9/28/2005	9/28/2005	9/28/2005	10/7/2005	10/6/2005	9/28/2005	10/10/2005
Units	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound								
Phenol	1	0.6 **J**	0.4 U	0.4 U	0.4 U	0.4 **UJ**	0.5 J	0.4 U
Benzyl alcohol	NS	1 **UJ**	1 **UJ**	1 **UJ**	1 U	1 **UJ**	1 **UJ**	1 U
2-Methylphenol	5	0.6 U	0.6 U	0.7 U	0.6 U	0.6 **UJ**	0.6 U	0.6 U
4-Methylphenol	50	0.3 U	0.3 U	0.4 U	0.4 U	0.3 **UJ**	0.3 U	0.3 U
2 4-Dimethylphenol	NS	0.7 U	0.7 U	0.9 U	0.8 U	0.7 **UJ**	0.7 U	0.7 U
Naphthalene	10	3 J	0.7 U	0.8 U	0.7 U	0.7 **UJ**	2 J	0.8 J
2-Methylnaphthalene	50	0.6 U	0.6 U	0.8 U	0.7 U	0.6 **UJ**	0.6 U	0.6 U
Bis(2-ethylhexyl)phthalate	50	1 U	1 U	2 U	1 U	1 **UJ**	1 U	2 J
Total VOCs	10,000	3.6	ND	ND	ND	ND	2.5	2.8

TABLE 5F
SEMIVOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient Water Qual. Standards**[1]	MW-7D	MW-8	MW-9	UST	FB - 1	FB - 2	FB - 3
Lab Sample ID		211066-003	211066-004	211066-006	211066-008	210723-007	210785-009	210785-019
Dilution		1	1	1	200	1	1	1
Date Sampled		10/10/2005	10/10/2005	10/7/2005	10/10/2005	9/9/2005	9/14/2005	9/16/2005
Units	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound								
Phenol	1	0.4 U	0.4 U	0.4 U	**4,100**	0.4 U	0.4 U	0.4 U
Benzyl alcohol	NS	1 U	1 U	1 U	**1,200**	1 U	1 U	1 U
2-Methylphenol	5	0.6 U	0.6 U	0.6 U	**2,300**	0.6 U	0.6 U	0.6 U
4-Methylphenol	50	0.3 U	0.4 U	0.4 J	**3,700**	0.4 U	0.3 U	0.3 U
2 4-Dimethylphenol	NS	0.7 U	0.8 U	0.8 U	**760** J	0.8 U	0.7 **UJ**	0.7 **UJ**
Naphthalene	10	5 J	**13**	1 J	**640** J	0.7 U	0.7 U	0.7 U
2-Methylnaphthalene	50	1 J	1 J	0.7 U	**420** J	0.7 U	0.6 U	0.6 U
Bis(2-ethylhexyl)phthalate	50	1 U	1 U	1 U	140 U	1 U	1 U	1 U
Total VOCs	10,000	6	14	1.4	**13,120**	ND	ND	ND

TABLE 5F

SEMIVOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

WEST 61st STREET SITE

NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**Class GA Ambient Water Qual. Standards**[1] **ug/L**	FB - 4 210941-009 1 9/23/2005 ug/L	FB - 5 210941-018 1 9/30/2005 ug/L	FB - 6 211066-001 1 10/10/2005 ug/L
Phenol	1	0.4 **UJ**	0.4 U	0.4 U
Benzyl alcohol	NS	1 **UJ**	1 **UJ**	1 U
2-Methylphenol	5	0.6 **UJ**	0.6 U	0.6 U
4-Methylphenol	50	0.3 **UJ**	0.3 U	0.3 U
2 4-Dimethylphenol	NS	0.7 U	0.7 U	0.7 U
Naphthalene	10	0.7 **UJ**	0.7 U	0.7 U
2-Methylnaphthalene	50	0.6 **UJ**	0.6 U	0.6 U
Bis(2-ethylhexyl)phthalate	50	1 U	1 U	1 U
Total VOCs	10,000	ND	ND	ND

TABLE 5F
SEMIVOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:

1 - NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values for Class GA groundwater (exceedances indicated in bold).

ug/L - micrograms per liter = parts per billion (ppb)

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria.
The result is less than the quantitation limit but greater than zero.The concentration given is an approximate value.

NS - No standard.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5G
PESTICIDES AND PCBs IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient Water Qual. Standards**[1]	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
Lab Sample ID		210941-015	210941-014	210941-016	211066-007	211066-005	210941-017	211066-002
Dilution		1	1	1	1	1	1	1
Date Sampled		9/28/2005	9/28/2005	9/28/2005	10/7/2005	10/6/2005	9/28/2005	10/10/2005
Units	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Pesticides								
alpha-BHC	ND (<0.05)	0.011 U	0.011 U	0.013 U	0.012 U	0.011 **UJ**	0.011 U	0.014 **U**
delta-BHC	ND (<0.05)	0.0047 **J**	0.0022 **UJ**	0.0026 **UJ**	0.0023 U	0.0022 **UJ**	0.0022 **UJ**	0.0024 U
Heptachlor	ND (<0.01)	0.0078 U	0.0078 U	0.0092 U	0.0083 U	0.0078 **UJ**	0.0078 U	0.015 **U**
Heptachlor epoxide	ND (<0.01)	0.0057 U	0.0057 U	0.0067 U	0.0061 U	0.0057 **UJ**	0.0057 U	0.0063 U
4 4'-DDD	ND (<0.01)	0.014 U	0.014 U	0.017 U	0.015 U	0.014 **UJ**	0.014 U	**0.037 J**
Endrin ketone	NS	0.016 U	0.016 U	0.019 U	0.017 U	0.016 **UJ**	0.016 U	0.02 **U**
Total PCBs	0.09	ND	ND	ND	ND	ND	ND	ND

TABLE 5G
PESTICIDES AND PCBs IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient**	MW-7D	MW-8	MW-9	FB - 1	FB - 2	FB - 3	FB - 4
Lab Sample ID	**Water Qual.**	211066-003	211066-004	211066-006	210723-007	210785-009	210785-019	210941-009
Dilution	**Standards[1]**	1	1	1	1	1	1	1
Date Sampled		10/10/2005	10/10/2005	10/7/2005	9/9/2005	9/14/2005	9/16/2005	9/23/2005
Units	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Pesticides								
alpha-BHC	ND (<0.05)	0.011 U	0.011 U	0.011 U	0.012 **UJ**	0.011 U	0.011 U	0.011 U
delta-BHC	ND (<0.05)	0.0022 U	0.0022 U	0.0044 J	0.0024 **UJ**	0.0022 **UJ**	0.0022 **UJ**	0.0022 **UJ**
Heptachlor	ND (<0.01)	0.0078 U	0.0078 U	0.0082 U	0.0085 U	0.0078 U	0.0078 U	0.0078 U
Heptachlor epoxide	ND (<0.01)	**0.013** J	0.0057 U	0.006 U	0.0062 **UJ**	0.0057 U	0.0057 U	0.0057 U
4 4'-DDD	ND (<0.01)	0.014 U	0.014 U	0.015 U	0.016 **UJ**	0.014 U	0.014 U	0.014 U
Endrin ketone	NS	0.016 U	0.016 U	0.017 U	0.018 U	0.016 U	0.016 U	0.016 U
Total PCBs	0.09	ND	ND	ND	ND	ND	ND	ND

TABLE 5G
PESTICIDES AND PCBs IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Pesticides**	**Class GA Ambient Water Qual. Standards**[1] **ug/L**	FB - 5 210941-018 1 9/30/2005 ug/L		FB - 6 211066-001 1 10/10/2005 ug/L	
alpha-BHC	ND (<0.05)	0.011	U	0.011	U
delta-BHC	ND (<0.05)	0.0022	**UJ**	0.0022	U
Heptachlor	ND (<0.01)	0.0078	U	0.0078	U
Heptachlor epoxide	ND (<0.01)	0.0057	U	0.0057	U
4 4'-DDD	ND (<0.01)	0.014	U	0.014	U
Endrin ketone	NS	0.016	U	0.016	U
Total PCBs	0.09	ND		ND	

TABLE 5G
PESTICIDES AND PCBs IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes

1 - NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values for Class GA groundwater (exceedances indicated in bold).
ug/L - micrograms per liter = parts per billion (ppb)
J - Data indicates the presence of a compound that meets the identification criteria.
U - The compound was not detected at the indicated concentration.
NS - No standard.
ND - Not detected.
UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5H
DISSOLVED METALS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units**	**Class GA Ambient Water Qual. Standards[1]** **ug/L**	MW-1 210941-015 1 9/28/2005 ug/L	MW-2 210941-014 1 9/28/2005 ug/L	MW-3 210941-016 1 9/28/2005 ug/L	MW-4 211066-007 1 10/7/2005 ug/L	MW-5 211066-005 1 10/6/2005 ug/L	MW-6 210941-017 1 9/28/2005 ug/L	MW-7 211066-002 1 10/10/2005 ug/L
Aluminum-Dissolved	100	92 U	92 U	92 U	**591**	**103 J**	92 U	**254 J**
Antimony-Dissolved	3	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U
Arsenic-Dissolved	25	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U
Barium-Dissolved	1,000	91.9	60.6	49.7	64.2	55.1	120	125
Beryllium-Dissolved	3*	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
Cadmium-Dissolved	5	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	3.6 **J**
Calcium-Dissolved	NS	97,600	196,000	133,000	224,000	165,000	185,000	383,000
Chromium-Dissolved	50	1.3 U	1.3 U	1.3 U	1.8 **J**	2.4 **J**	1.3 U	1.5 **J**
Cobalt-Dissolved	NS	2.8 **J**	1.8 U	4.2 **J**	2.3 **J**	1.8 U	1.8 U	11.9
Copper-Dissolved	200	4.3 U	11.9 **R**	11.8	4.3 U	6.3 **J**	4.3 U	20.2
Iron-Dissolved	300	97 **J**	130 **J**	54 U	**781**	293	71 **J**	**564**
Lead-Dissolved	25	3 **UJ**	3 **UJ**	3 **UJ**	3 **UJ**	3 **UJ**	3 **UJ**	3 **UJ**
Magnesium-Dissolved	35,000*	15,700	33,100	10,600	27,600	34,500	35,300	124,000
Manganese-Dissolved	300	**478**	35.1	73.5	**1,040**	72.2	**1,650**	**380**
Mercury-Dissolved	0.7	0.07 U	0.07 U	0.07 UN	0.07 U	0.07 U	0.07 U	0.098 **J**
Nickel-Dissolved	100	1.9 U	3.4 **J**	5.6 **J**	3.5 **J**	17.3	3.6 **J**	**183**
Potassium-Dissolved	NS	19,400 **J**	15,800 **J**	16,700 **J**	21,300 **J**	19,300 **J**	23,000 **J**	69,100 **J**
Selenium-Dissolved	10	6.9 **J**	**35.3**	25.9 **J**	**11.3 J**	**16 J**	6.3 **J**	**42.4**
Silver-Dissolved	50	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Sodium-Dissolved	20,000	**209,000 J**	**42,600 J**	**43,900 J**	90,700 **J**	55,900 **J**	**83,500 J**	168,000 **J**
Thallium-Dissolved	0.5*	10 U	10 U	10 U	10 **UJ**	10 **UJ**	10 U	10 **UJ**
Vanadium-Dissolved	NS	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	5.9 **J**
Zinc-Dissolved	2,000*	11 U	13.8 **J**	11 U	11 U	11.4 **J**	11 U	79.4

TABLE 5H
DISSOLVED METALS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient Water Qual. Standards[1]**	MW-7D	MW-8	MW-9
Lab Sample ID		211066-003	211066-004	211066-006
Dilution		1	1	1
Date Sampled		10/10/2005	10/10/2005	10/7/2005
Units	**ug/L**	ug/L	ug/L	ug/L
Aluminum-Dissolved	100	92 U	**174 J**	92 U
Antimony-Dissolved	3	5.4 U	5.4 U	5.4 U
Arsenic-Dissolved	25	3.9 U	18.3 **J**	3.9 U
Barium-Dissolved	1,000	177	112	67.6
Beryllium-Dissolved	3*	0.54 U	0.54 U	0.54 U
Cadmium-Dissolved	5	1.1 U	1.1 U	1.1 U
Calcium-Dissolved	NS	122,000	218,000	111,000
Chromium-Dissolved	50	1.3 U	1.3 U	7.6 **J**
Cobalt-Dissolved	NS	3.6 **J**	1.8 U	1.9 **J**
Copper-Dissolved	200	4.3 U	4.3 U	7.4 **J**
Iron-Dissolved	300	**355**	**581**	54 U
Lead-Dissolved	25	3 **UJ**	3.2 **J**	3 **UJ**
Magnesium-Dissolved	35,000*	**49,900**	32,300 **J**	26,800
Manganese-Dissolved	300	**3,460**	**1,490 J**	**897**
Mercury-Dissolved	0.7	0.07 U	0.075 **J**	0.07 U
Nickel-Dissolved	100	52.3	2.6 **J**	7 **J**
Potassium-Dissolved	NS	19,000 **J**	25,100 **J**	21,300 **J**
Selenium-Dissolved	10	5 U	5 U	5 U
Silver-Dissolved	50	1.1 U	1.1 U	1.1 U
Sodium-Dissolved	20,000	95,100 **J**	121,000 **J**	144,000 **J**
Thallium-Dissolved	0.5*	10 **UJ**	10 **UJ**	10 **UJ**
Vanadium-Dissolved	NS	1.5 U	1.5 U	1.7 **J**
Zinc-Dissolved	2,000*	11 U	11 U	11 U

TABLE 5H
DISSOLVED METALS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:

1 - NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values for Class GA groundwater (exceedances indicated in bold).
U - Compound not detected.
* Value is a guidance value.
NS - No standard.
UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
R - The sample results are rejected due to serious deficiencies in the ability to analyze the samle and meet quality control criteria. The presence or absence of the analyte cannot be verified.
(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5I
TOTAL METALS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient Water Qual. Standards[1]**	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-7D
Lab Sample ID		210941-015	210941-014	210941-016	211066-007	211066-005	210941-017	211066-002	211066-003
Dilution		1	1	1	1	1	1	1	1
Date Sampled		9/28/2005	9/28/2005	9/28/2005	10/7/2005	10/6/2005	9/28/2005	10/10/2005	10/10/2005
Units	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	100	**1,810**	**448 J**	92 U	**941**	**315 J**	**2,360**	**5,720**	**257 J**
Antimony	3	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U
Arsenic	25	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	6.5 **J**	4.9 **J**
Barium	1,000	112	69.4	49.8	67.6	56.7	145	288	246
Beryllium	3*	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
Cadmium	5	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**5.7 J**	1.1 U
Calcium	NS	102,000	213,000	129,000	223,000	160,000	192,000	381,000	126,000
Chromium	50	4 **J**	1.3 U	1.3 U	1.5 **J**	1.3 U	4.7 **J**	**62.1**	3.1 **J**
Cobalt	NS	4.2 **J**	2.1 **J**	2.8 **J**	3 **J**	1.9 **J**	4.2 **J**	50	6.7 **J**
Copper	200	5.9 **J**	6.1 **R**	11.6	4.3 U	9.4 **J**	8.6 **J**	61.2	4.3 U
Iron	300	**2,970**	**760**	84.5 **J**	**1,440**	**596**	**4,850**	**19,300**	**17,200**
Lead	25	3 **UJ**	3 **UJ**	3 **UJ**	3 **UJ**	3 **UJ**	6 **J**	**109 J**	7.5 **J**
Magnesium	35,000*	17,000	**36,100**	10,400	27,800	33500	**37,700**	**145,000**	**51,700**
Manganese	300	**554 UJ**	46.1	86.5	**1,070**	88.3	**1,770**	**661**	**3650**
Mercury	0.7	0.07 UN	0.07 **UJ**	0.07 **UJ**	**0.9**	0.07 U	0.07 **UJ**	0.07 U	0.07 U
Nickel	100	4.7 **J**	5.4 **J**	5.5 **J**	3.6 **J**	16.9	8.5 **J**	**544**	86.9
Potassium	NS	20,700 **J**	17,300 **J**	16,400 **J**	21,600 **J**	18600 **J**	24,700 **J**	71,200 **J**	18,500 **J**
Selenium	10	6.5 **J**	37.5	**23.3 J**	**19.1 J**	9.2 **J**	7 **J**	**42.6**	5 U
Silver	50	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Sodium	20,000	**217,000 J**	**46,100 J**	**43,900 J**	**90,100 J**	**53400 J**	**87,200 J**	**169,000 J**	**95,300 J**
Thallium	0.5*	10 U	10 U	10 U	10 **UJ**	10 **UJ**	10 U	10 **UJ**	10 **UJ**
Vanadium	NS	6.4	2 **J**	1.5 U	2 **J**	1.5 U	8.6	27.6	1.5 U
Zinc	2,000*	11 U	11 U	11 U	11 U	12.1 **J**	15.1 **J**	258	11 U

TABLE 5I
TOTAL METALS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**Class GA Ambient Water Qual. Standards[1]**	MW-8	MW-9	FB - 1	FB - 2	FB - 3	FB - 4	FB - 5	FB - 6
Lab Sample ID		211066-004	211066-006	210723-007	210785-009	210785-019	210941-009	210941-018	211066-001
Dilution		1	1	1	1	1	1	1	1
Date Sampled		10/10/2005	10/7/2005	9/9/2005	9/14/2005	9/16/2005	9/23/2005	9/30/2005	10/10/2005
Units	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	100	**2,060**	92 U	92 U	92 U	92 U	92 U	92 U	92 U
Antimony	3	5.4 U	5.4 U	5.4 U	5.4 **UJ**	5.4 U	5.4 U	5.4 U	5.4 U
Arsenic	25	9.8 **J**	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U
Barium	1,000	172	71.4	0.74 U	0.74 U	0.74 U	0.74 U	1 **J**	0.74 U
Beryllium	3*	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U
Cadmium	5	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Calcium	NS	207,000	115,000	58.7 **J**	156 **J**	74.3 **J**	56 U	88.2 **J**	63.3 **J**
Chromium	50	4.1 **J**	2.2 **J**	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
Cobalt	NS	2.4 **J**	2.1 **J**	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Copper	200	6.8 **J**	10.4	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
Iron	300	**5,790**	92.7 **J**	54 U	54 **U**	54 U	54 U	54 U	54 U
Lead	25	**29.6 J**	3 **UJ**	3 U	3 U	3 U	3 U	3 **UJ**	3 **UJ**
Magnesium	35,000*	31,200	27,900	26 U	26 U	26 U	26 U	26 U	26 U
Manganese	300	**1,200 J**	**953**	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U
Mercury	0.7	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 **UJ**	0.07 **UJ**	0.07 U
Nickel	100	7.4 **J**	4.7 **J**	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Potassium	NS	24,400 **J**	23,000 **J**	191 **UJ**	191 **UJ**	191 U	191 **UJ**	191 **UJ**	191 U
Selenium	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Silver	50	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Sodium	20,000	**114,000 J**	**148,000 J**	98 U	98 U	98 U	98 U	98 **UJ**	98 **U**
Thallium	0.5*	**11.1 J**	10 **UJ**	10 U	10 U	10 U	10 **UJ**	10 U	10 **UJ**
Vanadium	NS	6.6	2.1 **J**	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Zinc	2,000*	18.7 **J**	11 U	11 U	11 U	11 U	11 U	11 U	11 U

TABLE 5I
TOTAL METALS IN GROUNDWATER
WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:

1 - NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values for Class GA groundwater (exceedances indicated in bold).
U - Compound not detected.
N - MS/MSD spike recovery exceeds control limits.
* Value is a guidance value.
NS - No standard.
UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5J
VOLATILE ORGANIC COMPOUNDS IN SOIL GAS
ALGIN PROPERTIES/WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**SG-1S** **642258** **1** **10/05/2005** **ug/m3**	**SG-1D** **642259** **1** **10/05/2005** **ug/m3**	**SG-2S** **642255** **4** **10/05/2005** **ug/m3**	**SG-2D** **642254** **1** **10/5/2005** **ug/m3**	**SG-2D Duplicate** **642257** **1** **10/05/2005** **ug/m3**	**SG-3D** **642260** **20** **10/05/2005** **ug/m3**
1,1,1-Trichloroethane	1.1 U	1.1 U	4.4 U	9.8	8.2	22 U
1,2,4-Trimethylbenzene	4.9	1.8	6.9	4	3.6	20 U
1,2-Dichloroethane	0.81 U	0.81 U	5.7	2.1	1.7	16 U
1,3,5-Trimethylbenzene	2.5	0.98 U	5.4	1.5	1.2	20 U
1,3-Butadiene	0.44 U	0.44 U	1.8 U	0.44 U	0.62	8.8 U
1,4-Dichlorobenzene	1.6	1.7	4.8 U	1.6	1.7	24 U
2,2,4-Trimethylpentane	0.93 U	0.98	3.7 U	0.93 U	1.1	19 U
4-Ethyltoluene	3.9	1.5	6.9	2.9	2.8	20 U
Acetone	33	16	260 **J**	15	21	240 U
Benzene	1.1	1.6	28	2.9	2.9	13 U
Bromodichloromethane	1.3 U	1.3 U	5.4 U	1.3 U	1.3 U	27 U
Carbon Disulfide	16	1.7	120	40	31	31 U
Chloroform	1.9	1.6	8.8	15	12	20 U
Chloromethane	1 U	1 U	4.1 U	1 U	1 U	21 U
Cyclohexane	0.69 U	0.69 U	33	0.69 U	0.69 U	14 U
Dichlorodifluoromethane	4.2	3.8	16	16	13	49 U
Ethylbenzene	3.1	1.6	13	2.6	2.7	17 U
Freon TF	1.5 U	1.5 U	6.1 U	3.6	2.8	31 U
Methyl Butyl Ketone	2 U	2 U	8.2 U	2 U	2 U	41 U
Methyl Ethyl Ketone	5.3	2.9	22	2.4	2.9	29 U
Methylene Chloride	7.6	1.7 U	15	2.6	2.4	35 U
n-Heptane	0.86	1	39	1.4	1.4	16 U
n-Hexane	0.92	2	33	2	2.1	14 U
Tetrachloroethene	81	11	5.9	16	15	27 U
Tetrahydrofuran	15 U	15 U	59 U	15 U	15 U	290 U
Toluene	11	8.7	150	14	15	17
Trichloroethene	1.2	1.1 U	4.3 U	1.1 U	1.1 U	21 U
Trichlorofluoromethane	3.3	4.3	7.3	12	9	22 U
Xylene (m,p)	12	4	38	7.8	7.8	17 U
Xylene (o)	4.8	1.7	11	3.1	2.8	17 U

TABLE 5J
VOLATILE ORGANIC COMPOUNDS IN SOIL GAS
ALGIN PROPERTIES/WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**SG-1S** **642258** **1** **10/05/2005** **ug/m3**	**SG-1D** **642259** **1** **10/05/2005** **ug/m3**	**SG-2S** **642255** **4** **10/05/2005** **ug/m3**	**SG-2D** **642254** **1** **10/5/2005** **ug/m3**	**SG-2D Duplicate** **642257** **1** **10/05/2005** **ug/m3**	**SG-3D** **642260** **20** **10/05/2005** **ug/m3**
Xylene (total)	17	5.6	52	11	10	17 U
Unknown (TIC in ppbv)	490 J	1.9 J	14 J	4 J	3.7 J	87 J
Unknown (TIC in ppbv)	17 J	2.6 J	8.1 J	5.8 J	5.5 J	50 J
Unknown (TIC in ppbv)	40 J	1.4 J	26 J	250 J	220 J	14000 J
Unknown (TIC in ppbv)	5.3 J	1 J	640 J	6.7 J	6.1 J	86 J
Unknown (TIC in ppbv)	21 J	9.6 J	690 J	17 J	13 J	
Unknown (TIC in ppbv)	5.8 J	1 J	84 J	2.6 J	2.3 J	
Unknown (TIC in ppbv)	4.6 J		160 J	5.9 J	4.8 J	
Unknown (TIC in ppbv)	5.1 J		37 J	3.1 J	2.6 J	
Unknown (TIC in ppbv)	5.6 J		8 J	2.4 J	2 J	
Unknown (TIC in ppbv)	12 J		8.2 J	2.7 J	2.3 J	

TABLE 5J
VOLATILE ORGANIC COMPOUNDS IN SOIL GAS
ALGIN PROPERTIES/WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID	**SG-4D**	**SG-5S**	**TripBlank**	**Background-1**	**Background-2**	**MBLK102005VA**
Lab Sample ID	**642264**	**642261**	**642262**	**642256**	**642263**	**MBLK102005VA**
Dilution	**3**	**4**	**1**	**1**	**1**	**1**
Date Sampled	**10/06/2005**	**10/06/2005**	**10/05/2005**	**10/05/2005**	**10/06/2005**	
Units	**ug/m3**	**ug/m3**	**ug/m3**	**ug/m3**	**ug/m3**	**ug/m3**
Compound						
1,1,1-Trichloroethane	55	8.2	1.1 U	3	1.1 U	1.1 U
1,2,4-Trimethylbenzene	3.5	5.4	0.98 U	0.98 U	0.98 U	0.98 U
1,2-Dichloroethane	2.4 U	3.2 U	0.81 U	0.81 U	0.81 U	0.81 U
1,3,5-Trimethylbenzene	2.9 U	3.9 U	0.98 U	0.98 U	0.98 U	0.98 U
1,3-Butadiene	1.3 U	1.8 U	0.44 U	0.44 U	0.44 U	0.44 U
1,4-Dichlorobenzene	3.6 U	4.8 U	1.2 U	1.3	1.2 U	1.2 U
2,2,4-Trimethylpentane	2.8 U	3.7 U	0.93 U	1.5	1.2	0.93 U
4-Ethyltoluene	2.9 U	5.9	0.98 U	1.1	0.98 U	0.98 U
Acetone	36 **UJ**	48 **UJ**	12 **UJ**	16 **J**	21 **J**	12 U
Benzene	1.9 U	2.6 U	0.64 U	2.1	1.4	0.64 U
Bromodichloromethane	4.5	12	1.3 U	1.3 U	1.3 U	1.3 U
Carbon Disulfide	15	6.2 U	1.6 U	1.6 U	1.6 U	1.6 U
Chloroform	340	390	0.98 U	0.98 U	0.98 U	0.98 U
Chloromethane	3.1 U	4.1 U	1 U	1 U	1.3	1 U
Cyclohexane	2.1 U	2.8 U	0.69 U	0.69 U	0.69 U	0.69 U
Dichlorodifluoromethane	7.4 U	9.9 U	2.5 U	2.9	3.3	2.5 U
Ethylbenzene	3	14	0.87 U	1.7	0.96	0.87 U
Freon TF	4.6 U	6.1 U	1.5 U	1.5 U	1.5 U	1.5 U
Methyl Butyl Ketone	6.1 U	8.2 U	2 U	2.3	2 U	2 U
Methyl Ethyl Ketone	4.7	16	1.5 U	5	3.5	1.5 U
Methylene Chloride	5.2 U	6.9 U	1.7 U	2.3	1.7 U	1.7 U
n-Heptane	2.5 U	3.3 U	0.82 U	1.2	1.1	0.82 U
n-Hexane	2.1 U	2.8 U	0.7 U	2.6	1.9	0.7 U
Tetrachloroethene	75	67	1.4 U	4.5	2.4	1.4 U
Tetrahydrofuran	44 U	80	15 U	15 U	15 U	15 U
Toluene	3.3	4.5	0.75 U	9.8	6	0.75 U
Trichloroethene	3.5	8.6	1.1 U	1.1 U	1.1 U	1.1 U
Trichlorofluoromethane	10	17	1.1 U	2	1.7	1.1 U
Xylene (m,p)	8.3	43	0.87 U	4	1.8	0.87 U
Xylene (o)	6.1	24	0.87 U	1.5	0.87 U	0.87 U

TABLE 5J
VOLATILE ORGANIC COMPOUNDS IN SOIL GAS
ALGIN PROPERTIES/WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**SG-4D** **642264** **3** **10/06/2005** **ug/m3**	**SG-5S** **642261** **4** **10/06/2005** **ug/m3**	**TripBlank** **642262** **1** **10/05/2005** **ug/m3**	**Background-1** **642256** **1** **10/05/2005** **ug/m3**	**Background-2** **642263** **1** **10/06/2005** **ug/m3**	**MBLK102005VA** **MBLK102005VA** **1** **ug/m3**
Xylene (total)	14	69	0.87 U	5.6	1.9	0.87 U
Unknown (TIC in ppbv)	8.6 J			1.3 J	1.1 J	
Unknown (TIC in ppbv)	3.4 J			1.6 J	1.4 J	
Unknown (TIC in ppbv)	4.1 J			2.1 J	1.5 J	
Unknown (TIC in ppbv)	4.2 J			1.2 J	1.5 J	
Unknown (TIC in ppbv)	3.6 J			1.6 J	2 J	
Unknown (TIC in ppbv)					1.1 J	
Unknown (TIC in ppbv)						
Unknown (TIC in ppbv)						
Unknown (TIC in ppbv)						
Unknown (TIC in ppbv)						

TABLE 5J
VOLATILE ORGANIC COMPOUNDS IN SOIL GAS
ALGIN PROPERTIES/WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**mblk102005ba** **mblk102005ba** **1** **ug/m3**
1,1,1-Trichloroethane	1.1 U
1,2,4-Trimethylbenzene	0.98 U
1,2-Dichloroethane	0.81 U
1,3,5-Trimethylbenzene	0.98 U
1,3-Butadiene	0.44 U
1,4-Dichlorobenzene	1.2 U
2,2,4-Trimethylpentane	0.93 U
4-Ethyltoluene	0.98 U
Acetone	12 U
Benzene	0.64 U
Bromodichloromethane	1.3 U
Carbon Disulfide	1.6 U
Chloroform	0.98 U
Chloromethane	1 U
Cyclohexane	0.69 U
Dichlorodifluoromethane	2.5 U
Ethylbenzene	0.87 U
Freon TF	1.5 U
Methyl Butyl Ketone	2 U
Methyl Ethyl Ketone	1.5 U
Methylene Chloride	1.7 U
n-Heptane	0.82 U
n-Hexane	0.7 U
Tetrachloroethene	1.4 U
Tetrahydrofuran	15 U
Toluene	0.75 U
Trichloroethene	1.1 U
Trichlorofluoromethane	1.1 U
Xylene (m,p)	0.87 U
Xylene (o)	0.87 U

TABLE 5J
VOLATILE ORGANIC COMPOUNDS IN SOIL GAS
ALGIN PROPERTIES/WEST 61st STREET SITE
NEW YORK, NEW YORK

Client ID **Lab Sample ID** **Dilution** **Date Sampled** **Units** **Compound**	**mblk102005ba** **mblk102005ba** **1** **ug/m3**
Xylene (total)	0.87 U
Unknown (TIC in ppbv)	
Unknown (TIC in ppbv)	
Unknown (TIC in ppbv)	
Unknown (TIC in ppbv)	
Unknown (TIC in ppbv)	
Unknown (TIC in ppbv)	
Unknown (TIC in ppbv)	
Unknown (TIC in ppbv)	
Unknown (TIC in ppbv)	
Unknown (TIC in ppbv)	

TABLE 5J
VOLATILE ORGANIC COMPOUNDS IN SOIL GAS
ALGIN PROPERTIES/WEST 61st STREET SITE
NEW YORK, NEW YORK
NOTES

Notes:
ug/m^3 - micrograms per cubic meter of air.
ppbv - parts per billion per one liter of air.
U - The compound was not detected at the indicated concentration.
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
(Letters in bold indicate updated qualifiers based on the data usability report provided by Environmental Data Services Inc.)

TABLE 5K
TOXICITY CHARACTERISTIC LEACHING PROCEDURE
WEST 61st STREET SITE
NEW YORK, NEW YORK

Method Blank	**NYSDEC Section 371.3 Maximum Contaminant Concentration**	MB-57201	MB-57201	MB-57201	MB-57201
Client ID		B/MW-3(0-2)	B-12(11-13)	B-17(14-16)	MW-8(13-15)
Lab Sample ID		211281-001	211281-002	211281-003	211281-004
Date Sampled		9/8/2005	9/8/2005	9/16/2005	9/19/2005
Units	mg/L	mg/L	mg/L	mg/L	mg/L
Compound					
Arsenic-TCLP	5.0	0.0195 U	0.0195 U	0.0195 U	0.0195 U
Barium-TCLP	100.0	0.89	0.491	0.719	0.512
Cadmium-TCLP	1.0	0.031 **J**	0.009 **J**	0.0072 **J**	0.0055 U
Chromium-TCLP	5.0	0.0065 U	0.0065 U	0.0065 U	0.0065 U
Lead-TCLP	5.0	**6.82**	0.282	1.41	1.97
Selenium-TCLP	1.0	0.025 U	0.025 U	0.025 U	0.025 U
Silver-TCLP	5.0	0.0055 U	0.0055 U	0.0055 U	0.0055 U

Notes:

J - Indicates an estimated value. (Based on changes provided in the Data Usability Report supplied by Environmental Data Services Inc.)

APPENDIX H
CITIZEN PARTICIPATION ACTIVITIES DURING REMEDIAL CONSTRUCTION

CITIZEN PARTICIPATION DURING REMEDIAL CONSTRUCTION

Consistent with the New York State Department of Environmental Conservation (NYSDEC)-approved June 2005 Revised Citizen Participation Plan, the following activities will occur prior and during the implementation of the Remedial Work Plan.

- At the request of Ms. Lynn Opinante, the new Director of the Riverside Branch of the New York Public Library, AKRF, Inc. will provide information to her about the Brownfield Cleanup Program and the role of the library as a repository. AKRF will furnish Ms. Opinante a list of documents that should be presently available for public inspection at the library, and promptly provide any documents not present for public inspection.
- Consistent with Sections 4.5 and 4.6 of the June 2005 Revised Citizen Participation Plan, AKRF will prepare and submit to the NYSDEC and the New York State Department of Health (NYSDOH) for approval, a Fact Sheet that will provide: information summarizing the results of the Remedial Investigation, including the determination of no significant threat to public health or the environment; announce the availability of the January 2006 Remedial Investigation Report for public review; summarize the results of the Alternatives Analysis; state the selected tentative method of site remediation, and announce the availability of the Remedial Work Plan, including the Alternatives Analysis for public review; provide the location and hours of public access for document review at the two document repositories: and advise the public of the comment period and the possibility of holding a public meeting for the Site. The state-approved Fact Sheet will be distributed to the Project Mailing List. A Certification of Mailing will be submitted to NYSDEC, accompanied by the Fact Sheet and Distribution List.
- Prior to the commencement of remedial activities at the Site, AKRF will prepare and submit to the NYSDEC and NYSDOH a Notice and Fact Sheet announcing the intended start date and activities that will occur. The state-approved Notice and Fact Sheet will be distributed to the Project Mailing List. A Certification of Mailing will be submitted to the NYSDEC, accompanied by the FAct Shet and the Distribution List.
- At the direction of the NYSDEC and/or NYSDOH, any pertinent analytical data or other information gathered will be placed in the document repositories.

-

PROJECT MAILING LIST

West 61st Street Site, New York, NY
BCP Site #C231043

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State Senator
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Honorable Hillary Clinton
State Senator
780 Third Avenue, Suite 2601
New York, NY 10017

Honorable Jerrold Nadler
Congressman – 8th Congressional District
201 Varick Street Suite 669
New York, NY 10014

Honorable Scott Stringer
Assemblyman – 67th Assembly District
230 West 72nd Street
New York, NY 10023

Honorable Richard N. Gottfried
Assemblyman – 75th Assembly District
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Manhattan Borough President
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Commisioner of Dept. of Housing Preservation and Development
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New York, NY 10038

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Chair, Community Board 7
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New York, NY 10023

Mr. Robert Kulikowski, PhD, Director
New York City Office of Environmental Coordination
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New York, NY 10038

Ms. Amanda M. Burden, AICP
Chair of the City Planning Commission and
Director of Department of City Planning
NYC Department of City Planning
22 Reade Street
New York, NY 10007-1216

Commissioner Emily Lloyd
NYC Department of Environmental Protection
59-17 Junction Boulevard
Corona, NY 11368-5107

Michael Lesser
Division of Environmental Enforcement
New York State Department of Environmental Conservation
625 Broadway
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Mr. Daniel Walsh
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21st Street
Long Island City, N.Y. 11101-5407

Mr. Shaminder Chawla
New York State Department of Environmental Conservation
47-40 21st Street
Long Island City, NY 11101

West 60th Street Associates, LLC; West End Enterprises, LLC
Bennet Schonfeld, Esq., c/o Algin Management Co., LLC
64-35 Yellowstone Boulevard
Forest Hills, NY 11375

Seventh Frogmouth Corp., Cohen 101
3900 Galt Ocean Dr.
Fort Lauderdale, FL 33308-6631

250 West 61ST Street
35 Longvue Ave.
New Rochelle, NY 10804-4118

AJH 61 Corp.
270 West 89th St.
New York, NY 10024-1705

225-227 West 60TH Street
575 Lexington Ave.
New York, NY 10022-6102

NYC Department of Education
1 Centre St, 19th Fl.
New York, NY 10007-1602

Hasko Utilities Co., Inc.
80 Main St.
Mineola, NY 11501

240 West 60TH Street, C/O Louis DeStephanis
P.O. Box 400
Southampton, NY 11969-0400

Parks and Recreation-Arsenal West
16 West 61st St.
New York, NY 10023-7604

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46 Blauvelt Rd.
Blauvelt, NY 10913-1204

Bancamerica Comm. CRP
555 California St. Suite 8
San Francisco, CA 94104-1502

211 W. 61st St. Associates, LP
187 Millburn Ave. Suite 6
Millburn, NJ 07041-1845

Resident
242 West 61st St.
New York, NY 10023

Resident
244 West 61st St.
New York, NY 10023

Occupant
246 West 61st St.
New York, NY 10023

Occupant
34 West End Ave.
New York, NY 10023

Occupant
20 West End Ave.
New York, NY 10023

Occupant
225 West 60th St.
New York, NY 10023

P.S. 191
210 West 61st St.
New York, NY 10023

Occupant
555 West 59th St.
New York, NY 10019

Occupant
240 West 60th St.
New York, NY 10023

Occupant
533 West 59th St.
New York, NY 10023

Occupant
236 West 60th St.
New York, NY 10023

Occupant
238 West 60st St.
New York, NY 10023

Resident
227 West 61st St.
New York, NY 10023

Resident
211 West 61st St.
New York, NY 10023

Daily News
220 East 42nd Street
New York, NY 10017

New York City Department of Environmental Protection
59-17 Junction Boulevard, 10th Floor
Elmhurst, New York 11373

Elementary/Middle School PS 191
210 West 61st St.
New York, NY 10023

Yeshivat Chovevei Torah Rabbinical School
20 West End Avenue
New York, NY 10023

New York Public Library- Riverside Branch
127 Amsterdam Avenue
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APPENDIX I
ESTIMATED REMEDIATION COSTS AND SCHEDULE

PROJECTED COST FOR EASTERN AREA REMEDIATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Cost Estimate - Removal of Fill and Contaminated Material - Track 1 Cleanup

Activity	Area	Depth	Volume
Historic Fill	15,075 square feet	6 feet	4,100 cubic yds.
Petroleum Contamination	2 locations	10 feet	272 cubic yds.
Lead Contaminated Soil	36 square feet	6 feet	8 cubic yds.

Material Classification	Cubic yards	Tons	Cost / Ton	Cost
Fill - Beneficial Use	4,790	7185	$36	$258,660
Historic Fill - Waste	3,340	5,010	$62	$310,620
Petroleum Contamination	272	408	$50	$20,400
Lead-Contaminated Soil	8	12	$135	$1,620
Tank Removal - 2 days to remove 4 tanks				$5,000

Transportation and Disposal of On-Site Soil Subtotal $596,300

This estimate is based on a Track1 cleanup, which will result in the historic fill being removed to bedrock.The wastes identified include historic fill, lead contamination, and possible petroleum contamination. Except for the lead-contaminated waste around MW-3, all material is assumed to be a non-hazardous waste. Depending on post-excavation testing around MW-3, additional soil may have to be removed as hazardous waste. The amount of petroleum-contaminated material may increase depending upon post-excavation sampling results. This estimate is based on a Track 4 cleanup.The disposal facility receiving the historic fill requries one full test every 900 tons (600 cubic yards) and volatile organic compound (VOC) tests every 180 tons (120 cubic yards). Petroelum cleanup will be verified through endpoint samples for VOCs. Petroleum testing for disposal facilities will occur only if petroleum is encountered. Endpoint sampling will be undertaken consistent with NYSDEC guidelines.

Parameter	Samples	Cost/Sample	Cost
Contaminated Soil Disposal at Philadelphia, PA Facility			
Volatile Organics (VOCs)	30	$80	$2,400
TCLP - VOCs	30	$85	$2,550
Composite Samples	6	$1,020	$6,120
Petroleum Contaminated Soil Disposal at Carteret, NJ Facility			
TPH - GRO	34	$65	$2,210
Composite Samples	5	$505	$2,525
Beneficial Use Soil - Allied Signal Facility in Elizabeth, NJ			
Priority Pollutants + 40	6	$595.00	$3,570
Additional parameters	6	$180.00	$1,080
NYSDEC Endpoint Samples - Category B Deliverables			
Standard Analysis	6	$490	$2,940
QA/QC Analysis	1	$1,065	$1,065
TCLP - Metals	5	$85	$425
Lead (Metals)	5	$85	$425

Sample Analysis Subtotal $25,310

Cost - AKRF Staff	Hours	Cost/Hr	
Professional 1 - Sampling and H+S	100	$105.00	10,500
Technical Director - Oversight	20	$180.00	3,600
Senior Vice President	8	$240.00	1,920
Field Costs- sampling and monitoring equipment, and automobile.			5,000

AKRF Subtotal $21,020

Total Cost For Track 1 Cleanup $642,630

The laboratory analytical fees may change prior to the commencement of the remedial work.
Additional samples and parameters may be required by the facilility receiving the waste.

PROJECTED COST FOR EASTERN AREA REMEDIATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Cost Estimate - Removal of Fill and Contaminated Material - Track 4 Cleanup

Activity	Area	Depth	Volume
Historic Fill	15,075 square feet	6 feet	4,100 cubic yds.
Petroleum Contamination	2 locations	10 feet	272 cubic yds.
Lead Contaminated Soil	36 square feet	6 feet	8 cubic yds.

Material Classification	Cubic yards	Tons	Cost / Ton	Cost
Fill - Beneficial Use	1,676	2514	$36	$90,504
Historic Fill - Waste	3,340	5,010	$62	$310,620
Petroleum Contamination	272	408	$50	$20,400
Lead-Contaminated Soil	8	12	$135	$1,620
Tank Removal - 2 days to remove 4 tanks				$5,000
Transportation and Disposal of On-Site Soil Subtotal				**$428,144**

The wastes identified include historic fill, lead contamination, and possible petroleum contamination. Except for the lead-contaminated waste around MW-3, all material is assumed to be a non-hazardous waste. Depending on post-excavation testing around MW-3, additional soil may have to be removed as hazardous waste. The amount of petroleum-contaminated material may increase depending upon post-excavation sampling results. This estimate is based on a Track4cleanup.The disposal facility receiving the historic fill requries one full test every 900 tons (600 cubic yards) and volatile organic compound (VOC) tests every 180 tons (120 cubic yards). Petroelum cleanup will be verified through endpoint samples for VOCs. Petroleum testing for disposal facilities will occur only if petroleum is encountered. Endpoint sampling will be undertaken consistent with NYSDEC guidelines.

Parameter	Samples	Cost/Sample	Cost
Contaminated Soil Disposal at Philadelphia, PA Facility			
Volatile Organics (VOCs)	30	$80	$2,400
TCLP - VOCs	30	$85	$2,550
Composite Samples	6	$1,020	$6,120
Petroleum Contaminated Soil Disposal at Carteret, NJ Facility			
TPH - GRO	34	$65	$2,210
Composite Samples	5	$505	$2,525
Beneficial Use Soil - Allied Signal Facility in Elizabeth, NJ			
Priority Pollutants + 40	2	$595.00	$1,190
Additional parameters	2	$180.00	$360
Field Costs- sampling equipment, particulate monitors, PID, vehicle			$5,000
NYSDEC Endpoint Samples - Category B Deliverables			
Standard Analysis	6	$490	$2,940
QA/QC Analysis	1	$1,065	$1,065
TCLP - Metals	5	$85	$425
Lead (Metals)	5	$85	$425
Sample Analysis Subtotal			**$27,210**

Cost - AKRF Staff	Hours	Cost/Hr	Cost
Professional 1 - Sampling and H+S	80	$105.00	$8,400
Technical Director - Oversight	16	$180.00	$2,880
Senior Vice President	8	$240.00	$1,920
Field Costs- sampling and monitoring equipment, and automobile.			$3,000
AKRF Subtotal			**$16,200**
Cost For Track 4 Cleanup			**$471,554**

The laboratory analytical fees may change prior to the commencement of the remedial work.
Additional samples and parameters may be required by the facilility receiving the waste.

PROJECTED COST FOR MAIN AREA REMEDIATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Cost Estimate - Removal of Contaminated Soil and C+D Material - Track 1 Cleanup

Total Site area	47737.5 square feet
Excavation depth	Varies from 24 feet to 32.5 feet for sub-cellar excavation (elevation 14.0)

Material Classification	Cubic yards	Tons	Cost / Ton	Cost
Petroleum Contaminated	7,062	10,593	$50	$529,650
Uncont. fill, soil and bedrock	36,400	54,600	$36	$1,965,600
Waste fill and soil	3,432	5,148	$62	$319,176
C+D - Lot 8	2,224	3,336	$62	$206,832
Industrial Waste - acetone	15	28	$62	$1,736
Tank Removal - 4 tanks				$5,000
Transportation and Disposal of On-Site Soil Subtotal				**$3,027,994**

This estimate addresses the removal of native soil and various waste materials to the anticipated vertical and horizontal limits of excavation for the project. Wastes identified for off-site disposal include: fill and native soil destined for beneficial use; petroleum-contaminated soil; underground storage tanks; construction and demolition debris in Lot 8; potential acetone-affected soil; and soil unacceptable for beneficial use. Additional soil would be removed to meet TAGM # 4046 Cleanup Objectives in the courtyard and along West 60th Street and the removal of petroleum-contaminated soil in the southwestern corner of the Site, from the bottom of the project excavation downward to petroleum-free soil.

Parameter	Samples	Cost/Sample	Cost
Contaminated Soil Disposal at Philadelphia, PA Facility			
Volatile Organics (VOCs)	34	$80	$2,720
TCLP - VOCs	34	$85	$2,890
Composite Samples	9	$1,020	$9,180
Petroleum-Contaminated Soil Disposal at Carteret, NJ Facility			
TPH - GRO	77	$65	$5,005
Composite Samples	15	$505	$7,575
Beneficial Use Soil - Allied Signal Facility in Elizabeth, NJ			
Priority Pollutants + 40	46	$595.00	$27,370
Additional parameters	46	$180.00	$8,280
NYSDEC Endpoint Samples - Category B Deliverables			
Standard Analysis	22	$490	$10,780
QA/QC Analysis	2	$1,065	$2,130
Sample Analysis Subtotal			**$75,930**

AKRF Staff	Hours	Cost/Hr	
Professional 1 - Sampling and H+S	480	$105.00	$50,400
Technical Director- Coordination	60	$180.00	$10,800
Senior Vice President	25	$240.00	$6,000
Field Costs- sampling equipment, particulate monitors, PID, vehicle			$12,500
AKRF Subtotal			**$79,700**

Drilling Contractor	Unit		Cost/Unit	
Mob/Demob	1 LS	@	$750	$750
Hollow stem auger drill rig	22 days	@	$1,600	$35,200
Drums	10 drums	@	$50	$500
Drum disposal	10 drums	@	$150	$1,500
Drilling Subtotal				**$37,950**

Total Cost For Track 1 Cleanup	**$3,221,574**

The laboratory analytical fees may change prior to the commencement of the remedial work.
Additional samples and parameters may be required by the facilility receiving the waste.

PROJECTED COST FOR MAIN AREA REMEDIATION
WEST 61ST STREET SITE
NEW YORK, NEW YORK

Cost Estimate - Removal of Contaminated Soil and C+D Material - Track 4 Cleanup

Total Site area	47737.5 square feet
Excavation depth	Varies from 24 feet to 32.5 feet for sub-cellar excavation (elevation 14.0)

Material Classification	Cubic yards	Tons	Cost / Ton	Cost
Petroleum Contaminated	6,462	9,693	$50	$484,650
Uncont. fill, soil and bedrock	30,468	45,702	$36	$1,645,272
Waste fill and soil	3,432	5,148	$62	$319,176
C+D - Lot 8	2,224	3,336	$62	$206,832
Industrial Waste - acetone	15	28	$62	$1,736
Tank Removal - 4 tanks				$5,000
Transportation and Disposal of On-Site Soil Subtotal				**$2,662,666**

This estimate addresses the removal of native soil and various waste materials to the anticipated vertical and horizontal limits of excavation for the project. Wastes identified for off-site disposal include: fill and native soil destined for beneficial use; petroleum-contaminated soil; underground storage tanks; construction and demolition debris in Lot 8; potential acetone-affected soil; and soil unacceptable for beneficial use.

Parameter	Samples	Cost/Sample	Cost
Contaminated Soil Disposal at Philadelphia, PA Facility			
Volatile Organics (VOCs)	34	$80	$2,720
TCLP - VOCs	34	$85	$2,890
Composite Samples	9	$1,020	$9,180
Petroleum Contaminated Soil Disposal at Carteret, NJ Facility			
TPH - GRO	72	$65	$4,680
Composite Samples	14	$505	$7,070
Beneficial Use Soil - Allied Signal Facility in Elizabeth, NJ			
Priority Pollutans + 40	40	$595.00	$23,800
Additional parameters	40	$180.00	$7,200
NYSDEC Endpoint Samples - Category B Deliverables			
Standard Analysis	22	$490	$10,780
QA/QC Analysis	2	$1,065	$2,130
Sample Analysis Subtotal			**$70,450**

AKRF Staff	Hours	Cost/Hr	
Profesional 1 - Sampling and H+S	480	$105.00	$50,400.00
Technical Director- Coordination	50	$180.00	$9,000.00
Senior Vice President	25	$240.00	$6,000.00
Field Costs- sampling equipment, particulate monitors, PID, vehicle			$12,500
Total sampling and analysis			**$77,900.00**

Drilling Contractor	Unit		Cost/Unit	
Mob/Demob	1 LS	@	$750	$750
Hollow stem auger drill rig	22 days	@	$1,600	$35,200
Drums	10 drums	@	$50	$500
Drum disposal	10 drums	@	$150	$1,500
Drilling Subtotal				**$37,950**

Total Cost For Track 4 Cleanup **$2,778,516**

The laboratory analytical fees may change prior to the commencement of the remedial work.
Additional samples and parameters may be required by the facilility receiving the waste.

APPENDIX J
NYSDEC GENERIC LIST OF AGREEMENTS

NYSDEC GENERIC LIST OF AGREEMENTS
61st Street, New York, New York

Generic Agreement Number and Description	Section Addressed in RWP
1) Remedial Actions will be in compliance with DER-10.	DER-10 was used as guidance in preparing th West 61st Street RWP as stated in Section 1.0
2) An emergency contact sheet will be submitted to NYSDEC's Project Manager that will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.	Emergency contact list is included in Appendix E Health and Safety Plan (Section 5.2).
3) Pertinent data and information from the Remedial Investigation Report will be incorporated into the Remedial Work Plan.	Pertinent data from previous site investigations are included in RWP Appendix G.
4) Composite of all Sanborn maps, including a summary presentation of all historical structures of environmental significance, must be submitted.	Select Sanborn Maps and summary presentation are included in RWP Appendix L.
(5) A site map showing the defined Areas of Concern with an overlay of the site development plan will be submitted.	RWP Figure 4 shows the site development plan with the limits of the contamination shown as an overlay.
(6) A separate list of all local, regional and national governmental permits, certificates or other approvals or authorizations required to perform the remedial and development work will be submitted in the RWP and updated in the Final Remedial Report.	A list of required permits is provide in RWP Section 4.1.4
(7) A comprehensive project schedule including all proposed activities will be provided in the RWP.	A proposed remediation schedule is include in RWP Appendix I
(8) The specific details of minimum required technical elements of the Remedial Action will be included in the RWP and associated design documents and will not be shifted to the contractor for submission in contractor documents.	The RWP includes minimum technical specifications included in the bid package for the remediation contractor (Appendix F), Contract Plans for the foundation and the cellar/sub-cellar wqlls (Appendix O), and requirements for soil handling (Soil Management Plan [Appendix E]).
(9) The Applicants Remediation Engineer is responsible to insure that the contractor documents for remedial work conform to the terms defined in the final approved RWP and the final Interim Remedial Measures Work Plan.	The technical specifications for the waterproofing/vapor barrier are included in the contractor bid documents, and are included in RWP-Appendix F. AKRF will monitor all on-site excavation activities.
(10) All documents and reports submitted in fulfillment of consent orders and agreements made with NYSDEC will be submitted in both hard copy and in digital format on CD.	Digital copies of all documents will be submitted upon finalization of reports.
(11) All digital and hard copy submittals will be addressed to Project Managers for both the NYSDEC and NYSDOH.	All documents will be submitted in accordance with this requirement, and will be included in RWP Appendix K.
(12) A digital site map(s) will be submitted to the Department and will show site structures, environmental monitoring apparatus and sampling points, and a recent aerial photo of the site and immediate surrounding area.	A digital site map will be submitted upon finalization of the report. An aerial photo is provided as Figure 1 in RWP Appendix K.
(13) A surveyed site map showing the metes and bounds for the subject site as described in the governing agreement with New York State will be submitted.	A site survey is included as RWP Figure 13.

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(14) Metes and bounds description of the site will include a global positioning system coordinate for the starting point for the description.	Coordinates for southwestern property corner are: 73^{o} 59’ 22.5” W and 40^{o} 46’ 19.0” N.
(15) Project numbers will appear on the cover and face page of all reports.	The BCP number (231043) appears on the RWP cover.
(16) A glossary will be provided to provide an explanation of all acronyms used in each report.	A List of Acronyms is provided in RWP Appendix B.
(17) Photographs will be taken of all remedial action activities and submitted to NYSDEC in digital form on a CD(s).	Photographs will be taken as described in RWP Section 4.8.2 Final Remedial Report.
(18) The Remedial Investigation Report will include a conceptual site model that explains the occurrence of contaminant sources and their fate and transport at the site in the context of the local site stratigraphy and hydrogeology. The conceptual model will utilize both plan and cross-sectional views of the site.	A conceptual site model is included in RWP Appendix N. Figures 6, 9, 10, 11, 12, 12A, 12B. 12C. and 12D provide plan and cross-section views.
(19) An itemized summary of projected costs for the proposed remedial activity will be submitted as an appendix to the RWP. Actual final costs will be reported as an appendix to the Final Remediation Report.	Itemized project costs are Included in RWP Appendix I. Actual final costs will be included in the Final Remedial Report (as described in RWP Section 4.8.2)
(20) A general description of hours (i.e. 7 A.M. to 3 P. M.) and days of operation (Monday to Friday) for performance of remedial actions will be submitted. Early morning, evening, and weekend remedial work will be prohibited.	Daily work schedule will be 7 AM to 5 PM as described in RWP Section 4.10 Schedule and Costs
(21) For all BCP projects, the Track 1 alternative must be considered in the feasibility assessment of the RWP.	Alternative #1 in RWP Section 3.5 evaluates a Track 1 Cleanup.
(22) The RWP will include a complete and thorough description of the remedy.	Complete description of remedy provided in RWP Section 3.0.
(23) The RWP will specify whether additional design documents will be prepared for the project or for elements of the project.	Design for implementation of the RWP is included in the waterproofing/vapor barrier specifications and in RWP Soil Management Plan (Appendix E). No additional design documents will be submitted.
(24) A detailed map of the proposed end usage (Development Plan) of the site will be submitted.	RWP Figure 4 shows the proposed development plan.
(25) A site map will be submitted showing contour lines indicating the cut (soil removal) thicknesses that will be required into soil/fill as part of the site wide development plans.	RWP Figure 14 shows the bottom elevations of the excavation and cut thickness contour lines.
(26) Details regarding the proposed end usage of buildings and structures, particularly the lower floors and will be submitted and will be coordinated with NYSDOH.	Details of proposed end usage are described in RWP Section 2.6 and are shown on RWP Figure 4.
(27) NYSDEC will be provided the opportunity to participate in a pre-remediation/construction meeting at the site.	NYSDEC and NYSDOH will be notified of and invited to attend a pre-remediation/ construction meeting to be held prior to the start of remediation.

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(28) Site development activities are prohibited from interfering or otherwise impairing remedial activities proposed in the RWP.	Site development activities will not be allowed to interfere with site remediation as described in RWP – end of first paragraph in Section 4.0.
(29) All hotspots and structures to be remediated will be removed and end-point remedial performance sampling completed before excavations related to site-wide development commence.	Endpoint sampling will be conducted as described in RWP Section 4.2.6 and RWP Sampling Plan (Appendix D).
(30) Removal of free product and grossly contaminated soils will be performed.	NAPL was not detected in the Remedial Investigation.
(31) Underground Storage Tanks will be identified and removed from the site in accordance with STARS.	USTs will be removed during the undertaking of a NYSDEC-approved February 2006 Interim Remedial Measure Work Plan.
(32) Depths and other dimensions of initial remedial hotspot excavations will be defined.	The Areas of Concern are shown on RWP Figure 4.
(33) A table will be provided showing planned location identification number, depth, and Site-Specific Soil Action Level (SSSAL) triggers for all proposed excavations for site specific soil action level-based Areas of Concern. TCLP failure and other hazardous waste containing areas will be identified.	Locations of areas exceeding SSSALs are noted in RWP Table 3.
(34) A site map showing locations of all SSSAL-based Areas of Concern (hotspots) will be submitted with note or code identifying specific contaminant trigger(s) for each hotspot.	RWP Figure 15 shows all AOCs.
(35) A scaled map will be submitted showing all proposed remedial excavation areas for hotspots and structures to be removed.	RWP Figures4 and 15 show the areas where soil will be removed all hot spots and AOCs are within these areas.
(36) For projects with a major IRM program, a site-wide RWP will still be required for the entire project.	The portions of the Site being addressed in the Interim Remedial Measure are within the boundaries of the Site remediation.
(37) Major IRM that constitute a substantial part of the overall remedy are subject to a formal 45-day public review.	The comment period for the February 2006 IRM Work Plan ends on April 9, 2006.
(38) Plan for decommissioning historic subterranean systems will be submitted.	Not applicable. All on-site USTs and piping encountered during the IRM and the Site remediation will be removed.
(39) The Applicant, Volunteer, Responsible Party and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work and the structural integrity of excavations and structures that may be affected by those excavations.	The Applicant, AKRF, and selected remediation subcontractor will be responsible for the safe implementation of the RWP.
(40) The Final Remediation Report will include a certification by a Professional Engineer that all invasive work done during the remediation and development was performed in accordance with the contaminant field screening methodology defined in the Soil Management Plan.	Final Remedial Report will include a P.E. certification that all work was in accordance with Soil Management Plan as described in RWP Section 4.8.2

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(41) Resumes should be provided for all personnel responsible for field screening of invasive work during the IRM and subsequent remediations and all invasive development work for unknown contaminant sources.	Resumes are included in the Appendix A of the RWP Soil Management Plan (Appendix E).
(42) A plan will be submitted for screening of all excavations during invasive work that may penetrate residual contamination, including excavations for remediation and development.	Soil screening plan is provided in the Section 3.1 of the RWP Sampling Plan (Appendix D) and Section 4.3.5 of the RWP Soil Management Plan (Appendix E).
(43) Post-excavation sampling following hot-spot or other mandatory soil removal is required. A plan for post-excavation samples to be collected for all hotspot and other remedial excavations will be submitted.	Endpoint sampling will be conducted as described in the sampling Plan (Appendix D).
(44) A plan for monitoring down-gradient wells to assess the success of remedial measures to be taken during the IRMs and Remedial Actions will be submitted.	Future Off-site monitoring is not warranted at this Site..
(45) A monitoring plan for groundwater at the down-gradient site perimeter to evaluate site-wide post-remedial performance will be submitted.	Future off-Site monitoring is not warranted at this Site.
(46) Appropriately placed groundwater monitor wells will be installed immediately down-gradient of all volatile organic carbon remediation areas for the purpose of evaluation of the effectiveness of the remedy that is implemented.	Future off-Site monitoring is not warranted at this Site.
(47) A plan for site-wide, soil gas monitoring to be performed after the completion of remediation will be submitted and will be coordinated with NYSDOH.	Future on-site soil gas monitoring is not warranted at this Site.
(48) Sites with identified methane and other contaminated soil vapors will be required to construct utility seals at all underground entry points for utilities into onsite buildings and all utility departures from the site to prevent preferential migration of methane and other soil gasses along utility pathways.	Methane was not identified as a potential problem at this Site.
(49) All remedial plan involving the capture and release of soil vapors known or suspected to be contaminated must demonstrate that the atmospheric emissions of those contaminants is consistent with requirements defined in NYSDEC Division of Air document Air Guide One.	Soil vapors will not be captured and released at this Site.
(50) Sites containing historic fill or other organic-rich fill material will require testing of soil vapor for methane.	Not applicable - site characterization did not identify subsurface materials that would be indicative of methane generation. Methane samples collected at the Site contained less than or equal to 0.1% methane.
(51) Proposed design of the sub-slab portion of the proposed development will be provided and will be coordinated with NYSDOH.	A waterproofing/vapor barrier membrane will be used beneath the floor slabs of the three buildings to be constructed. Due to the presence of groundwater above the sub-cellar floor level, and the level of the VOC concentrations detected, vapor intrusion is not an issue.

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(52) After the completion of soil removal and other invasive remedial activities, a land survey will be performed by a New York State licensed surveyor.	As-built drawings described in RWP Section 4.8.2 will be based upon a survey performed by an New York licensed surveyor.
(53) Demarcation layer will be placed over on-site soils at all locations outside the footprint of buildings to be included in the final development.	A demarcation layer will be installed as described in RWP Section 4.4.1 in areas where a Track 4 Cleanup is selected.
(54) A site map and plan will be submitted that shows the design detail and location for each of the proposed final surfaces contemplated for the site.	RWP Figure 4 shows the proposed final surfaces contemplated for the site.
(55) A description will be submitted of the nature of surface cover that will be in place after the remediation is complete but before development commences	Not applicable – site development will commence concurrent with and immediately following remediation.
(56) Double layers of minimum 8-mil plastic sheeting will be used at the base of all stockpiles.	Double layers of 8-mil plastic will be used as described in Section 4.2.8 of the RWP Soil Management Plan (Appendix E)).
(57) Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.	Stockpiles will be covered with tarps as described in Section 4.2.8 of the RWP Soil Management Plan (Appendix E).
(58) Soil stockpiles will be continuously encircled with silt fences. Hay bales will be used as needed near catch basins, surface waters and other discharge points.	All stockpiles will have silt fence or a hay-bale berm around the perimeter as described in RWP Section 4.2.8 of the Soil Management Plan (Appendix E).
(59 A stockpile management plan will be submitted and will address historic fill, clean fill for reuse and imported of offsite soil.	Section 4.2.8 of the RWP Soil Management Plan (Appendix E) describes the stockpile management practices.
(60) All liquids to be removed from the site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, state, and federal regulations. Liquids discharged into city sewer systems will be addressed through approval by NYCDEP.	Dewatering fluids will be treated on-site, using a sedimentation tank, and discharged to the City sewer under a NYCDEP permit as described in RWP Section 4.2.3.
(61) Dewatered fluids will not be recharged back to the land surface or subsurface of the site.	Dewatering fluids will be treated on-site and discharged to the City sewer under a NYCDEP permit as described in RWP Section 4.2.3. Dewatering fluids will not be discharged to the land surface or subsurface.
(62) Characterization plan for onsite reuse of grading cut soils will be submitted and will be consistent with the sampling protocol defined in DER-10 or otherwise approved by NYSDEC.	Soil characterization procedures are described in the Section 4.2.5 of the RWP Soil Management Plan (Appendix E).
(63) Onsite soils removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill above subsurface utility lines.	Soil cap will consist of clean imported fill as specified in RWP Section 4.4.1.
(64) Development-related grading cuts and fills for development must not interfere with, or otherwise compromise, the performance of remediation necessary at the site.	Development activities will not interfere with site remediation.

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(65) Organic matter or other solid waste derived from on-site or from offsite is prohibited from reuse or use on-site.	Organic matter/solid waste will not be used as fill as described in Section 4.3.1 and Section 4.3.7 of the RWP Soil Management Plan (Appendix E).
(66) Historical fill is prohibited from being reused as backfill in utility trenches or landscape berms.	Soil cap will consist of clean imported fill as specified in RWP Section 4.4.1.
(67) Mechanical processing of historical fill on-site is prohibited.	Mechanical processing will not be conducted without prior approval from the NYSDEC, as described in the Soil Management Plan (Appendix E).
(68) A plan for composite sampling for reuse of site soils will be provided. The plan will describe the sampling frequency, analytes, sampling methods and stockpile management plan.	Waste/re-use characterization will be conducted during the Waste Characterization sampling as described in Section 3.2.1 of the RWP Soil Sampling Plan (Appendix D) and RWP Section 4.3.1.
(69) Plan for all material to be removed from the site will be submitted and will include excavated soil, historic fill and other solid waste and hazardous waste, showing that the material will be handled, transported and disposed in accordance with applicable Part 360 regulations and other applicable local, state, and federal regulations.	Included in the RWP Sampling Plan (Appendix D) and the RWP Soil Management Plan (Appendix E).
(70) Non-hazardous historic fill taken off-site will be handled as a Municipal Solid Waste per 6NYCRR Part 360-1.2	Sections 4.3 and 5.0 of the RWP Soil Management Plan (Appendix E). All excavated on-site material being transported to an off-site facility, will be transported to facilities located in New Jersey and/or Pennsylvania
(71) Historical fill (Municipal Solid Waste) can be received by permitted Part 360-2 or Part 360-11 facilities without modification of their permits. These materials are prohibited from Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).	All excavated on-site material being transported to an off-site facility, will be transported to facilities located in New Jersey and/or Pennsylvania.
(72) Native soils that are contaminated and non-hazardous that are being removed from remediation sites are considered Construction and Demolition (C/D) materials with contamination not typical of virgin soils by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC. These soils may be sent to a permitted Part 360 landfill.	All soil removed off-site will be disposed of out of state in accordance with applicable requirements of the state regulatory agency. Section 5.1 of the RWP Soil Management Plan (Appendix E) states that native soil will be transported to either a beneficial use site or a disposal facility, based on the soil analysis.
(73) The Final Remediation Report will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, historic fill, solid waste, and hazardous waste, and fluids, and documentation associated with that disposal showing requisite approvals for receipt of the material.	The Final Remedial Report will included an accounting of all material removed from the site including manifests/bills of lading and certificates of disposal, as described in RWP Section 4.8.2.
(74) Bill of Lading system or equivalent will be used for offsite movement of non-hazardous wastes and contaminated soils. This information will be reported in the Final Remediation Report.	The Final Remedial Report will included an accounting of all material removed from the site including manifests/bills of lading and certificates of disposal, as described in RWP Section 4.8.2.

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(75) Hazardous wastes derived from on-site will be stored, transported, and disposed in full compliance with applicable local, state, and federal regulations.	Waste characterization data from the RI indicates that there is one location of on-site hazardous waste (B/MW-3). This lead-contaminated soil will be removed during the Interim Remedial Measure.
(76) Soils imported to the site for use for the final cover will meet TAGM 4046 criteria.	Imported fill will be tested for compliance with TAGM 4046, as described in Section 4.3.1 of the RWP Soil Management Plan (Appendix E).
(77) The Final Remediation Report will include a certification by a Professional Engineer that all import of soils from offsite, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the RWP or other pertinent project plans.	Included in RWP Section 4.8.2 Final Remedial Report.
(78) Soil materials that exceed TAGM 4046 will not be imported onto the site.	Imported fill will be tested for compliance with TAGM 4046, as described in the Soil Management Plan (Sections 4.2.3, 4.2.4, and 4.3.3). Soil exceeding TAGM levels will not be used as backfill.
(79) For larger projects, an evaluation should be performed for the import of cover soils via alternatives to overland truck transport (barge, rail, etc.).	Not applicable.
(80) Solid waste will not be brought onsite. Solid waste will not be used for grading fill or cover soil on-site.	Solid waste will not be used as backfill, as described in Section 4.3.7 of the RWP Soil Management Plan (Appendix E).
(81) A dust suppression plan that addresses dust management during invasive on-site work, including, at a minimum, the items listed below:	Water will be used to control dust as described in RWP Soil Management Plan (Appendix E).
(82) Dust suppression will be achieved though the use of a dedicated on-site water truck equipped with a water cannon to enable the spray of water into off-road areas including excavations and stockpiles.	Water will be used to control dust as described in RWP Soil Management Plan (Appendix E).
(83) Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils subject to dust production.	Complete clearing and grubbing of bushes and small trees will be required for one area (approximately 90’ by 10’)) and a small structure (approximately 20’ by 30’), both located on Lot 13. The rests of the Site is cleared. Water will be used to control dust as described in RWP Soil Management Plan (Appendix E).
(84) Gravel will be used on roadways to provide a clean and dust-free road surface.	Stabilized construction entrances and truck decontamination pads will be provided as specified in RWP Sections 4.2.4 and Appendix D
(85) On-site roads will be limited in total area in order to minimize the area required for water truck sprinkling.	Stabilized construction entrances and truck decontamination pads will be provided as specified in RWP Sections 4.2.4 Trucking and Disposal, and Appendix D.
(86) The Final Remediation Report will include a certification by a P.E. that all invasive work during the remediation (including IRM’s) and all invasive development work was done in accord with dust and odor suppression methodology defined in the Interim Remedial Measures Work Plan or RWP.	Final Remedial Report will include P.E. certification that dust suppression and odor control was performed according to the Air Monitoring Work Plan (Appendix A).

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(87) A truck wash will be constructed and used for all trucks and equipment departing the site	A decontamination pad and truck wash station will be installed as described in RWP Section 4.2.5.
(88) Proposed truck routes for ingress and egress to the site will be defined. Routes will consider: (a) limiting transport through residential areas; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; and (e) promoting safety in access to highways.	Truck routs are shown on Figures 1 and 2 of the RWP Soil Management Plan (Appendix E).
(89) Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.	Trucks will be prohibited from stopping in the west 61st Street neighborhood or between the Site and the Lincoln Tunnel Or Cross Bronx expressway, as stated in RWP Section 4.2.5.
(90) Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.	Stated in RWP Section 4.2.5.
(91) Queuing of trucks will be performed onsite. Offsite queuing will be prohibited.	Queuing of loaded trucks will be prohibited, as stipulated in RWP Section 4.2.5. Loaded trucks will be required to travel directly to the highway with no stops.
(92) Trucks exiting the site will be securely covered with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited.	Stated in RWP Section 4.2.5.
(93) An odor control plan will be submitted that is capable of controlling emissions of nuisance odors off-site, and on-site, where there are residents or tenants on the property.	This is addressed in RWP Remediation Health and Safety Plan (RHASP) (Appendix A) and an expanded Community air Monitoring Plan, included RHASP.
(94) Among the means to be considered for minimization of odors during remedial actions include, but are not limited to: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; (c) use of foams to cover exposed odorous soils; (d) use of chemical odorants in spray or misting systems; and, (e) use of staff to monitor odors in surrounding neighborhoods.	Addressed in Section 4.6 of the RWP Soil Management Plan (Appendix E) and the RWP RHASP (Appendix A).
(95) Where odor problems have developed during remedial work or where the release of nuisance odors cannot otherwise be avoided due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by containing excavation and handling areas through the use of tents containment structures.	The utilization of tens for the identified waste streams is not necessary.
(96) A plan for rodent control will be submitted and will be utilized prior and during site clearing and site grubbing, and during all remedial work.	Addressed in RWP Section 4.5.1.
(97) A plan will be submitted for noise control will be included in the Remedial Work Plan or Interim Remedial Measures for all remedial work and will conform, at a minimum, to NYCDEP noise control standards.	Addressed in RWP Section 4.5.2.
(98) A plan that conforms to the requirements of a Stormwater Pollution Prevention Plan will be submitted.	A Stormwater Pollution Prevention Plan (SWPPP) is not required.

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(99) The Applicant, Volunteer, Responsible Party and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the preparation of an appropriate Health and Safety Plan and for the appropriate performance of work according to that plan.	All work will be conducted in accordance with the RWP Remediation Health and Safety Plan (Appendix A).
(100) The Health and Safety Plan (HASP) and all agreements made related to invasive activities will be required for all work performed until the completion of the development of the site (including site grading and materials relocation).	The Remediation Health and Safety Plan (RHASP) in included as RWP Appendix A.
(101) The HASP will be submitted as a separate, standalone document independent from the project plans.	Although the RHASP is being submitted as an appendix to the RWP, it was prepared so that it can be a stand alone document.
(102) The Site Safety Coordinator will be identified. A resume will be provided.	The Site Safety Coordinator (called Field Safety Officer in the HASP), will be assigned before any remediation work commences at the site.
(103) Details of the Community Air Monitoring Program (CAMP) will be defined and will be coordinated with the NYSDOH.	The Community Air Monitoring Work Plan and Expanded Community Air Monitoring Plan is consistent with the NYSDOH Generic Community Air Monitoring Plan and the NYSDOH-approved RIHASP.
(104) Exceedences observed in the CAMP will be reported in the daily report to the NYSDEC Project Manager.	RWP Section 4.8.1.
(105) The HASP will include affirmative statements to indicate procedures to be followed.	Language in the RWP Remediation Health and Safety Plan (Appendix A) includes affirmative statements.
(106) The HASP will cover all invasive work performed for remediation and site development (including site grading and materials relocation).	This is addressed in Section 6.0 of the RWP Soil management Plan (Appendix E).
(107) Appropriate HAZWOPER training will be provided as required for remedial activities.	HAZWOPER Training will be provided for the remedial activities involving AOCs , but will not address the removal of non-petroleum-contaminated fill, construction and demolition debris, and native soil as stated in RWP RHASP (Appendix A).
(108) Institutional Controls necessary for appropriate management of residual contamination of the site will be defined in the Remedial Work Plan and finalized in the Site Management Plan in the Final Remedial Report for the site.	RWP Section 4.9.1.
(109) Engineering Controls necessary for appropriate management of residual contamination of the site will be defined in the final Remedial Work Plan for the site. Long-term management of engineering controls will be defined in the Site Management Plan in the Final Remediation Report.	RWP Sections 4.4 and 4.9.1.
(110) Fact Sheets are the property of New York State. The applicant will be requested to assist in their preparation (including the development of draft Fact Sheets) and their distribution.	RWP Section 4.6.

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(111) All draft Fact Sheets will be provided to the Department in WordPerfect files and in the format used by Region 2, as dictated by the Project Manager.	RWP Section 4.6.
(112) A certification of mailing will be sent by the Applicant to the NYSDEC project manager following distribution of all Fact Sheets and notices, providing certification that the Fact Sheets were mailed, when they were mailed, a copy of the Fact Sheet, and a list of recipients.	RWP Section 4.6.
(113) CP Plans: check latest guidance on DER Website.	RWP Section 4.6.
(114) Daily Reports will be provided to the Project Manager for NYSDEC and NYSDOH by email during all periods of major invasive activity on remedial projects.	Daily reports will be emailed as described in RWP Section 4.8.1.
(115) Daily reports are not intended as a means to convey sensitive or time-critical information (i.e. notification of an accident, spill or emergency) or notification of changes to approved plans. These communications must be made directly with project managers.	Time-critical information will be communicated directly to the NYSDEC project manager as described in RWP Section 4.8.1 Daily Reports.
(116) Periodic reports will be required for site development that occurs prior to the issuance of State signoff for a project.	Such reports will be included in Daily Report as described in RWP Section 4.8.1.
(117) Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated to the NYSDEC's project manager. These findings will be included in daily or periodic electronic media reports.	Such identifications will be communicated in daily reports or directly to the project manager, as described in RWP Section 4.8.1.
(118) A site map will be submitted that shows a predefined grid for use to identify locations in reports provided to NYSDEC.	See RWP Section 4.8.1 Daily Reports and RWP Soil Sampling Plan (Appendix D) Figure 1.
(119) Mandatory job-site record keeping will be required. These records must be maintained onsite at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.	The project log book will be maintained on-site for inspection as described in RWP Section 4.7 Record Keeping.
(120) The Final Remedial Report will include as-built drawings for all constructed elements, certifications, manifests and bills of lading; and the Site Management Plan (formerly the Operation and Maintenance Plan).	RWP Section 4.8.2. Final Remedial Report
(121) Where determined to be necessary by the Department, a Financial Assurance Plan will be required to insure the sufficiency of revenue to perform long-term operations, maintenance and monitoring tasks defined in the Site Management Plan and Environmental Easements.	Not applicable.

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Generic Agreement Number and Description	**Section Addressed in RWP**
(122) The Final Remediation Report will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, historic fill and solid waste and fluids, and documentation associated with that disposal showing requisite approvals for receipt of the material.	RWP Section 4.8.2 Final Remedial Report.
(123) An itemized description of costs incurred during all aspects of the Remedial Action taken on the project will be provided as an appendix to the Final Remedial Report.	RWP Section 4.8.2 Final Remedial Report.
(124) Before completion of a project (before approval of a final Remedial Report and issuance of a Certificate of Completion), all project reports must be submitted in digital form (PDF).	All reports will be submitted in PDF format in accordance with this requirement.
(125) All primary contaminant sources (including but not limited to tanks and hotspots) identified during site characterization, remedial investigation, and remedial action will be surveyed by a surveyor licensed to practice in the State of New York.	As-built drawings described in RWP Section 4.8.2 Final Remedial Report will be created based on a survey performed by a NYS licensed surveyor.
(126) The Final Site Management Plan must be submitted in the Final Remedial Report and must include a Soil Management Plan and a listing of all Institutional Controls, Engineering Controls, operation, monitoring and maintenance for the site and Annual Certification that the controls are still in-place and effective.	A Site Management Plan will be submitted as described in RWP Section 4.8.2.
(127) Environmental Easements will be required for all residual contamination left onsite after the remedial action is complete at the site.	Environmental Easements will be recorded as described in RWP Section 4.9.1.
(128) The Environmental Easements must include the Site Management Plan including a listing of all Institutional Controls, Engineering Controls, and Operation, Monitoring and Maintenance, and Annual Certification for the site.	The Environmental Easements will include a copy of the Site Management Plan as described in RWP Section 4.9.1.

APPENDIX K
ELECTRONIC COPY OF WORK PLAN AND APPENDICES

APPENDIX L
SANBORN MAPS AND SUMMARY PRESENTATION

SUMMARY OF HISTORICAL STRUCTURES AND SANBORN MAPS

A Phase I Environmental Site Assessment (ESA) was performed by AKRF on the project Site in June 2003. The ESA report included the findings of a site inspection, the evaluation of available historical information, and the interpretation of relevant federal and state environmental databases. The pertinent findings of the June 2003 report are summarized below.

Lot Uses:

Lot 5 was occupied by a building constructed prior to 1926 and had a partial basement used to house a fuel storage tank and a furnace. The most recent use of this structure was as a garage for the repair and maintenance of taxis. The most recent inspection prior to the remedial investigation identified three 275-gallon tanks on the first floor used to store engine oil, transmission fluid, and used engine oil. A 1,080-gallon vaulted above ground storage (AST) was observed in the basement. The building was demolished during the remedial investigation field activities.

Lot 8 was occupied by two four-story brick residential buildings with basements. In 1926, the building was identified as containing one 550-gallon underground storage tank. In 1940, NYC Building Department's records indicated the installation of a gasoline tank, but site interviews did not confirm the presence of the underground storage tank. In 1961, a City permit for a fuel oil burner was issued and the presence of a 1,050-gallon tank was verified by a previous site inspection. The building also contained one 55-gallon drum and eight empty 55-gallon drums. This building was demolished prior to the remedial investigation.

Lot 10 was occupied by a vacant one-story building constructed between 1926 and 1951. Historically, this parcel was initially occupied by a four-story residential building, followed by an auto repair shop, followed by a one-story packing case manufacturer, and then by unknown occupants. During the site visit, one 275-gallon waste oil aboveground storage tank was observed. The building contained piles of debris consisting of auto parts, garbage, and construction debris. Building Department records indicated that a permit application was filed in 1950 to install a gasoline tank. It is unknown whether this gasoline tank was installed and whether it was present at the time of the inspection. This building was demolished before the remedial investigation.

Lot 11 contained a two-story brick building constructed between 1926 and 1951 and was occupied by N&P Auto Repair on the first floor with an employee break room on the second floor. Historically, this parcel was occupied by a four-story residential building, then residences and manufacturing, then a two-story auto repair shop, and finally by unknown occupants. During the site visit, the first floor garage contained small containers of spray paint, cases of motor oil, two hydraulic lifts with external hydraulic oil canisters, a small solvent degreasing station, and a radiator fluid wash bath. The floor was observed to be stained with automobile fluids and the shop was observed to generally practice poor housekeeping. The building reportedly had a crawl space but it was inaccessible at the time of the inspection. The building was demolished during the remedial investigation field activities.

Lot 12 was occupied by a two-story brick building at the time of the inspection that contained an electrical contractor's office constructed between 1926 and 1951. Historically, this parcel was occupied by a four-story factory building with residences on the fourth floor, followed by a one-story iron works factory, and finally by unknown occupants. There was no evidence of current or historical on-site storage tanks. The building was demolished during the remedial investigation field activities.

Lot 13 was occupied by a gravel parking lot used for taxi cab parking and a small elevated office in the rear of the lot. Historically, this parcel was occupied by a total of four separate four-story, store-fronted residential buildings. The lot was then used for two separate periods as a two-story auto repair shop and became a vacant lot in 2001. The 1926 historical (Sanborn) map indicated that a 1,000-gallon gasoline underground storage tank was located on the Site. This parcel was listed for three 550-gallon diesel underground storage tanks installed in 1969 on the regulatory database. Their registration expired in 1993. Records maintained by the Fire Department revealed that a permit for three 550-gallon tanks filed in 1984 expired in 1989. These are likely the same tanks listed in the regulatory database. It is unknown whether or not these tanks had been removed or remained on the parcel at the time of the site inspection. During the site visit, no evidence of on-site tanks, such as fill caps or vent pipes, was observed. The Phase I ESA noted the presence of a manufacturer directly uphill and adjacent to this lot. Discharges from this adjacent off-site property, the former Emsig Manufacturing, may have affected on-site conditions. The building was demolished during the remedial investigation field activities.

Lot 43 is presently occupied by a gravel and paved lot used for commercial parking. Historically, this parcel was occupied by nine, five-story, store-fronted residential buildings until 1926. The lot was then used for parking and as a gasoline station with a small one-story office. It was then a vacant lot from 1976 to 1986, at which time it became a commercial parking lot. NYC Buildings Department records indicated that an unspecified number of gasoline tank installation permits were applied for in 1947. These permits are most likely associated with the former on-site gasoline station noted on the 1951 Sanborn map. The Phase I ESA stated that these tanks apparently remained in place. The one-story office has not been demolished.

Lot 52 contained a one-story concrete block and brick building used by 3G Studio Corporation for sound stage and set building activities. This building was constructed sometime between 1907 and 1926. There was no evidence to indicate the current presence of petroleum or chemical storage tanks on-site. Historically, this parcel was occupied by a one-to two-story building with a storefront, then a one-story auto repair shop, followed by a metal works factory (c. 1951), and then a one-story building with unknown occupants just prior to its most recent use by 3-G Studios. Storage tanks may have been in use on-site in the past, but there were no records to indicate any such tanks. The building was demolished during the remedial investigation field activities.

Lot 53 contained a one-story brick building with a basement. It was attached to the building on Lot 52 and was also most recently used by 3G Studio Corporation for sound stage and set building activities. This building was constructed between 1926 and 1951, and was occupied by two five-story residential buildings, followed by a one-to two-story garage, and finally the one-to two-story sound stage. NYC Buildings Department records indicated that a gasoline tank installation permit was applied for in 1950. Site interviews indicated that there were no active gasoline tanks on-site. The Phase I ESA was unable to ascertain whether this tank was installed, and if so, whether it was subsequently removed. The building was demolished during remedial investigation field activities.

Lot 55 was most recently occupied by a gravel and paved lot containing parked trucks and cars. This parking area was used by the east-adjacent 3G Studio Corporation. There was no evidence to suggest the presence of chemical or petroleum storage tanks. Historically, this parcel was occupied by a five-story residential building and then used as a parking lot. The former residential building may have utilized a fuel oil storage tank; however, no records indicated such usage.

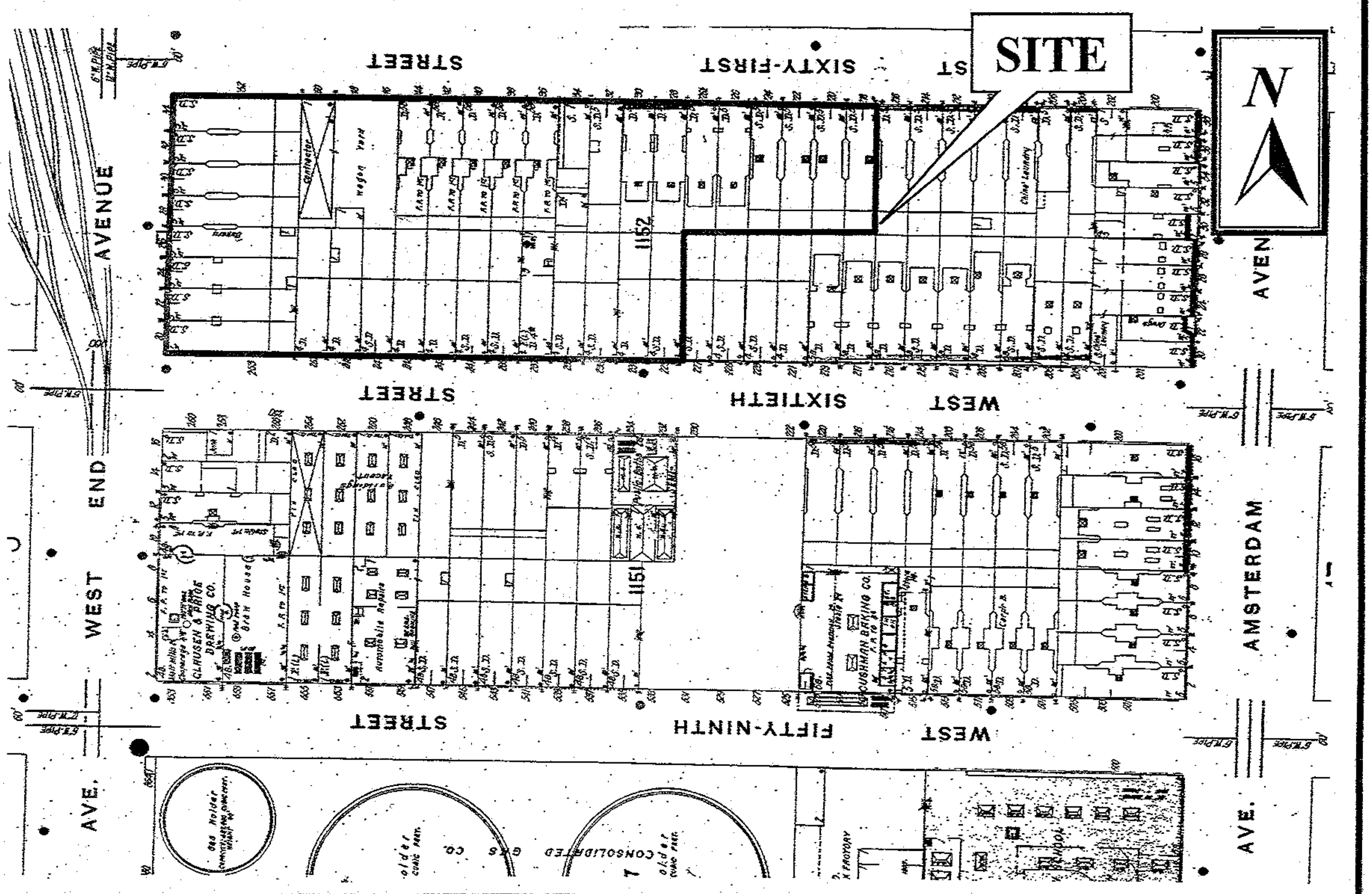
The following table summarizes the tanks identified in the Phase I Environmental Site Assessment.

On-Site Underground (UST) and Aboveground Storage Tanks (AST) Identified in Phase I ESA

Lot	Source	Date	Capacity (gallons)	Contents	UST/AST
5	Sanborn Maps	1926	550	GT	UST
	Site Visit, Fire/Bldg Dept	1940	1,080	FO	AST
	Site Visit	* * *	275 275 275	Motor Oil Waste Oil Transmission Oil	AST AST AST
8	Sanborn Maps	1926	550	GT	UST
	Bldg Dept	1940	*	GT Permit	*
	Site Visit, Bldg Dept	1961	1,050	Fuel Oil	AST (Vaulted)
10	Site Visit	*	275	Waste Oil	AST
	Bldg Dept	1950	*	GT Permit	*
11	No Evidence of Tanks				
12	No Evidence of Tanks				
13	Sanborn Maps	1926	1,000	GT	UST
	Fire Dept, Regulatory Database	1969	3 (550)	Diesel	U ST
Part 43	Sanborn Maps	1951	*	Gasoline Station	*
	Bldg Dept	1947	*	GT Permit	*
52	No Evidence of Tanks				
53	Bldg Dept	1950	*	GT Permit	*
55	No Evidence of Tanks				

Notes: AST = Aboveground Storage Tank
UST = Underground Storage Tank
* = Unknown
FO = Fuel Oil
GT = Gasoline Tank
Non-Shaded Lots are part of the proposed project Site.

Sanborn Maps for the years 1907, 1926, 1951, 1976, 1986, and 2001 are included in this Appendix.



Algin Properties, West 61st Street Project
New York, New York

1907 SANBORN MAP

AKRF, Inc.

Environmental Consultants

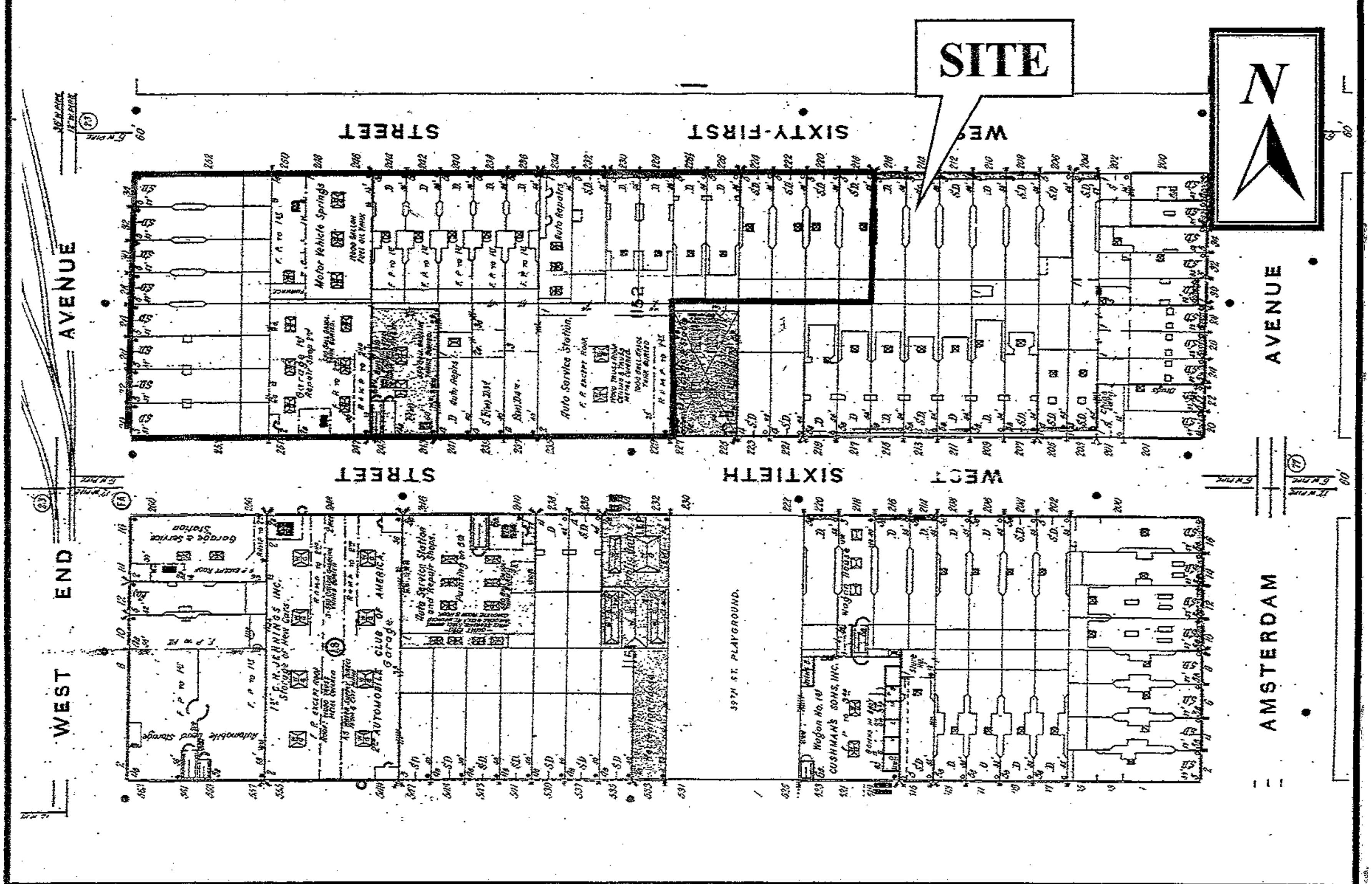
116 East 27th Street, New York, New York 10016

DATE
June 2003

DRAWING No.

PROJECT No.
10321

FIGURE No.

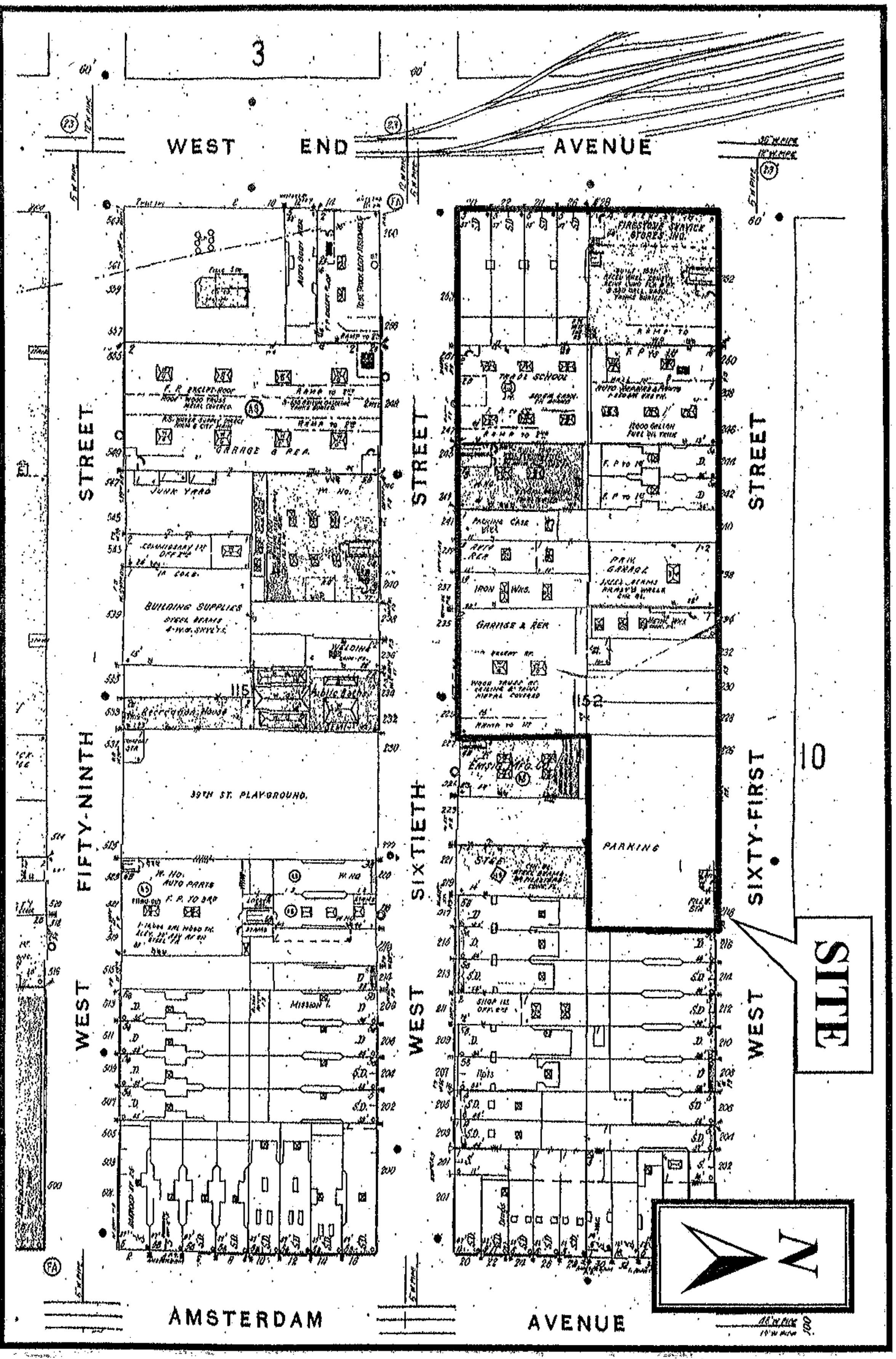


Algin Properties, West 61st Street Project
New York, New York

1926 SANBORN MAP

AKRF, Inc.
Environmental Consultants
116 East 27th Street, New York, New York 10016

DATE
June 2003
DRAWING No.
PROJECT No.
10321
FIGURE No.



AKRF, Inc.
Environmental Consultants
116 East 27th Street, New York, New York 10016

Algin Properties, West 61st Street Project
New York, New York

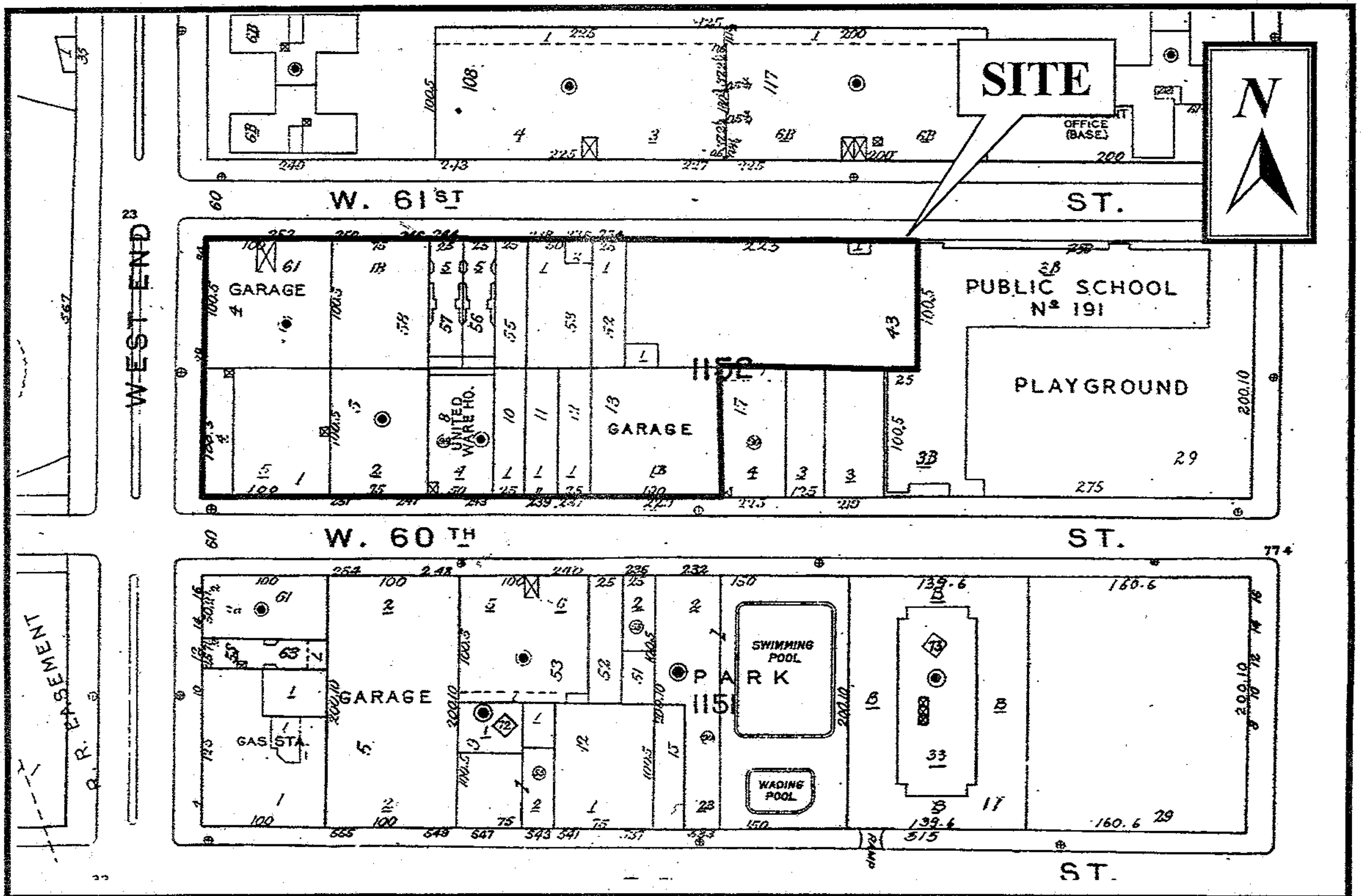
1951 SANBORN MAP

DATE
June 2003

DRAWING No.

PROJECT No.
10321

FIGURE No.



Algin Properties, West 61st Street Project
New York, New York

1976 SANBORN MAP

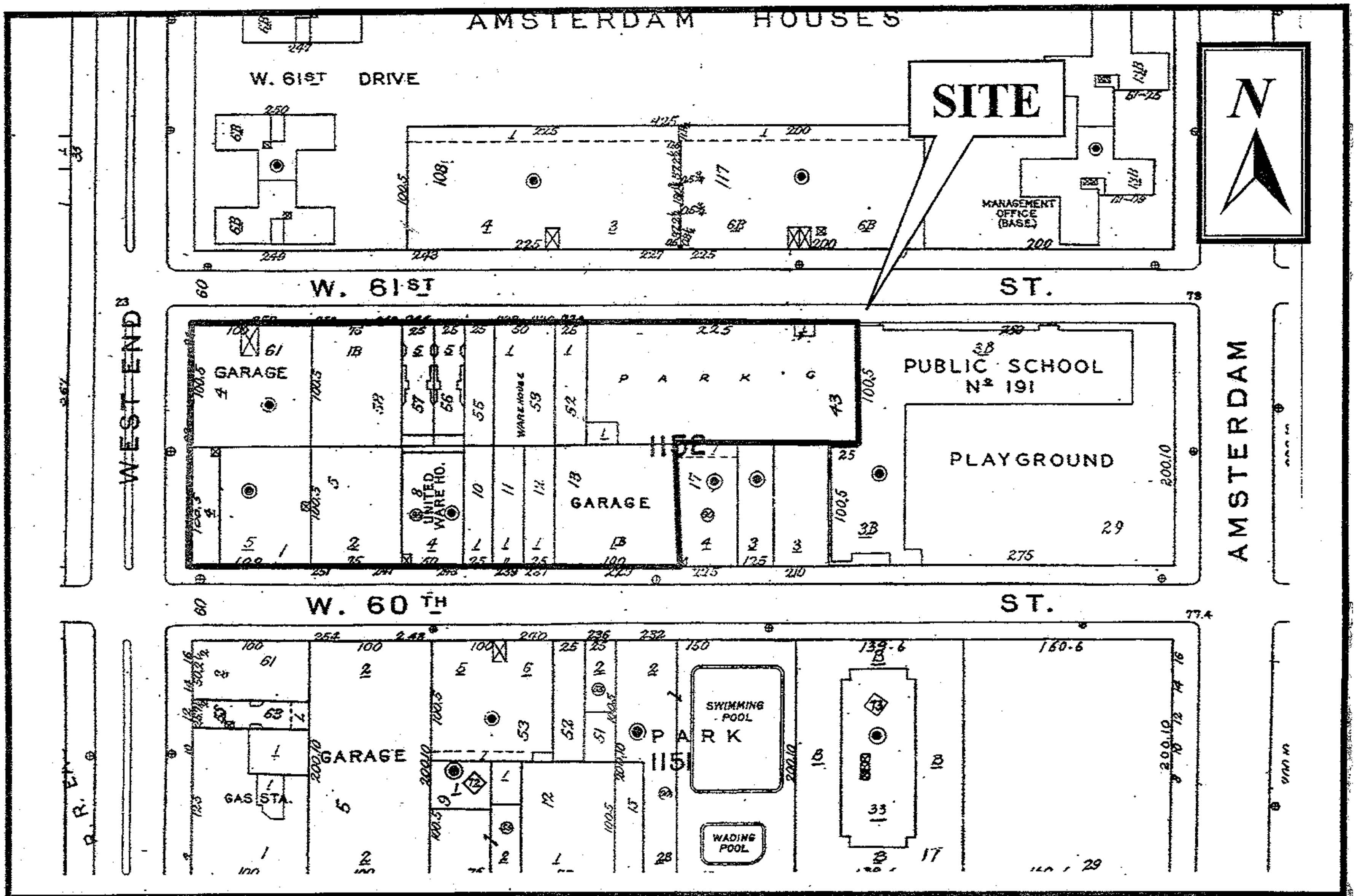
AKRF, Inc.
Environmental Consultants
116 East 27th Street, New York, New York 10016

DATE
June 2003

DRAWING No.

PROJECT No.
10321

FIGURE No.

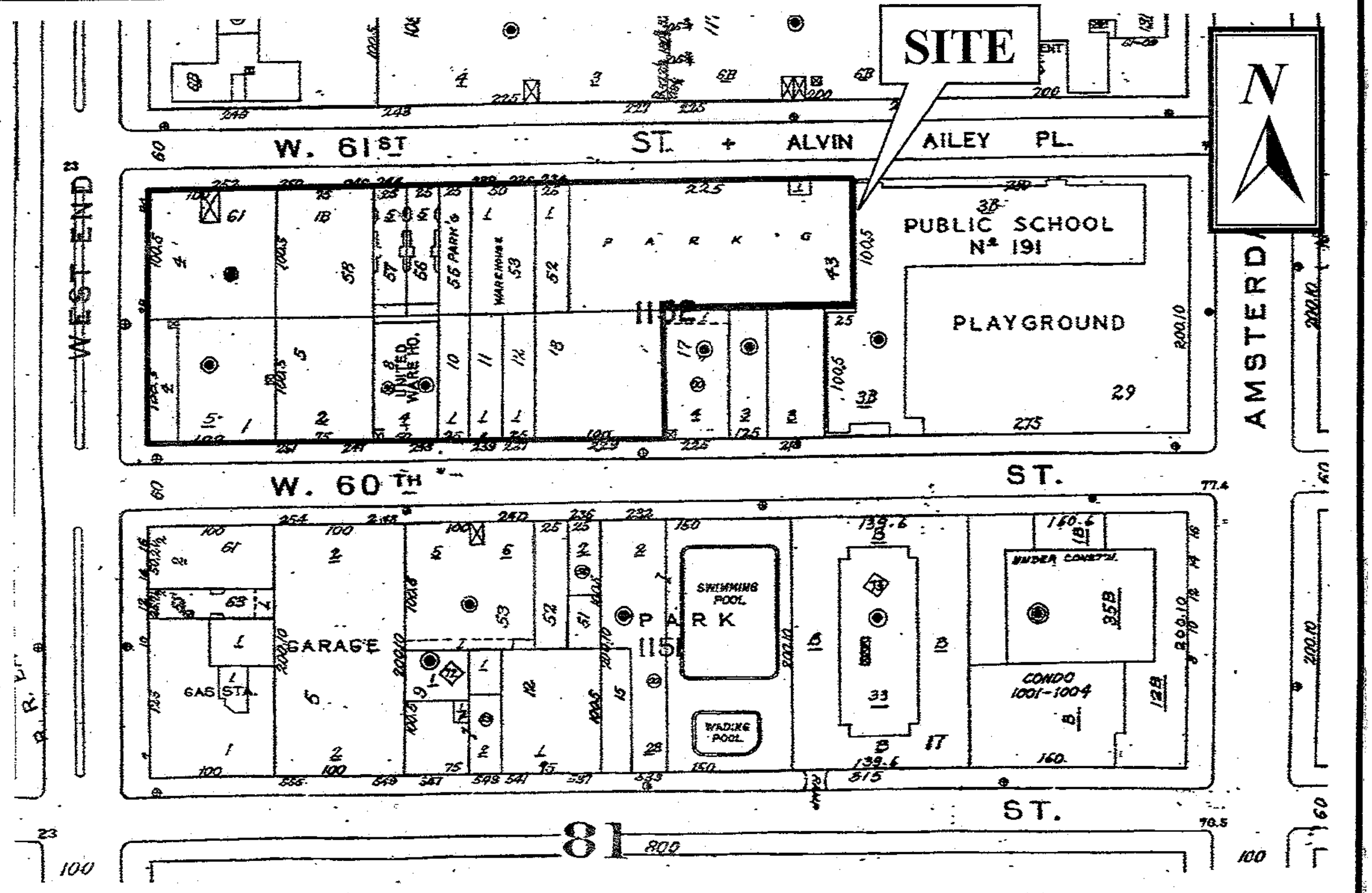


Algin Properties, West 61st Street Project
New York, New York

1986 SANBORN MAP

AKRF, Inc.
Environmental Consultants
116 East 27th Street, New York, New York 10016

DATE June 2003
DRAWING No.
PROJECT No. 10321
FIGURE No.



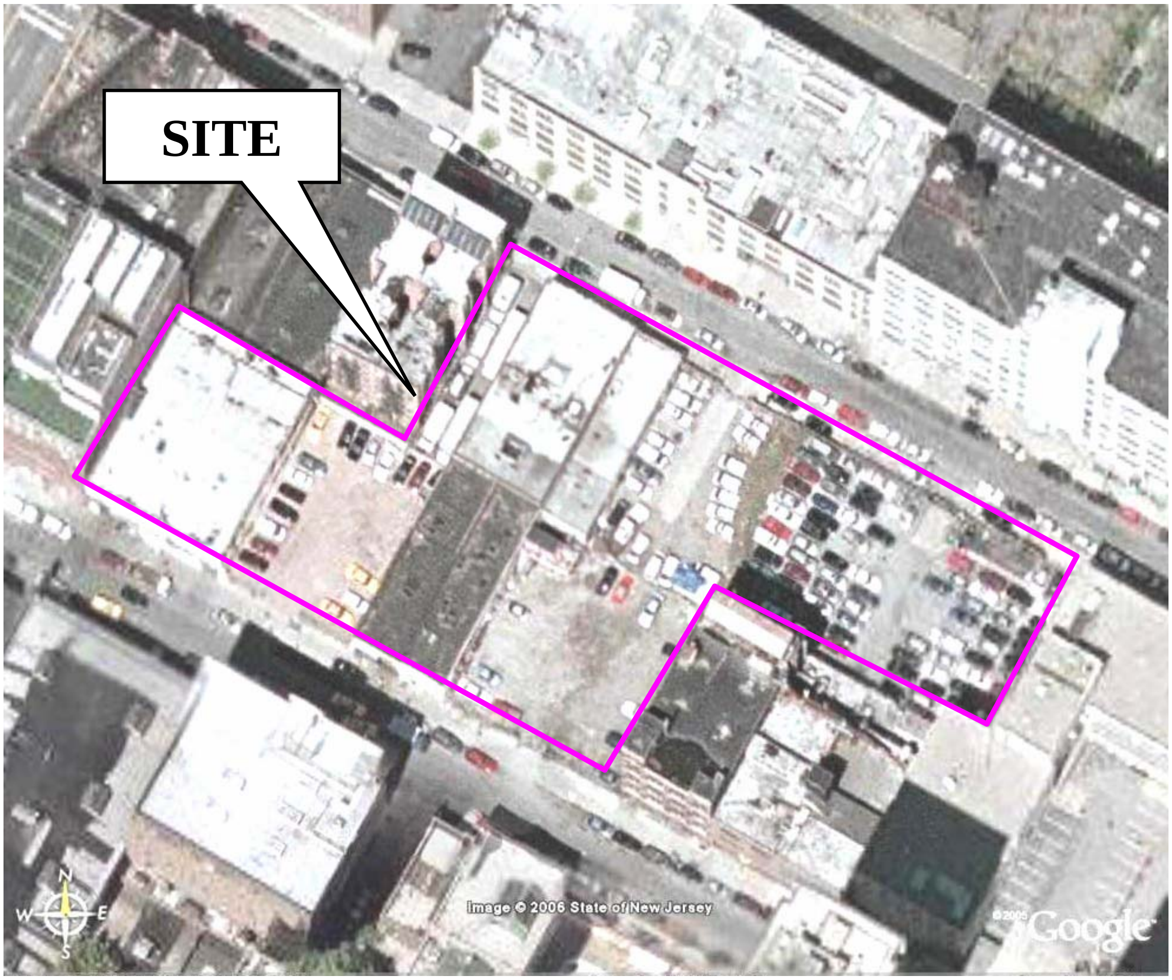
Algin Properties, West 61st Street Project
New York, New York

2001 SANBORN MAP

AKRF, Inc.
Environmental Consultants
116 East 27th Street, New York, New York 10016

DATE June 2003
DRAWING No.
PROJECT No. 10321
FIGURE No.

APPENDIX M
AERIAL PHOTOGRAPH



N

West 61st Street Site
New York, New York

AERIAL PHOTOGRAPH OF SITE

AKRF, Inc.

Environmental Consultants
440 Park Avenue South, New York, New York 10016

DATE
March 16, 2006

SCALE.
N/A

PROJECT No.
10321

FIGURE No.
M-1

APPENDIX N
CONCEPTUAL SITE MODEL

Conceptual Site Model

The Site is located between West 60th and 61st Streets on the side of a hill that slopes downward to the west towards the Hudson River. The Site consists of two distinct areas: the Eastern Area or portion of the Site being used as a parking lot, located on West 60th Street in the northeastern corner of the Site; and the Main Area, located between West 60th and West 61st Streets. These have been separated for discussion based on bedrock topography, subsurface soils, present usage, intended use, and cleanup track.

Eastern Area (Parking Lot Portion of Lot 43):

The eastern or upper portion of the Site is an elevated piece of property, presently being used as a parking lot. This 100 by 150-foot area slopes gently from east to west (Figure 6 of the Remedial Work Plan [RWP]). At present, the majority of this area is covered with blacktop. Historically, this area was used as a gasoline station. The geophysical survey revealed the presence or one of more underground storage tanks in the northeastern corner of the area and the potential presence of one or more underground storage tanks in the southwestern corner of the area, in proximity to the retaining wall.

The bedrock is located approximately 7 feet below the surface on the eastern boundary and slopes towards the west, increasing in depth to approximately 15 to 20 feet below the surface at the retaining wall along the western border of the area (Figure 9 of the RWP). The data gathered from borings and groundwater monitoring wells indicates that fill material appears to have been placed directly on the bedrock. No groundwater was observed in the overburden fill material. Groundwater flows into the Site in the bedrock aquifer, approximately ten feet below the surface along the eastern boundary (Figure 11 of the RWP). No volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, or polychlorinated biphenyls (PCBs) in concentrations exceeding groundwater quality standards were found in the groundwater entering the Site. One metal, sodium, exceeded groundwater standards in one of the wells. Due to the elevation of this area above West 61st Street and the presence of a basement in the school adjacent to the area, the only source of water entering this area is rainfall entering the fill through cracks and openings in the blacktop surface. This water then percolates downward to the bedrock and flows along the bedrock surface, westward, to the lower, or Main Area, of the Site.

The overburden material contains sand, silt, brick, concrete, ash, slag, wood, glass, and asphalt. Chemical analysis (Appendix G of the RWP) revealed the presence of various metals in concentrations above Eastern US Background Ranges and SVOCs in the form of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) above the NYSDEC Technical and Administrative Guidance (TAGM) 4046 Recommended Soil Cleanup Objectives (RSCOs) in the subsurface soils. Soil vapor analytical results revealed the presence of a number of VOCs. Since many of the VOCs found in the soil vapor were not found in the on-site soil or groundwater, these vapors likely originated off-site. Any movement of the metals and SVOCs in this area would be minimal, only occurring after the limited amount of rainwater percolated through the fill material. This leachate would flow westward along the bedrock interface towards the Main Area, thus mixing with both the groundwater flowing out of the bedrock and groundwater in the overburden aquifer in the vicinity of monitoring well MW-2.

Main Area:

The Main Area of the Site slopes sharply towards the west. It is primarily uncovered due to the recent demolition of the buildings and subsequent site grading. Two areas are covered with concrete slabs of former buildings on Lots 5 and 53. The Main Area of the Site had many past uses, which involved numerous storage tanks, shown on Figure 3 of the Remedial Work Plan (RWP). Uses included an apartment house with fuel tanks, auto repair, metal works, iron works, and chemical storage. Tanks were identified and/or suspected on Lots 5 8, 10, 13, and 53. Three tanks were removed from Lots 5 and 12.

One tank location containing one or more underground storage tanks was identified during the geophysical survey.

The bedrock in the northern portion of this area, along West 61st Street, slopes sharply from elevation 40 to elevation 5 in approximately 100 feet. There appears to be a bedrock “trough” heading towards the northwest beneath Lots 52 and 53 (Figure 9 of the RWP). The slope along the southern portion is more-gradual, going from elevation 35 to elevation 5 in approximately 250 feet (Figure 9 of the RWP). The groundwater in the overburden aquifer flows towards the southwestern corner of the Site (Figure 10 of the RWP), apparently due to some type of drawdown, such as a basement sump-pump, or construction dewatering, or the sewer system acting as an under drain collection system. The groundwater flow is from east to west along the southern portion of the Site, near West 60th Street. The groundwater flows west to southwest towards MW-7 along the northern portion of the Site by West 61st Street, as shown on Figure 10 of the RWP. The groundwater changes in elevation from 29.4 in the northeastern corner of the Main Area (MW-2) to 15.2 in the southwestern corner (MW-7).

The overburden consists of historic fill material on top of native soil, both varying in thickness (Figures 12, 12A, 12B, 2C, and 12D of the RWP). The fill material, based on observations of the borings, consists of sand, silt, brick, concrete, ash, slag, wood, glass, and asphalt. It varies in thickness from 7 to 16 feet. The bricks, broken concrete, and masonry in the upper areas of the fill originated from the buildings demolished on the Site prior to and during the remedial investigation field activities. The native soil consists of sand and silt with some gravel. It varies in thickness from 4 to 26 feet. The native soil slopes from east to west across the Site (Figure 7 of the RWP).

One or more tanks were confirmed on Lot 53 through the geophysical survey and observations after the building was demolished and the wood floor removed. A liquid, which protruded through the concrete floor slab, was collected from the center fill port and analyzed and was found to contain VOCs and acid-extractable SVOCs. A second tank is believed to exist on Lot 8. Test pits were excavated, but the tank was not uncovered. Eight anomalies were detected during the geophysical survey in this area, but were not identified as tanks when using ground penetrating radar.

Subsurface analytical results indicate the presence of VOCs in one or two areas in concentrations above TAGM 4046 RSCOs, several SVOCs in concentrations above RSCOs, and several metals in concentrations above the Eastern US Background Ranges. Based on observations from geotechnical borings, soil borings, and groundwater monitoring well installation and sampling, there appears to be on-site petroleum contamination in an area in the southern section of the Site along West 60th Street. Soil vapor testing indicated the presence of several VOCs in each of the well locations; however, many of the VOCs identified in the soil vapor were not detected in the soil or groundwater, indicating that there may be an off-site source of this contamination. A tentatively identified compound (TIC) was detected at a large concentration of 14,000 ppbv at one location (SG-3D) indicating an on-site source in the soil or groundwater near the vapor probe in the area of the suspected petroleum contamination. An acetone concentration of 270 micrograms per kilogram (µg/kg) was reported in the deep soil sample at MW-4.

The main off-site transport for the contaminants in the subsurface is through the overburden groundwater aquifer. The groundwater level appears to be at the waste material/native soil interface. Sources of water coming into the Main Area of the Site include: the bedrock aquifer from the upper (Eastern Area) of the Site; the bedrock aquifer on the adjacent property (Lot 17) on West 60th Street; the area north of the Site on West 61st Street; the area south of the Site on West 60th Street; and percolation of rainwater though the Site itself. Based on the groundwater analysis from monitoring wells MW-7 and MW-7D, there appears to be minimal off-site movement of the contaminants. Benzene (detected at a concentration of 2 micrograms per liter [µg/L] versus the groundwater standard of 1 µg/L), 4-4’- DDD (detected at a concentration of 0.037µg/L versus a groundwater standard of non-detect), six metals in filtered samples (aluminum, iron, manganese, magnesium, nickel, and selenium) and five additional metals in unfiltered samples (cadmium, chromium, lead, mercury, and sodium) exceeded groundwater quality standards. The

Site is located approximately 500 feet west of the Hudson River. The groundwater is not potable in this area and it is relatively close to the anticipated brackish groundwater found in areas located next to bodies of salt water. There does not appear to be any direct exposure from the groundwater. The VOC concentration in the groundwater leaving the Site will not pose a soil vapor issue. The Site is fenced-in, preventing access from children at the neighboring schools. There is no evidence of a blowing dust at the Site. Therefore, there is no dermal contact from the on-site exposed surfaces. The perimeter wells on the north, west, and east indicate the presence of VOCs, but they are not in concentrations sufficient to pose an off-site threat for inhalation. Analytical data from the well along the southern Site boundary along West 60th Street (soil gas sample SG-3D) indicates the presence of an unknown volatile organic compound, likely from the petroleum contamination at a depth of 12 feet below the surface and approximately three to four feet above the groundwater level. There is no indication that the vapor is leaving the Site from testing data gathered for this study. The first floor of the building across the street is presently empty; there are no potential receptors in that building

In summation, the only active pathway for off-site transport of contaminants is via the groundwater in the southwestern corner of the Site. The contaminants leaving the Site via the groundwater are in low concentrations and are not adversely affecting public health or the environment. This area will be remedied through the excavation of known and discovered sources of contamination as part of the Site development. All surfaces of the Main Area will be covered by buildings, pavement, and/or two feet of clean imported soil.

APPENDIX O
FOUNDATION CONSTRUCTION DRAWINGS

GENERAL NOTES:

I - CODES

1. BUILDING CODE OF THE CITY OF NEW YORK, INCLUDING LATEST AMENDMENTS ("N.Y.C. CODE")
2. AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS – ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", JUNE 1, 1989 ("AISC SPECIFICATION"). AS MODIFIED BY SUBCHAPTER 10 ARTICLE 6 OF THE NYC BUILDING CODE.
3. AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" ACI 318-99 ("ACI") AS MODIFIED BY SUBCHAPTER 10 ARTICLE 5 OF THE N.Y.C. BUILDING CODE.
4. AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" ACI 530-99 ("ACI 530") AS MODIFIED BY REFERENCE STANDARD RS 10 – 18 OF THE N.Y.C. BUILDING CODE.
5. STEEL JOIST INSTITUTE "STANDARD SPECIFICATIONS, LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS", 1994 ("SJI") AS MODIFIED BY SUBCHAPTER 10 ARTICLE 6 OF THE N.Y.C. BUILDING CODE.

II - MATERIALS

UNLESS OTHERWISE SHOWN OR NOTED ON DRAWINGS:

1. STRUCTURAL STEEL:

ALL ROLLED SHAPES:	ASTM A572 OR A992, GRADE 50
ALL PLATES AND CONNECTION MATERIAL:	ASTM A36
ALL TUBULAR SECTIONS:	ASTM A500, GRADE B
ANCHOR BOLTS, U.O.N.:	ASTM F1554

2. METAL DECK:
FABRICATE FROM ASTM A611 OR ASTM A653 STEEL WITH ASTM A653 G60 GALVANIZING. SIZE AND GAGE AS NOTED ON DRAWINGS.
U.O.N., FLOOR DECKING SHALL BE COMPOSITE DECK WITH CONFIGURATION THAT PERMITS FULL AISC SHEAR CONNECTOR VALUE.
3. SHEAR CONNECTORS:
¾" DIAMETER x _____ HEADED STUDS, U.O.N.
4. CAST-IN-PLACE CONCRETE:

FOUNDATIONS:	5 KSI NORMAL WT.
SLABS ON GROUND:	5 KSI NORMAL WT.
FORMED SLABS:	5 KSI NORMAL WT.
COLUMNS AND WALLS:	5 KSI NORMAL WT.

5. REINFORCEMENT:

DEFORMED BARS:	ASTM A615, GRADE 60.
WELDED WIRE FABRIC:	ASTM A185.
WELDED DEFORMED WIRE FABRIC:	ASTM A467, GRADE 60.

6. WELDING ELECTRODES:	E70XX LOW HYDROGEN.
7. BOLTING MATERIALS:	ASTM A325 OR A490, U.O.N.
8. LIGHT GAGE FRAMING:	ASTM A653; GRADE 50 FOR 16 GAGE AND HEAVIER, GRADE 33 FOR 18 GAGE AND LIGHTER; WITH G60 GALVANIZING

III - GENERAL

1. NOTES, TYPICAL DETAILS AND SCHEDULES APPLY TO ALL STRUCTURAL WORK UNLESS OTHERWISE NOTED. FOR CONDITIONS NOT SPECIFICALLY SHOWN, PROVIDE DETAILS OF A SIMILAR NATURE. VERIFY APPLICABILITY BY SUBMITTING SHOP DRAWINGS FOR REVIEW.
2. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS, ARCHITECTURAL AND MECHANICAL DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER PRIOR TO PERFORMING WORK.
3. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONAL INFORMATION.
4. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR WATER/DAMPROOFING AND FIREPROOFING DETAILS AND REQUIREMENTS.
5. TOP OF CONCRETE SLABS ARE AT FLOOR REFERENCE ELEVATIONS EXCEPT AS NOTED. FOR FLOOR REFERENCE ELEVATIONS SEE COLUMN SCHEDULE.
6. THESE DRAWINGS DO NOT DEFINE SCOPE OF CONTRACTS. SEE CONSTRUCTION MANAGER'S [or CONTRACT if no CM] DOCUMENTS.
7. AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOBSITE INCLUDING SAFETY OF PERSONS AND PROPERTY. THE ARCHITECT'S OR ENGINEER'S PRESENCE OR REVIEW OF WORK DOES NOT INCLUDE THE ADEQUACY OF THE CONTRACTOR'S MEANS OR METHODS OF CONSTRUCTION.
8. SHORING, BRACING AND PROTECTION OF EXISTING AND ADJACENT STRUCTURES DURING CONSTRUCTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PROTECT AND MAINTAIN THE INTEGRITY OF ADJACENT STREETS, BUILDINGS AND STRUCTURES.
9. ALL EXISTING DIMENSIONS AND LOCATIONS OF EXISTING STRUCTURES SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY FIELD MEASUREMENTS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.
10. DRAWINGS HAVE BEEN PREPARED BASED ON AVAILABLE KNOWLEDGE OF EXISTING CONDITIONS. IF, DURING DEMOLITION, EXCAVATION OR CONSTRUCTION, ACTUAL CONDITIONS ARE DISCOVERED TO DIFFER FROM THOSE INDICATED ON DRAWINGS, ENGINEER SHALL BE NOTIFIED.

IV - FOUNDATION NOTES

1. THE DESIGN OF THE FOUNDATIONS SHOWN HEREIN IS BASED ON THE INFORMATION PROVIDED IN THE PRELIMINDARY GEOTECHNICAL INFORMATION PREPARED BY RA CONSULTANTS DATED 02.19.05
2. PIERS, MATS, FOOTINGS, AND WALLS SHALL BEAR ON ROCK WITH A MINIMUM BEARING CAPACITY OF 20TSF.
3. NO BACKFILL SHALL BE PLACED AGAINST FOUNDATION WALLS UNLESS SUPPORTING SLABS ARE IN PLACE AND SET OR THE WALLS ARE ADEQUATELY BRACED.
4. UNDERPINNING OF THE EXISTING ADJACENT FOUNDATION MAY BE REQUIRED EXTENT OF UNDERPINNING WORK, IF SHOWN ON DRAWINGS, IS BASED UPON INTERPRETATION OF AVAILABLE INFORMATION. HOWEVER, ACTUAL CONDITIONS WILL VARY AND DETERMINE REQUIRED SCOPE OF WORK. FOUNDATION CONTRACTOR TO BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF UNDERPINNING IF REQUIRED.
5. DEWATERING OF THE SITE DURING CONSTRUCTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR NOT TO UNDERMINE EXISTING FOUNDATIONS. METHOD OF DEWATERING AND CALCULATIONS FOR THE APPROPRIATE SYSTEM ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
6. ALL FOOTINGS AND/OR PIERS ARE TO BE CENTERED ON COLUMNS ABOVE, U.O.N.
7. PROVIDE DOWELS IN FOUNDATIONS FOR ALL WALLS, COLUMNS, AND SHEAR WALLS OF SAME NUMBER AND SIZE AS THE VERTICAL REINFORCEMENT ABOVE, U.O.N.
8. PROVIDE WATERSTOPS IN ALL VERTICAL CONSTRUCTION JOINTS IN BASEMENT WALLS.
9. SLABS ON GROUND SHALL BE PLACED ON SELECT FILL COMPACTED TO 95 PERCENT MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557).
10. FOOTING AND/OR PIER ELEVATIONS SHOWN ON THE DRAWINGS HAVE BEEN ESTIMATED USING THE AVAILABLE GEOTECHNICAL INFORMATION. ACTUAL ELEVATIONS OF FOOTING AND PIER BOTTOMS WILL BE DETERMINED BY FIELD CONDITIONS.

V - UNDERPINNING NOTES

1. CONTRACTOR SHALL RETAIN THE SERVICE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF [insert state] TO PREPARE SIGNED AND SEALED DESIGN DRAWINGS AND CALCULATIONS FOR ALL REQUIRED UNDERPINNING OF ADJACENT STRUCTURES. THE CONTRACTOR SHALL FILE THE DRAWINGS WITH THE BUILDING DEPARTMENT.
2. SUBMIT COPY OF FILED DRAWINGS TO DCE FOR INFORMATION ONLY. ALL UNDERPINNING WORK SHALL BE SUBJECT TO SPECIAL INSPECTION IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
3. THE FULL SCOPE OF THIS WORK IS TO BE DETERMINED BY THE CONTRACTOR BY THE REVIEW OF ALL AVAILABLE DOCUMENTATION SUCH AS SURVEYS, GEOTECHNICAL REPORTS AND THE LIKE AND BY SITE REVIEW PRIOR TO BIDDING.
4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF ALL EXISTING ADJACENT BUILDINGS, STRUCTURES, SIDEWALKS, VAULTS AND THE LIKE DURING AND AS A RESULT OF UNDERPINNING OPERATIONS.

VI - CONCRETE NOTES

1. REINFORCING STEEL SHALL HAVE A MINIMUM CLEAR COVER AS FOLLOWS, U.O.N. IN DRAWINGS:

CONCRETE POURED AGAINST EARTH....................................3"

CONCRETE EXPOSED TO EARTH OR WEATHER:
#5 OR SMALLER...1½"
#6 OR LARGER..2"

CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
COLUMNS (TIES AND MAIN REINFORCING).........................1½"
SLABS, WALLS, JOISTS
#14 OR #18 BARS...1½"
#11 OR SMALLER..¾"
BEAMS (STIRRUPS AND MAIN REINF)..............................1½"

CLEAR COVER SHALL BE CLEARLY SHOWN ON ALL REBAR DETAIL DRAWINGS.

2. ALL REINFORCEMENT SHALL BE SECURELY HELD IN POSITION WHILE PLACING CONCRETE. IF NECESSARY, ADDITIONAL BARS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, ETC. AS REQUIRED BY ALL TRADES, BEFORE THE CONCRETE IS POURED. THE CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, MECHANICAL,AND ELECTRICAL DRAWINGS, AS WELL AS THE STRUCTURAL DRAWINGS FOR THE LOCATION, NUMBER, AND SIZE OF ALL OPENINGS, SLEEVES, ETC. HOWEVER, OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE INSTALLED ONLY AFTER APPROVAL BY THE STRUCTURAL ENGINEER IS OBTAINED.
4. LOCATION OF ALL CONSTRUCTION JOINTS NOT SHOWN IN DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO DETAILING OF REINFORCING. ALL CONSTRUCTION JOINTS TO BE CLEARLY SHOWN IN REBAR DETAIL DRAWINGS. ENGINEER MAY REQUIRE ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS.
5. DIMENSIONS "LD" AS NOTED ON DRAWINGS SHALL BE AS FOLLOWS:

BEAMS		
BAR SIZE	BOTTOM BARS	OTHER BARS
#3	13	17
#4	17	23
#5	22	28
#6	26	34
#7	38	49
#8	43	56
#9	48	63
#10	54	71
#11	60	78

COLUMNS	
BAR SIZE	Ld
#3	13
#4	17
#5	22
#6	26
#7	38
#8	43
#9	48
#10	54
#11	60

TABLE ASSUMPTIONS:

1. f'c = 5 ksi
2. A MINIMUM CLEAR COVER AS SHOWN IN NOTE 1 ABOVE
3. A MINIMUM CLEAR SPACING OF 3" BETWEEN ANY BARS
4. fy = 60 ksi
5. NORMAL WEIGHT CONCRETE
6. FOR WALLS:
CASE 1 = CLEAR SPACING ≥ 2db
AND CLEAR COVER ≥ db
CASE 2 = OTHER THAN CASE 1

WALLS				
BAR SIZE	VERTICAL BARS		HORIZONTAL BARS	
	CASE 1	CASE 2	CASE 1	CASE 2
#3	13	20	17	25
#4	17	26	23	34
#5	22	32	28	42
#6	26	39	34	50
#7	38	56	49	73
#8	43	64	56	83
#9	48	72	63	94
#10	54	81	70	106
#11	60	90	78	117

SLABS / MATS			
BAR SIZE	THICKNESS 12" OR LESS	THICKNESS GREATER THEN 12"	
	ALL BARS	BOTTOM BARS	OTHER BARS
#3	13	13	17
#4	17	17	23
#5	22	22	28
#6	26	26	34
#7	56	56	73
#8	64	64	83
#9	72	72	94
#10	81	81	106
#11	90	90	117

FOR: f'c = 3 ksi Ld = 1.29 x TABLE VALUE
f'c = 4 ksi Ld = 1.12 x TABLE VALUE
f'c = 6 ksi Ld = 0.92 x TABLE VALUE
f'c = 8 ksi Ld = 0.79 x TABLE VALUE
f'c = 10 ksi Ld = 0.71 x TABLE VALUE
f'c = 12 ksi Ld = 0.65 x TABLE VALUE

6. ALL LAP SPLICES SHALL BE 1.3LD UNLESS NOTED OTHERWISE ON DRAWINGS.
7. FOR LIGHTWEIGHT AGGREGATE CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
8. FOR EPOXY-COATED BARS, MULTIPLY THE TABULATED VALUES BY 1.5.
9. COMBINATIONS OF EFFECTS DUE TO CONCRETE STRENGTH, CONCRETE WEIGHT, AND EPOXY BARS ARE CUMULATIVE. Ld SHALL BE MULTIPLIED BY EACH FACTOR TO FIND THE CORRECT VALUE.
10. ACI DOES NOT PERMIT LAP SPLICES OF #14 OR #18 BARS. BARS OF THIS SIZE SHALL BE COUPLED BY ACCEPTABLE MECHANICAL MEANS.
11. DOWEL BAR SUBSTITUTIONS SHALL BE PERMITTED PROVIDED THAT MANUFACTURER'S DATA SUPPORTS FULL TENSION SPLICES.
12. ALL SLEEVES AND PENETRATIONS SHALL BE PROVIDED BY THE SUB-CONTRACTOR REQUIRING THE OPENING.
13. CONCRETE COLUMN LENGTH ADJUSTMENT FOR ELASTIC SHORTENING, SHRINKAGE AND CREEP EFFECTS SHALL BE DISCUSSED WITH THE CONCRETE CONTRACTOR.
14. CONDUIT PLACED IN CONCRETE SLABS MUST BE PLACED IN ACCORDANCE WITH THE FOLLOWING GUIDELINES:
    - a. CONTRACTOR SHALL NOT INSTALL CONDUIT THAT IS NOT SHOWN ON MECHANICAL DRAWINGS.
    - b. DO NOT CROSS MORE THAN ONE LAYER OF CONDUIT OVER ANOTHER IN ANY GIVEN AREA.
    - c. PLACE CENTROID OF CONDUIT OR CONDUIT GROUP AT THE MID-HEIGHT OF THE SLAB.
    - d. CONDUIT OR CONDUIT GROUP CAN NOT EXTEND OUTSIDE THE MIDDLE ⅓ OF THE SLAB.
    - e. MAINTAIN A MINIMUM CLEAR SPACING BETWEEN THE CONDUIT OF 3 DIAMETERS. THIS REQUIREMENT APPLIES EXCEPT WHERE CONDUITS ACCUMULATE AT "TURN DOWNS". THE CONDITIONS AT "TURN DOWN" LOCATIONS MUST BE EVALUATED AT EACH LOCATION BY THE STRUCTURAL ENGINEER. "TURN DOWNS" CAN NOT OCCUR AT COLUMN OR BUTTRESS LOCATIONS.
    - f. DO NOT PLACE ANY CONDUIT IN THE SLAB WITHIN 36" FROM THE EDGE OF ANY COLUMN OR WALL ABOVE OR BELOW THE SLAB.
    - g. SLAB REINFORCEMENT MUST NOT BE MOVED, CUT, OR BENT TO ACCOMMODATE CONDUIT PLACEMENT.
    - h. CONDUIT IS NOT TO RUN THROUGH OR WITHIN A COLUMN OR WALL.
    - i. ALUMINUM CONDUIT SHALL NOT BE EMBEDDED IN A SLAB UNLESS IT IS EFFECTIVELY COATED.

IF THE ABOVE REQUIREMENTS ARE ALL MET, CONDUIT LOCATIONS NEED NOT BE REVIEWED BY THE STRUCTURAL ENGINEER. ANY DEVIATIONS MUST BE SUBMITTED ON A SHOP DRAWING FOR APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO CONDUIT PLACEMENT.

THE FOLLOWING CASES MUST BE SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER:

a. LOCATIONS OF ANY CONDUIT LARGER THAN 2" IN OUTSIDE DIAMETER.
b. LOCATIONS OF ANY BUNDLED CONDUITS.

VII - STEEL NOTES

1. BOLTED CONNECTIONS: BOLTS ARE TO BE A325 OR A490 SLIP CRITICAL, CLASS A. FLOOR BEAM CONNECTIONS TO OTHER BEAMS OR GIRDERS CAN BE MADE WITH A307 BOLTS. MINIMUM DIAMETER OF ALL BOLTS SHALL BE 3/4", MAX. DIA. 1-1/8". PROVIDE AT LEAST 2 BOLTS PER CONNECTION.

UNLESS OTHERWISE NOTED IN PLAN, DETAIL FLOOR MEMBER CONNECTIONS FOR THE FOLLOWING VERTICAL REACTIONS:

SHAPE	MINIMUM REACTIONS (KIPS)		MINIMUM NUMBER OF ROWS
	TO GIRDERS	TO COLUMNS	
W8,C8	12	17	2
W10,C10	15	20	2
W12,C12	20	25	2
W14	25	30	3
W16	30	38	3
W18	36	46	3
W21	46	58	4
W24	57	72	4
W27	70	85	5
W30	85	100	6
W33	100	120	7
W36	115	135	8

2. END CONNECTIONS OF FLOOR MEMBERS SHALL ACCOMMODATE END ROTATIONS OF SIMPLE, UNRESTRAINED BEAMS. FOR THIS PURPOSE, INELASTIC ACTION IN THE CONNECTION IS PERMITTED.
3. COPED OR CUT ENDS OF MEMBERS SHALL BE REINFORCED WHERE REQUIRED TO SUSTAIN THE SPECIFIED REACTIONS.
4. FABRICATE AND ERECT FLOOR MEMBERS WITH NATURAL CAMBER UP.
5. SHORING OF FLOOR MEMBERS TO CONTROL SLAB THICKNESS, FLOOR LEVEL AND OTHER TOLERENCES, AND CONCRETE PONDING IS THE CONTRACTOR'S OPTION. FLOORS TO BE POURED SO AS TO MAINTAIN UNIFORM SLAB THICKNESS ACROSS TOP OF STEEL MEMBERS.
6. STRUCTURAL STEEL CONTRACTOR TO PROVIDE DECK SUPPORT ANGLES AS REQUIRED.
7. UNLESS OTHERWISE SHOWN ON DRAWINGS, SIZE OF WELDS SHALL NOT BE SMALLER THAN ¼".
8. FABRICATION AND ERECTION CONSIDERATIONS – THE FOLLOWING ITEMS WILL BE DEFINED AT A PRE-DETAILING CONFERENCE WITH THE STEEL CONTRACTOR:

i) STEEL COLUMN LENGTH ADJUSTMENT FOR ELASTIC SHORTENING EFFECTS.

ii) STEEL TRUSS CAMBERING.

iii) ELEMENTS AFFECTED BY STEEL ERECTION PROCEDURE, SUCH AS MEMBER SIZES, CONNECTIONS, SPLICES, BASE PLATES, ANCHOR BOLTS, ROCK ANCHORS, ETC.

iv) ERECTION PROCEDURES AND SEQUENCES WITH REGARD TO TEMPERATURE EFFECTS.

9. THE CONTRACTOR SHALL PROVIDE, AT NO ADDITIONAL COST, ALL ADDITIONAL STEEL, CONNECTIONS, GUYING, ETC. REQUIRED FOR ERECTION.
10. UNLESS SPECIFICALLY NOTED, STEEL DETAILS SHOWN ON THE DRAWINGS ARE FOR CONCEPT ONLY AND DO NOT INDICATE REQUIRED NUMBER OF BOLTS, SIZE OF WELDS, ETC.
11. MEMBERS MAY ONLY BE SPLICED WHERE SPECIFICALLY DETAILED ON ACCEPTED SHOP DRAWINGS.
12. FIELD CUTTING OF STRUCTURAL STEEL IS NOT PERMITTED EXCEPT WITH THE PRIOR APPROVAL OF THE ENGINEER.
13. BOLTS, NUTS AND WASHERS FOR STEEL PERMANENTLY EXPOSED TO WEATHER SHALL BE GALVANIZED. SEE SPECIFICATIONS.

VIII - METAL DECK NOTES

1. U.O.N., ALL METAL DECKING HAS BEEN DESIGNED FOR UNSHORED CONSTRUCTION. WHERE POSSIBLE, DECK SHALL EXTEND OVER TWO OR MORE SPANS.
2. DECK SUPPLIER SHALL FURNISH ANY AND ALL SCREEDS, CLOSURES, POUR STOPS, COLUMN CLOSURES, CANT STRIPS, RIDGE AND VALLEY PLATES, SUMPS, ETC. AS REQUIRED FOR COMPLETE INSTALLATION OF DECK.
3. COMPOSITE FLOOR DECK SHALL BE WELDED TO ALL SUPPORTING MEMBERS WITH ¾" DIA. PUDDLE WELDS OR #12 TEKS SELF-DRILLING FASTENERS AT 12" O.C. SHEAR STUDS SHALL BE CONSIDERED TO REPLACE WELDS. FASTEN SIDE LAPS AS REQUIRED IN SPECIFICATIONS.
4. ROOF DECK SHALL BE WELDED TO ALL SUPPORTING MEMBERS WITH ⅝" DIA. PUDDLE WELDS AT 18" O.C. OR #12 TEKS SELF-DRILLING FASTENERS @ 12" O.C. FASTEN SIDE LAPS AS REQUIRED IN SPECIFICATIONS FOR SPANS OVER 5'-0".
5. FORM DECK SHALL BE WELDED TO ALL SUPPORTING MEMBERS USING 16 GAGE WELD WASHERS WITH ⅜" DIA. HOLES IN PATTERN AS RECOMMENDED BY DECK MANUFACTURER. FASTEN SIDE LAPS WITH SCREWS AT 36" MAX FOR SPANS OVER 5'-0".
6. PROVIDE 2" MIN LAPS AND END BEARING FOR ALL DECKING.
7. UNFRAMED OPENINGS, IN FLOOR OR ROOF DECKS, LARGER THAN 6" PERPENDICULAR TO SPAN OF DECK SHALL BE REINFORCED.

IX - MASONRY NOTES

1. STRUCTURAL CONCRETE MASONRY, AS SHOWN ON THESE DRAWINGS, SHALL HAVE A COMPRESSIVE STRENGTH (F'M) OF 1500 PSI.
2. MASONRY UNITS SHALL CONFORM TO ASTM C90, TYPE II, NORMAL WEIGHT, HOLLOW UNLESS SPECIFICALLY NOTED OTHERWISE ON THESE DRAWINGS, WITH A UNIT STRENGTH AS REQUIRED TO ACHIEVE COMPRESSIVE STRENGTH SPECIFIED ABOVE.
3. MORTAR SHALL CONFORM TO ASTM C270, TYPE M OR S FOR ABOVE GRADE, TYPE M FOR BELOW GRADE.
4. GROUT FOR FILLED CELLS SHALL CONFORM TO ASTM C476 WITH 3000 PSI STRENGTH AT 28 DAYS. CELLS SHALL BE GROUTED IN INCREMENTS NOT EXCEEDING 5 FEET VERTICALLY. FILL ALL CELLS BELOW GRADE.
5. VERTICAL REINFORCING SHALL BE ASTM A615, GRADE 60 DEFORMED BARS. MINIMUM LAP SPLICES SHALL BE AS FOLLOWS:
3 BARS – 1'-6"
4 BARS – 2'-0"
5 BARS – 2'-6"
6 BARS – 3'-0"
6. HORIZONTAL REINFORCING SHALL BE NO. 9 GAGE "DUROWALL" OR EQUIVALENT AND SHALL BE PLACED EVERY OTHER COURSE U.O.N.
7. ALL BLOCK SHALL BE PLACED IN RUNNING BOND.

X - CONTROLLED INSPECTION

OWNER WILL ENGAGE AND PAY FOR AN INDEPENDENT TESTING AGENCY TO PERFORM THE FOLLOWING INSPECTION AND TESTING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE PRIOR NOTICE FOR COMPLETION OF SUCH.

1. CONCRETE: ALL CONCRETE WORK SHALL BE SUBJECT TO CONTROLLED INSPECTION BY OR UNDER THE DIRECT SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER AS REQUIRED BY SUBCHAPTER 1 OF THE N.Y.C. BUILDING CODE, PARAGRAPH 27-132. TECHINCIAL REPORT TR-1 SHALL BE FILED WITH THE BUILDING DEPARTMENT FOR APPROVAL OF SAID ENGINEER.
    - A. THE OWNER SHALL ENGAGE A LICENSED PROFESSIONAL ENGINEEER, APPROVED BY THE ENGINEER OF RECORD, TO SUPERVISE THE TESTING OF THE MATERIALS AND THE INSPECTION OF CONCRETE CONSTRUCTION.
    - B. THE PRELIMINARY TEST FOR CONTROLLED CONCRETE SHALL BE MADE IN ACCORDANCE WITH SUBCHAPTER 10 PARAGRAPH 27-605 OF THE N.Y.C. BUILDING CODE AND THE RESULTS FILED ON TECHNICAL REPORT TR-3. NO CONCRETE SHALL BE PLACED BEFORE ACCEPTANCE BY ENGINEER.
    - C. QUALITY CONTROL AND INSPECTION OF MATERIALS AND OF BATCHING SHALL BE MADE IN ACCORDANCE WITH SUBCHAPTER 10 PARAGRAPH 27-605 OF THE N.Y.C. BUILDING CODE.
    - D. ALL FIELD TESTS AND INSPECTIONS SHALL BE PERFORMED AS REQUIRED BY SUBCHAPTER 10 PARAGRAPH 27-607 OF THE N.Y.C. BUILDING CODE.
2. SOILS:
INSPECT SUBGRADE FOR FOUNDATIONS, PIERS AND WALLS PER SUBCHAPTER 11 PARAGRAPH 27-723 OF THE N.Y.C. BUILDING CODE.

XI - SYMBOLS USED ON DRAWINGS

1.	U.O.N.	DENOTES "UNLESS OTHERWISE NOTED".
2.	F → ← F	DENOTES FINISHED (MILLED) SURFACES.
3.	☒	DENOTES CAMBER OF FLOOR MEMBERS.
4.	(......)	DENOTES MEMBER ELEVATION IF OTHER THAN BASELINE ESTABLISHED ON DRAWING OR TOP OF PILE CAP ELEVATION.
5.	LD	DENOTES LENGTH AS PREVIOUSLY DEFINED IN CONCRETE NOTES.
6.	EG	DENOTES TS6x4x¼ ELEVATOR GUIDE RAIL DIVIDER BEAM. TOP OF STEEL IS 2" BELOW TOP OF SUPPORTING STEEL MEMBERS, SEE TYPICAL DETAIL WHEN SUPPORTED BY CONCRETE ELEMENTS. PAINT PER SPECIFICATIONS. 4" DIMENSION IS PLAN DIMENSION.
7.	T.O.STL.	DENOTES 'TOP OF STEEL'.
8.	T.O.SL.	DENOTES 'TOP OF SLAB'.

DRAWING INDEX

DESIGN LOADS

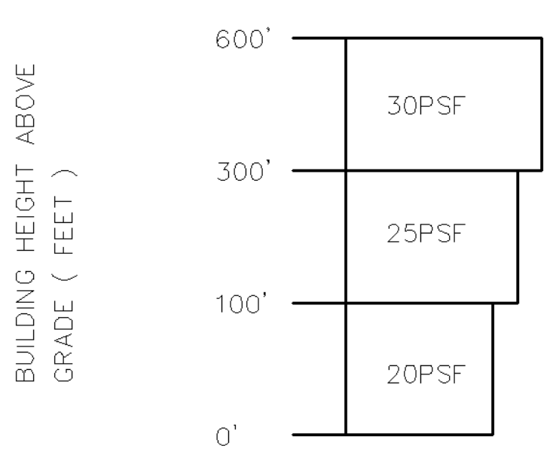
SEISMIC DESIGN CRITERIA

REF: LOCAL 17/95; SECTION 27-569, RS9-6 AMD RS 10-5C.

SEISMIC ZONE FACTOR, Z = .15
SOIL PROFILE TYPE AND SIZE COEFFICIENT, S = .67
IMPORTANCE FACTOR, I = 1.0
Rw = 8 (SHEAR WALLS)
BUILDING HEIGHT, hn = 125 FT.
COEFFICIENT, C = .6
BASE SHEAR, V = (ZIC/Rw)W W = BUILDING WEIGHT

WIND LOAD DIAGRAM

WIND LOAD DIAGRAM DEVELOPED IN ACCORDANCE WITH SUBCHAPTER 9 – ARTICLE 5 AND REFERENCE STANDARDS RS 9-5 OF THE NEW YORK CITY BUILDING CODE



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BUILDING A

no.	issued	revisions
8		
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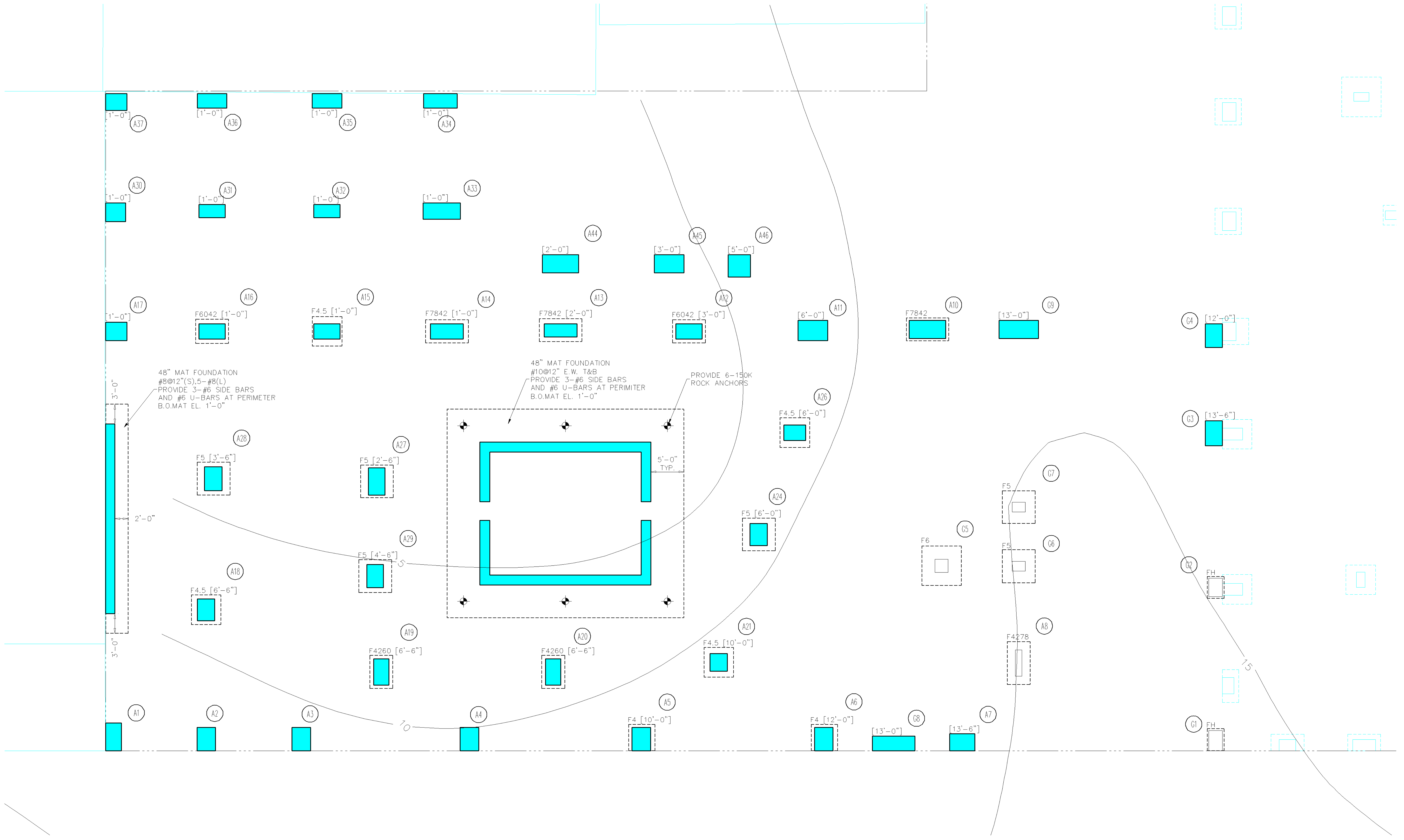
1	09.13.05	FOUNDATION BID

drawing title:
GENERAL NOTES AND DRAWING INDEX

project number:
date: 8/29/05
scale: NTS
drawn by: NT
checked by: SEF
drawing number: S-001



DRAWING NOTES:

1. FOR GENERAL NOTES SEE DRAWING S-001.
2. FOR FOUNDATION SCHEDULE AND DETAILS SEE DRAWING S-111.
3. TOP OF FOOTING ELEVATION +14'-4" UNLESS BOTTOM OF FOOTING/PIER NOTED AS [X'-X"].
4. FOUNDATION BOTTOM MAY NEED TO BE LOWERED DUE TO UNCOVERED ROCK CONDITIONS. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION. ROCK CONTOURS SHOWN AS GUIDE. ACTUAL FIELD CONDITIONS MAY VARY.
5. REFER TO S-102 FOR CELLAR SLAB INFORMATION.
6. FOR COLUMN SCHEDULE SEE DRAWING S-201.
7. FOR SHEAR WALL SCHEDULE SEE DRAWING S-202.
8. ☐ DENOTES COLUMN ABOVE
9. 🟦 DENOTES COLUMN PIER – SEE DRAWING S-111 FOR TYP. PIER DETAILS.

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no.	*issued*	*revisions*

drawing title:

FOUNDATION PLAN

project number:

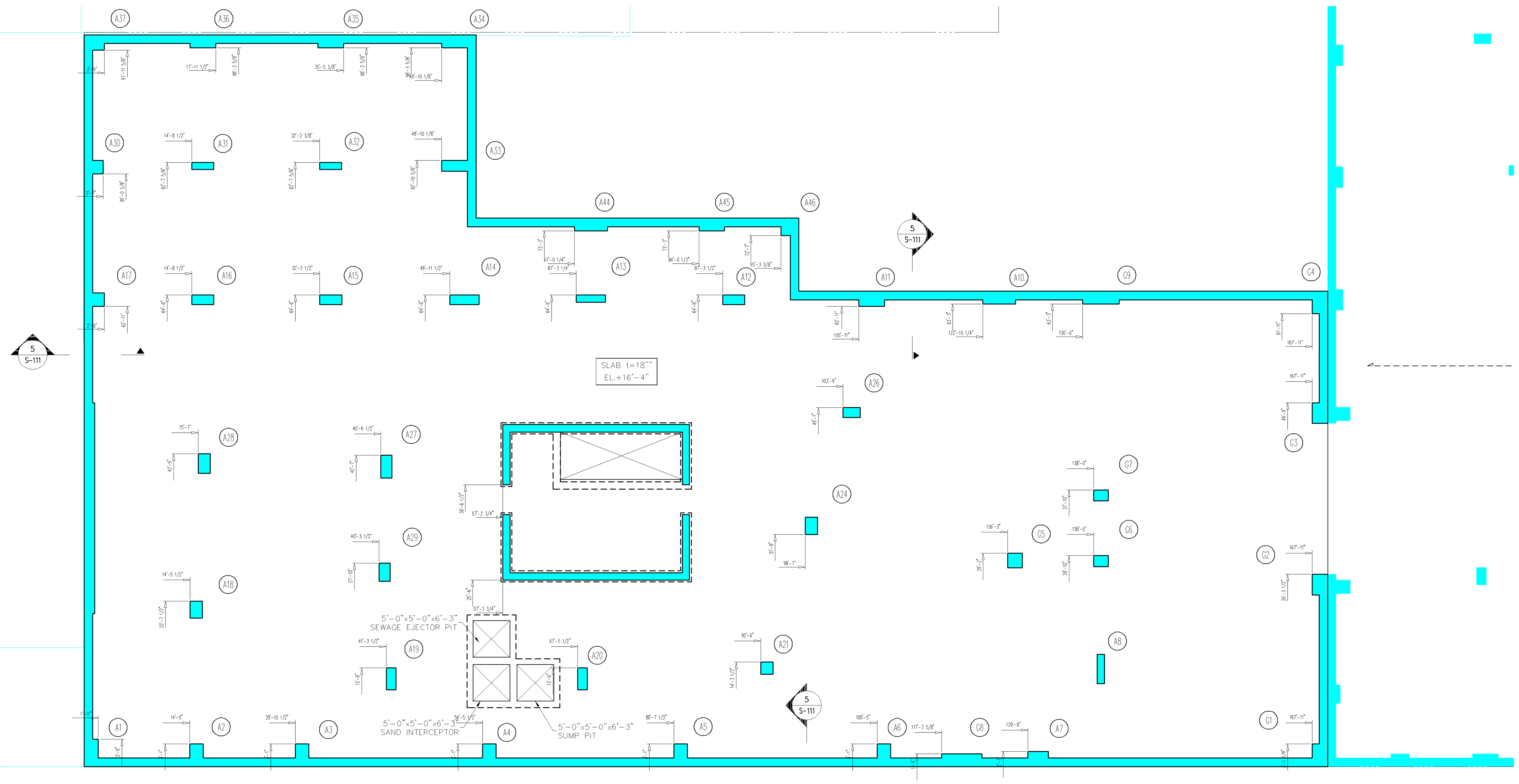
date: 03/17/05

scale: 1/8"=1'-0"

drawn by: NT *checked by:* SEF

drawing number:

S-101

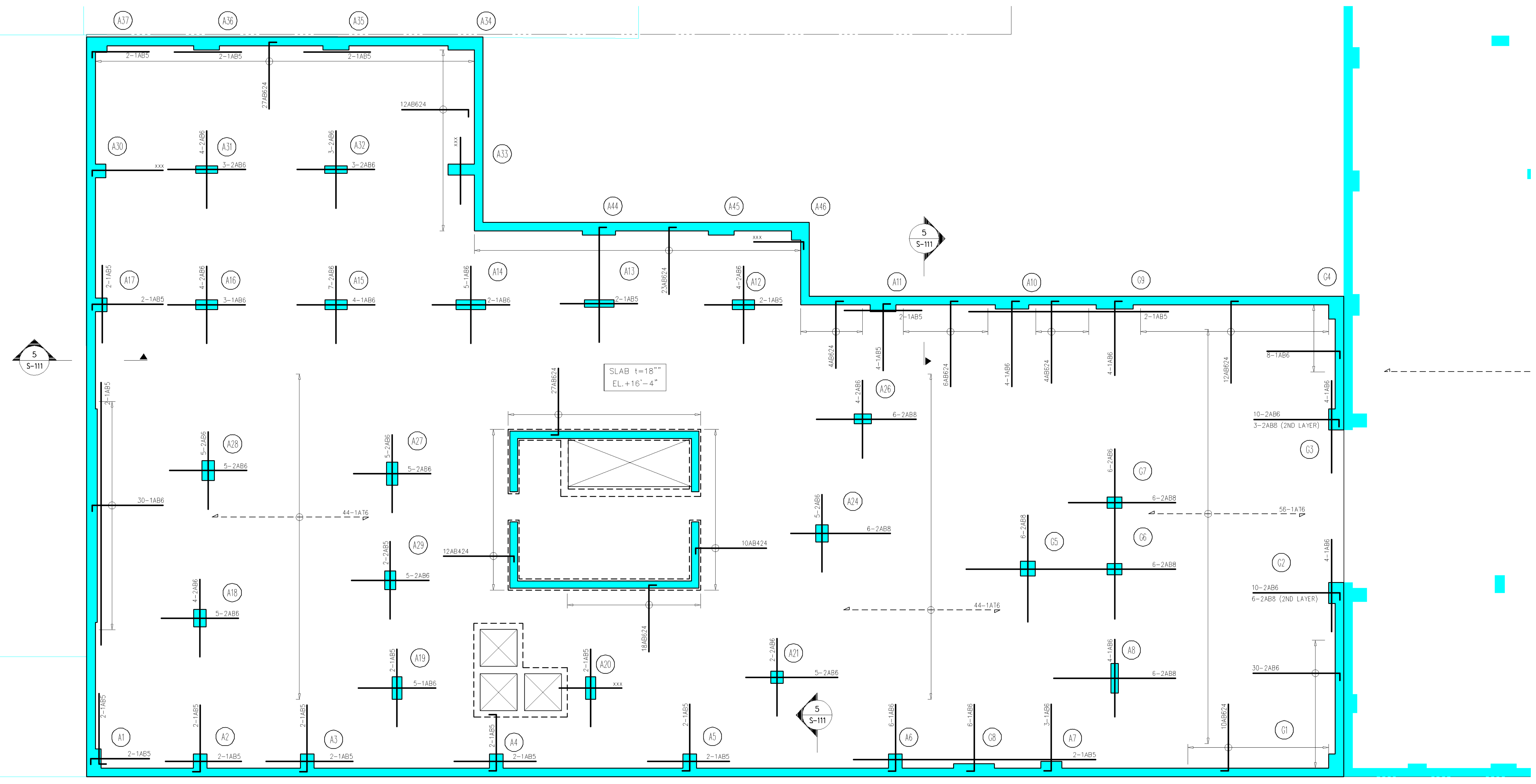


1 CELLAR LAYOUT PLAN

SCALE: 1/8"=1'-0"

DRAWING NOTES:

1. FOR GENERAL NOTES SEE DRAWING S-001.
2. TOP OF SLAB EL. +16'-4" UNLESS OTHERWISE NOTED.
3. FOR FOUNDATION SCHEDULES SEE DRAWING S-111
4. FOR TYPICAL FOUNDATION DETAILS SEE DRAWING S-111.
5. SLAB ON GRADE t=18". REFER TO 2/S-102 FOR REINFORCEMENT.
6. FOR COLUMN SCHEDULE SEE DRAWING S-201.
7. FOR SHEAR WALL DRAWINGS SEE DRAWING S-202.
8. REFER TO S-101 FOR FOOTING INFORMATION.



2 CELLAR REINFORCEMENT PLAN

SCALE: 1/8"=1'-0"

DRAWING NOTES:

1. FOR GENERAL NOTES SEE DRAWING S-001.
2. TOP OF SLAB EL. +16'-4" UNLESS OTHERWISE NOTED.
3. FOR FOUNDATION SCHEDULES SEE DRAWING S-111.
4. FOR TYPICAL FOUNDATION DETAILS SEE DRAWING S-111.
5. SLAB ON GRADE t=18". #6@12" E.W. T&B.
6. FOR COLUMN SCHEDULE SEE DRAWING S-201.
7. FOR SHEAR WALL DRAWINGS SEE DRAWING S-202.
8. OUTERMOST REINFORCING IN SLAB RUNS NORTH-SOUTH.
9. REFER TO S-101 FOR FOOTING INFORMATION.

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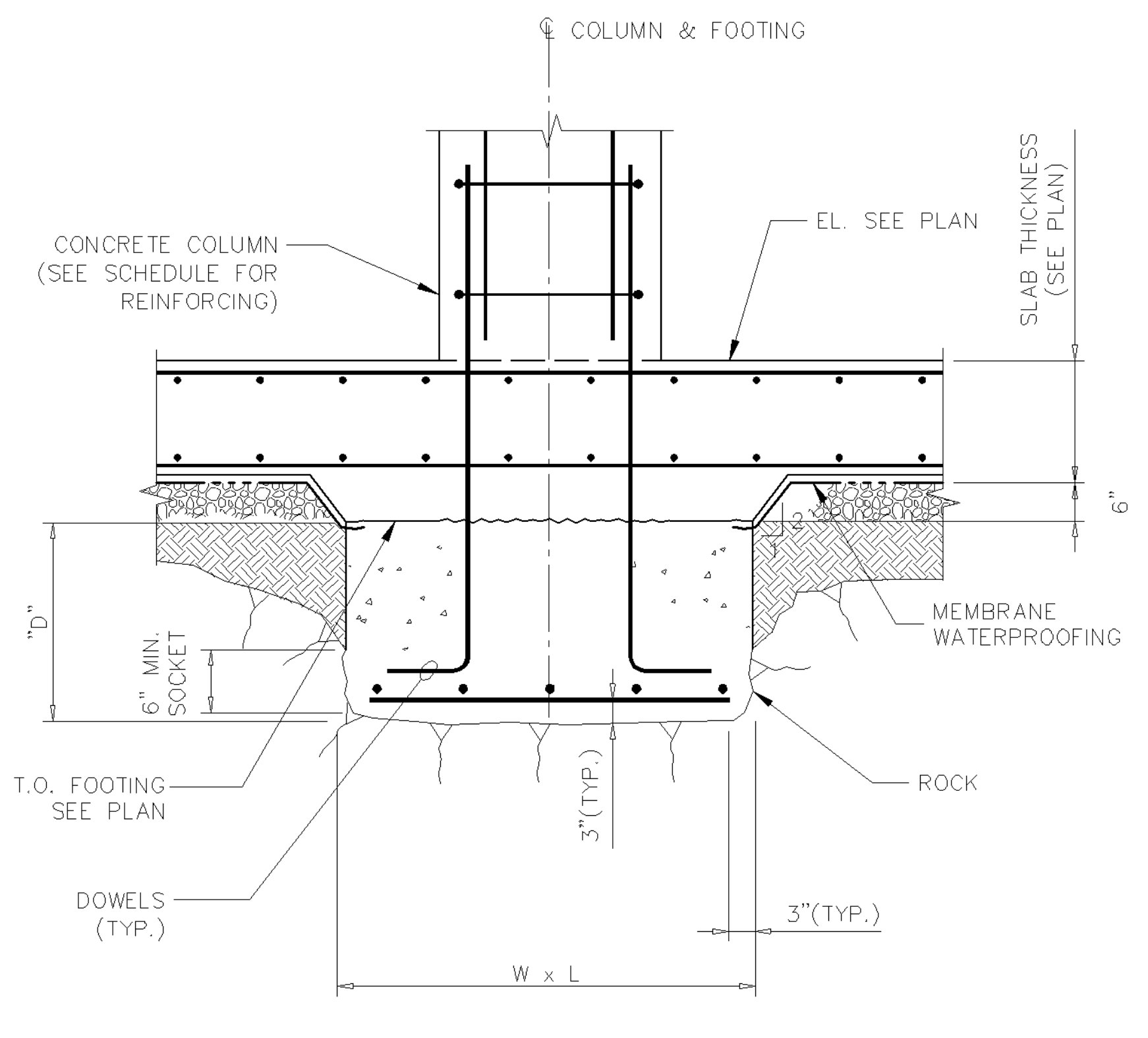
1	09.13.05	FOUNDATION BID

drawing title:
CELLAR PLAN

project number:
drawing number: S-102
date: 03/17/05
scale: 1/8"=1'-0"
drawn by: NT *checked by:* SEF

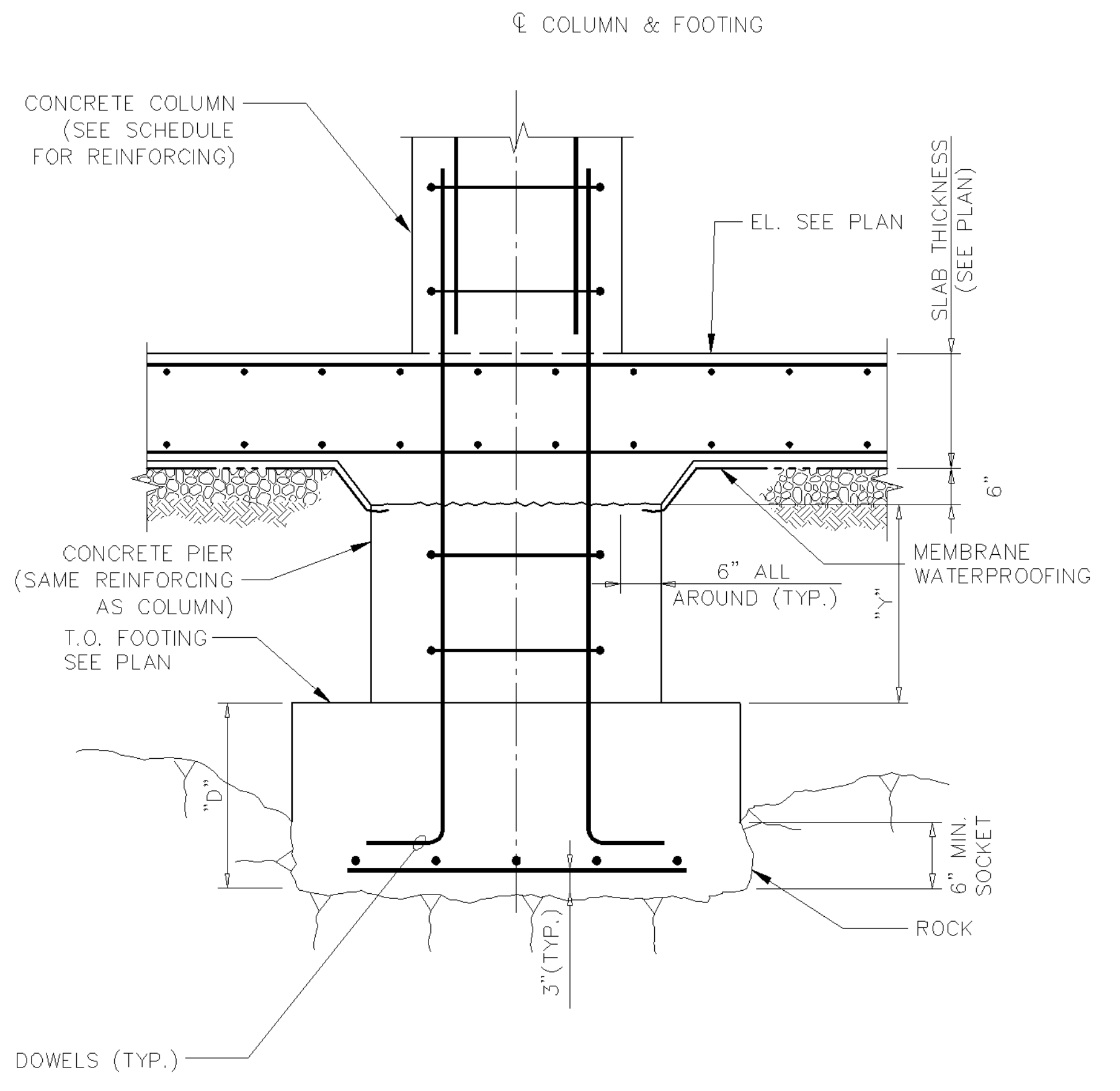
FOOTING SCHEDULE				
MARK	SIZE	DEPTH	BOTTOM REINFORCING EACH WAY (U.O.N.)	REMARKS
F4	4'-0"x4-0"	24"	#7@12"	
F4.5	4'-6"x4-6"	24"	#8@12"	
F5	5'-0"x5'-0"	30"	#7@6"	
F6	6'-0"x6'-0"	36"	#10@12"	
F4260	3'-6"x5'-0"	24"	#7@12"	
F4278	3'-6"x6'-0"	24"	#9@12"	
FH				SEE 4/S-111

1 FOOTING SCHEDULE
SCALE: N.T.S.



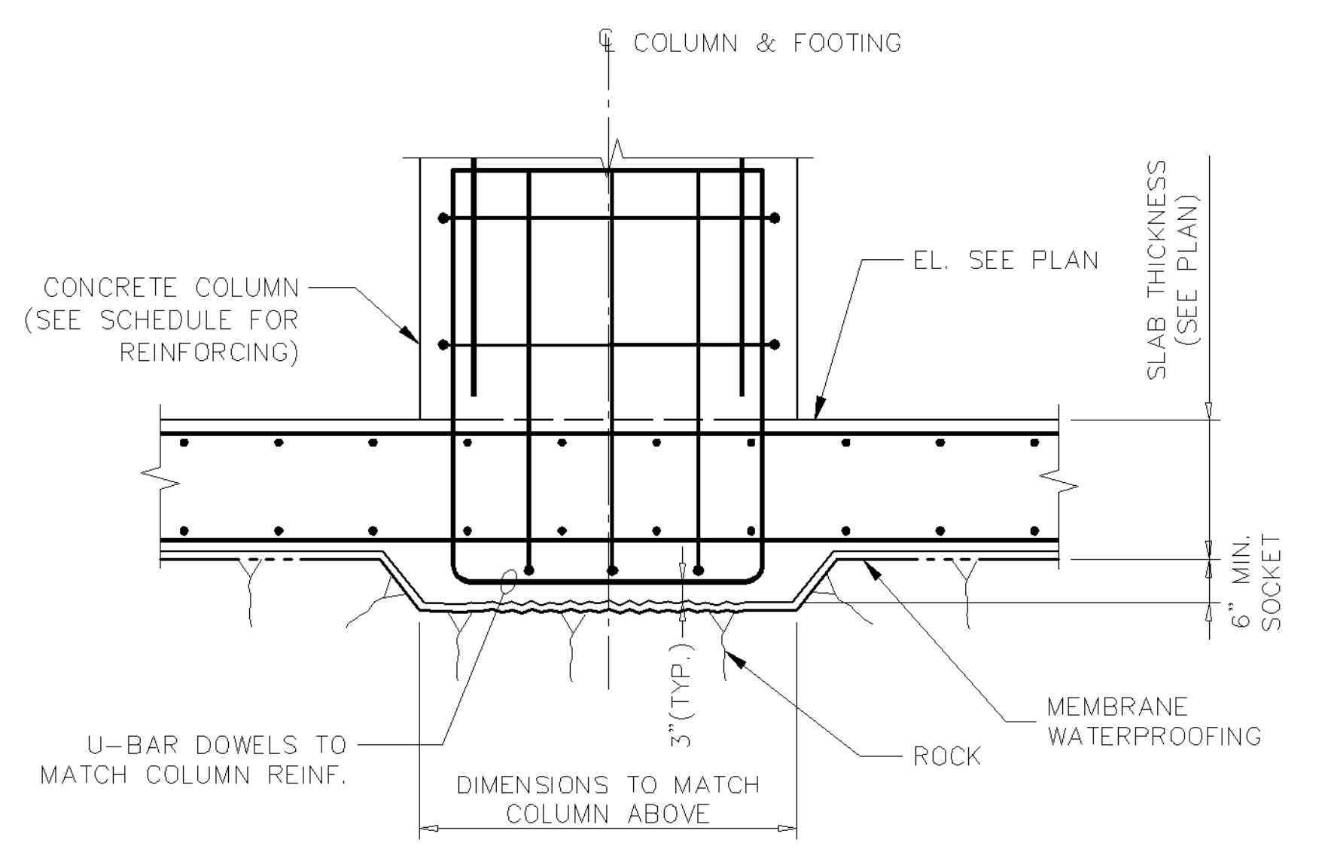
NOTE: FOR FOOTING DIMENSIONS SEE SCHEDULE

2 TYPICAL INTERIOR FOOTING DETAIL
SCALE: N.T.S.

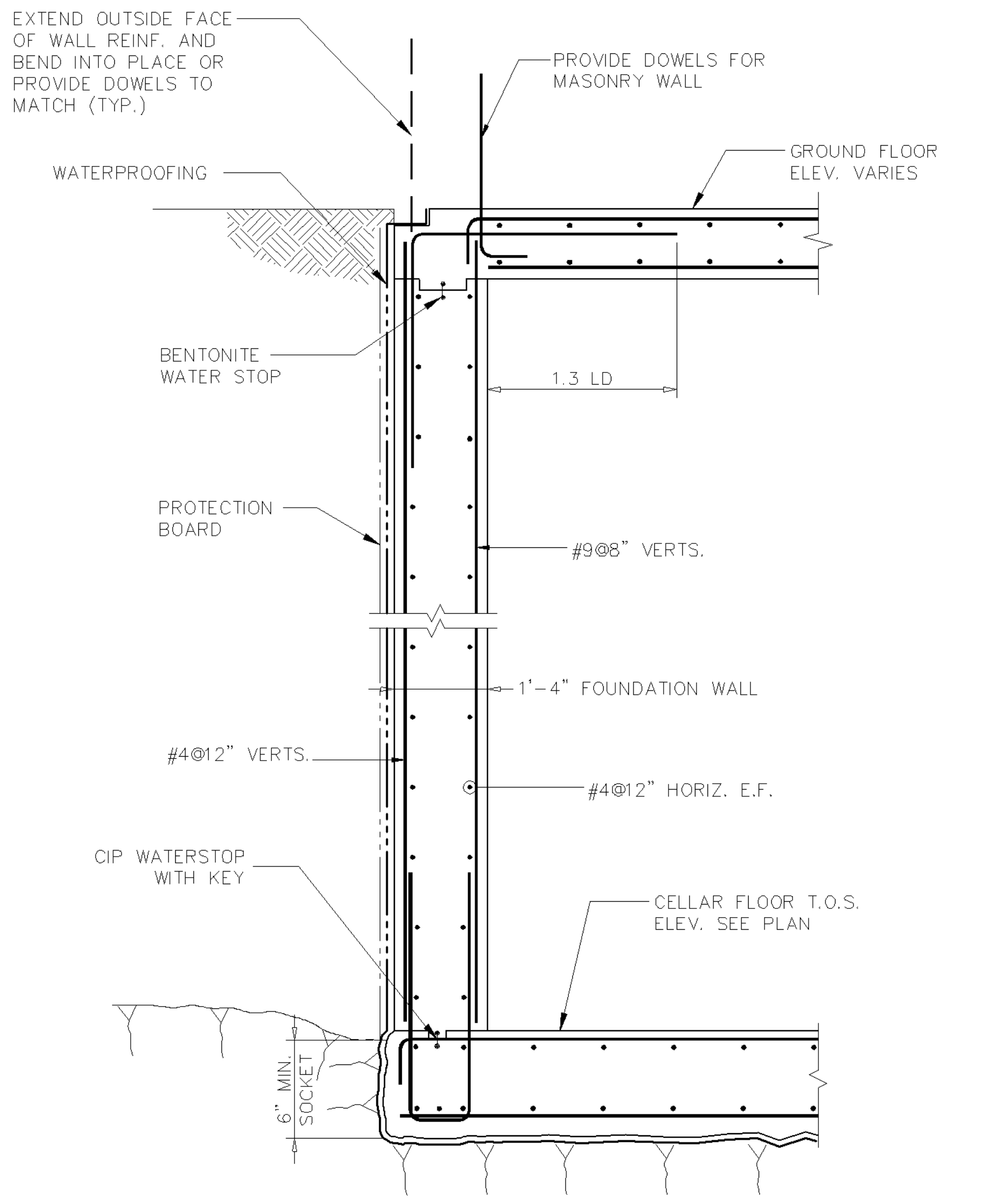


NOTE: FOR FOOTING DIMENSIONS SEE SCHEDULE WHEN "Y" < 2'-6" USE FOOTING DETAIL WITH ENLARGED "D" DIMENSION

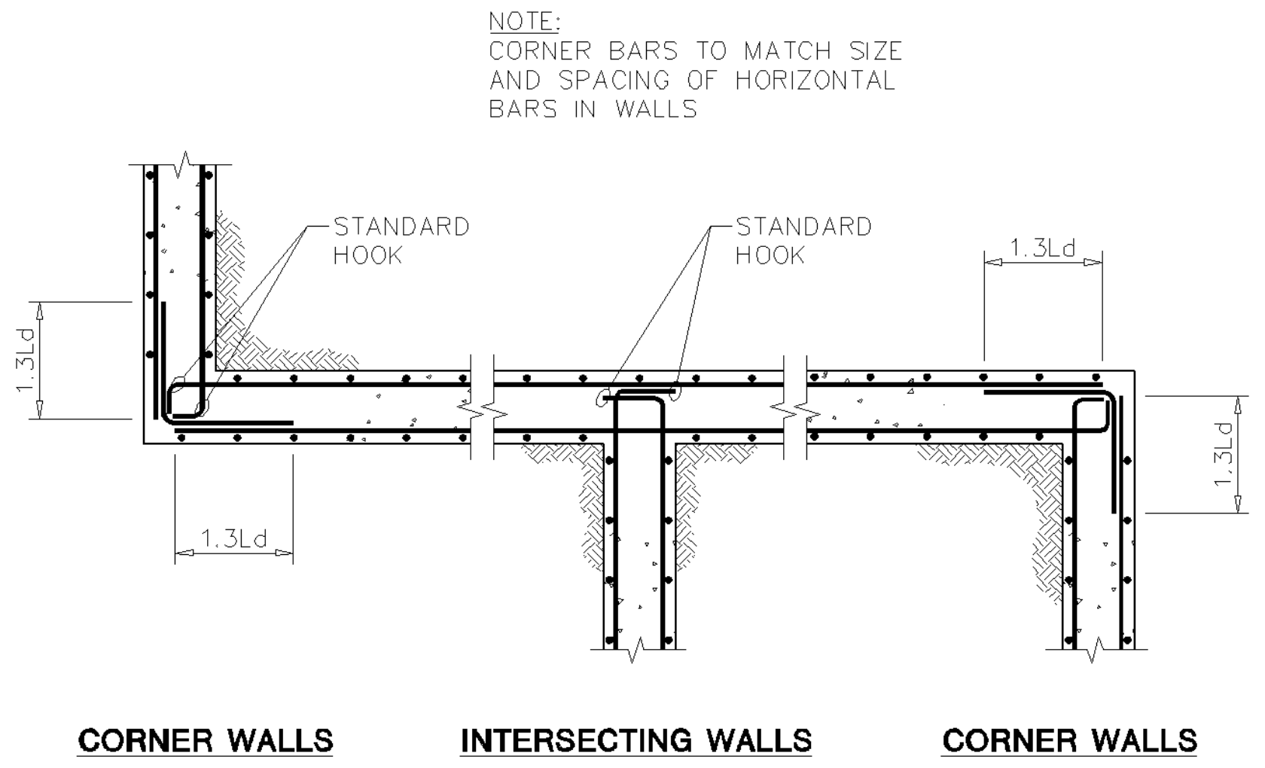
3 TYPICAL INTERIOR FOOTING DETAIL
SCALE: N.T.S.



4 TYPICAL INTERIOR HAUNCH FOOTING DETAIL
SCALE: N.T.S.

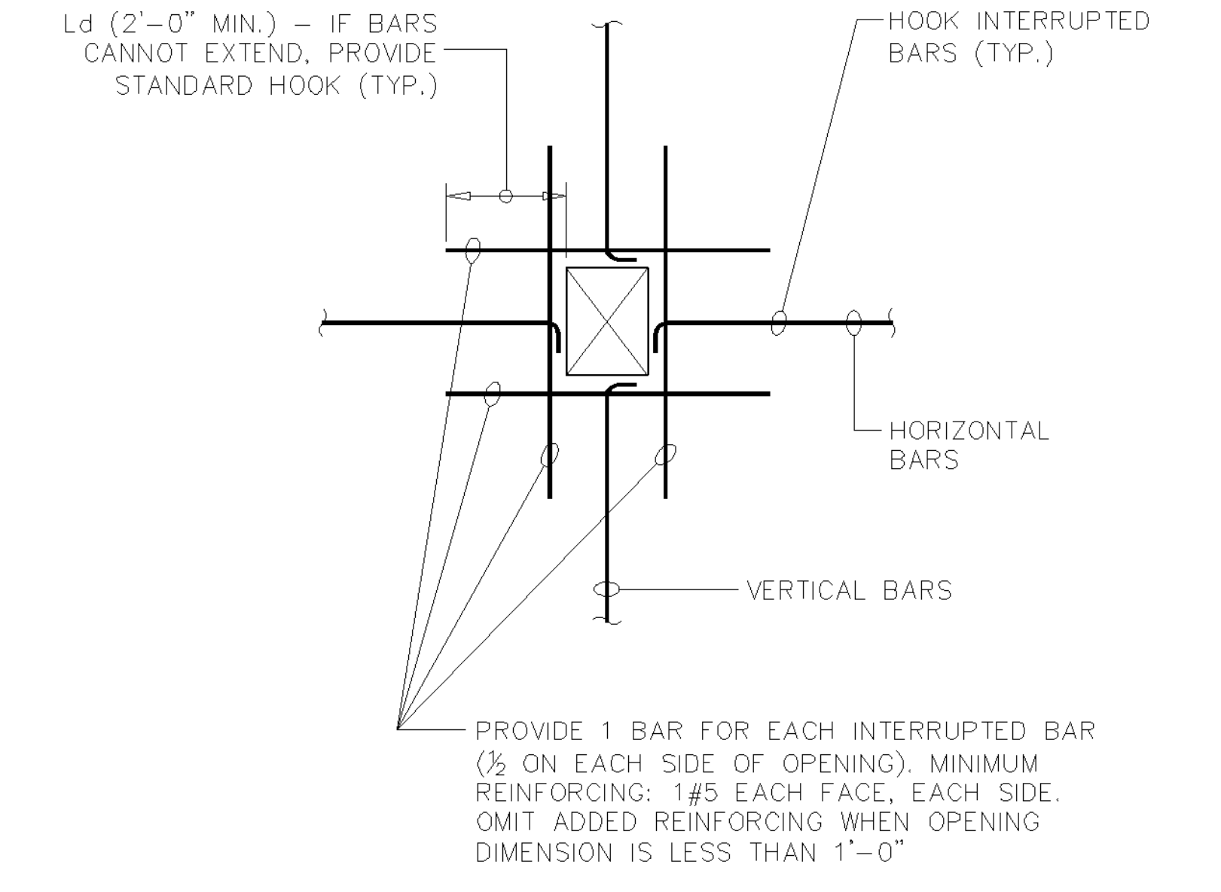


5 TYPICAL FOUNDATION WALL SECTION
SCALE: 1/2"=1'-0"



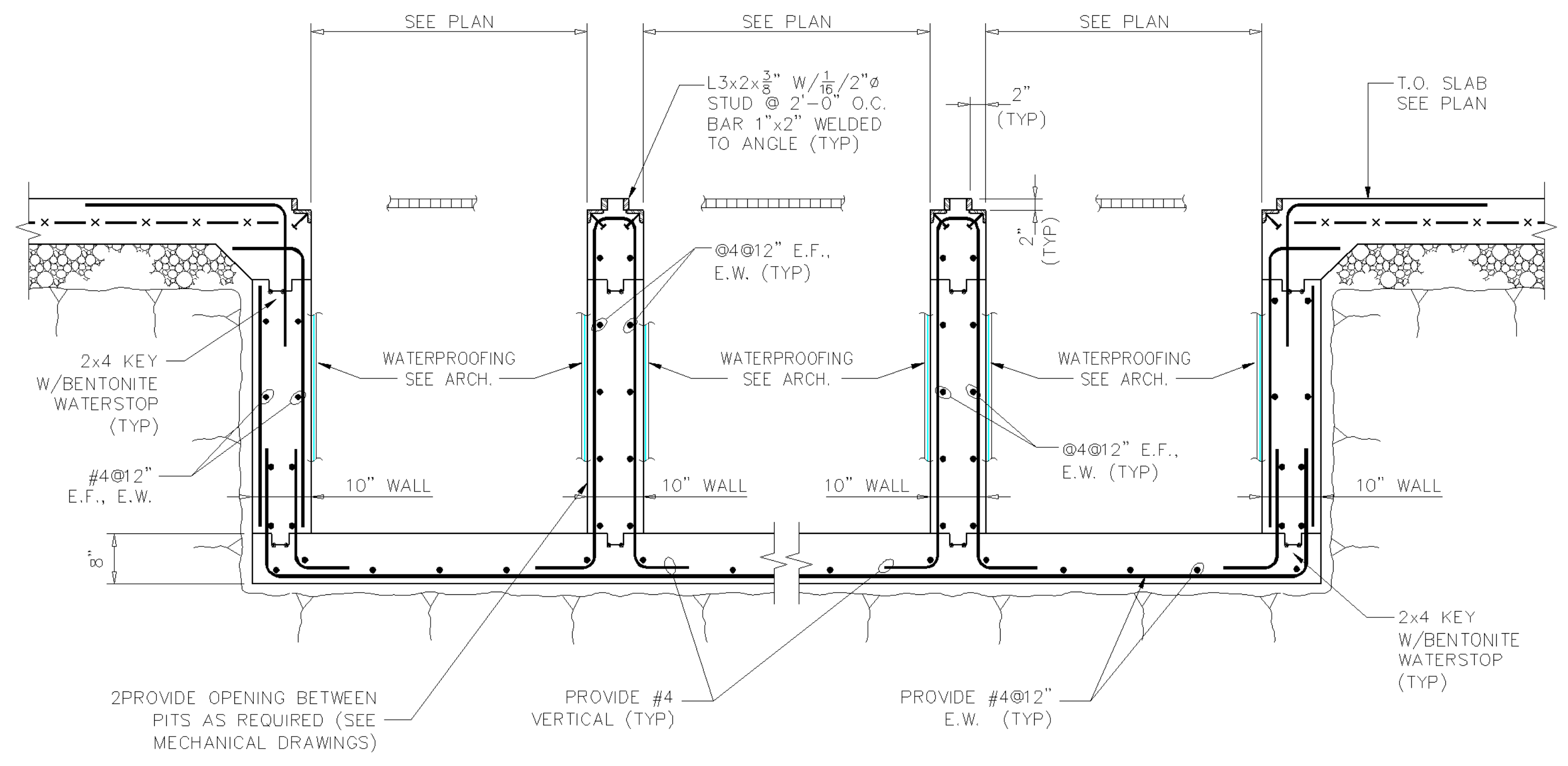
NOTE:
CORNER BARS TO MATCH SIZE AND SPACING OF HORIZONTAL BARS IN WALLS

6 FOUNDATION WALL CORNER DETAILS
SCALE: N.T.S.

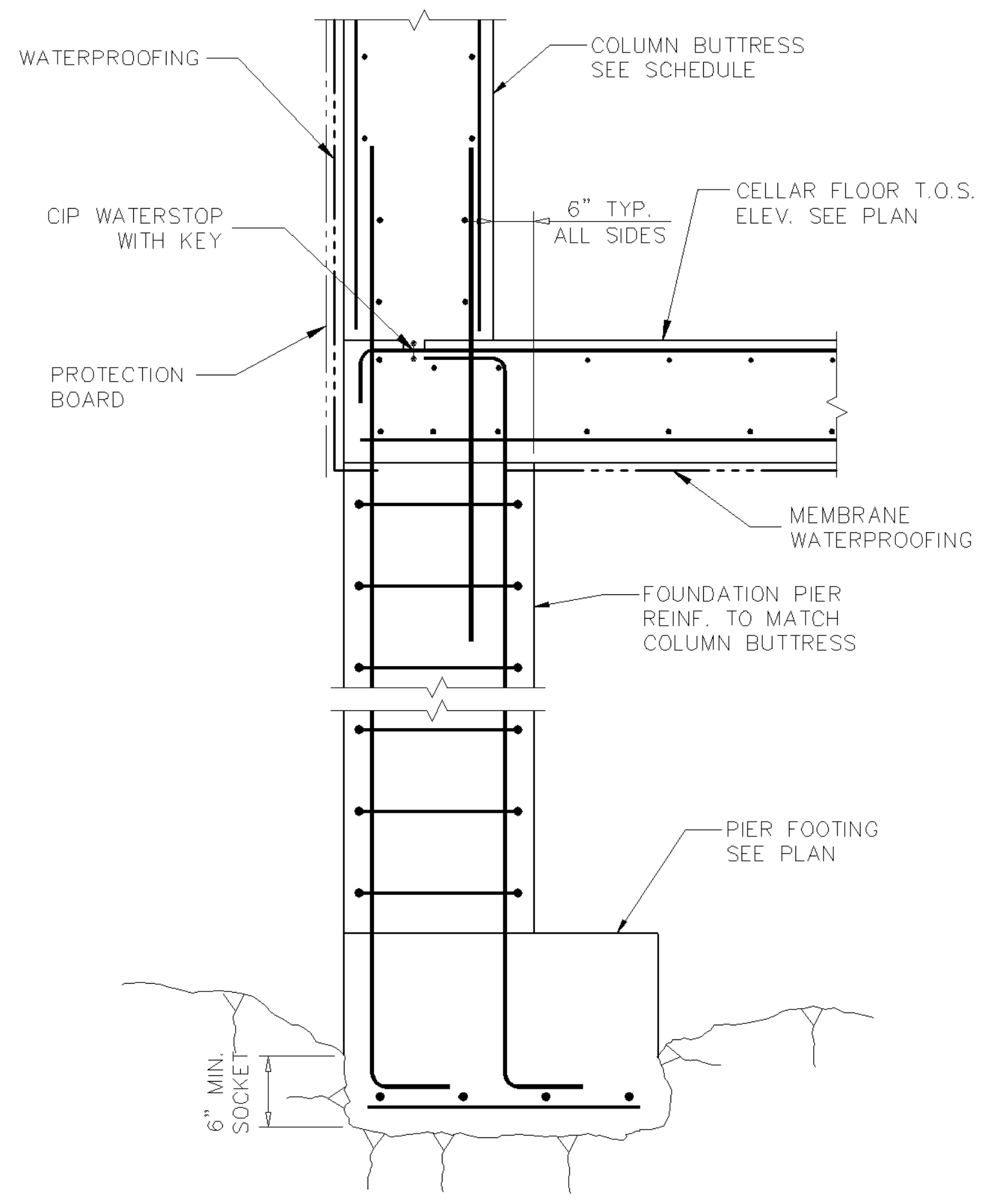


PROVIDE 1 BAR FOR EACH INTERRUPTED BAR (½ ON EACH SIDE OF OPENING). MINIMUM REINFORCING: 1#5 EACH FACE, EACH SIDE. OMIT ADDED REINFORCING WHEN OPENING DIMENSION IS LESS THAN 1'-0"

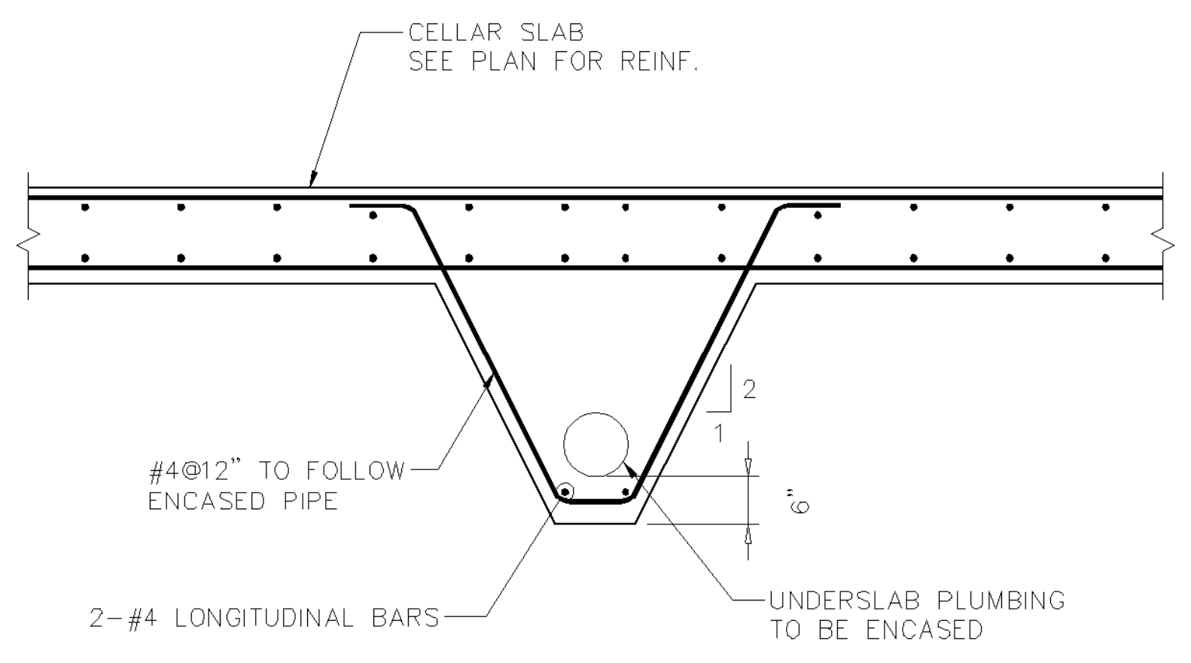
7 TYPICAL FOUNDATION WALL OPENING
SCALE: N.T.S.



9 TYPICAL SUMP/EJECTOR PIT DETAIL
SCALE: N.T.S.



10 TYPICAL FOUNDATION WALL PIER DETAIL
SCALE: 1/2"=1'-0"



12 TYPICAL UNDERSLAB PLG ENCASEMENT
SCALE: 1/2"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

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project:
WEST 60TH / 61ST STREET
NEW YORK,NY 10023
BUILDING A

no.	*issued*	*revisions*
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1	09.13.05	FOUNDATION BID

drawing title:
TYPICAL
FOUNDATION
SECTIONS AND DETAILS

project number:
date: 03/17/05
scale: AS NOTED
drawn by: NT *checked by:* SEF
drawing number: **S-111**

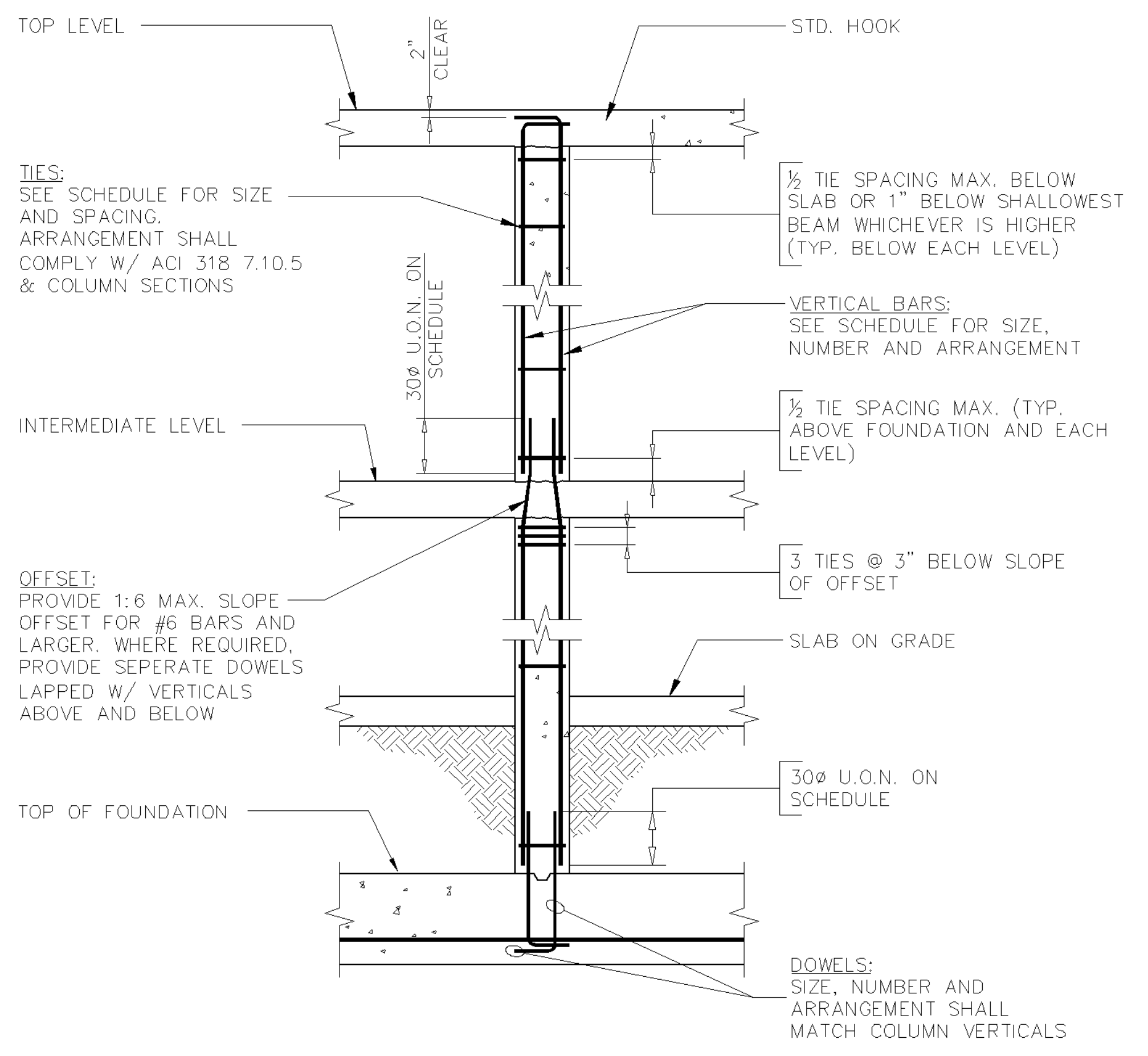
COLUMN LEVEL	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20
BULKHEAD ROOF																				
EL. + 10'-0" MAIN ROOF																				
EL. + 10'-0" 9TH FLOOR																				
EL. + 10'-0" 8TH FLOOR																				
EL. + 10'-0" 7TH FLOOR																				
EL. + 10'-0" 6TH FLOOR																				
EL. + 10'-0" 5TH FLOOR																				
EL. + 10'-0" 4TH FLOOR																				
EL. + 10'-0" 3RD FLOOR																				
EL. + 10'-0" 2ND FLOOR																				
EL. + VARIES GROUND FLOOR																				
EL. + SEE PLAN VARIES CELLAR	21x39 BUTTR 16 #6 #3@12" 258 22	22x31 BUTTR 12 #6 #3@12" 335 35	22x31 BUTTR 12 #6 #3@12" 302 33	22x31 BUTTR 12 #6 #3@12" 366 33	22x31 BUTTR 12 #6 #3@12" 362 33	22x31 BUTTR 12 #6 #3@12" 396 38	34x21 BUTTR 12 #6 #3@12" 265 22	12x48 20 #5 #3@10" 423 49		54x21 BUTTR 18 #6 #3@12" 687 61	42x25 BUTTR 16 #6 #3@12" 397 34	36x16 14 #6 #3@12" 500 48	48x16 20 #6 #3@12" 487 43	48x16 20 #6 #3@12" 529 51	36x18 16 #6 #3@12" 544 60	36x18 16 #6 #3@12" 452 45	31x22 BUTTR 12 #6 #3@12" 232 21	22x28 16 #6 #3@12" 529 77	18x36 14 #7 #3@14" 522 59	16x36 14 #6 #3@12" 467 51
EL. +16'-4"																				
COLUMN LEVEL	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20

COLUMN LEVEL	A21	A22	A23	A24	A25	A26	A27	A28	A29	A30	A31	A32	A33	A34	A35	A36	A37	A38	A39	A40
BULKHEAD ROOF																				
EL. + 10'-0" MAIN ROOF																				
EL. + 10'-0" 9TH FLOOR																				
EL. + 10'-0" 8TH FLOOR																				
EL. + 10'-0" 7TH FLOOR																				
EL. + 10'-0" 6TH FLOOR																				
EL. + 10'-0" 5TH FLOOR																				
EL. + 10'-0" 4TH FLOOR																				
EL. + 10'-0" 3RD FLOOR																				
EL. + 10'-0" 2ND FLOOR																				
EL. + VARIES GROUND FLOOR																				
EL. + SEE PLAN VARIES CELLAR	22x22 12 #6 #3@12" 630 71			20x28 16 #6 #3@12" 713 89		32x18 16 #6 #3@12" 630 82	18x42 20 #6 #3@12" 720 91	20x32 16 #6 #3@12" 704 88	18x30 16 #6 #3@12" 536 65	31x22 BUTTR 12 #6 #3@12" 132 19	36x12 16 #5 #3@10" 142 27	36x12 16 #5 #3@10" 149 29	57x18 BUTTR 20 #5 #3@10" 181 28	57x21 BUTTR 20 #5 #3@10" 128 18	42x21 BUTTR 16 #5 #3@10" 124 19	42x21 BUTTR 16 #5 #3@10" 118 19	31x25 BUTTR 12 #6 #3@12" 96 11			
EL. +16'-4"																				
COLUMN LEVEL	A21	A22	A23	A24	A25	A26	A27	A28	A29	A30	A31	A32	A33	A34	A35	A36	A37	A38	A39	A40

COLUMN LEVEL	A41	A42	A43	A44	A45	A46	G23	G24	G25	G26	G27	G28	G29	G30	G31
BULKHEAD ROOF															
EL. + 10'-0" MAIN ROOF															
EL. + 10'-0" 9TH FLOOR															
EL. + 10'-0" 8TH FLOOR															
EL. + 10'-0" 7TH FLOOR															
EL. + 10'-0" 6TH FLOOR															
EL. + 10'-0" 5TH FLOOR															
EL. + 10'-0" 4TH FLOOR															
EL. + 10'-0" 3RD FLOOR															
EL. + 10'-0" 2ND FLOOR															
EL. + VARIES GROUND FLOOR															
EL. + SEE PLAN VARIES CELLAR				54x21 BUTTR 20 #5 #3@10" 107 10	42x21 BUTTR 16 #5 #3@10" 79 8	29x29 BUTTR 12 #6 #3@12" 72 5	25x37 BUTTR. 12 #6 #3@12" 78 22	25x34 BUTTR. 12 #6 #3@12" 108 22	25x34 BUTTR. 12 #6 #3@12" 108 22	25x37 BUTTR. 12 #6 #3@12" 70 20	24x24 16 #8 #3@16" 1064 123	24x18 12 #6 #3@12" 338 41	24x18 12 #6 #3@12" 500 55	66x21 BUTTR. 28 #7 #3@14" 338 41	60x21 BUTTR. 24 #7 #3@14" 358 41
EL. +16'-4"															
COLUMN LEVEL	A41	A42	A43	A44	A45	A46	G1	G2	G3	G4	G5	G6	G7	G8	G9

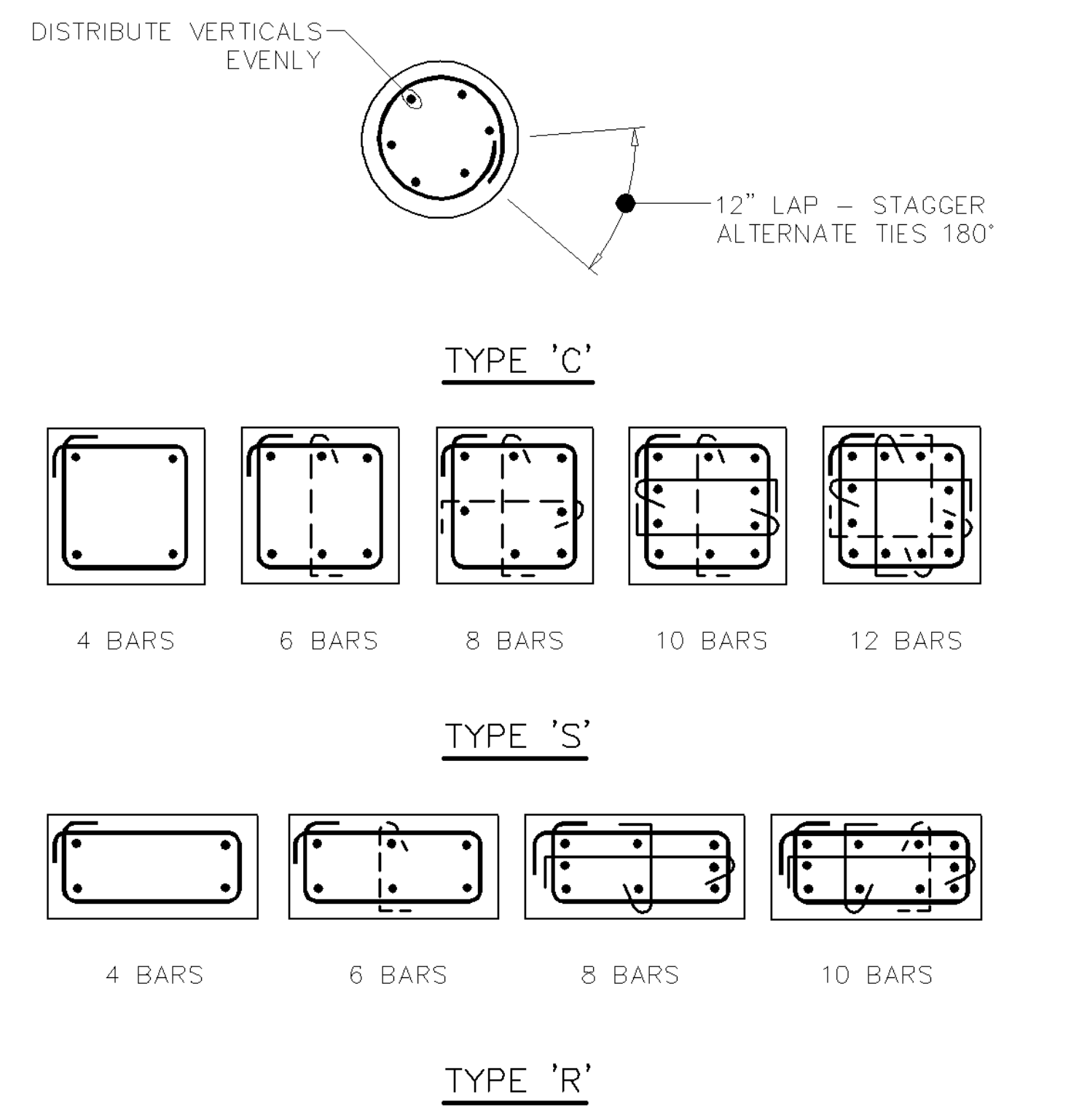
1 COLUMN SCHEDULE

SCALE: N.T.S.



5 TYPICAL CONCRETE COLUMN DETAIL

NTS

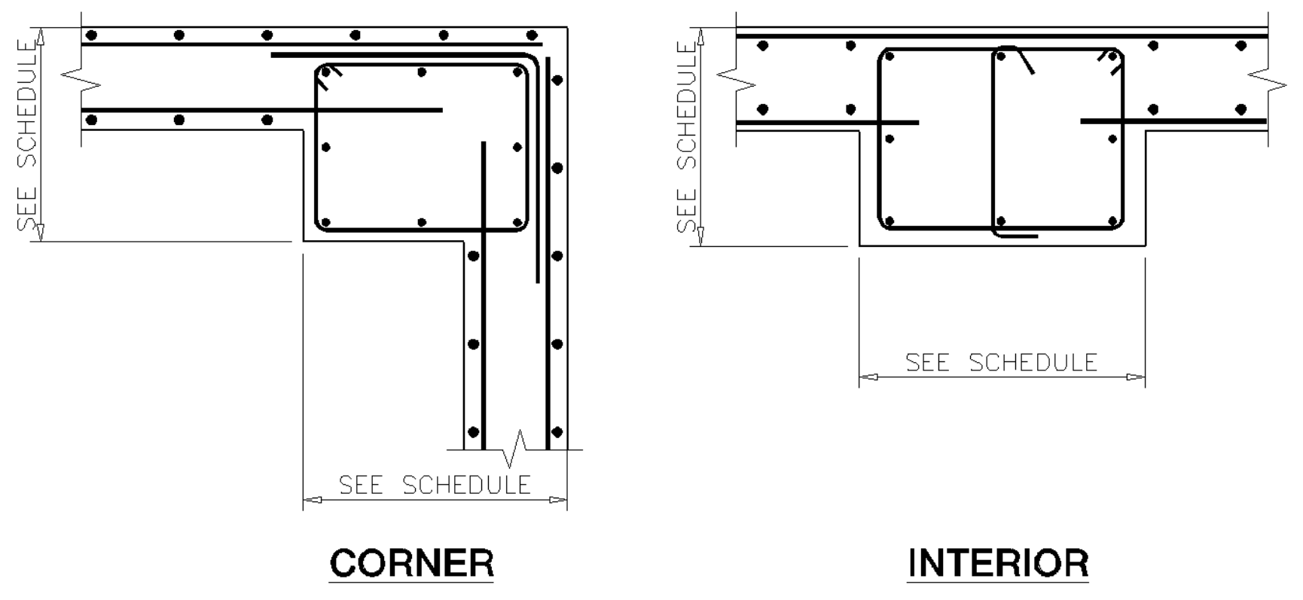


NOTES:

1. DASHED TIES MAY BE OMITTED IF CLEAR DISTANCE BETWEEN ADJACENT VERTICALS < 6".
2. ALTERNATE POSITION OF 90° HOOKS ON SINGLE TIES.

4 TYPICAL CONCRETE COLUMN SECTIONS

NTS

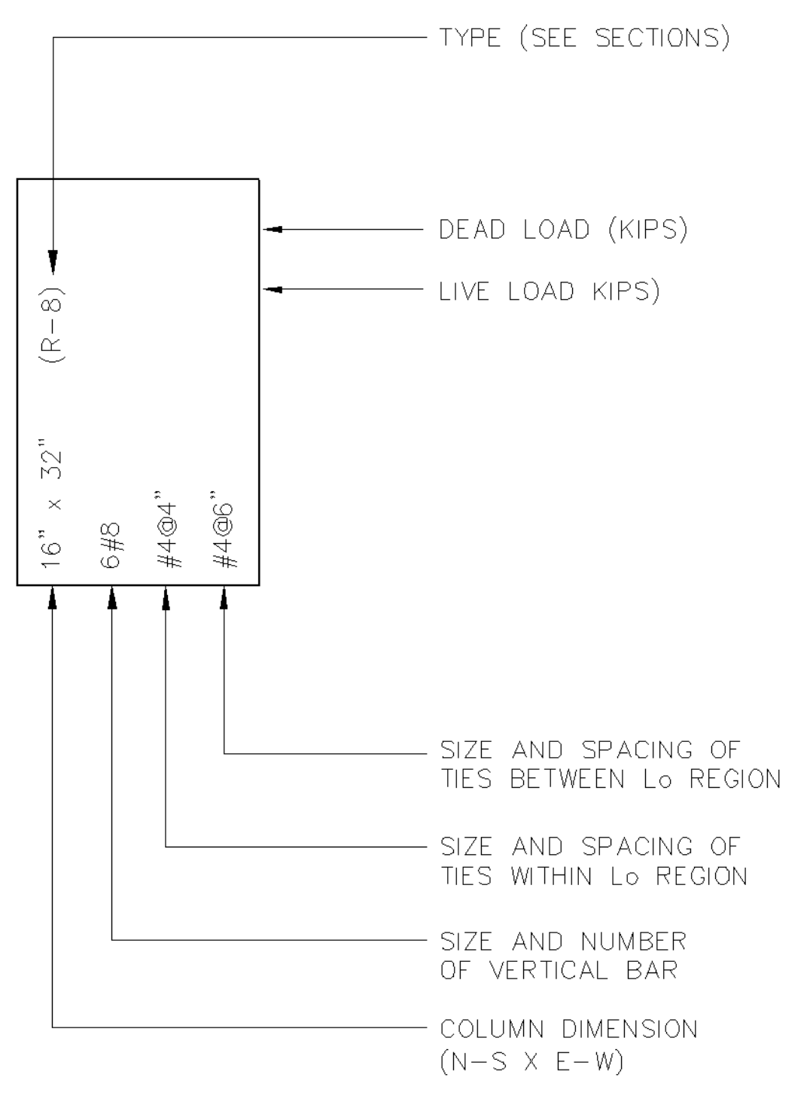


NOTE:

1. COLUMN SIZES ON THIS SCHEDULE, FIRST DIMENSION N-S DIRECTION.
2. CONCRETE STRENGTH f'c = 5 ksi FOR ALL EXTERIOR FOUNDATION WALLS AND BUTTRESSES.
3. ALL COLUMNS ARE TYPE 'R' U.O.N.
4. FLOOR LIVE LOADS ARE REDUCED IN ACCORDANCE WITH SUBCHAPTER 9, ARTICLE 4 OF THE N.Y.C.B.C..

3 TYPICAL BUTTRESS DETAIL

NTS



2 CONCRETE COLUMN SCHEDULE LEGEND

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BUILDING A

no.	*issued*	*revisions*
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1	09.13.05	FOUNDATION BID

drawing title:

COLUMN SCHEDULE
AND DETAILS

project number:

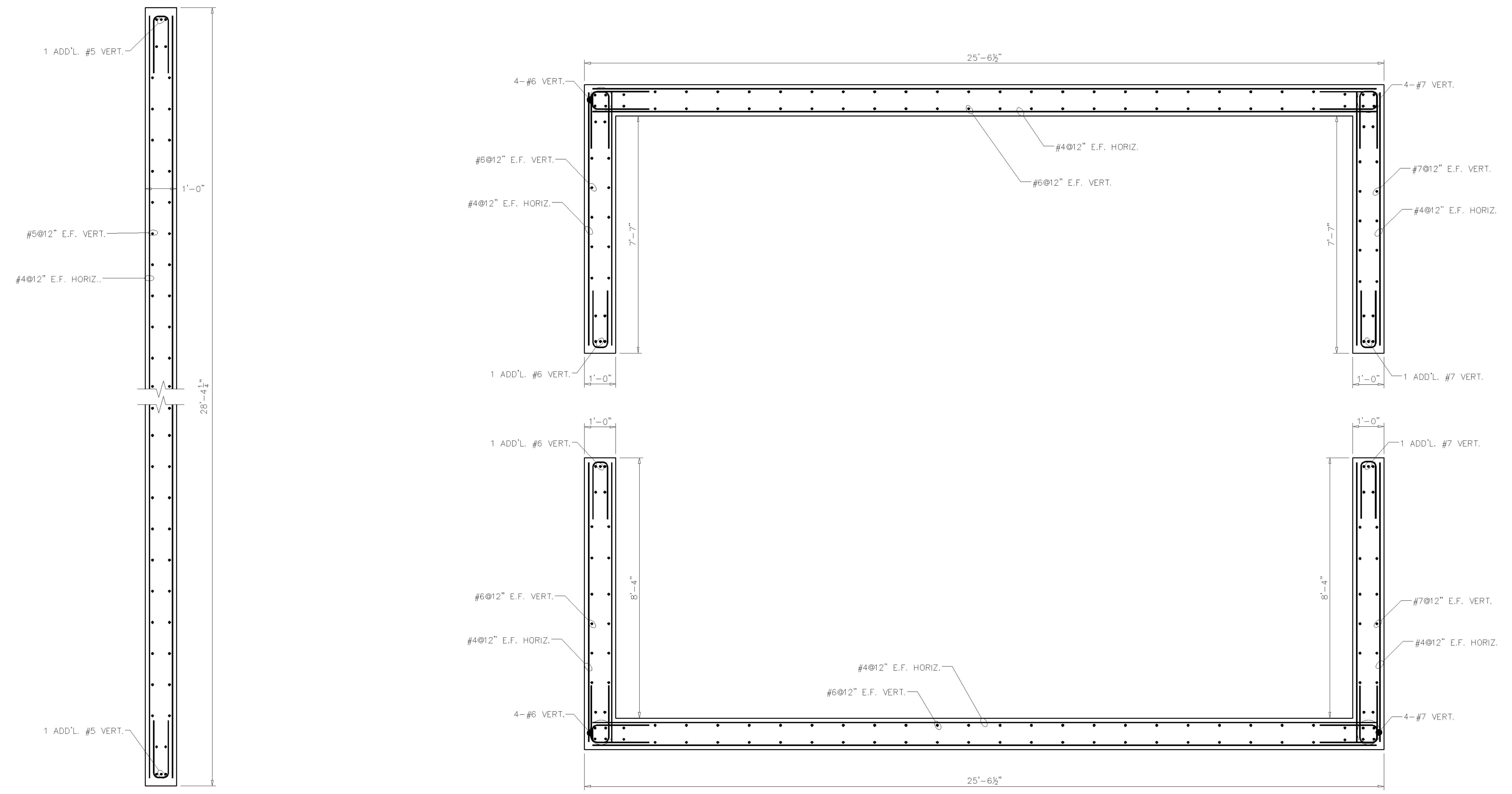
date: 05/24/05

scale:

drawn by: NT
checked by: SEF

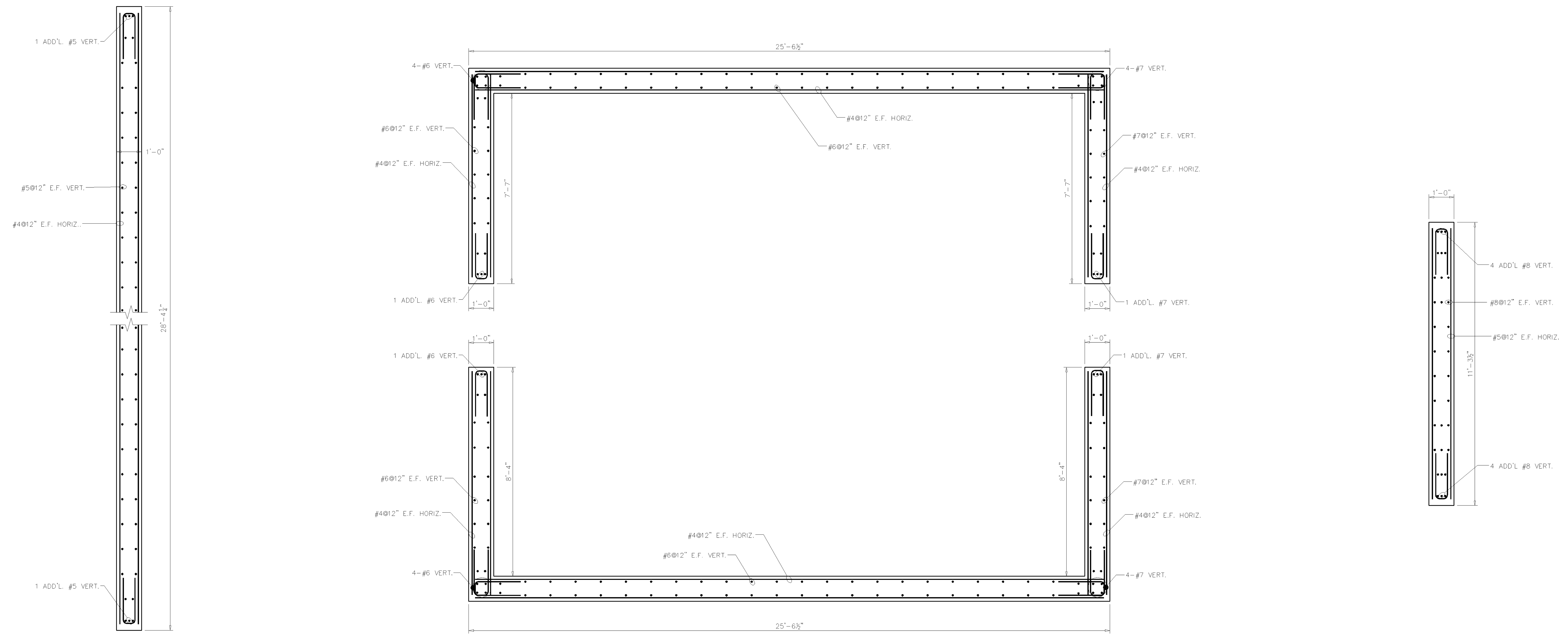
drawing number:

S-201



① **SHEAR WALLS SUPPORTING GROUND**

SCALE: 1/2"=1'-0"



② **SHEAR WALLS SUPPORTING 2ND**

SCALE: 1/2"=1'-0"

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1	09.13.05	FOUNDATION BID

drawing title:
SHEAR WALL
PART PLANS

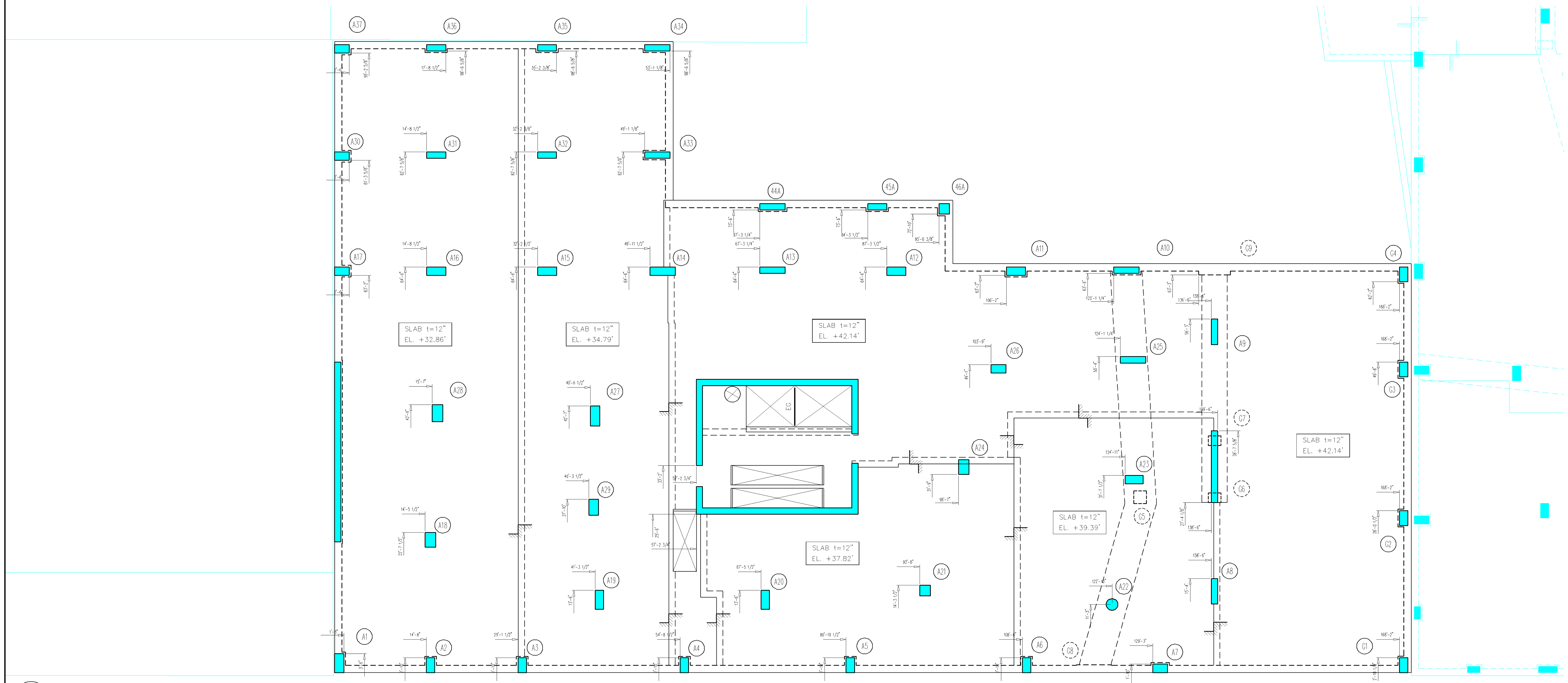
project number:

drawing number:
S-202

date: 05/24/05

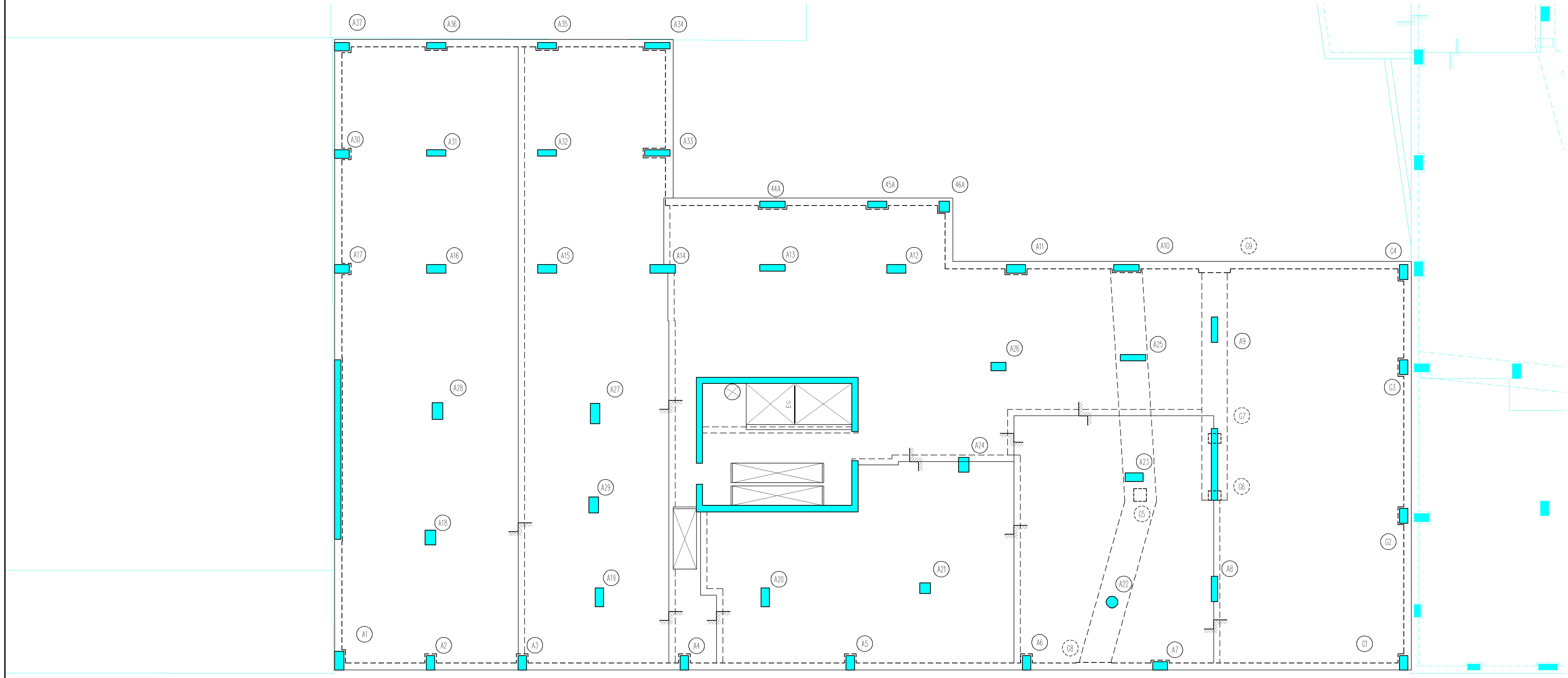
scale:

drawn by: NT
checked by: SEF



1 **GROUND FLOOR LAYOUT PLAN**

SCALE: 1/8"=1'-0"



2 **GROUND FLOOR REINFORCEMENT PLAN**

SCALE: 1/8"=1'-0"

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BUILDING A

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1	09.13.05	FOUNDATION BID

drawing title:
GROUND FLOOR PLAN

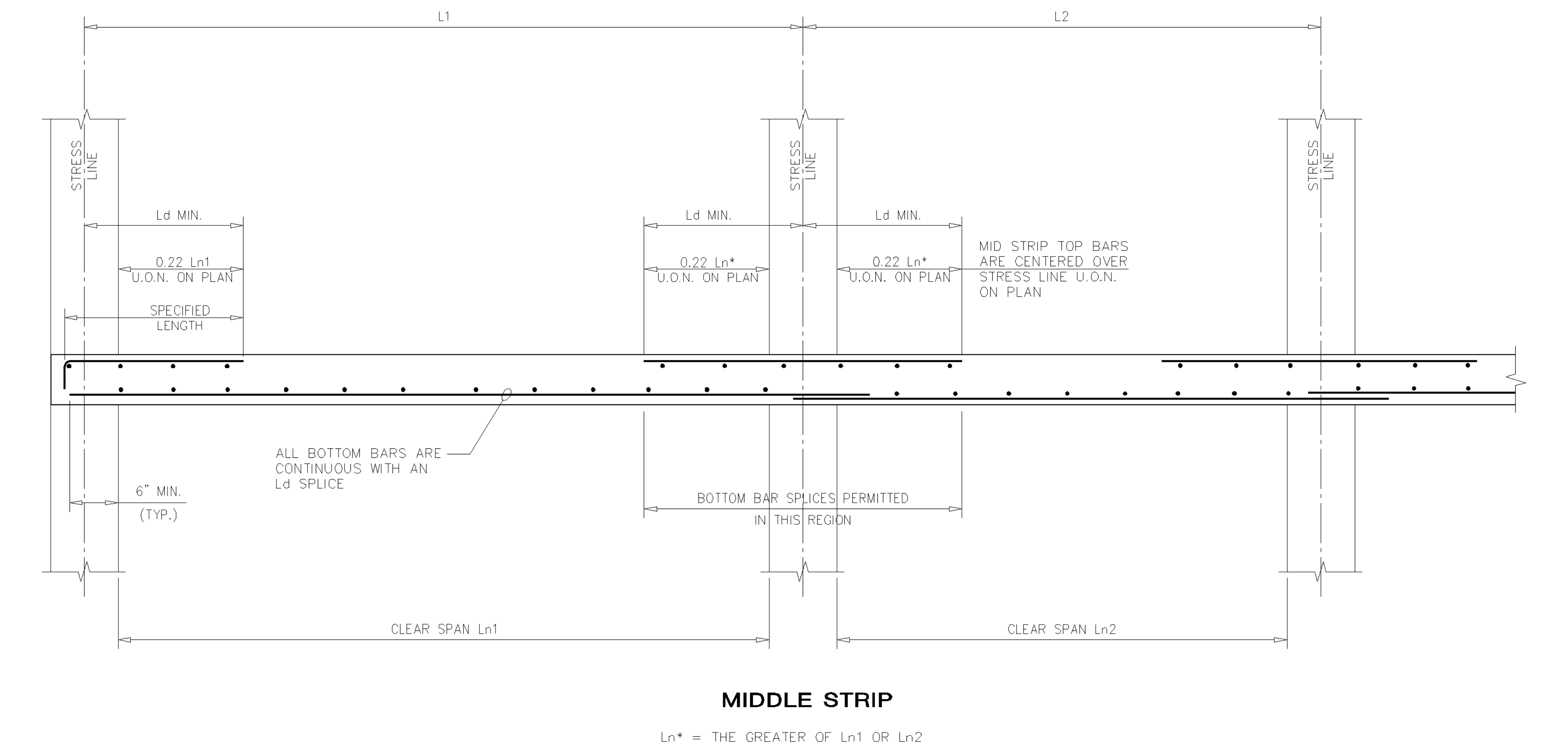
project number:

date: 03/17/05

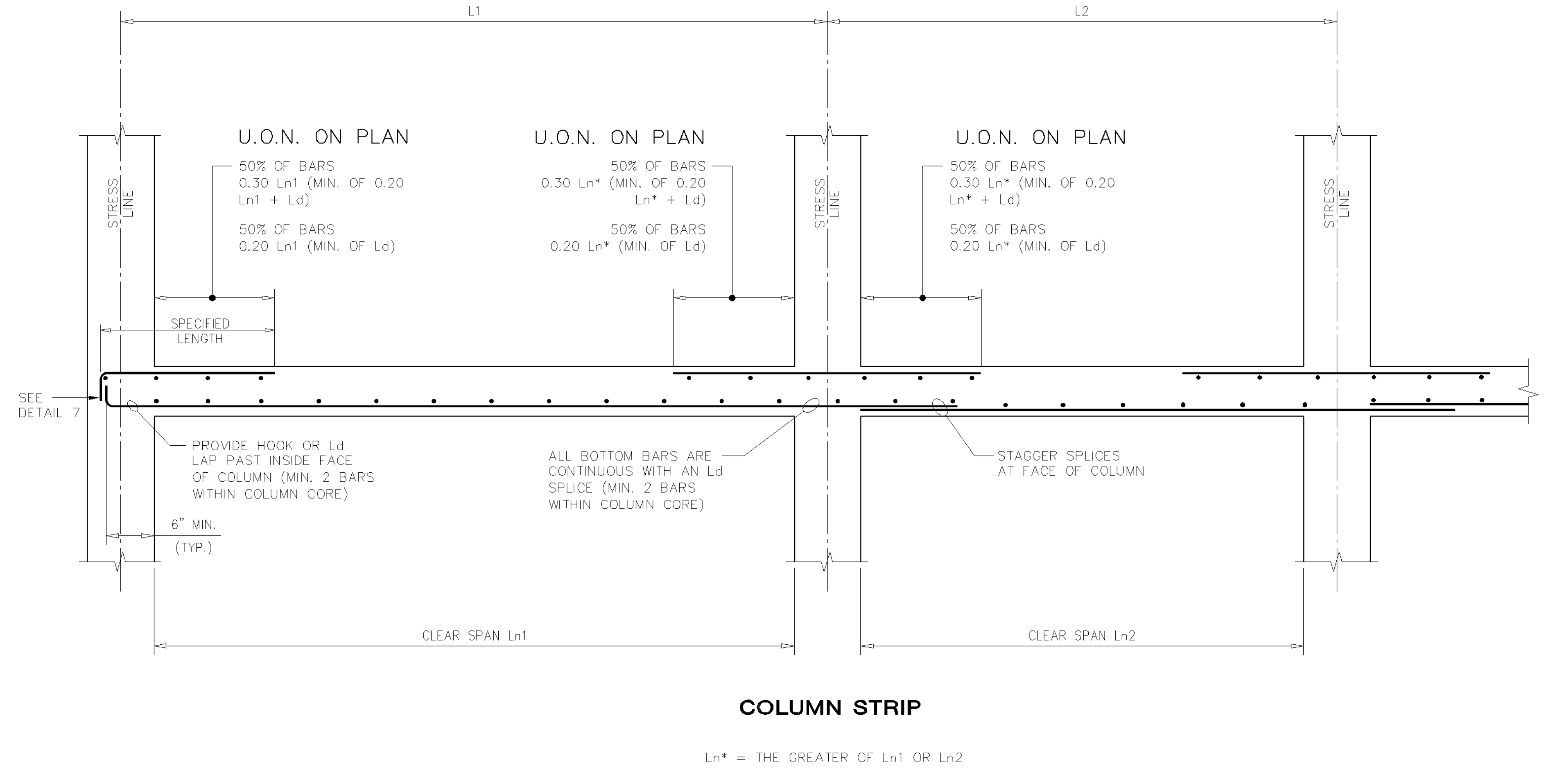
scale: 1/8"=1'-0"

drawn by: NT
checked by: SEF

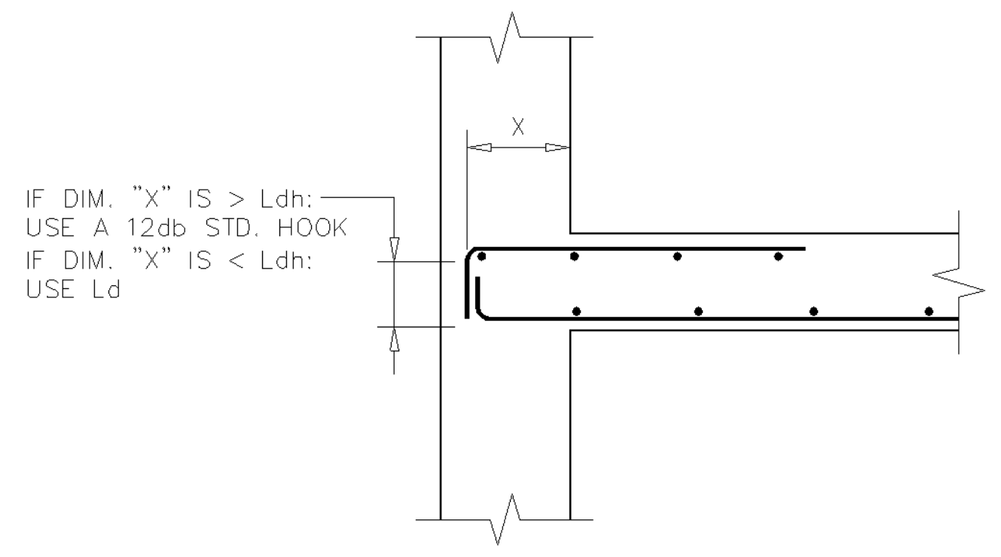
drawing number:
S-301



5 TYPICAL CONCRETE FLAT SLAB DETAIL



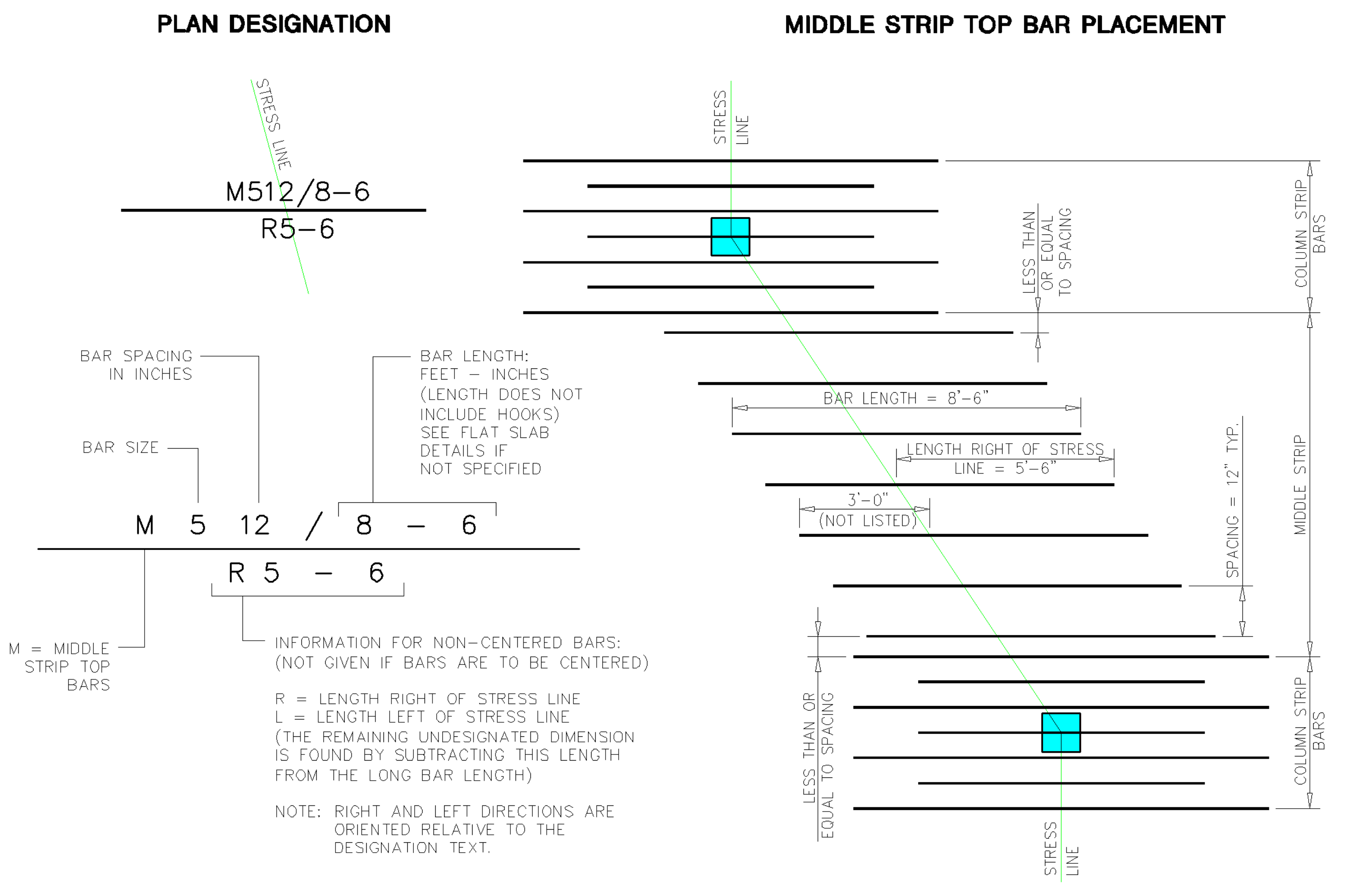
2 TYPICAL CONCRETE FLAT SLAB DETAIL



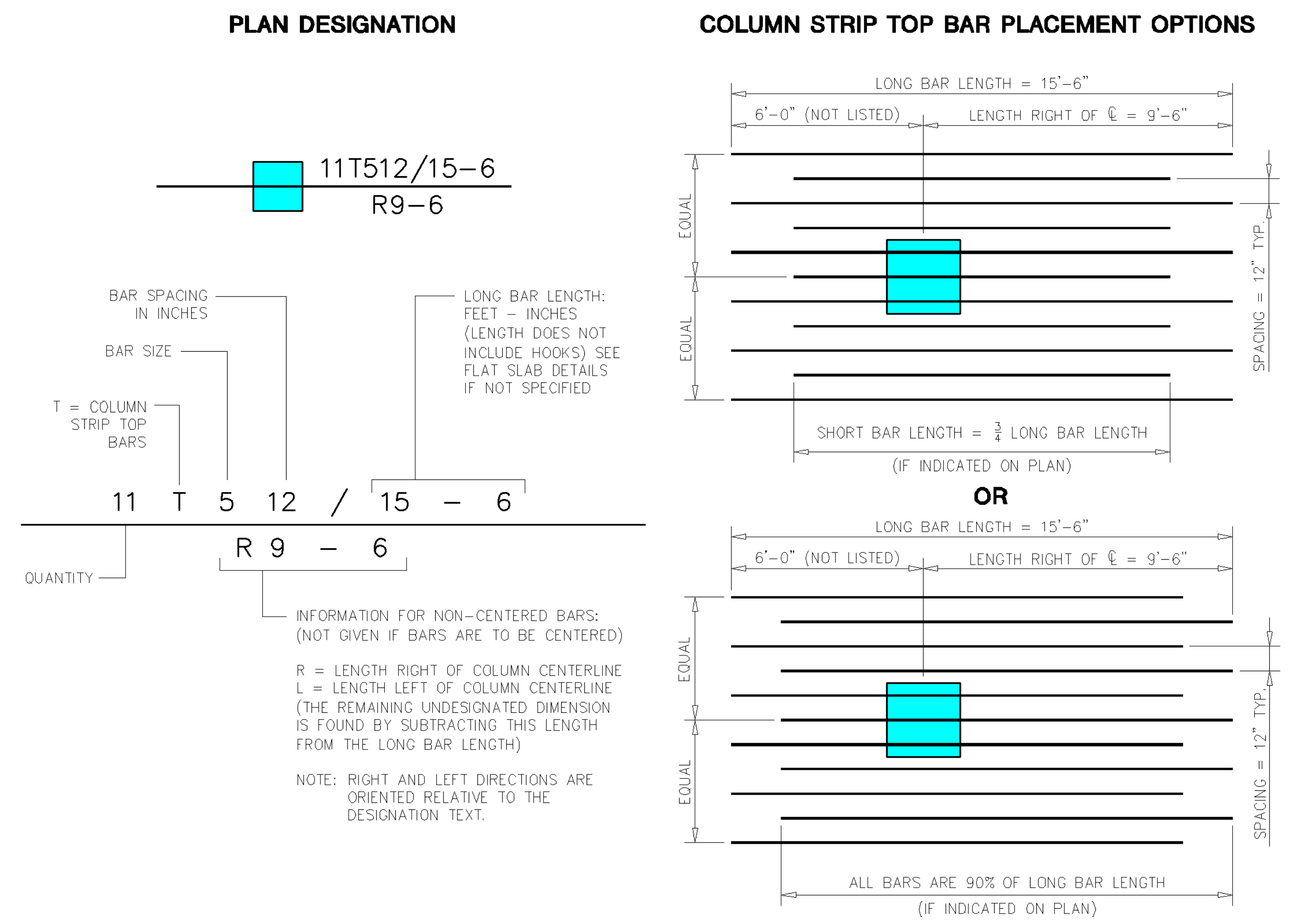
Ldh (IN INCHES)

BAR #	f'c		
	4000 psi	5000 psi	6000 psi
3	5	5	5
4	7	6	6
5	9	8	7
6	10	9	9
7	12	11	10
8	14	12	11
9	15	14	13
10	17	16	14
11	19	17	16

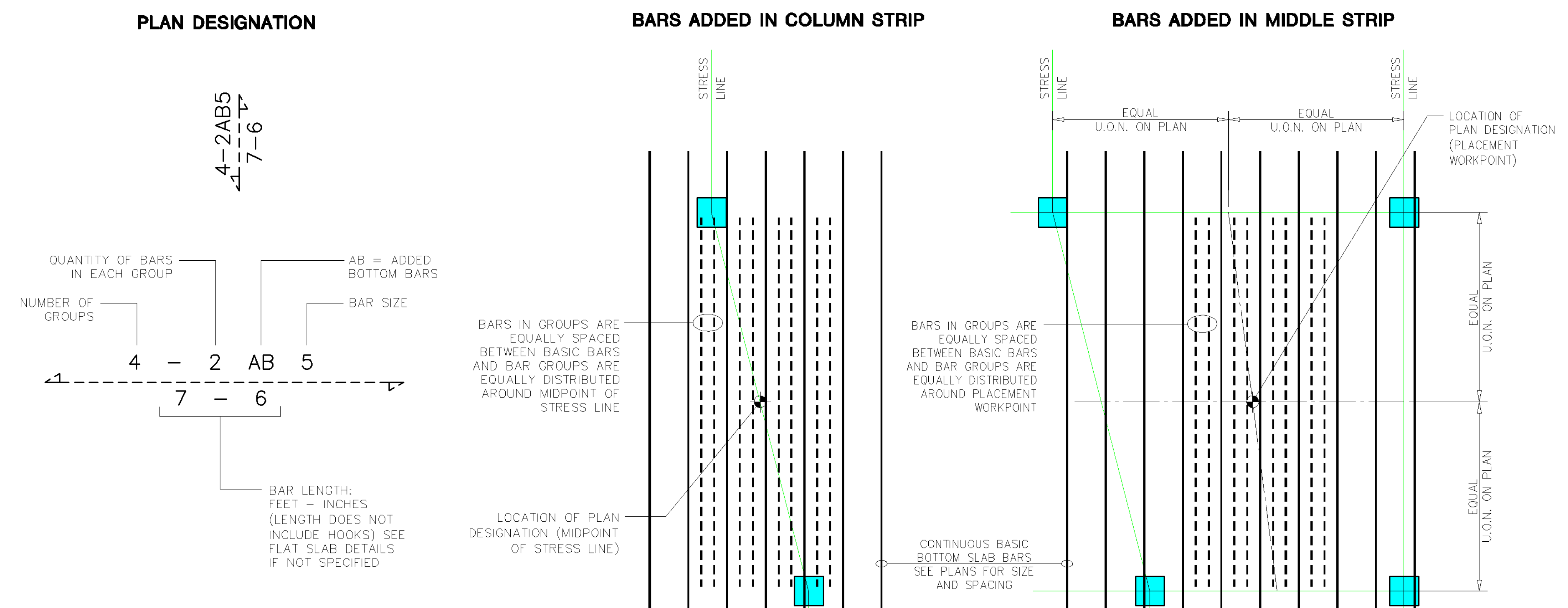
10 HOOK LENGTHS FOR CONNECTIONS



9 MIDDLE STRIP TOP BAR PLACEMENT



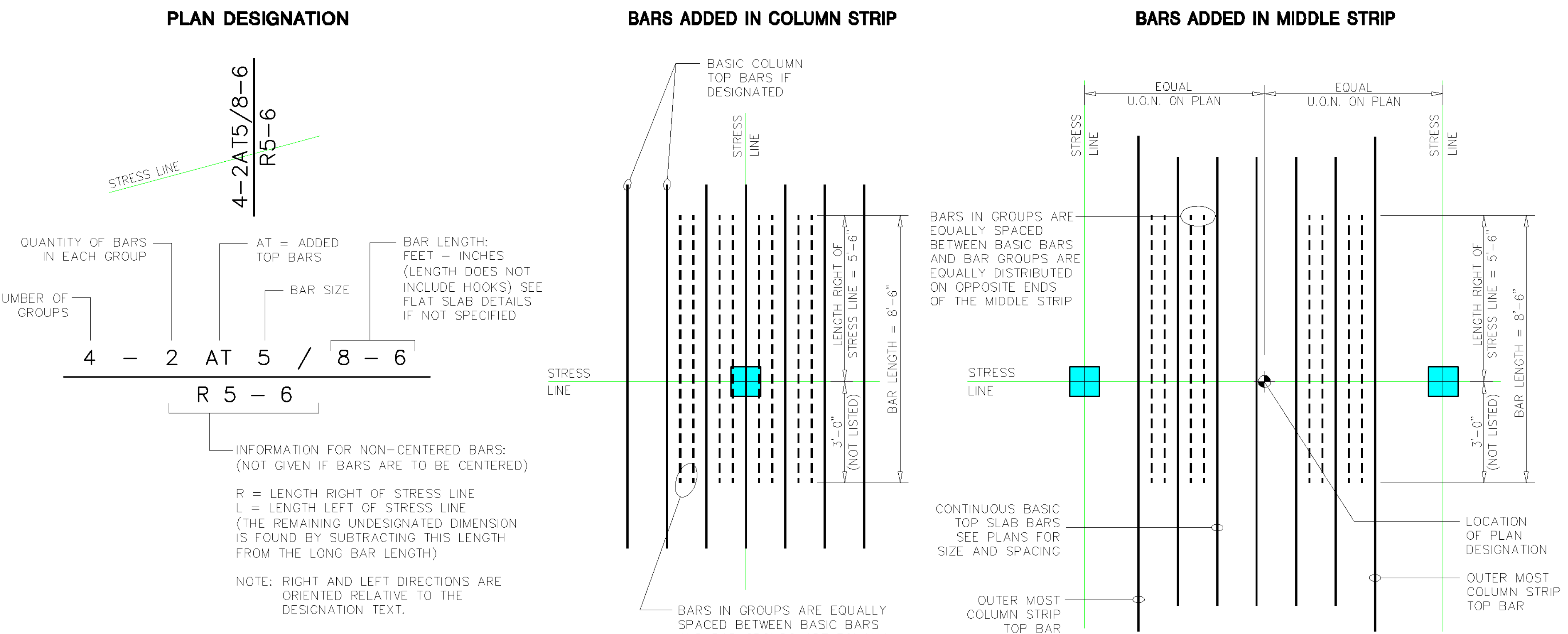
7 COLUMN STRIP TOP BAR PLACEMENT



NOTE:

IF NUMBER OF ADDED BAR GROUPS IS NOT SPECIFIED, ADDED BARS SHOULD BE EVENLY DISTRIBUTED ACROSS THE ENTIRE COLUMN OR MIDDLE STRIP WIDTH.

15 ADDED BOTTOM BAR PLACEMENT



NOTE: IF NUMBER OF ADDED BAR GROUPS IS NOT SPECIFIED, ADDED BARS SHOULD BE EVENLY DISTRIBUTED ACROSS THE ENTIRE COLUMN OR MIDDLE STRIP WIDTH.

12 ADDED TOP BAR PLACEMENT

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1	09.13.05	FOUNDATION BID

drawing title:
TYPICAL CONCRETE DETAILS

project number:
date: 8/29/05
scale: NTS
drawn by: NT *checked by:* SEF
drawing number: **S-401**

GENERAL NOTES:

I - CODES

1. BUILDING CODE OF THE CITY OF NEW YORK, INCLUDING LATEST AMENDMENTS ("N.Y.C. CODE")
2. AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS – ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN", JUNE 1, 1989 ("AISC SPECIFICATION"). AS MODIFIED BY SUBCHAPTER 10 ARTICLE 6 OF THE NYC BUILDING CODE.
3. AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" ACI 318–99 ("ACI") AS MODIFIED BY SUBCHAPTER 10 ARTICLE 5 OF THE N.Y.C. BUILDING CODE.
4. AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" ACI 530–99 ("ACI 530") AS MODIFIED BY REFERENCE STANDARD RS 10 – 18 OF THE N.Y.C. BUILDING CODE.
5. STEEL JOIST INSTITUTE "STANDARD SPECIFICATIONS, LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS", 1994 ("SJI") AS MODIFIED BY SUBCHAPTER 10 ARTICLE 6 OF THE N.Y.C. BUILDING CODE.

II - MATERIALS

UNLESS OTHERWISE SHOWN OR NOTED ON DRAWINGS:

1. STRUCTURAL STEEL:
   ALL ROLLED SHAPES: ASTM A572 OR A992, GRADE 50
   ALL PLATES AND CONNECTION MATERIAL: ASTM A36
   ALL TUBULAR SECTIONS: ASTM A500, GRADE B
   ANCHOR BOLTS, U.O.N.: ASTM F1554
2. METAL DECK:
   FABRICATE FROM ASTM A611 OR ASTM A653 STEEL WITH ASTM A653 G60 GALVANIZING. SIZE AND GAGE AS NOTED ON DRAWINGS.
   U.O.N., FLOOR DECKING SHALL BE COMPOSITE DECK WITH CONFIGURATION THAT PERMITS FULL AISC SHEAR CONNECTOR VALUE.
3. SHEAR CONNECTORS:
   ¾" DIAMETER x _____ HEADED STUDS, U.O.N.
4. CAST–IN–PLACE CONCRETE:
   FOUNDATIONS: 5 KSI NORMAL WT.
   SLABS ON GROUND: 5 KSI NORMAL WT.
   FORMED SLABS: 5 KSI NORMAL WT.
   COLUMNS AND WALLS: 5 KSI NORMAL WT.
5. REINFORCEMENT:
   DEFORMED BARS: ASTM A615, GRADE 60.
   WELDED WIRE FABRIC: ASTM A185.
   WELDED DEFORMED WIRE FABRIC: ASTM A467, GRADE 60.
6. WELDING ELECTRODES: E70XX LOW HYDROGEN.
7. BOLTING MATERIALS: ASTM A325 OR A490, U.O.N.
8. LIGHT GAGE FRAMING: ASTM A653; GRADE 50 FOR 16 GAGE AND HEAVIER, GRADE 33 FOR 18 GAGE AND LIGHTER; WITH G60 GALVANIZING

III - GENERAL

1. NOTES, TYPICAL DETAILS AND SCHEDULES APPLY TO ALL STRUCTURAL WORK UNLESS OTHERWISE NOTED. FOR CONDITIONS NOT SPECIFICALLY SHOWN, PROVIDE DETAILS OF A SIMILAR NATURE. VERIFY APPLICABILITY BY SUBMITTING SHOP DRAWINGS FOR REVIEW.
2. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS, ARCHITECTURAL AND MECHANICAL DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER PRIOR TO PERFORMING WORK.
3. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONAL INFORMATION.
4. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR WATER/DAMPROOFING AND FIREPROOFING DETAILS AND REQUIREMENTS.
5. TOP OF CONCRETE SLABS ARE AT FLOOR REFERENCE ELEVATIONS EXCEPT AS NOTED. FOR FLOOR REFERENCE ELEVATIONS SEE COLUMN SCHEDULE.
6. THESE DRAWINGS DO NOT DEFINE SCOPE OF CONTRACTS. SEE CONSTRUCTION MANAGER'S [or CONTRACT if no CM] DOCUMENTS.
7. AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOBSITE INCLUDING SAFETY OF PERSONS AND PROPERTY. THE ARCHITECT'S OR ENGINEER'S PRESENCE OR REVIEW OF WORK DOES NOT INCLUDE THE ADEQUACY OF THE CONTRACTOR'S MEANS OR METHODS OF CONSTRUCTION.
8. SHORING, BRACING AND PROTECTION OF EXISTING AND ADJACENT STRUCTURES DURING CONSTRUCTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PROTECT AND MAINTAIN THE INTEGRITY OF ADJACENT STREETS, BUILDINGS AND STRUCTURES.
9. ALL EXISTING DIMENSIONS AND LOCATIONS OF EXISTING STRUCTURES SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY FIELD MEASUREMENTS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.
10. DRAWINGS HAVE BEEN PREPARED BASED ON AVAILABLE KNOWLEDGE OF EXISTING CONDITIONS. IF, DURING DEMOLITION, EXCAVATION OR CONSTRUCTION, ACTUAL CONDITIONS ARE DISCOVERED TO DIFFER FROM THOSE INDICATED ON DRAWINGS, ENGINEER SHALL BE NOTIFIED.

IV - FOUNDATION NOTES

1. THE DESIGN OF THE FOUNDATIONS SHOWN HEREIN IS BASED ON THE INFORMATION PROVIDED IN THE PRELIMINDARY GEOTECHNICAL INFORMATION PREPARED BY RA CONSULTANTS DATED 02.19.05
2. PIERS, MATS, FOOTINGS, AND WALLS SHALL BEAR ON ROCK WITH A MINIMUM BEARING CAPACITY OF 20TSF.
3. NO BACKFILL SHALL BE PLACED AGAINST FOUNDATION WALLS UNLESS SUPPORTING SLABS ARE IN PLACE AND SET OR THE WALLS ARE ADEQUATELY BRACED.
4. UNDERPINNING OF THE EXISTING ADJACENT FOUNDATION MAY BE REQUIRED EXTENT OF UNDERPINNING WORK, IF SHOWN ON DRAWINGS, IS BASED UPON INTERPRETATION OF AVAILABLE INFORMATION. HOWEVER, ACTUAL CONDITIONS WILL VARY AND DETERMINE REQUIRED SCOPE OF WORK. FOUNDATION CONTRACTOR TO BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF UNDERPINNING IF REQUIRED.
5. DEWATERING OF THE SITE DURING CONSTRUCTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR NOT TO UNDERMINE EXISTING FOUNDATIONS. METHOD OF DEWATERING AND CALCULATIONS FOR THE APPROPRIATE SYSTEM ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
6. ALL FOOTINGS AND/OR PIERS ARE TO BE CENTERED ON COLUMNS ABOVE, U.O.N.
7. PROVIDE DOWELS IN FOUNDATIONS FOR ALL WALLS, COLUMNS, AND SHEAR WALLS OF SAME NUMBER AND SIZE AS THE VERTICAL REINFORCEMENT ABOVE, U.O.N.
8. PROVIDE WATERSTOPS IN ALL VERTICAL CONSTRUCTION JOINTS IN BASEMENT WALLS.
9. SLABS ON GROUND SHALL BE PLACED ON SELECT FILL COMPACTED TO 95 PERCENT MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557).
10. FOOTING AND/OR PIER ELEVATIONS SHOWN ON THE DRAWINGS HAVE BEEN ESTIMATED USING THE AVAILABLE GEOTECHNICAL INFORMATION. ACTUAL ELEVATIONS OF FOOTING AND PIER BOTTOMS WILL BE DETERMINED BY FIELD CONDITIONS.

V - UNDERPINNING NOTES

1. CONTRACTOR SHALL RETAIN THE SERVICE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF [insert state] TO PREPARE SIGNED AND SEALED DESIGN DRAWINGS AND CALCULATIONS FOR ALL REQUIRED UNDERPINNING OF ADJACENT STRUCTURES. THE CONTRACTOR SHALL FILE THE DRAWINGS WITH THE BUILDING DEPARTMENT.
2. SUBMIT COPY OF FILED DRAWINGS TO DCE FOR INFORMATION ONLY. ALL UNDERPINNING WORK SHALL BE SUBJECT TO SPECIAL INSPECTION IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
3. THE FULL SCOPE OF THIS WORK IS TO BE DETERMINED BY THE CONTRACTOR BY THE REVIEW OF ALL AVAILABLE DOCUMENTATION SUCH AS SURVEYS, GEOTECHNICAL REPORTS AND THE LIKE AND BY SITE REVIEW PRIOR TO BIDDING.
4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF ALL EXISTING ADJACENT BUILDINGS, STRUCTURES, SIDEWALKS, VAULTS AND THE LIKE DURING AND AS A RESULT OF UNDERPINNING OPERATIONS.

VI - CONCRETE NOTES

1. REINFORCING STEEL SHALL HAVE A MINIMUM CLEAR COVER AS FOLLOWS, U.O.N. IN DRAWINGS:

   CONCRETE POURED AGAINST EARTH.................................3"

   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #5 OR SMALLER...1½"
   #6 OR LARGER..2"

   CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
   COLUMNS (TIES AND MAIN REINFORCING)...........................1½"
   SLABS, WALLS, JOISTS
   #14 OR #18 BARS...1½"
   #11 OR SMALLER..¾"
   BEAMS (STIRRUPS AND MAIN REINF)...............................1½"

   CLEAR COVER SHALL BE CLEARLY SHOWN ON ALL REBAR DETAIL DRAWINGS.
2. ALL REINFORCEMENT SHALL BE SECURELY HELD IN POSITION WHILE PLACING CONCRETE. IF NECESSARY, ADDITIONAL BARS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVES, ETC. AS REQUIRED BY ALL TRADES, BEFORE THE CONCRETE IS POURED. THE CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, MECHANICAL,AND ELECTRICAL DRAWINGS, AS WELL AS THE STRUCTURAL DRAWINGS FOR THE LOCATION, NUMBER, AND SIZE OF ALL OPENINGS, SLEEVES, ETC. HOWEVER, OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE INSTALLED ONLY AFTER APPROVAL BY THE STRUCTURAL ENGINEER IS OBTAINED.
4. LOCATION OF ALL CONSTRUCTION JOINTS NOT SHOWN IN DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO DETAILING OF REINFORCING. ALL CONSTRUCTION JOINTS TO BE CLEARLY SHOWN IN REBAR DETAIL DRAWINGS. ENGINEER MAY REQUIRE ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS.
5. DIMENSIONS "LD" AS NOTED ON DRAWINGS SHALL BE AS FOLLOWS:

BEAMS

BAR SIZE	BOTTOM BARS	OTHER BARS
#3	13	17
#4	17	23
#5	22	28
#6	26	34
#7	38	49
#8	43	56
#9	48	63
#10	54	71
#11	60	78

COLUMNS

BAR SIZE	Ld
#3	13
#4	17
#5	22
#6	26
#7	38
#8	43
#9	48
#10	54
#11	60

TABLE ASSUMPTIONS:

1. $f'c = 5$ ksi
2. A MINIMUM CLEAR COVER AS SHOWN IN NOTE 1 ABOVE
3. A MINIMUM CLEAR SPACING OF 3" BETWEEN ANY BARS
4. $fy = 60$ ksi
5. NORMAL WEIGHT CONCRETE
6. FOR WALLS:
   CASE 1 = CLEAR SPACING ≥ 2db AND CLEAR COVER ≥ db
   CASE 2 = OTHER THAN CASE 1

WALLS

BAR SIZE	VERTICAL BARS		HORIZONTAL BARS	
	CASE 1	CASE 2	CASE 1	CASE 2
#3	13	20	17	25
#4	17	26	23	34
#5	22	32	28	42
#6	26	39	34	50
#7	38	56	49	73
#8	43	64	56	83
#9	48	72	63	94
#10	54	81	70	106
#11	60	90	78	117

SLABS / MATS

BAR SIZE	THICKNESS 12" OR LESS	THICKNESS GREATER THEN 12"	
	ALL BARS	BOTTOM BARS	OTHER BARS
#3	13	13	17
#4	17	17	23
#5	22	22	28
#6	26	26	34
#7	56	56	73
#8	64	64	83
#9	72	72	94
#10	81	81	106
#11	90	90	117

FOR: $f'c = 3$ ksi $Ld = 1.29 \times$ TABLE VALUE
$f'c = 4$ ksi $Ld = 1.12 \times$ TABLE VALUE
$f'c = 6$ ksi $Ld = 0.92 \times$ TABLE VALUE
$f'c = 8$ ksi $Ld = 0.79 \times$ TABLE VALUE
$f'c = 10$ ksi $Ld = 0.71 \times$ TABLE VALUE
$f'c = 12$ ksi $Ld = 0.65 \times$ TABLE VALUE

6. ALL LAP SPLICES SHALL BE 1.3LD UNLESS NOTED OTHERWISE ON DRAWINGS.
7. FOR LIGHTWEIGHT AGGREGATE CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
8. FOR EPOXY–COATED BARS, MULTIPLY THE TABULATED VALUES BY 1.5.
9. COMBINATIONS OF EFFECTS DUE TO CONCRETE STRENGTH, CONCRETE WEIGHT, AND EPOXY BARS ARE CUMULATIVE. Ld SHALL BE MULTIPLIED BY EACH FACTOR TO FIND THE CORRECT VALUE.
10. ACI DOES NOT PERMIT LAP SPLICES OF #14 OR #18 BARS. BARS OF THIS SIZE SHALL BE COUPLED BY ACCEPTABLE MECHANICAL MEANS.
11. DOWEL BAR SUBSTITUTIONS SHALL BE PERMITTED PROVIDED THAT MANUFACTURER'S DATA SUPPORTS FULL TENSION SPLICES.
12. ALL SLEEVES AND PENETRATIONS SHALL BE PROVIDED BY THE SUB–CONTRACTOR REQUIRING THE OPENING.
13. CONCRETE COLUMN LENGTH ADJUSTMENT FOR ELASTIC SHORTENING, SHRINKAGE AND CREEP EFFECTS SHALL BE DISCUSSED WITH THE CONCRETE CONTRACTOR.
14. CONDUIT PLACED IN CONCRETE SLABS MUST BE PLACED IN ACCORDANCE WITH THE FOLLOWING GUIDELINES:
    - a. CONTRACTOR SHALL NOT INSTALL CONDUIT THAT IS NOT SHOWN ON MECHANICAL DRAWINGS.
    - b. DO NOT CROSS MORE THAN ONE LAYER OF CONDUIT OVER ANOTHER IN ANY GIVEN AREA.
    - c. PLACE CENTROID OF CONDUIT OR CONDUIT GROUP AT THE MID–HEIGHT OF THE SLAB.
    - d. CONDUIT OR CONDUIT GROUP CAN NOT EXTEND OUTSIDE THE MIDDLE ⅓ OF THE SLAB.
    - e. MAINTAIN A MINIMUM CLEAR SPACING BETWEEN THE CONDUIT OF 3 DIAMETERS. THIS REQUIREMENT APPLIES EXCEPT WHERE CONDUITS ACCUMULATE AT "TURN DOWNS". THE CONDITIONS AT "TURN DOWN" LOCATIONS MUST BE EVALUATED AT EACH LOCATION BY THE STRUCTURAL ENGINEER. "TURN DOWNS" CAN NOT OCCUR AT COLUMN OR BUTTRESS LOCATIONS.
    - f. DO NOT PLACE ANY CONDUIT IN THE SLAB WITHIN 36" FROM THE EDGE OF ANY COLUMN OR WALL ABOVE OR BELOW THE SLAB.
    - g. SLAB REINFORCEMENT MUST NOT BE MOVED, CUT, OR BENT TO ACCOMMODATE CONDUIT PLACEMENT.
    - h. CONDUIT IS NOT TO RUN THROUGH OR WITHIN A COLUMN OR WALL.
    - i. ALUMINUM CONDUIT SHALL NOT BE EMBEDDED IN A SLAB UNLESS IT IS EFFECTIVELY COATED.

    IF THE ABOVE REQUIREMENTS ARE ALL MET, CONDUIT LOCATIONS NEED NOT BE REVIEWED BY THE STRUCTURAL ENGINEER. ANY DEVIATIONS MUST BE SUBMITTED ON A SHOP DRAWING FOR APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO CONDUIT PLACEMENT.

    THE FOLLOWING CASES MUST BE SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER:

    - a. LOCATIONS OF ANY CONDUIT LARGER THAN 2" IN OUTSIDE DIAMETER.
    - b. LOCATIONS OF ANY BUNDLED CONDUITS.

VII - STEEL NOTES

1. BOLTED CONNECTIONS: BOLTS ARE TO BE A325 OR A490 SLIP CRITICAL, CLASS A. FLOOR BEAM CONNECTIONS TO OTHER BEAMS OR GIRDERS CAN BE MADE WITH A307 BOLTS. MINIMUM DIAMETER OF ALL BOLTS SHALL BE 3/4", MAX. DIA. 1–1/8". PROVIDE AT LEAST 2 BOLTS PER CONNECTION.

   UNLESS OTHERWISE NOTED IN PLAN, DETAIL FLOOR MEMBER CONNECTIONS FOR THE FOLLOWING VERTICAL REACTIONS:

SHAPE	MINIMUM REACTIONS (KIPS)		MINIMUM NUMBER OF ROWS
	TO GIRDERS	TO COLUMNS	
W8,C8	12	17	2
W10,C10	15	20	2
W12,C12	20	25	2
W14	25	30	3
W16	30	38	3
W18	36	46	3
W21	46	58	4
W24	57	72	4
W27	70	85	5
W30	85	100	6
W33	100	120	7
W36	115	135	8

2. END CONNECTIONS OF FLOOR MEMBERS SHALL ACCOMMODATE END ROTATIONS OF SIMPLE, UNRESTRAINED BEAMS. FOR THIS PURPOSE, INELASTIC ACTION IN THE CONNECTION IS PERMITTED.
3. COPED OR CUT ENDS OF MEMBERS SHALL BE REINFORCED WHERE REQUIRED TO SUSTAIN THE SPECIFIED REACTIONS.
4. FABRICATE AND ERECT FLOOR MEMBERS WITH NATURAL CAMBER UP.
5. SHORING OF FLOOR MEMBERS TO CONTROL SLAB THICKNESS, FLOOR LEVEL AND OTHER TOLERENCES, AND CONCRETE PONDING IS THE CONTRACTOR'S OPTION. FLOORS TO BE POURED SO AS TO MAINTAIN UNIFORM SLAB THICKNESS ACROSS TOP OF STEEL MEMBERS.
6. STRUCTURAL STEEL CONTRACTOR TO PROVIDE DECK SUPPORT ANGLES AS REQUIRED.
7. UNLESS OTHERWISE SHOWN ON DRAWINGS, SIZE OF WELDS SHALL NOT BE SMALLER THAN ¼".
8. FABRICATION AND ERECTION CONSIDERATIONS – THE FOLLOWING ITEMS WILL BE DEFINED AT A PRE–DETAILING CONFERENCE WITH THE STEEL CONTRACTOR:
   - i) STEEL COLUMN LENGTH ADJUSTMENT FOR ELASTIC SHORTENING EFFECTS.
   - ii) STEEL TRUSS CAMBERING.
   - iii) ELEMENTS AFFECTED BY STEEL ERECTION PROCEDURE, SUCH AS MEMBER SIZES, CONNECTIONS, SPLICES, BASE PLATES, ANCHOR BOLTS, ROCK ANCHORS, ETC.
   - iv) ERECTION PROCEDURES AND SEQUENCES WITH REGARD TO TEMPERATURE EFFECTS.
9. THE CONTRACTOR SHALL PROVIDE, AT NO ADDITIONAL COST, ALL ADDITIONAL STEEL, CONNECTIONS, GUYING, ETC. REQUIRED FOR ERECTION.
10. UNLESS SPECIFICALLY NOTED, STEEL DETAILS SHOWN ON THE DRAWINGS ARE FOR CONCEPT ONLY AND DO NOT INDICATE REQUIRED NUMBER OF BOLTS, SIZE OF WELDS, ETC.
11. MEMBERS MAY ONLY BE SPLICED WHERE SPECIFICALLY DETAILED ON ACCEPTED SHOP DRAWINGS.
12. FIELD CUTTING OF STRUCTURAL STEEL IS NOT PERMITTED EXCEPT WITH THE PRIOR APPROVAL OF THE ENGINEER.
13. BOLTS, NUTS AND WASHERS FOR STEEL PERMANENTLY EXPOSED TO WEATHER SHALL BE GALVANIZED. SEE SPECIFICATIONS.

VIII - METAL DECK NOTES

1. U.O.N., ALL METAL DECKING HAS BEEN DESIGNED FOR UNSHORED CONSTRUCTION. WHERE POSSIBLE, DECK SHALL EXTEND OVER TWO OR MORE SPANS.
2. DECK SUPPLIER SHALL FURNISH ANY AND ALL SCREEDS, CLOSURES, POUR STOPS, COLUMN CLOSURES, CANT STRIPS, RIDGE AND VALLEY PLATES, SUMPS, ETC. AS REQUIRED FOR COMPLETE INSTALLATION OF DECK.
3. COMPOSITE FLOOR DECK SHALL BE WELDED TO ALL SUPPORTING MEMBERS WITH ¾" DIA. PUDDLE WELDS OR #12 TEKS SELF–DRILLING FASTENERS AT 12" O.C. SHEAR STUDS SHALL BE CONSIDERED TO REPLACE WELDS. FASTEN SIDE LAPS AS REQUIRED IN SPECIFICATIONS.
4. ROOF DECK SHALL BE WELDED TO ALL SUPPORTING MEMBERS WITH ⅝" DIA. PUDDLE WELDS AT 18" O.C. OR #12 TEKS SELF–DRILLING FASTENERS @ 12" O.C. FASTEN SIDE LAPS AS REQUIRED IN SPECIFICATIONS FOR SPANS OVER 5'–0".
5. FORM DECK SHALL BE WELDED TO ALL SUPPORTING MEMBERS USING 16 GAGE WELD WASHERS WITH ⅜" DIA. HOLES IN PATTERN AS RECOMMENDED BY DECK MANUFACTURER. FASTEN SIDE LAPS WITH SCREWS AT 36" MAX FOR SPANS OVER 5'–0".
6. PROVIDE 2" MIN LAPS AND END BEARING FOR ALL DECKING.
7. UNFRAMED OPENINGS, IN FLOOR OR ROOF DECKS, LARGER THAN 6" PERPENDICULAR TO SPAN OF DECK SHALL BE REINFORCED.

IX - MASONRY NOTES

1. STRUCTURAL CONCRETE MASONRY, AS SHOWN ON THESE DRAWINGS, SHALL HAVE A COMPRESSIVE STRENGTH (F'M) OF 1500 PSI.
2. MASONRY UNITS SHALL CONFORM TO ASTM C90, TYPE II, NORMAL WEIGHT, HOLLOW UNLESS SPECIFICALLY NOTED OTHERWISE ON THESE DRAWINGS, WITH A UNIT STRENGTH AS REQUIRED TO ACHIEVE COMPRESSIVE STRENGTH SPECIFIED ABOVE.
3. MORTAR SHALL CONFORM TO ASTM C270, TYPE M OR S FOR ABOVE GRADE, TYPE M FOR BELOW GRADE.
4. GROUT FOR FILLED CELLS SHALL CONFORM TO ASTM C476 WITH 3000 PSI STRENGTH AT 28 DAYS. CELLS SHALL BE GROUTED IN INCREMENTS NOT EXCEEDING 5 FEET VERTICALLY. FILL ALL CELLS BELOW GRADE.
5. VERTICAL REINFORCING SHALL BE ASTM A615, GRADE 60 DEFORMED BARS. MINIMUM LAP SPLICES SHALL BE AS FOLLOWS:
   # 3 BARS – 1'–6"
   # 4 BARS – 2'–0"
   # 5 BARS – 2'–6"
   # 6 BARS – 3'–0"
6. HORIZONTAL REINFORCING SHALL BE NO. 9 GAGE "DUROWALL" OR EQUIVALENT AND SHALL BE PLACED EVERY OTHER COURSE U.O.N.
7. ALL BLOCK SHALL BE PLACED IN RUNNING BOND.

X - CONTROLLED INSPECTION

OWNER WILL ENGAGE AND PAY FOR AN INDEPENDENT TESTING AGENCY TO PERFORM THE FOLLOWING INSPECTION AND TESTING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE PRIOR NOTICE FOR COMPLETION OF SUCH.

1. CONCRETE: ALL CONCRETE WORK SHALL BE SUBJECT TO CONTROLLED INSPECTION BY OR UNDER THE DIRECT SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER AS REQUIRED BY SUBCHAPTER 1 OF THE N.Y.C. BUILDING CODE, PARAGRAPH 27–132. TECHINCIAL REPORT TR–1 SHALL BE FILED WITH THE BUILDING DEPARTMENT FOR APPROVAL OF SAID ENGINEER.
   - A. THE OWNER SHALL ENGAGE A LICENSED PROFESSIONAL ENGINEEER, APPROVED BY THE ENGINEER OF RECORD, TO SUPERVISE THE TESTING OF THE MATERIALS AND THE INSPECTION OF CONCRETE CONSTRUCTION.
   - B. THE PRELIMINARY TEST FOR CONTROLLED CONCRETE SHALL BE MADE IN ACCORDANCE WITH SUBCHAPTER 10 PARAGRAPH 27–605 OF THE N.Y.C. BUILDING CODE AND THE RESULTS FILED ON TECHNICAL REPORT TR–3. NO CONCRETE SHALL BE PLACED BEFORE ACCEPTANCE BY ENGINEER.
   - C. QUALITY CONTROL AND INSPECTION OF MATERIALS AND OF BATCHING SHALL BE MADE IN ACCORDANCE WITH SUBCHAPTER 10 PARAGRAPH 27–605 OF THE N.Y.C. BUILDING CODE.
   - D. ALL FIELD TESTS AND INSPECTIONS SHALL BE PERFORMED AS REQUIRED BY SUBCHAPTER 10 PARAGRAPH 27–607 OF THE N.Y.C. BUILDING CODE.
2. SOILS:
   INSPECT SUBGRADE FOR FOUNDATIONS, PIERS AND WALLS PER SUBCHAPTER 11 PARAGRAPH 27–723 OF THE N.Y.C. BUILDING CODE.

XI - SYMBOLS USED ON DRAWINGS

1.	U.O.N.	DENOTES "UNLESS OTHERWISE NOTED".
2.	F F	DENOTES FINISHED (MILLED) SURFACES.
3.	☒	DENOTES CAMBER OF FLOOR MEMBERS.
4.	(......)	DENOTES MEMBER ELEVATION IF OTHER THAN BASELINE ESTABLISHED ON DRAWING OR TOP OF PILE CAP ELEVATION.
5.	LD	DENOTES LENGTH AS PREVIOUSLY DEFINED IN CONCRETE NOTES.
6.	EG	DENOTES TS6x4x¼ ELEVATOR GUIDE RAIL DIVIDER BEAM. TOP OF STEEL IS 2" BELOW TOP OF SUPPORTING STEEL MEMBERS, SEE TYPICAL DETAIL WHEN SUPPORTED BY CONCRETE ELEMENTS. PAINT PER SPECIFICATIONS. 4" DIMENSION IS PLAN DIMENSION.
7.	T.O.STL.	DENOTES 'TOP OF STEEL'.
8.	T.O.SL.	DENOTES 'TOP OF SLAB'.

DRAWING INDEX

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S–102	SUB–CELLAR LAYOUT PLAN
S–102.1	SUB–CELLAR REINFORCEMENT PLAN
S–103	CELLAR LAYOUT PLAN
S–103.1	CELLAR REINFORCEMENT PLAN
S–104	PARKING RAMP PART PLANS
S–111	TYPICAL FOUNDATION SECTIONS AND DETAILS
S–112	FOUNDATION CONCRETE SECTIONS AND DETAILS
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S–402	TYPICAL CONCRETE SECTIONS AND DETAILS
S–403	TYPICAL CONCRETE SECTIONS AND DETAILS
S–404	CONCRETE SECTIONS AND DETAILS
S–405	CONCRETE SECTIONS AND DETAILS
S–406	CONCRETE SECTIONS AND DETAILS

DESIGN LOADS

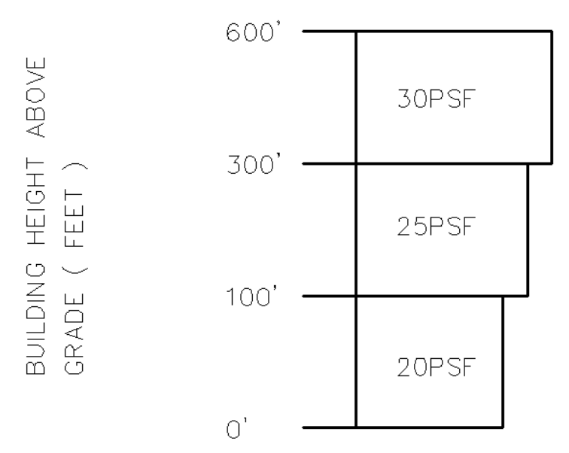
SEISMIC DESIGN CRITERIA

REF: LOCAL 17/95; SECTION 27–569, RS9–6 AMD RS 10–5C.

SEISMIC ZONE FACTOR, Z = .15	
SOIL PROFILE TYPE AND SIZE COEFFICIENT, S = .67	
IMPORTANCE FACTOR, I = 1.0	
Rw = 8 (SHEAR WALLS)	
BUILDING HEIGHT, hn = 305 FT.	
COEFFICIENT, C = .6	
BASE SHEAR, V = (ZIC/Rw)W	W = BUILDING WEIGHT

WIND LOAD DIAGRAM

WIND LOAD DIAGRAM DEVELOPED IN ACCORDANCE WITH SUBCHAPTER 9 – ARTICLE 5 AND REFERENCE STANDARDS RS 9–5 OF THE NEW YORK CITY BUILDING CODE



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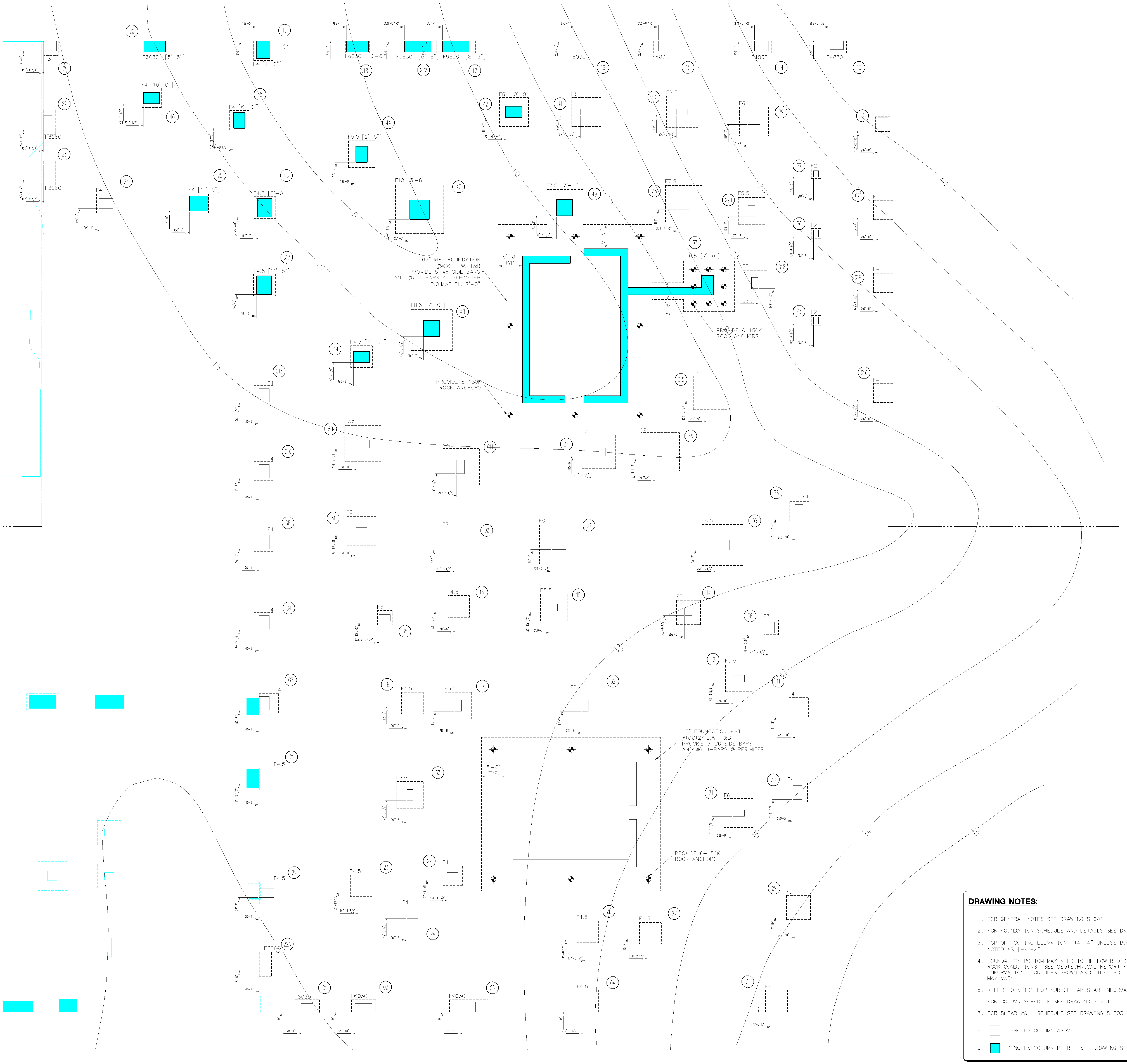
BUILDINGS B&C

no.	*issued*	*revisions*
8		
7		
6		
5		
4		
3		
2		
1	09.13.05	FOUNDATION BID

drawing title:
GENERAL NOTES AND DRAWING INDEX

project number:
date: 8/29/05
scale: NTS
drawn by: NT *checked by:* SEF
drawing number: **S-001**



DRAWING NOTES:

1. FOR GENERAL NOTES SEE DRAWING S-001.
2. FOR FOUNDATION SCHEDULE AND DETAILS SEE DRAWING S-111.
3. TOP OF FOOTING ELEVATION +14'-4" UNLESS BOTTOM OF FOOTING/PIER NOTED AS [+X'-X"].
4. FOUNDATION BOTTOM MAY NEED TO BE LOWERED DUE TO UNCOVERED ROCK CONDITIONS. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION. CONTOURS SHOWN AS GUIDE. ACTUAL FIELD CONDITIONS MAY VARY.
5. REFER TO S-102 FOR SUB-CELLAR SLAB INFORMATION.
6. FOR COLUMN SCHEDULE SEE DRAWING S-201.
7. FOR SHEAR WALL SCHEDULE SEE DRAWING S-203.
8. ☐ DENOTES COLUMN ABOVE
9. 🟦 DENOTES COLUMN PIER - SEE DRAWING S-111 FOR TYP. PIER DETAILS.

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Owner:
West End Enterprises
64 - 35 Yellowstone Blvd.
Forest Hills, NY 11375

project:
WEST 60TH / 61ST STREET
NEW YORK,NY 10023
BUILDINGS B&C

no.	*issued*	*revisions*
8		
7		
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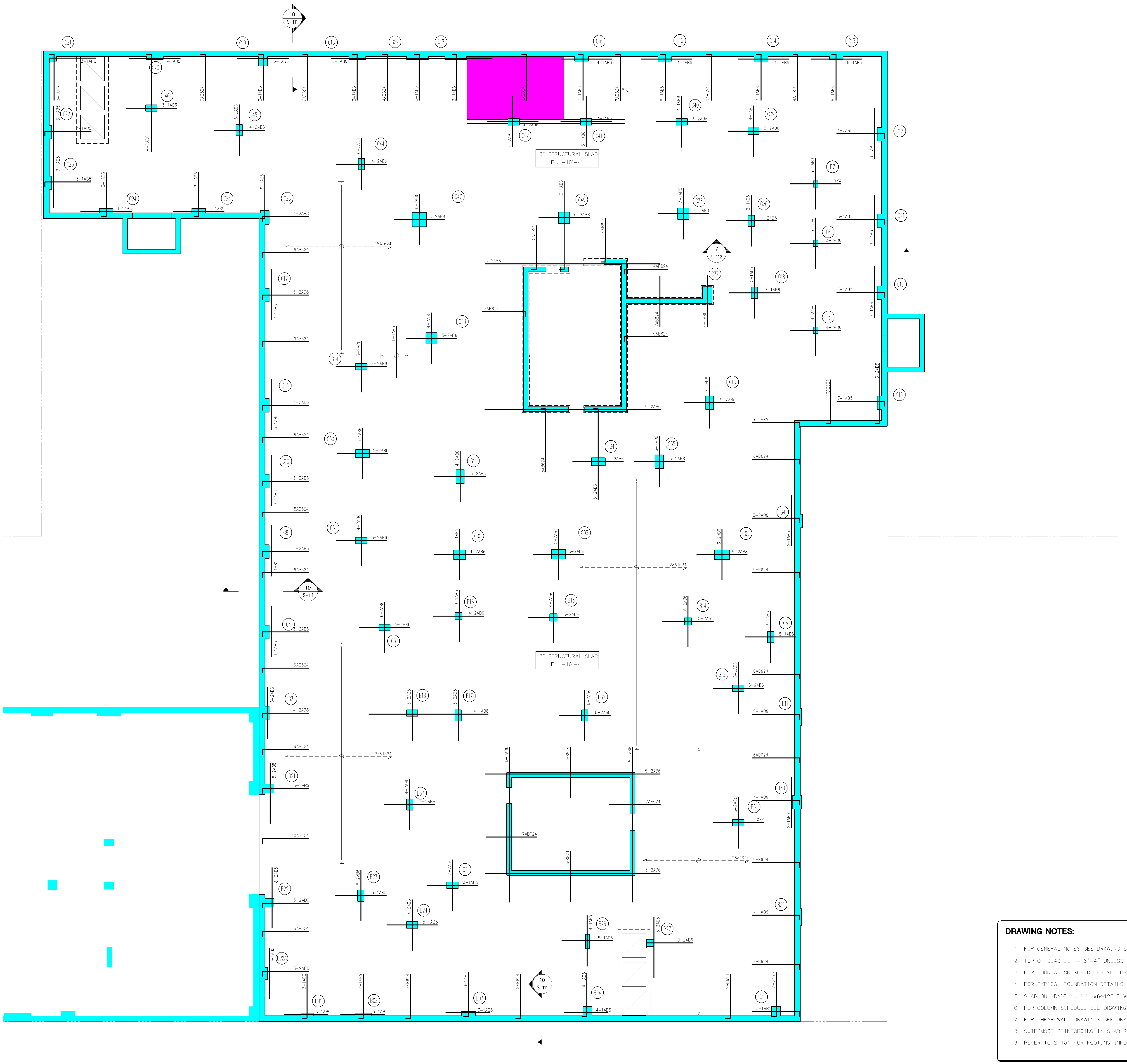
2		
1	09.13.05	FOUNDATION BID

drawing title:
FOUNDATION PLAN

project number:
date: 03/17/05
scale: 1/8"=1'-0"
drawn by: NT *checked by:* SEF
drawing number: **S-101**



DRAWING NOTES:

1. FOR GENERAL NOTES SEE DRAWING S-001.
2. TOP OF SLAB EL. +16'-4" UNLESS OTHERWISE NOTED.
3. FOR FOUNDATION SCHEDULES SEE DRAWING S-111.
4. FOR TYPICAL FOUNDATION DETAILS SEE DRAWING S-111.
5. SLAB ON GRADE t=18". #6@12" E.W. T&B.
6. FOR COLUMN SCHEDULE SEE DRAWINGS S-201 & S-202.
7. FOR SHEAR WALL DRAWINGS SEE DRAWING S-203.
8. OUTERMOST REINFORCING IN SLAB RUNS NORTH-SOUTH.
9. REFER TO S-101 FOR FOOTING INFORMATION.

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BUILDINGS B&C

no.	*issued*	*revisions*
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1	09.13.05	FOUNDATION BID

drawing title:
SUB-CELLAR
REINFORCEMENT PLAN

project number:
date: 03/17/05
scale: 1/8"=1'-0"
drawn by: NT *checked by:* SEF

drawing number:
S-102.1

DRAWING NOTES:

1. FOR GENERAL NOTES SEE DRAWING S-001.
2. TOP OF SLAB EL. +16'-4" UNLESS OTHERWISE NOTED.
3. FOR FOUNDATION SCHEDULES SEE DRAWING S-111
4. FOR TYPICAL FOUNDATION DETAILS SEE DRAWING S-111.
5. SLAB ON GRADE t=18". REFER TO S-102.1 FOR REINFORCEMENT.
6. FOR COLUMN SCHEDULE SEE DRAWINGS S-201 & S-202.
7. FOR SHEAR WALL DRAWINGS SEE DRAWING S-203.
8. REFER TO S-101 FOR FOOTING INFORMATION.

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project:
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BUILDINGS B&C

no.	issued	revisions
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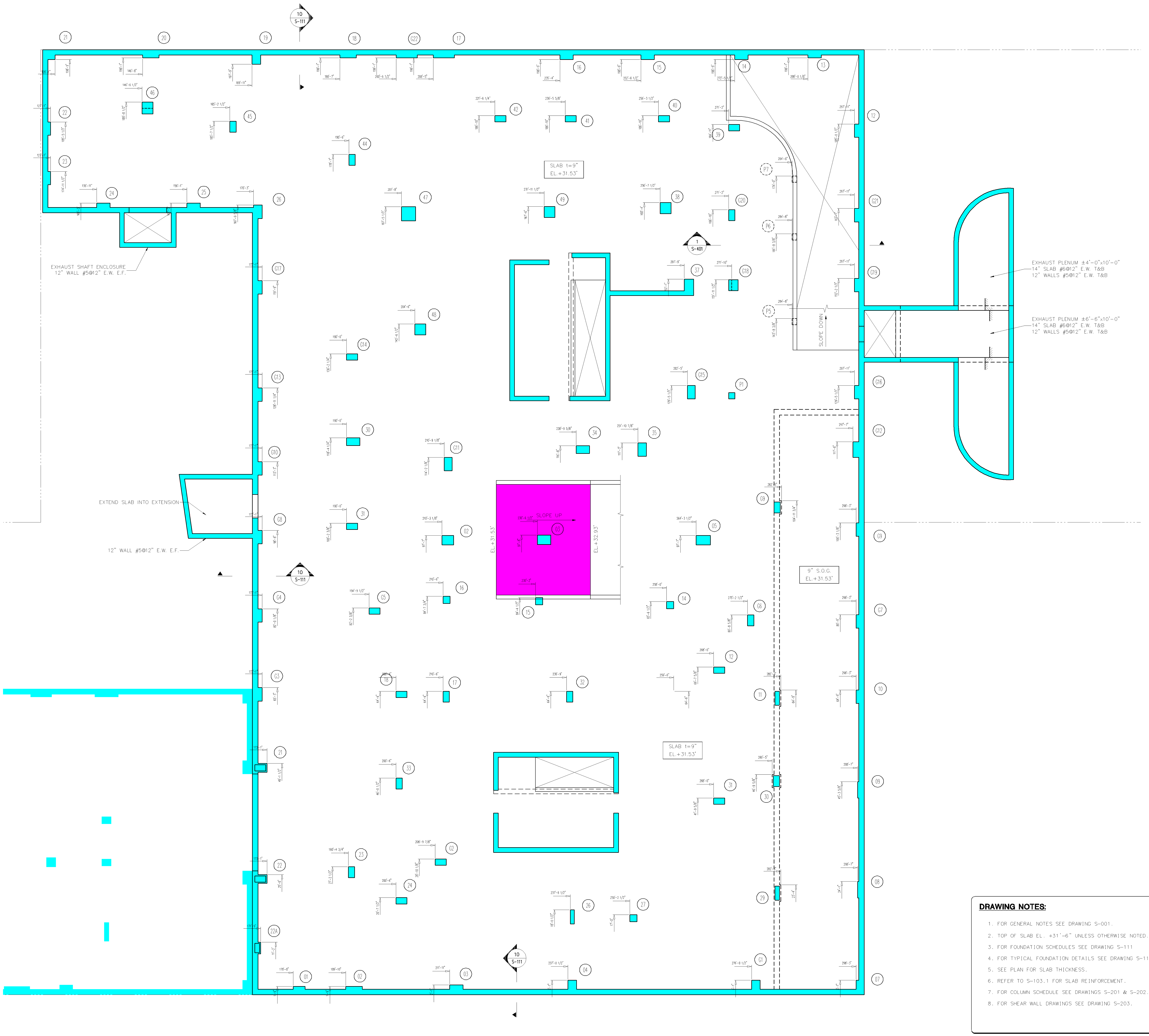
1	09.13.05	FOUNDATION BID

drawing title:
**SUB-CELLAR
LAYOUT PLAN**

project number:
date: 03/17/05
scale: 1/8"=1'-0"
drawn by: NT *checked by:* SEF

drawing number:
S-102



DRAWING NOTES:

1. FOR GENERAL NOTES SEE DRAWING S-001.
2. TOP OF SLAB EL. +31'-6" UNLESS OTHERWISE NOTED.
3. FOR FOUNDATION SCHEDULES SEE DRAWING S-111
4. FOR TYPICAL FOUNDATION DETAILS SEE DRAWING S-111.
5. SEE PLAN FOR SLAB THICKNESS.
6. REFER TO S-103.1 FOR SLAB REINFORCEMENT.
7. FOR COLUMN SCHEDULE SEE DRAWINGS S-201 & S-202.
8. FOR SHEAR WALL DRAWINGS SEE DRAWING S-203.

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BUILDINGS B&C

no.	issued	revisions
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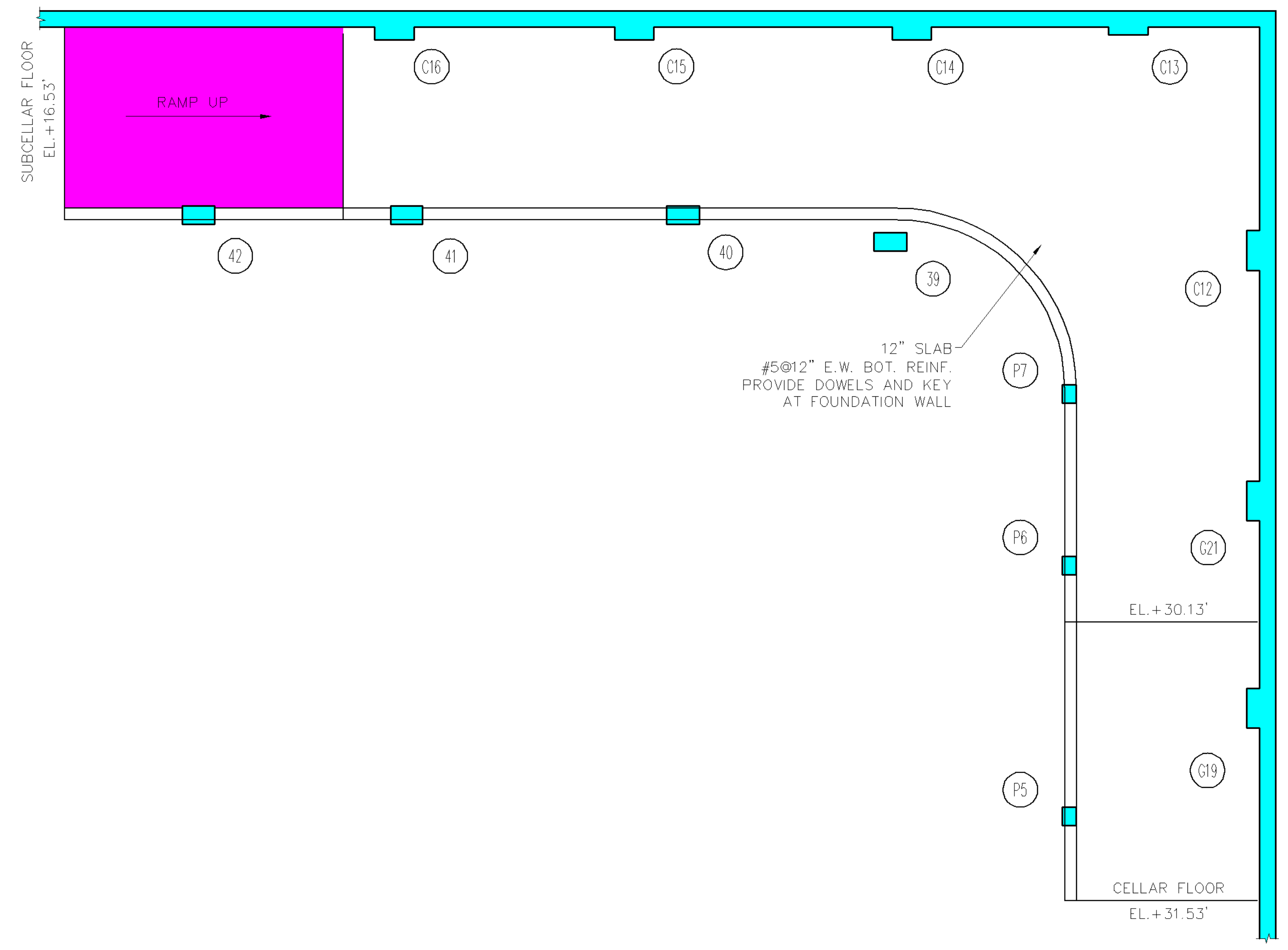
1	09.13.05	FOUNDATION BID

drawing title:
CELLAR
LAYOUT PLAN

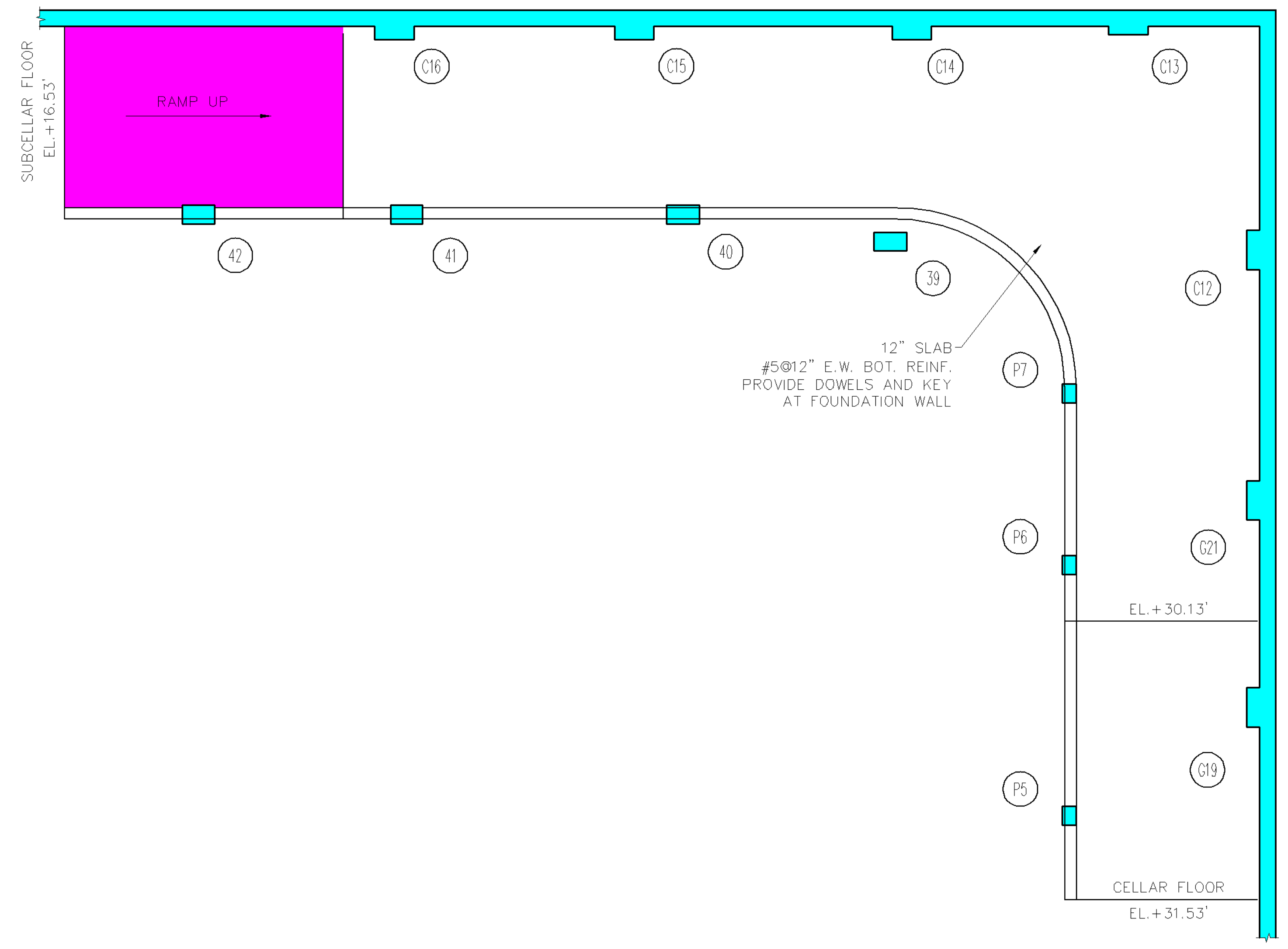
project number:
drawing number:
S-103

date: 03/17/05
scale: 1/8"=1'-0"
drawn by: NT
checked by: SEF



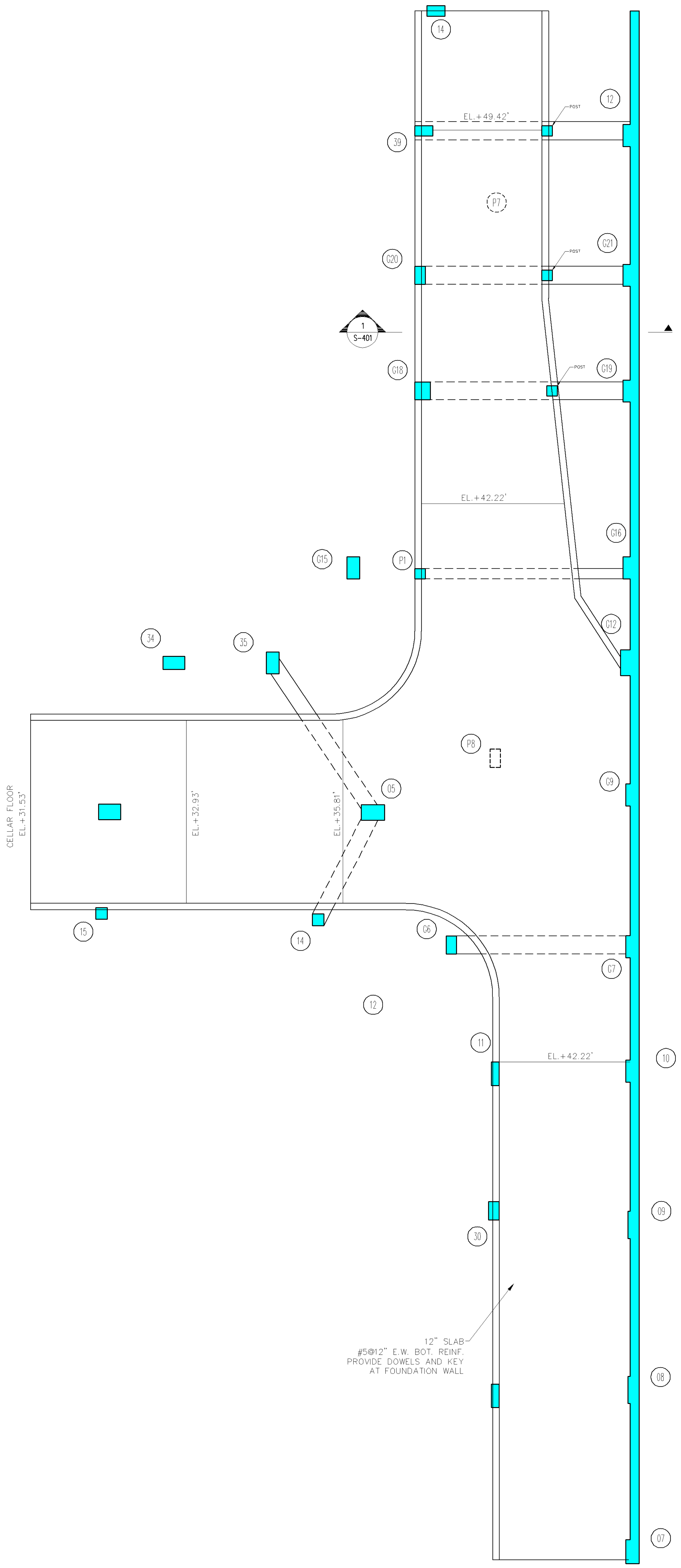
1 SUBCELLAR RAMP LAYOUT PART PLAN

SCALE: 1/8"=1'-0"



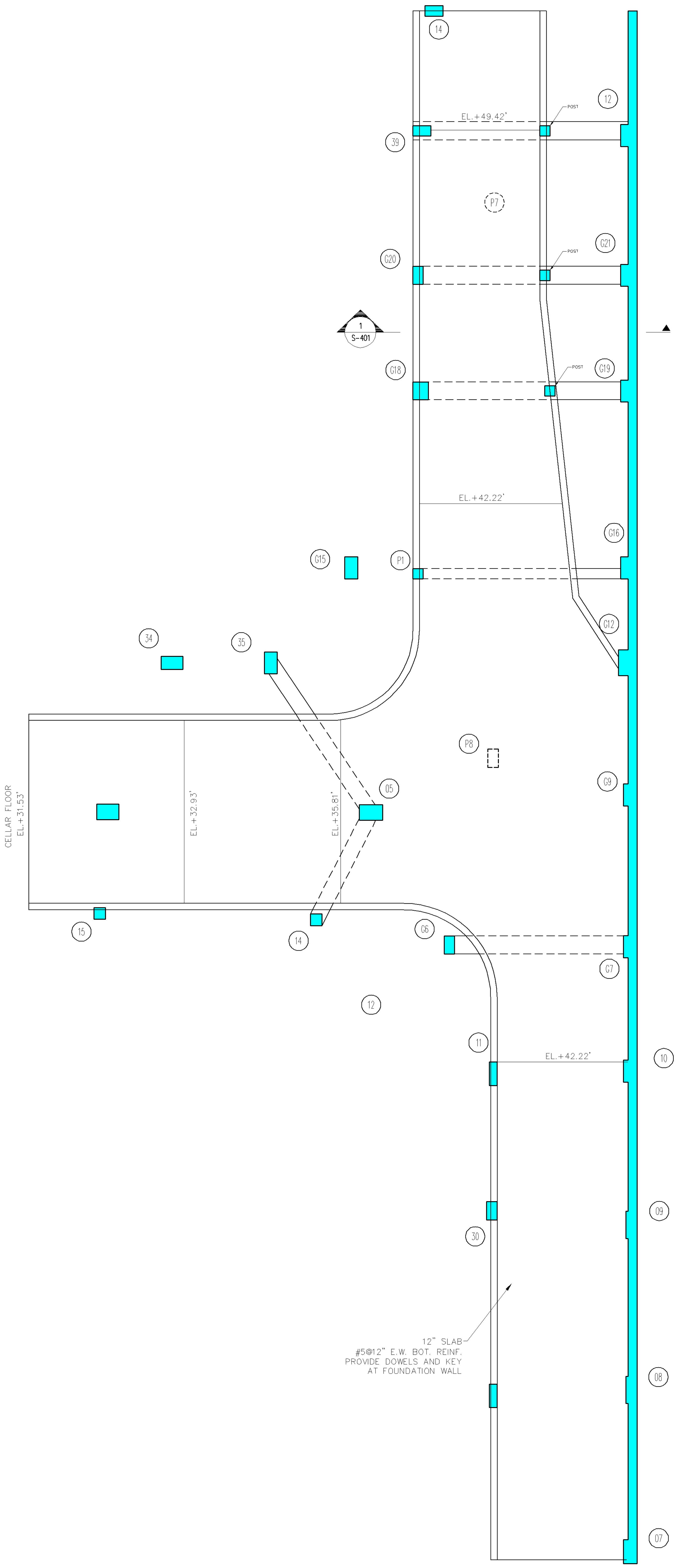
2 SUBCELLAR REINFORCEMENT LAYOUT PART PLAN

SCALE: 1/8"=1'-0"



3 CELLAR RAMP LAYOUT PART PLAN

SCALE: 1/8"=1'-0"



4 CELLAR RAMP REINFORCEMENT PART PLAN

SCALE: 1/8"=1'-0"

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project:
WEST 60TH / 61ST STREET
NEW YORK,NY 10023
BUILDINGS B&C

no.	*issued*	*revisions*
8		
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1	09.12.05	FOUNDATION BID

drawing title:

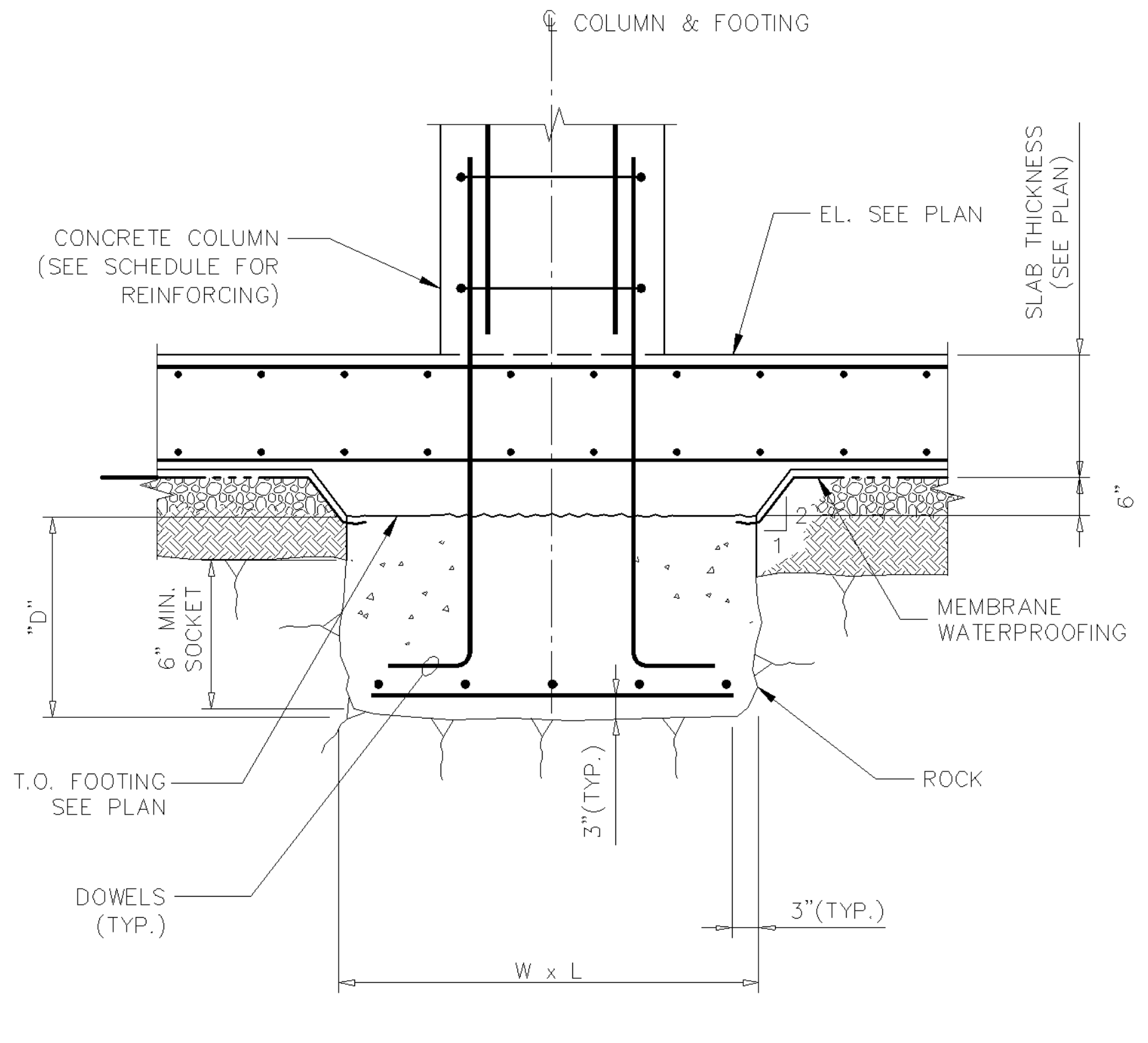
PARKING RAMP
PART PLANS

project number:
date: 8/29/05
scale: 1/8"=1'-0"
drawn by: NT *checked by:* SEF

drawing number:
S-104

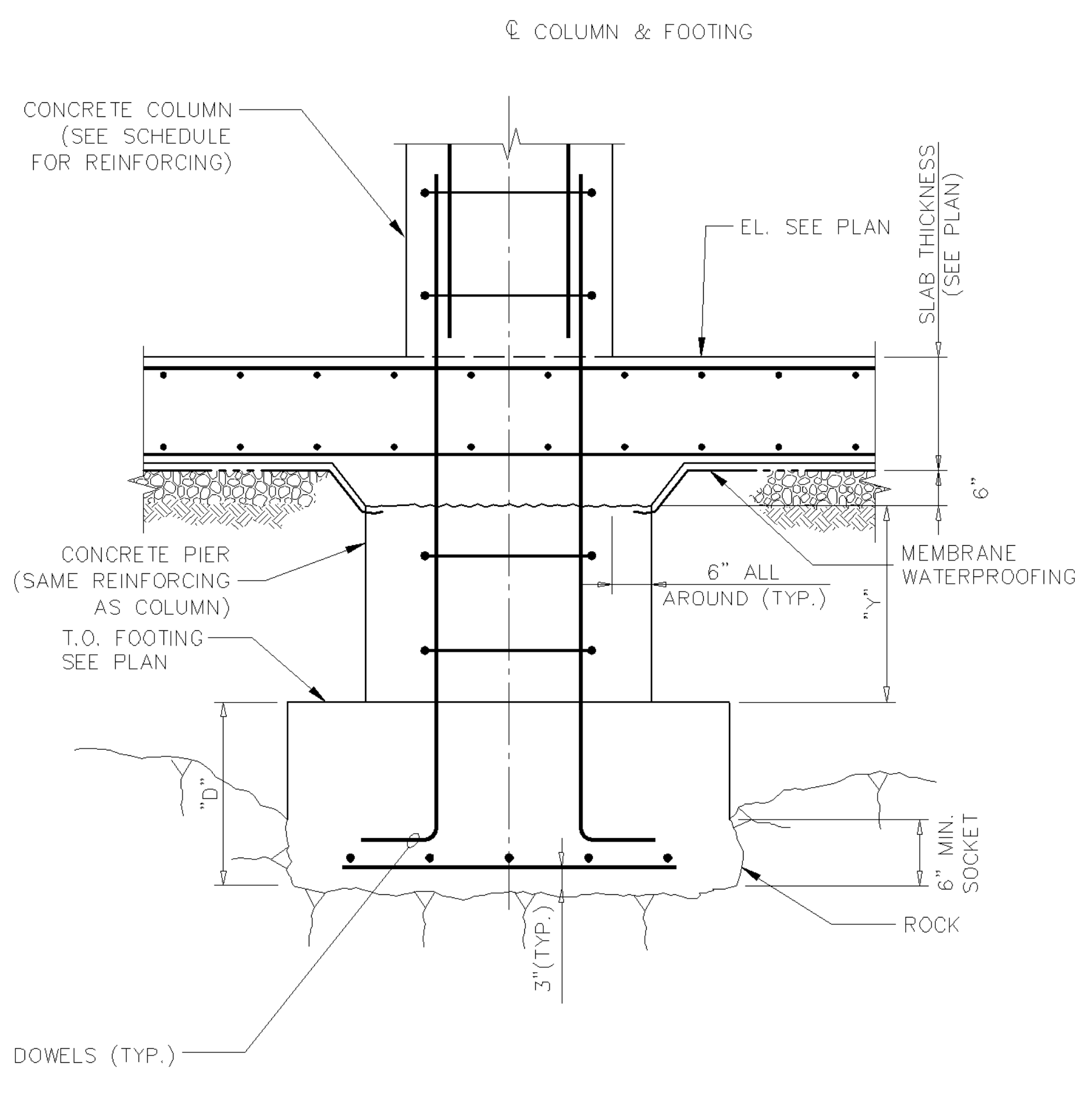
FOOTING SCHEDULE				
MARK	SIZE	DEPTH	BOTTOM REINFORCING EACH WAY (U.O.N.)	REMARKS
F2	2'-0"x2'-0"	18"	#6@12"	
F3	3'-0"x3'-0"	24"	#7@12"	
F4	4'-0"x4-0"	24"	#7@12"	
F4.5	4'-6"x4-6"	24"	#8@12"	
F5	5'-0"x5'-0"	30"	#7@6"	
F5.5	5'-6"x5'-6"	30"	#7@6"	
F6	6'-0"x6'-0"	36"	#10@12"	
F6.5	6'-6"x6'-6"	36"	#10@12"	
F7	7'-0"x7'-0"	42"	#10@12"	
F7.5	7'-6"x7'-6"	42"	#8@6"	
F8	8'-0"x8'-0"	48"	#9@6"	
F8.5	8'-6"x8'-6"	48"	#9@6"	
F10	10'-0"x10'-0"	48"	#10@6"	
F10.5	10'-6"x10'-6"	66"	#9@6" E.W. T&B	
F3048	2'-6"x4'-0"	24"	#6@12"	
F3060	2'-6"x5'-0"	24"	#7@12"	
F9630	8'-0"x2'-6"	30"	#6@12" (S),#10@6" (L)	

1 FOOTING SCHEDULE
SCALE: N.T.S.



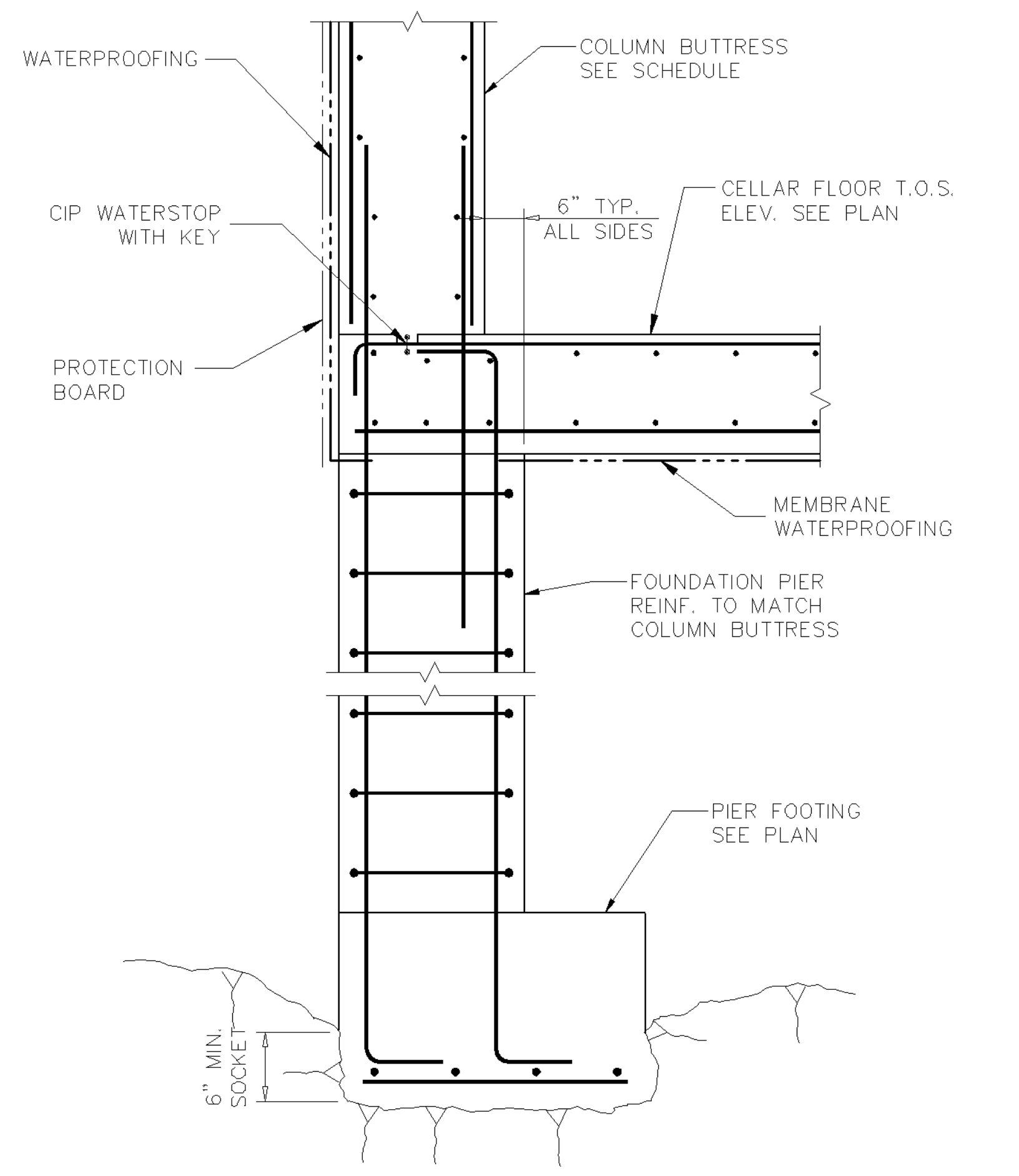
NOTE: FOR FOOTING DIMENSIONS SEE SCHEDULE

2 TYPICAL INTERIOR FOOTING DETAIL
SCALE: N.T.S.

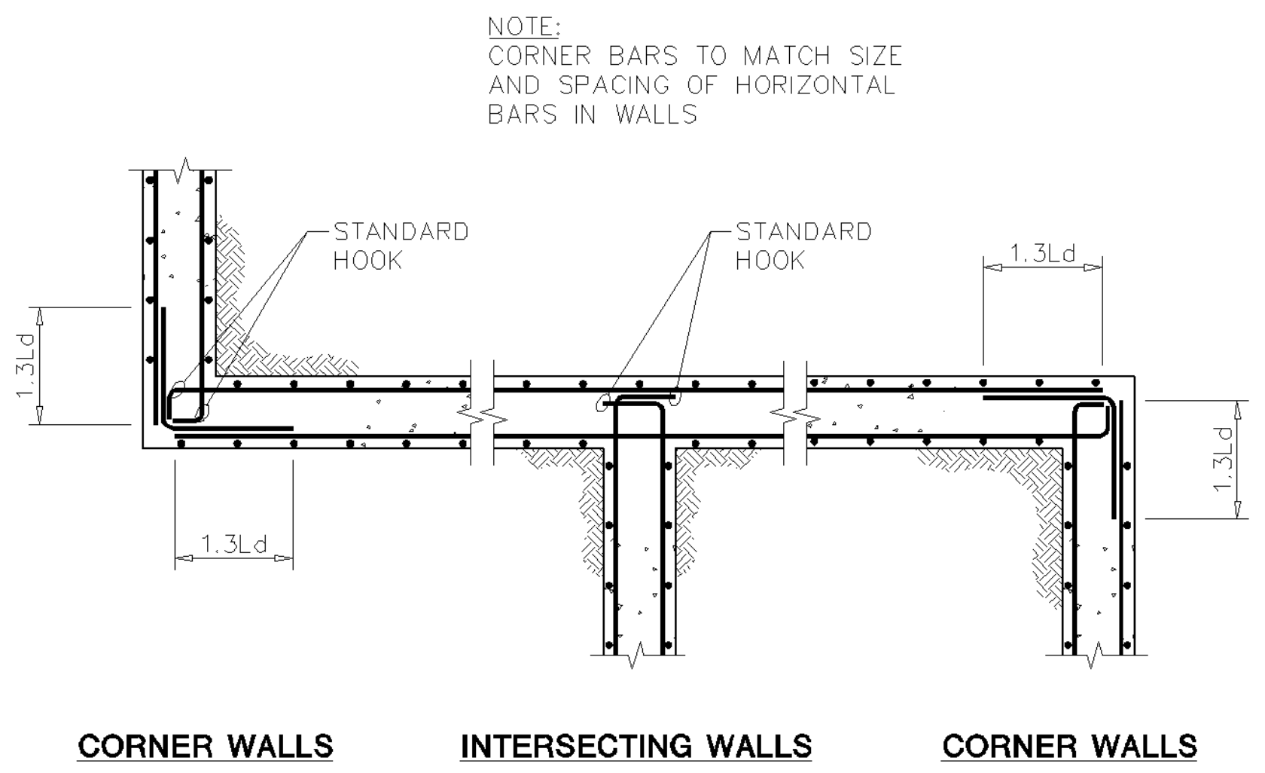


NOTE: FOR FOOTING DIMENSIONS SEE SCHEDULE WHEN "Y" < 2'-6" USE FOOTING DETAIL WITH ENLARGED "D" DIMENSION

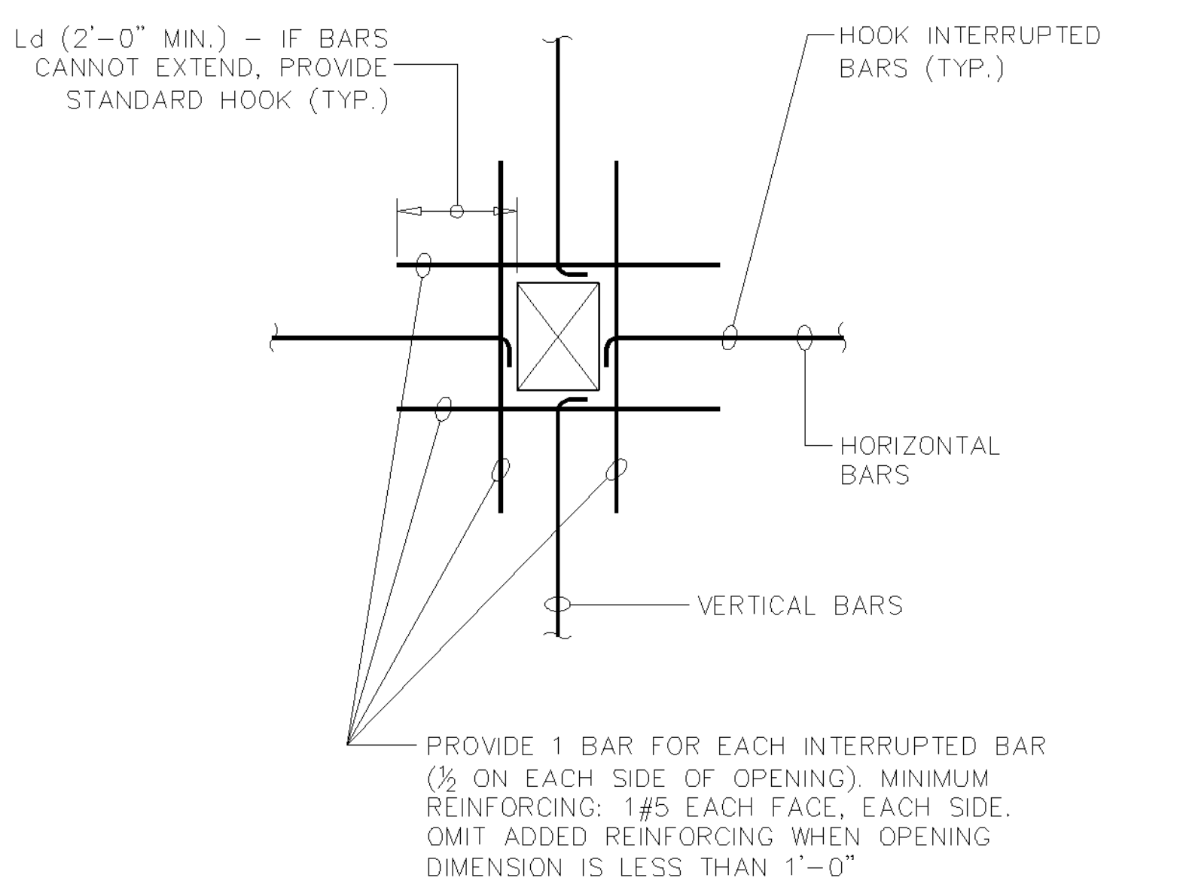
3 TYPICAL INTERIOR FOOTING DETAIL
SCALE: N.T.S.



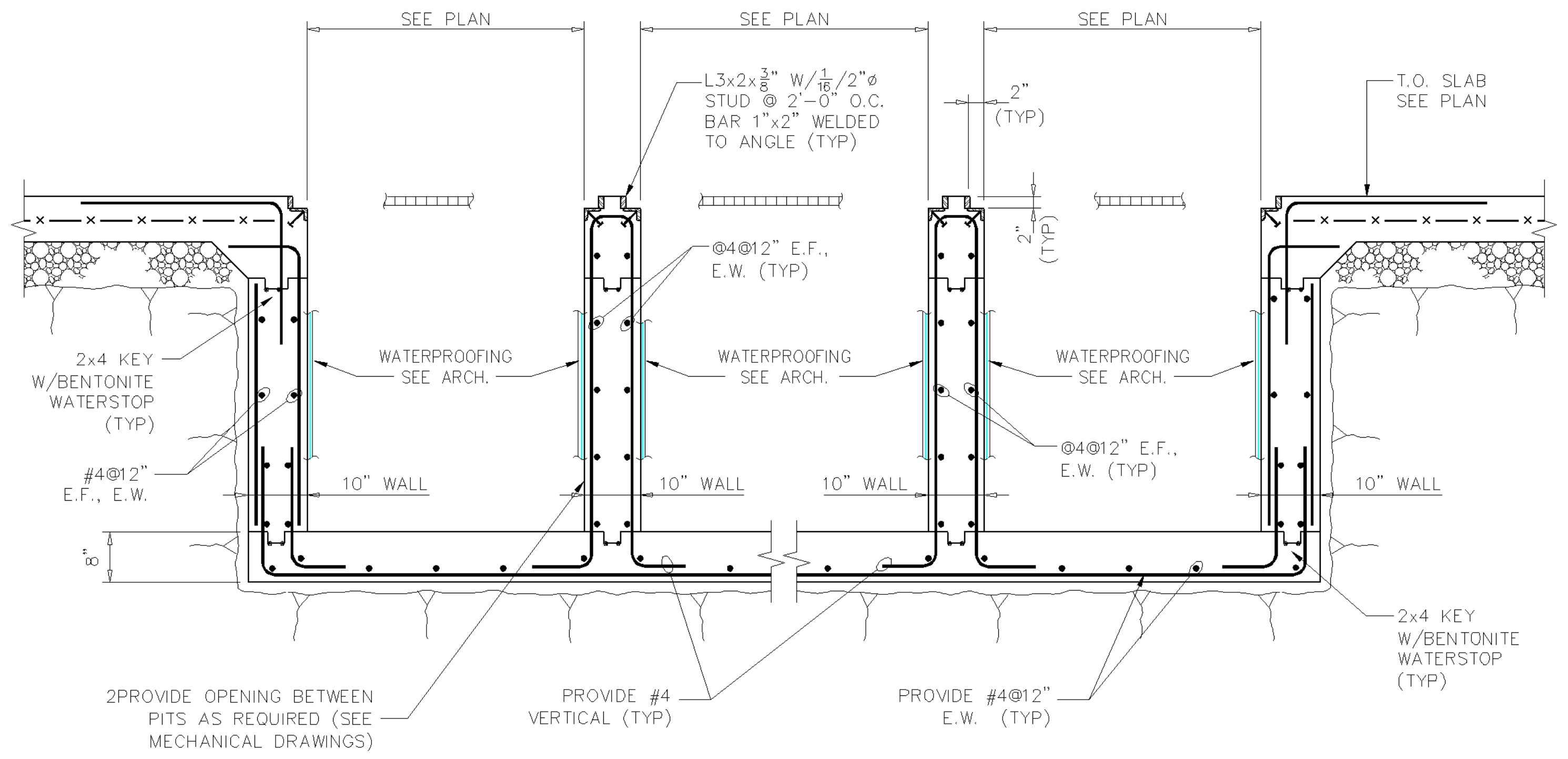
4 TYPICAL INTERIOR HAUNCH FOOTING DETAIL
SCALE: N.T.S.



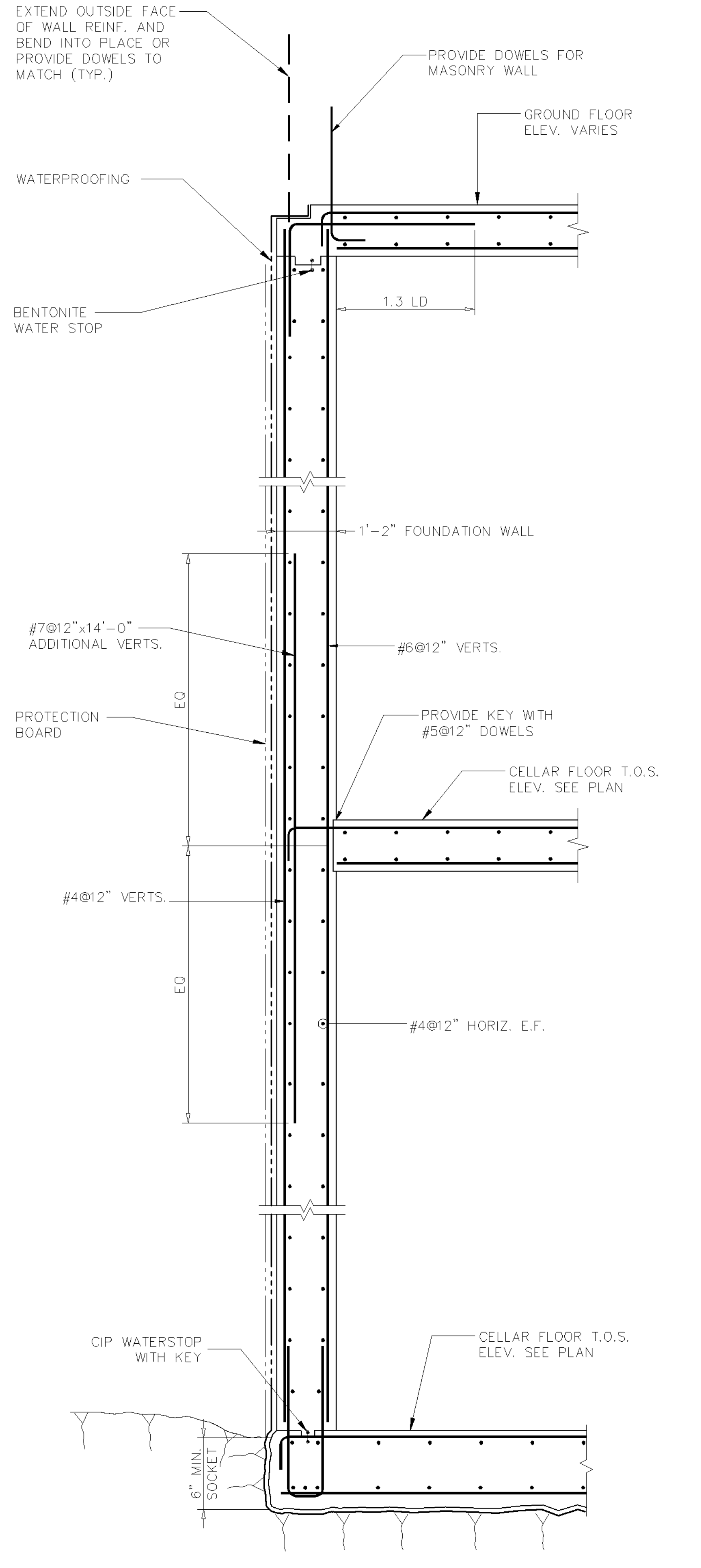
6 FOUNDATION WALL CORNER DETAILS
SCALE: N.T.S.



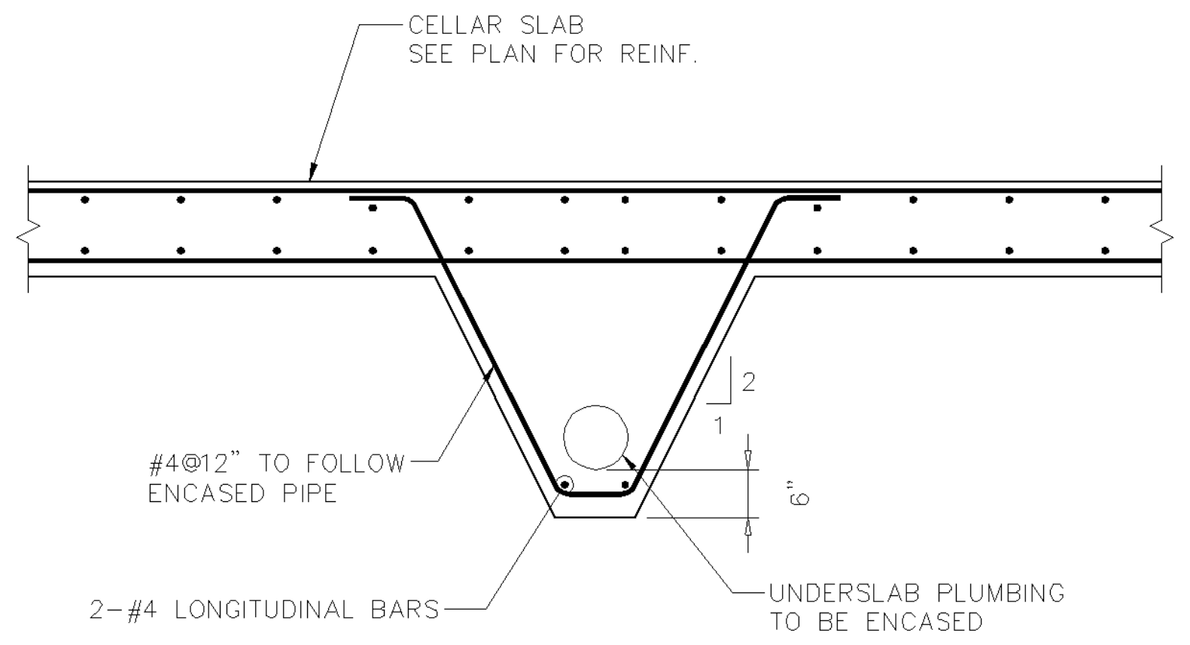
7 TYPICAL FOUNDATION WALL OPENING
SCALE: N.T.S.



9 TYPICAL SUMP/EJECTOR PIT DETAIL
SCALE: 1/2"=1'-0"



10 TYPICAL FOUNDATION WALL SECTION
SCALE: 1/2"=1'-0"



12 TYPICAL UNDERSLAB PLG ENCASEMENT
SCALE: 1/2"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

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WEST 60TH / 61ST STREET
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BUILDINGS B&C

no.	*issued*	*revisions*
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drawing title:
TYPICAL
FOUNDATION
SECTIONS AND DETAILS

project number:
date: 03/17/05
scale: AS NOTED
drawn by: NT *checked by:* SEF
drawing number: **S-111**

X SECTION - X
SCALE: XX"=1'-0"

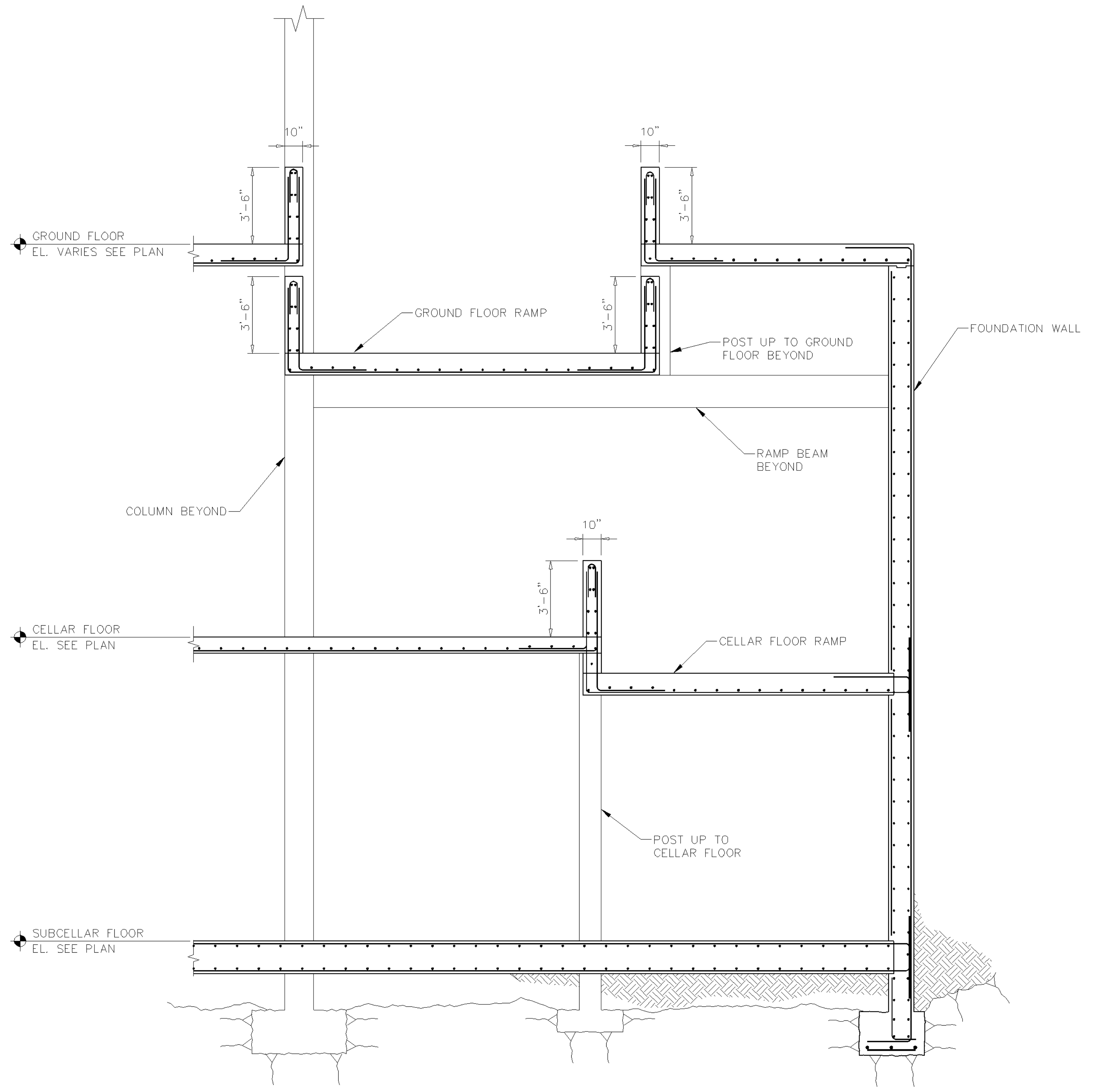
X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"



7 SECTION AT RAMP
SCALE: 1/4"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

X SECTION - X
SCALE: XX"=1'-0"

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BUILDINGS B&C

no.	*issued*	*revisions*
8		
7		
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5		
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1	09.13.05	FOUNDATION BID

drawing title:

FOUNDATION
CONCRETE SECTIONS
AND DETAILS

project number:

date: 8/29/05

scale: AS NOTED

drawn by: NT
checked by: SEF

drawing number:

S-112

LEVEL \ COLUMN	B1	B2	B3	B4A	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20A	B21	B22	B22A	B23	B24	B26	B27	B28	B29	B30	B31	B32	B33	B34
BULKHEAD ROOF																																		
EL. + 10'-0" MAIN ROOF																																		
EL. + 10'-0" 14TH FLOOR																																		
EL. + 10'-0" 13TH FLOOR																																		
EL. + 10'-0" 12TH FLOOR																																		
EL. + 10'-0" 11TH FLOOR																																		
EL. + 10'-0" 10TH FLOOR																																		
EL. + 10'-0" 9TH FLOOR																																		
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EL. + 10'-0" 5TH FLOOR																																		
EL. + 10'-0" 4TH FLOOR																																		
EL. + 10'-0" 3RD FLOOR																																		
EL. + 10'-0" 2ND FLOOR																																		
EL. + 10'-0" GROUND FLOOR																																		
EL. SEE PLAN VARIES CELLAR							21x37 BUTTR 12 #6 #3@12" 318 33	17x42 BUTTR 16 #5 #3@10" 423 50	17x42 BUTTR 16 #5 #3@10" 402 48	21x34 BUTTR 12 #6 #3@12" 298 32																								
EL. +31'-6" 15'-2" SUBCELLAR	30x21 BUTTR 12 #5 #3@10" 220 34	42x21 BUTTR 16 #5 #3@10" 390 47	34x25 BUTTR 12 #6 #3@12" 662 68	22x37 BUTTR 12 #6 #3@12" 435 41							17x42 BUTTR 16 #5 #3@10" 319 41	28x16 12 #9 #3@16" 1004 104		18x18 12 #8 #3@16" 751 82	18x18 12 #8 #3@16 921 129	18x18 12 #5 #3@10" 640 69	16X28 12 #6 #3@12" 881 98	28x16 12 #6 #3@12" 517 55			37x22 BUTTR 12 #6 #3@12" 641 82	37x22 BUTTR 12 #6 #3@12" 593 73	21x30 BUTTR 12 #5 #3@10" 372 46	16x28 12 #6 #3@12" 655 78	28x16 12 #6 #3@12" 856 88	10x36 12 #5 #3@10" 669 75	18x18 12 #5 #3@10" 565 65		17x42 BUTTR 16 #5 #3@10" 799 108	22x34 BUTTR 12 #6 #3@12" 462 71	28x16 12 #10 #3@16 1067 124	16x28 12 #11 #4@16 1120 139	16x28 12 #9 #3@16" 1022 125	
EL. +16'-4"																																		
LEVEL \ COLUMN	B1	B2	B3	B4A	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20A	B21	B22	B22A	B23	B24	B26	B27	B28	B29	B30	B31	B32	B33	B34

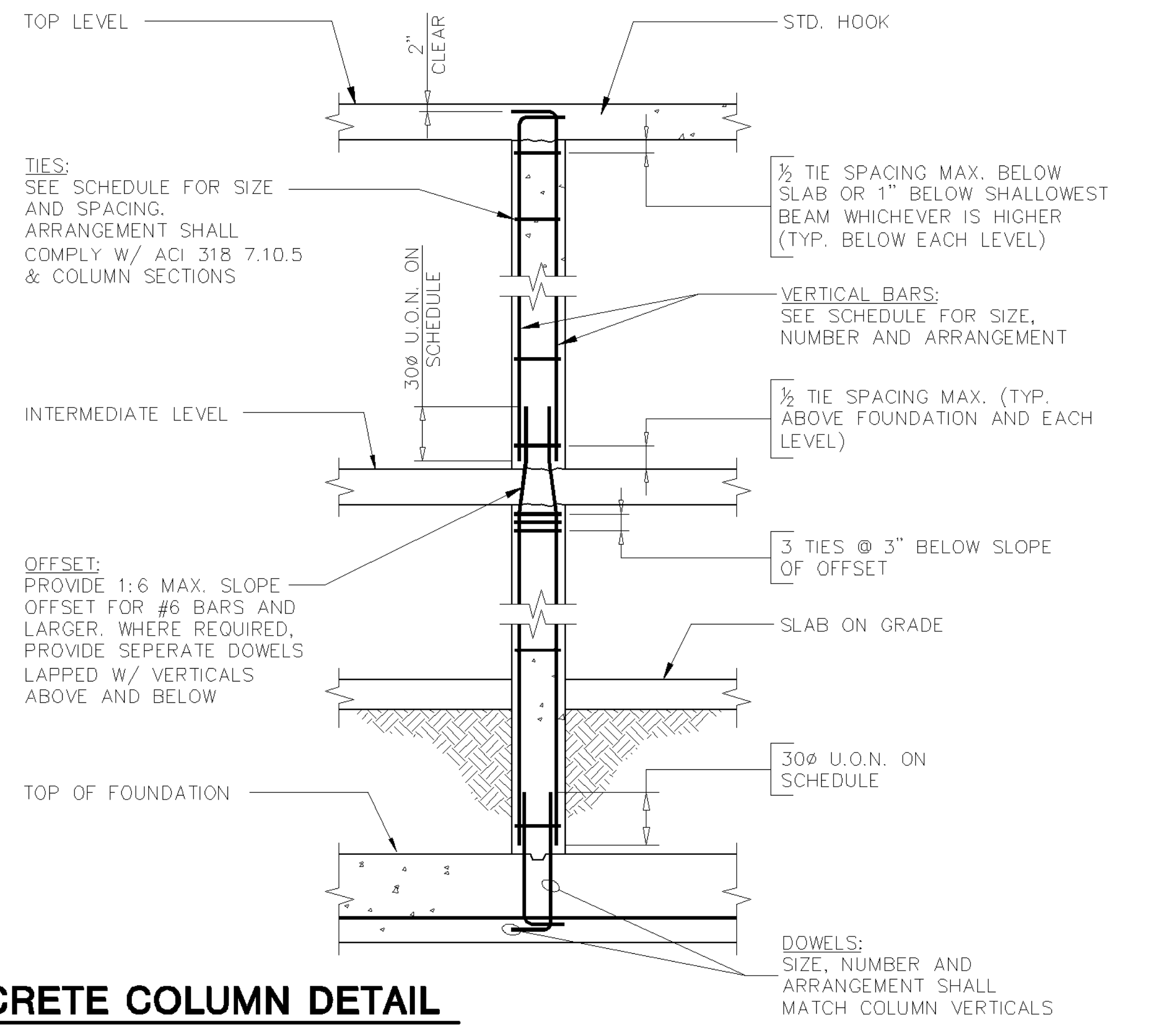
5 COLUMN SCHEDULE

SCALE: N.T.S.

LEVEL \ COLUMN	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	G18	G19	G20	G21	G22
2ND FLOOR																						
EL. + 10'-0" GROUND FLOOR																						
EL. + SEE PLAN VARIES CELLAR																						
EL. +31'-6" 15'-2" SUBCELLAR	22x37 BUTTR 12 #6 #3@12" 579 75	28x16 12 #6 #3@12" 451 55	25x34 BUTTR 12 #6 #3@12" 284 41	21x22 BUTTR 12 #6 #3@12" 177 38	28x16 12 #6 #3@12" 93 25	16x28 12 #6 #3@12" 177 37	16x28 12 #6 #3@12" 129 32	21x22 BUTTR 12 #6 #3@12" 162 36	16x28 12 #6 #3@12" 148 34	21x22 BUTTR 12 #6 #3@12" 174 37	20x34 16 #8 #3@16" 1805 235	16X28 12 #9 #3@16" 1317 114	21x22 BUTTR 8 #5 #3@10" 174 37	28X16 12 #6 #3@12" 686 72	20X34 16 #6 #3@12" 1633 182	25x34 BUTTR 12 #6 #3@12" 549 49	25x34 BUTTR 12 #6 #3@12" 568 54	16X28 12 #6 #3@12" 825 73	25x34 BUTTR 12 #6 #3@12" 395 37	16x28 12 #6 #3@12" 1055 91	25x34 BUTTR 12 #6 #3@12" 508 50	54x21 BUTTR 24 #7 #3@14" 699 72
EL. +16'-4"																						
LEVEL \ COLUMN	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16	G17	G18	G19	G20	G21	G22

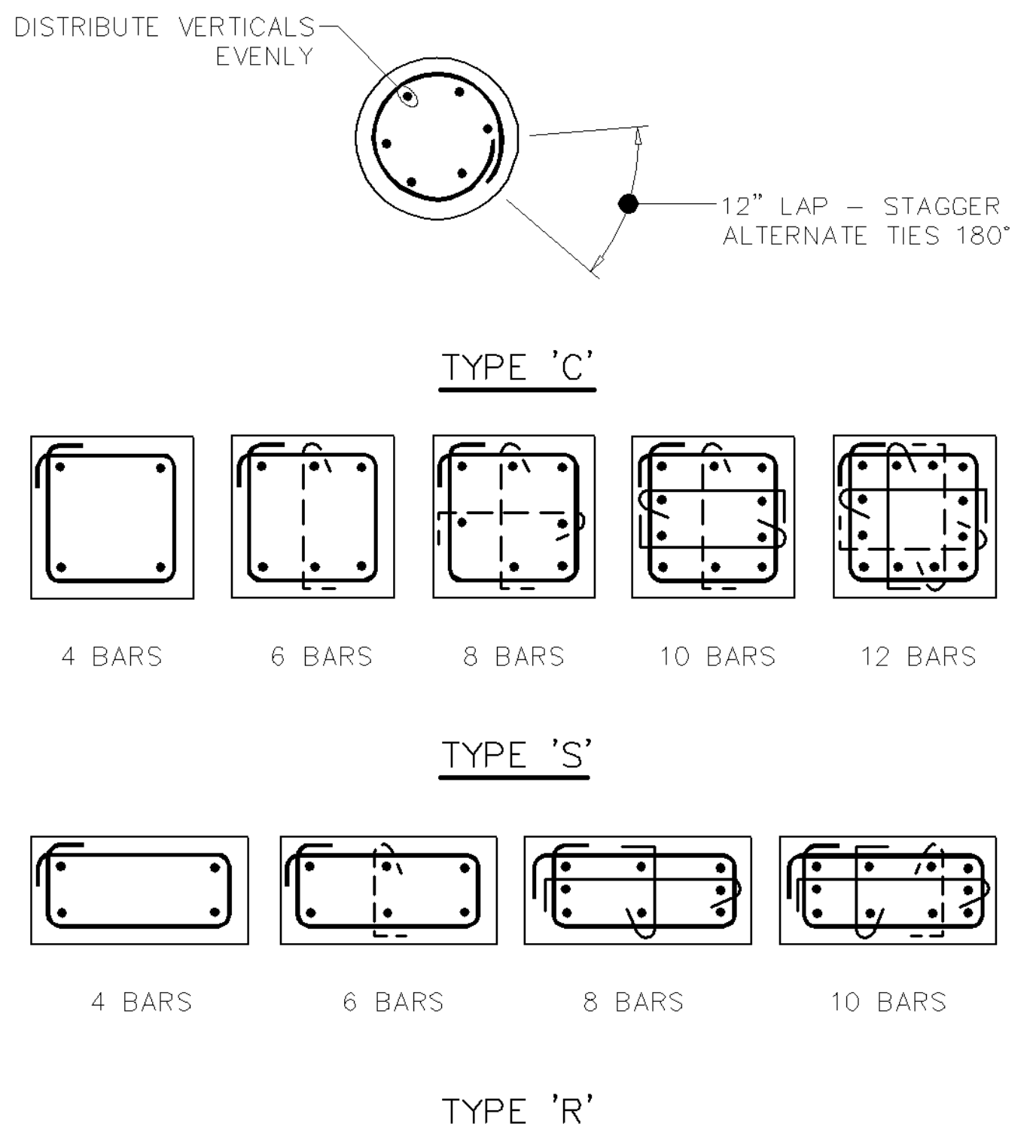
6 GARAGE COLUMN SCHEDULE

SCALE: N.T.S.



1 TYPICAL CONCRETE COLUMN DETAIL

SCALE: N.T.S.

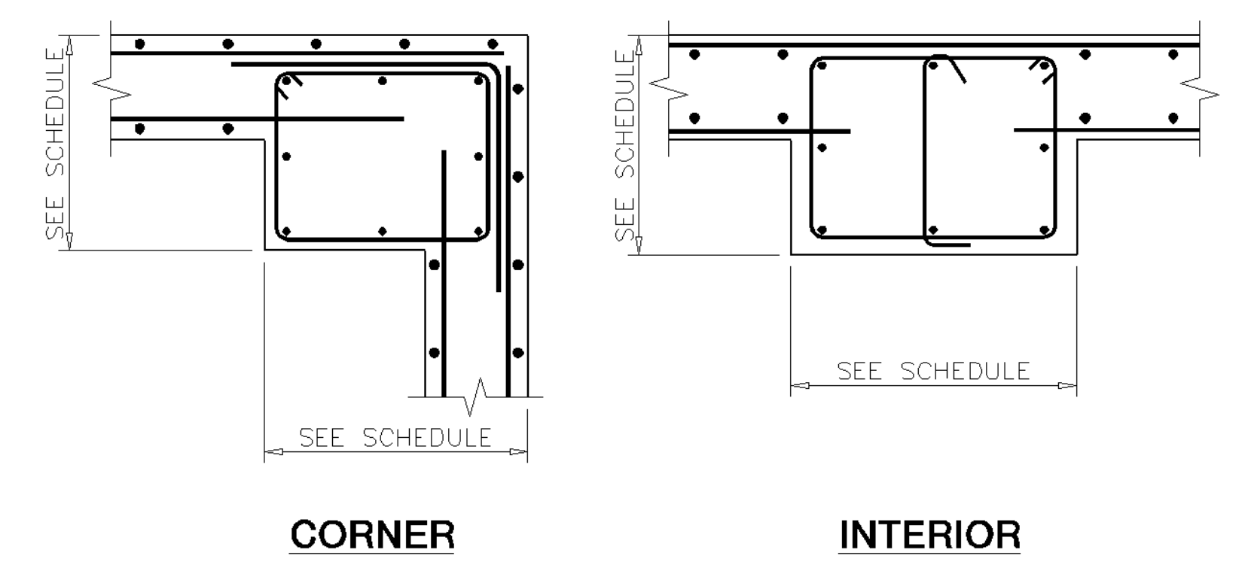


2 TYPICAL CONCRETE COLUMN SECTIONS

N.T.S.

NOTES:

1. DASHED TIES MAY BE OMITTED IF CLEAR DISTANCE BETWEEN ADJACENT VERTICALS < 6".
2. ALTERNATE POSITION OF 90° HOOKS ON SINGLE TIES.

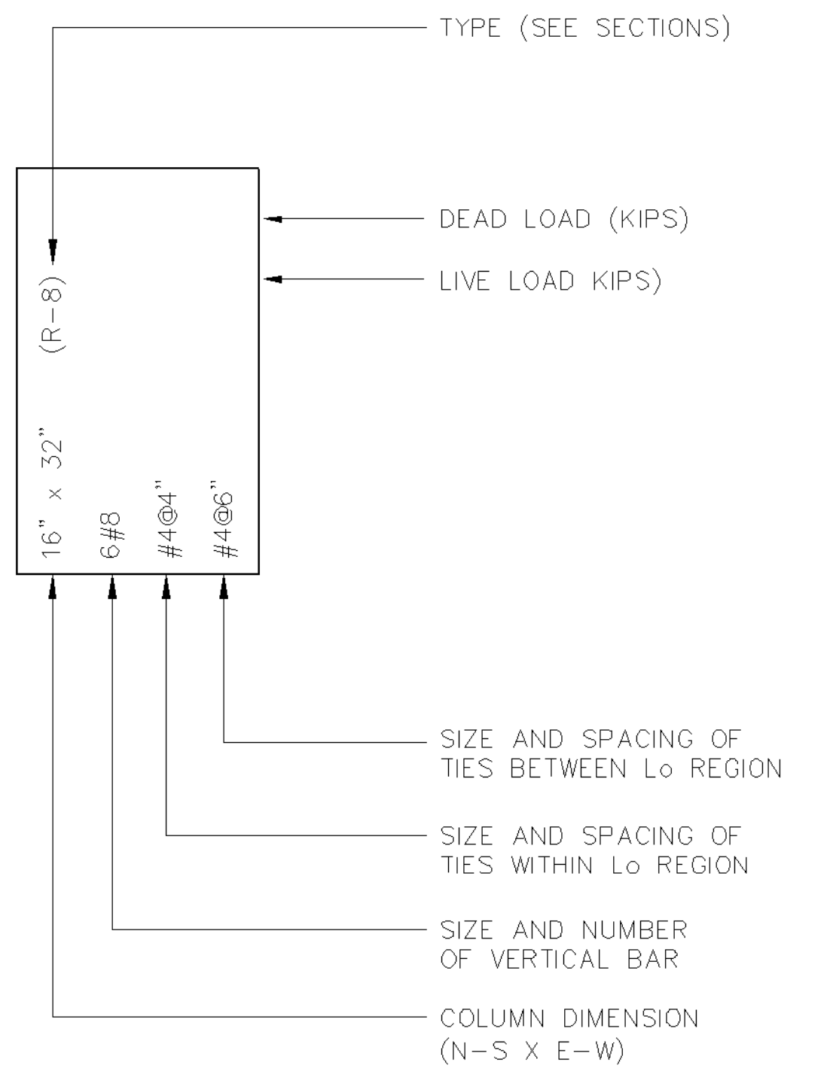


NOTE:

1. COLUMN SIZES ON THIS SCHEDULE, FIRST DIMENSION N–S DIRECTION.
2. CONCRETE STRENGTH f'c = 5 ksi FOR ALL EXTERIOR FOUNDATION WALLS AND BUTTRESSES.
3. ALL COLUMNS ARE TYPE 'R' U.O.N.
4. FLOOR LIVE LOADS ARE REDUCED IN ACCORDANCE WITH SUBCHAPTER 9, ARTICLE 4 OF THE N.Y.C.B.C..

3 TYPICAL BUTTRESS DETAIL

SCALE: N.T.S.



4 CONCRETE COLUMN SCHEDULE LEGEND

SCALE: N.T.S.

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Owner:
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64 - 35 Yellowstone Blvd.
Forest Hills, NY 11375

project:
WEST 60TH / 61ST STREET
NEW YORK,NY 10023
BUILDINGS B&C

no.	*issued*	*revisions*
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1	09.13.05	FOUNDATION BID

drawing title:

BUILDING B
COLUMN SCHEDULE
AND DETAILS

project number:

date: 8/29/05

scale: 1/8"=1'-0"

drawn by: NT
checked by: SEF

drawing number:

S-201

COLUMN / LEVEL	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	C31	C32	C33	C34	C35	C36	C37	C38	C39	C40	C41	C42	C43	C44	C45	C46	C47	C48	C49
BULKHEAD ROOF																																																	
EL. + 10'-0" MAIN ROOF																																																	
EL. + 10'-0" 27TH FLOOR																																																	
EL. + 10'-0" 26TH FLOOR																																																	
EL. + 10'-0" 25TH FLOOR																																																	
EL. + 10'-0" 24TH FLOOR																																																	
EL. + 10'-0" 23RD FLOOR																																																	
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EL. + 10'-0" 2ND FLOOR																																																	
EL. + 10'-0" GROUND FLOOR																																																	
EL. + SEE PLAN VARIES CELLAR																																																	
EL. +31'-6" 15'-2" SUBCELLAR		30x24 16 #7 #3@14" 1609 141	34x24 20 #6 #3@12" 2037 219		36x24 20 #8 #3@16" 2370 209							25x34 BUTTR 12 #6 #3@12" 305 40	34x21 BUTTR 12 #5 #3@10" 220 35	34x25 BUTTR 12 #6 #3@12" 219 34	34x25 BUTTR 12 #6 #3@12" 379 39	34x25 BUTTR 12 #6 #3@12" 376 40	54x21 BUTTR 20 #5 #3@10" 435 44	42x21 BUTTR 16 #5 #3@10" 414 48	22x37 BUTTR 12 #6 #3@12" 474 46	42x21 BUTTR 16 #5 #3@10" 315 34	32x25 BUTTR 12 #6 #3@12" 261 28	20x34 BUTTR 12 #6 #3@12" 336 43	20x34 BUTTR 12 #6 #3@12" 283 33	34x25 BUTTR 12 #6 #3@12" 428 49	34x25 BUTTR 12 #6 #3@12" 436 47	25x34 BUTTR 12 #6 #3@12" 652 64				34x20 16 #8 #4@20" 1869 165	28x16 12 #7 #3@14" 1246 98			34x20 16 #7 #3@14" 1568 201	22x34 16 #11 #4@22" 2202 250		24X42* 28 #10 #3@18" 1751 211	28x28 16 #7 #3@14" 1771 207	28x16 12 #6 #3@12" 1079 105	28x18 16 #8 #3@16" 1427 150	28x16 12 #6 #3@12" 1137 117	28x16 12 #8 #3@16" 1245 130		16x28 12 #6 #3@12" 978 95	16x28 12 #6 #3@12" 396 57	16x28 12 #6 #3@12" 526 77	36x36 24 #9 #3@18" 3536 352	28x28 16 #11 #4@22" 2297 265	28x28 16 #7 #3@14" 1955 215
EL. +16'-4"																																																	
LEVEL / COLUMN	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	C31	C32	C33	C34	C35	C36	C37	C38	C39	C40	C41	C42	C43	C44	C45	C46	C47	C48	C49

* DENOTES FULL TENSION LAP SPLICE

① COLUMN SCHEDULE

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NEW YORK,NY 10023
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no.	*issued*	*revisions*
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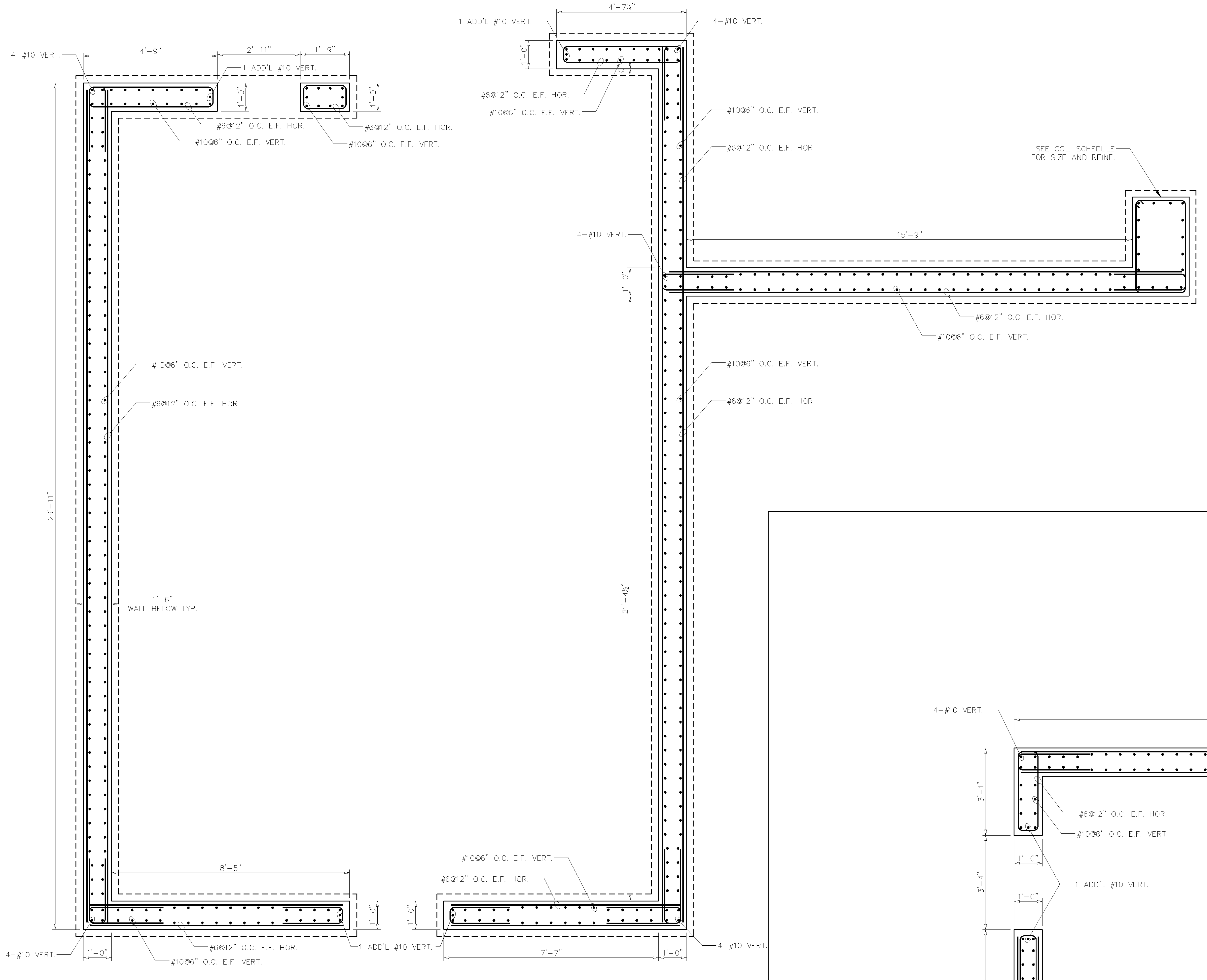
1	09.13.05	FOUNDATION BID

drawing title:
BUILDING C
COLUMN SCHEDULE

project number:
date: 8/29/05
scale: 1/8"=1'-0"
drawn by: NT
checked by: SEF
drawing number: **S-202**



NOTE: fc'=5ksi

1 BUILDING C
SHEAR WALL SUPPORTING CELLAR FLOOR

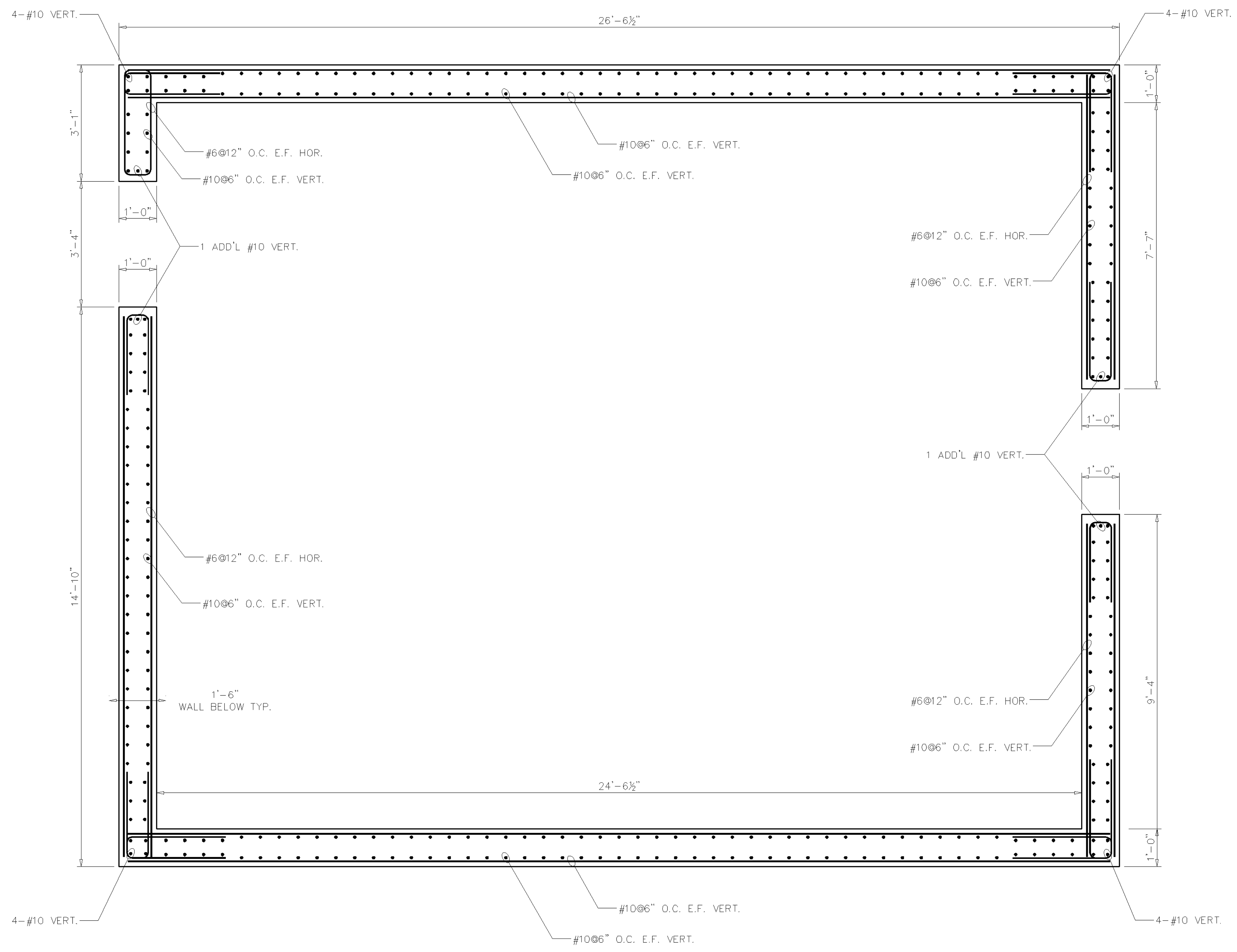
SCALE: 1/2"=1'-0"

X SECTION - X

SCALE: XX"=1'-0"

X SECTION - X

SCALE: XX"=1'-0"



NOTE: fc'=5ksi

2 BUILDING B
SHEAR WALL SUPPORTING CELLAR FLOOR

SCALE: 1/2"=1'-0"

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project:
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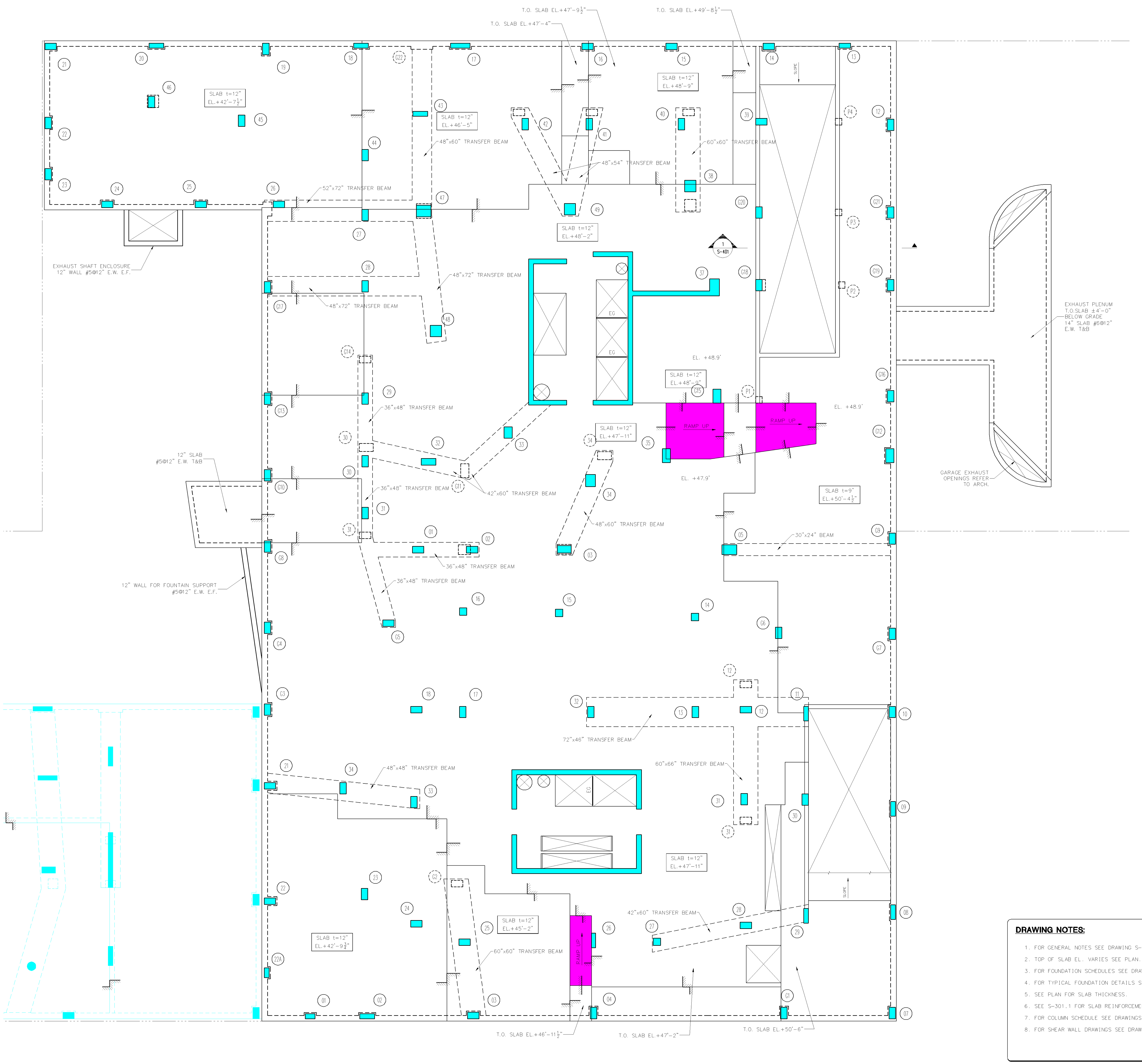
1	09.12.05	FOUNDATION BID

drawing title:
SHEAR WALL
PART PLANS

project number:
date: 9/12/05
scale: AS NOTED
drawn by: NT *checked by:* SEF
drawing number: S-203



DRAWING NOTES:

1. FOR GENERAL NOTES SEE DRAWING S-001.
2. TOP OF SLAB EL. VARIES SEE PLAN.
3. FOR FOUNDATION SCHEDULES SEE DRAWING S-111
4. FOR TYPICAL FOUNDATION DETAILS SEE DRAWING S-111.
5. SEE PLAN FOR SLAB THICKNESS.
6. SEE S-301.1 FOR SLAB REINFORCEMENT.
7. FOR COLUMN SCHEDULE SEE DRAWINGS S-201 & S-202.
8. FOR SHEAR WALL DRAWINGS SEE DRAWING S-203.

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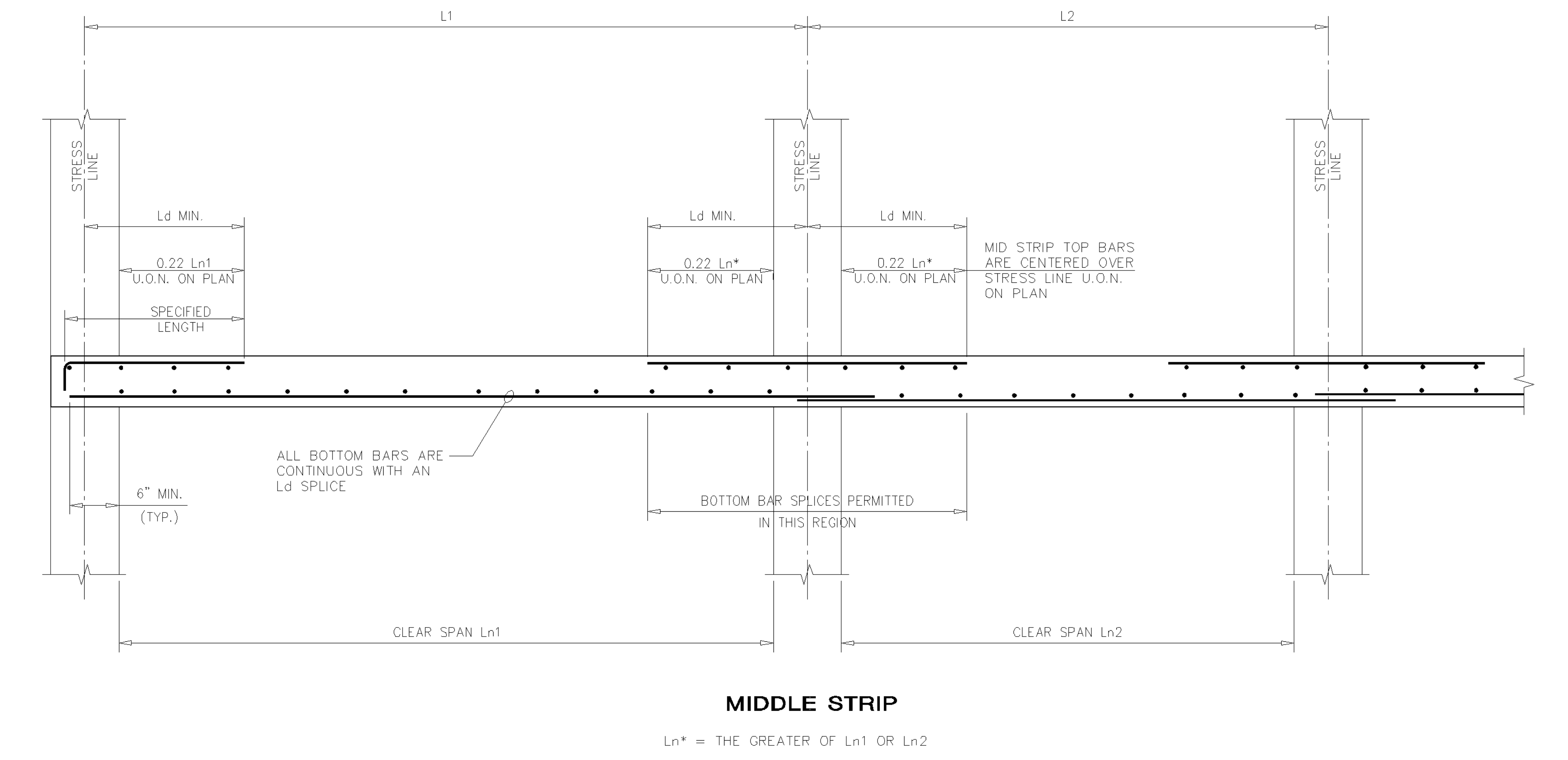
1	09.13.05	FOUNDATION BID

drawing title:
GROUND FLOOR
LAYOUT PLAN

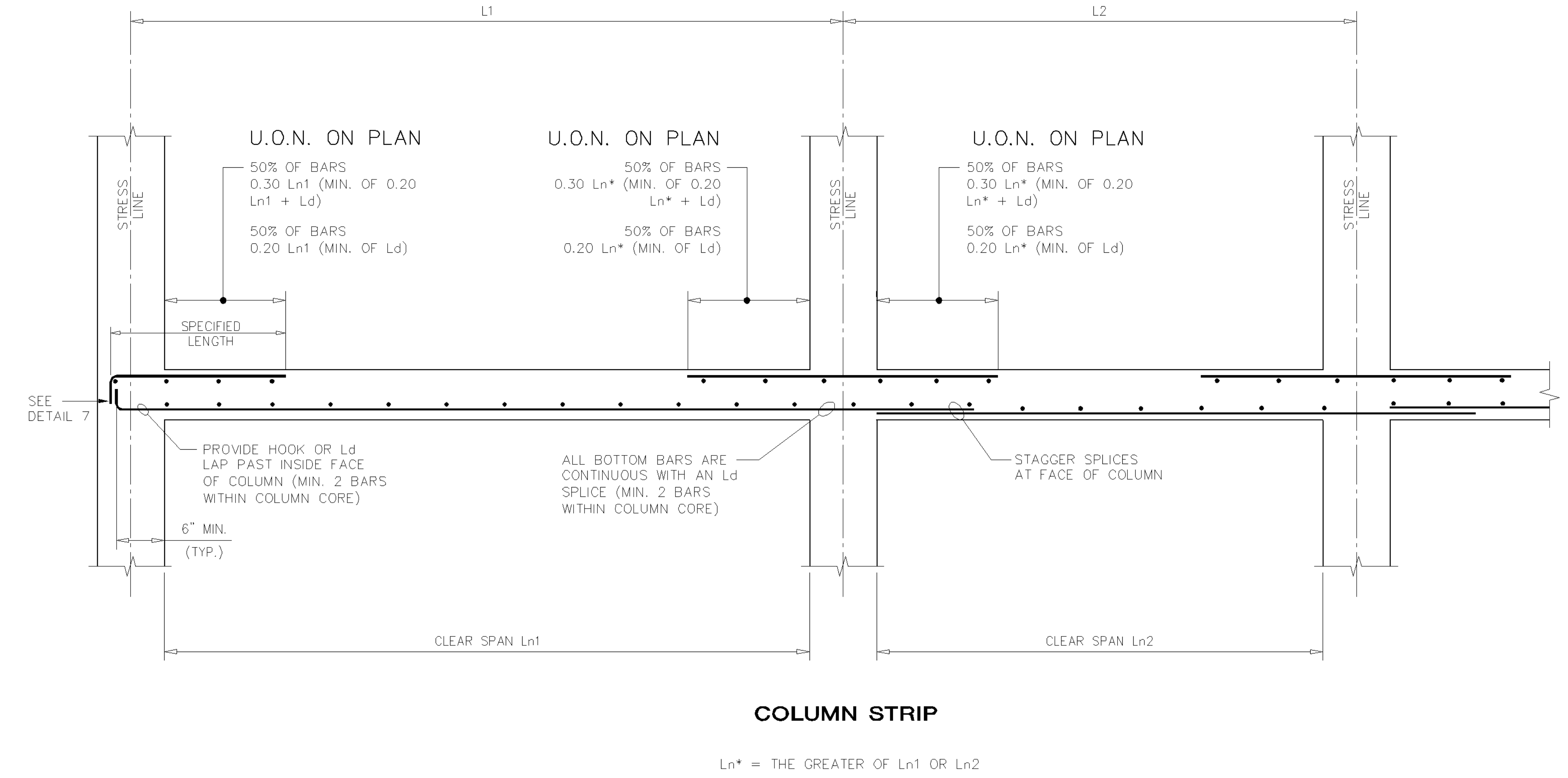
project number:

drawing number:
S-301

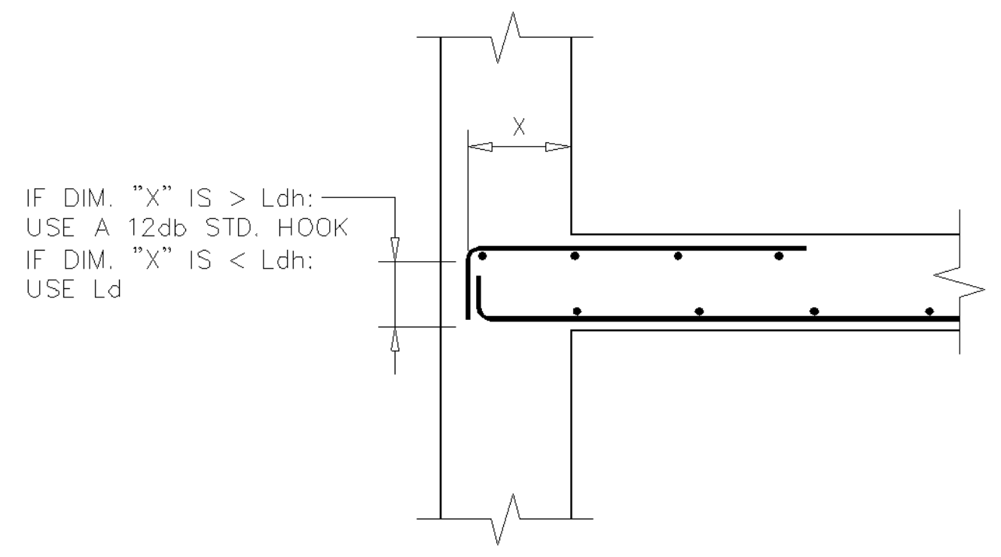
date: 03/17/05
scale: 1/8"=1'-0"
drawn by: NT
checked by: SEF



5 TYPICAL CONCRETE FLAT SLAB DETAIL



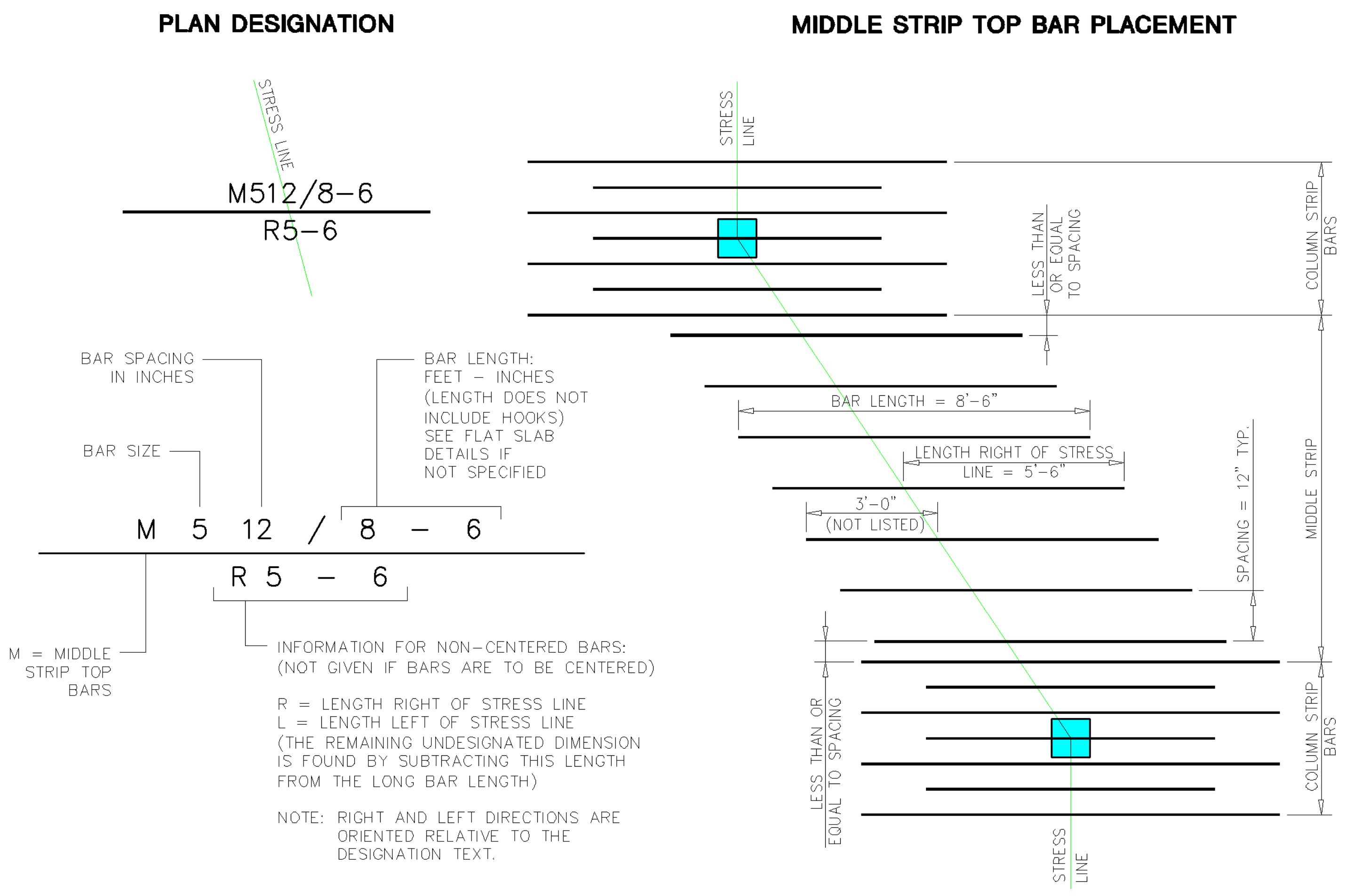
2 TYPICAL CONCRETE FLAT SLAB DETAIL



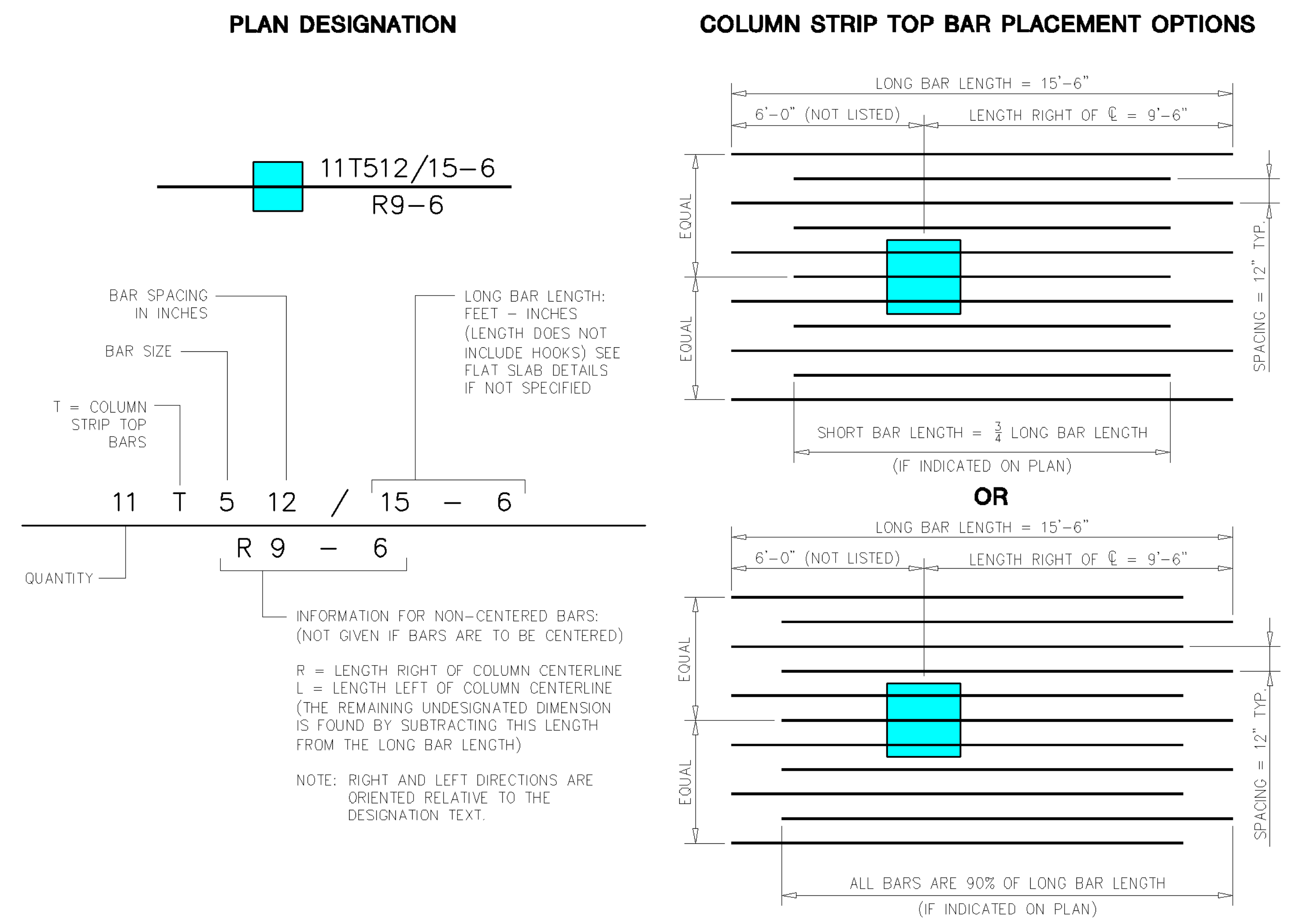
Ldh (IN INCHES)

BAR #	f'c		
	4000 psi	5000 psi	6000 psi
3	5	5	5
4	7	6	6
5	9	8	7
6	10	9	9
7	12	11	10
8	14	12	11
9	15	14	13
10	17	16	14
11	19	17	16

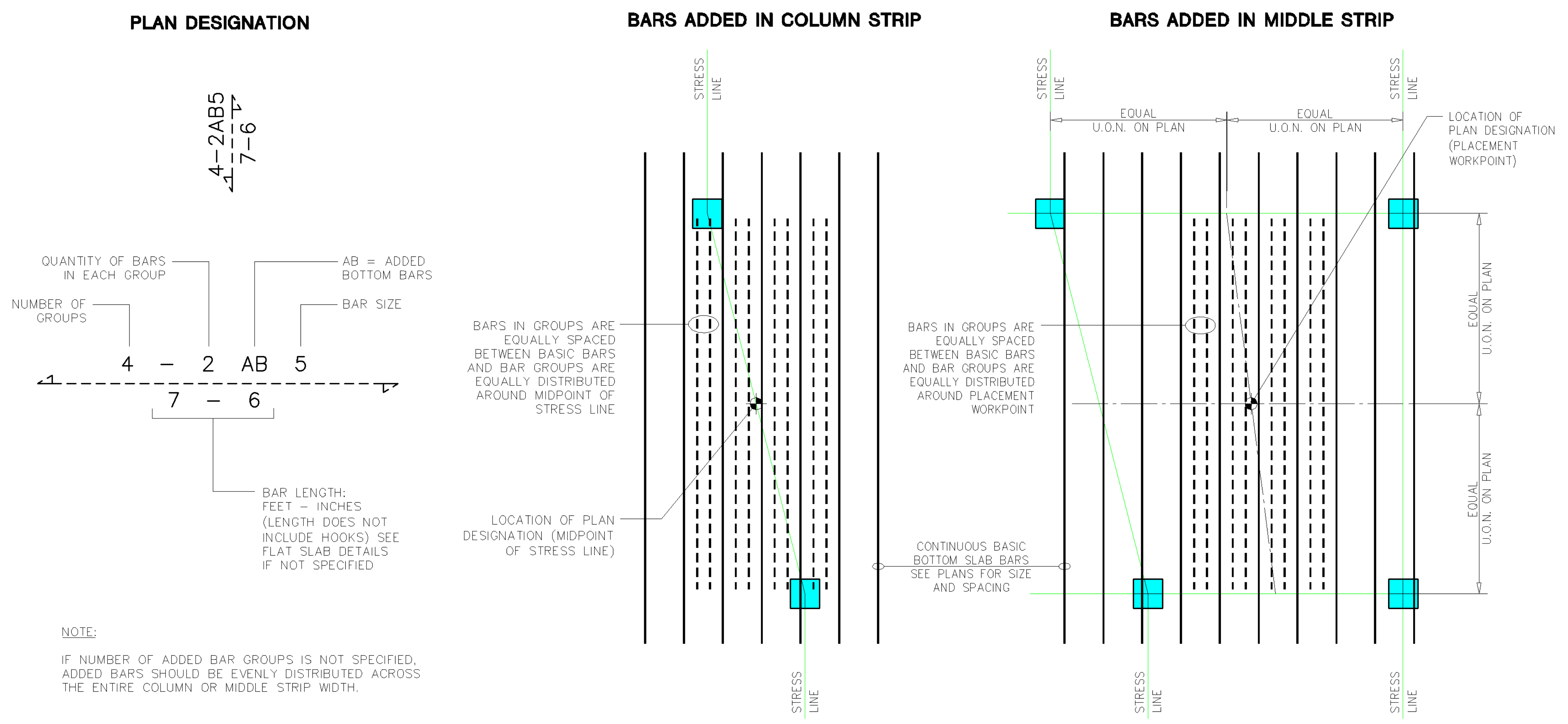
10 HOOK LENGTHS FOR CONNECTIONS



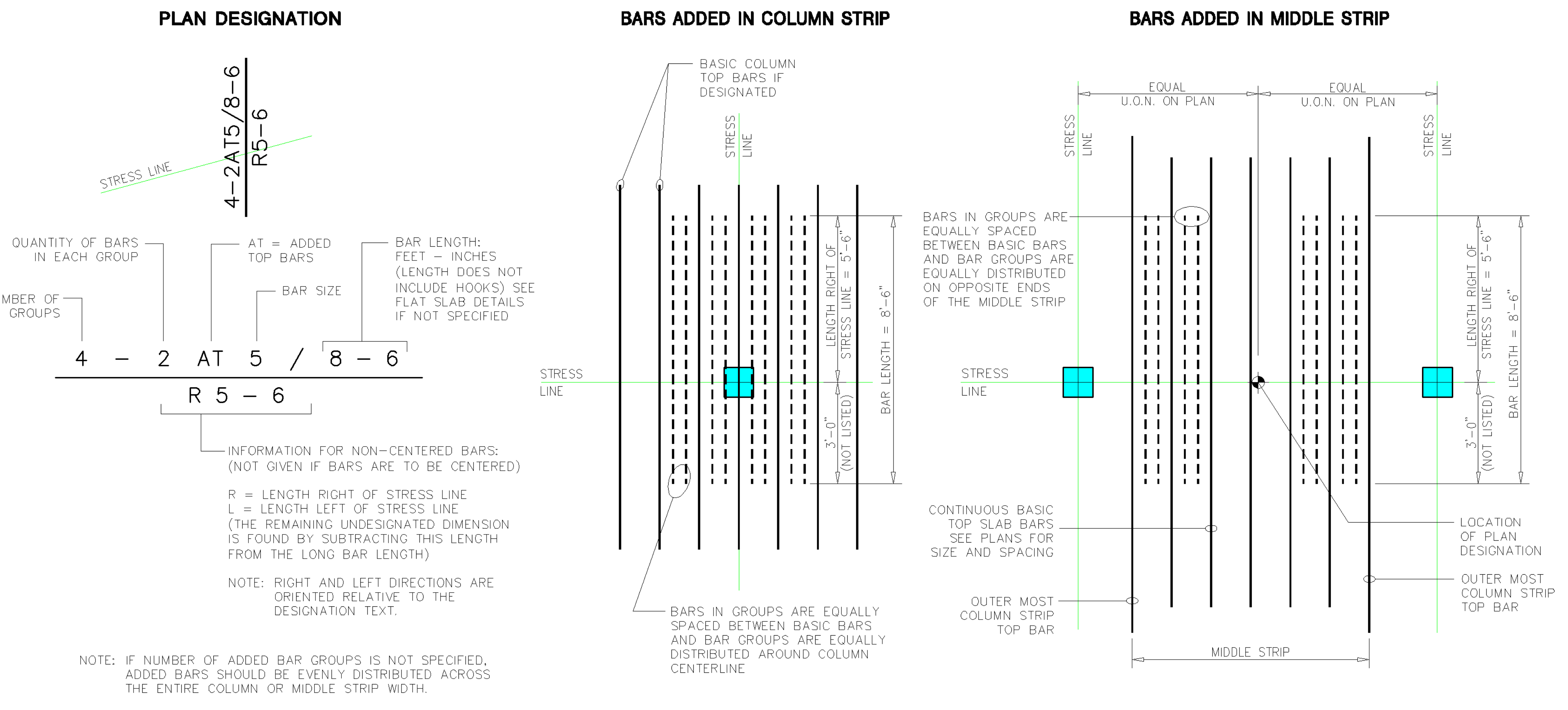
9 MIDDLE STRIP TOP BAR PLACEMENT



7 COLUMN STRIP TOP BAR PLACEMENT



15 ADDED BOTTOM BAR PLACEMENT



12 ADDED TOP BAR PLACEMENT

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no.	*issued*	*revisions*
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1	09.13.05	FOUNDATION BID

drawing title:
TYPICAL CONCRETE DETAILS

project number:
date: 8/29/05
scale: NTS
drawn by: NT *checked by:* SEF
drawing number: **S-401**

APPENDIX D

SOIL MANAGEMENT PLAN

West 61st Street Tennis Court Area Site

Block 1152, Part of Lot 13

NEW YORK, NEW YORK

Soil Management Plan

AKRF Project Number: 10321

NYSDEC BCP Site No.: C231059

Prepared for:

West 60th Street Associates, LLC
West End Enterprises, LLC
64-35 Yellowstone Boulevard
Forest Hills, New York 11375

Prepared by:

AKRF Engineering, P.C.
440 Park Avenue South
New York, NY 10016
212-696-0670

DECEMBER 2009

TABLE OF CONTENTS

FIGURES

1.0 INTRODUCTION

This Soil Management Plan (SoMP) was prepared by AKRF Engineering, P.C. (AKRF) in conjunction with the Site Management Plan (SMP) for the West 61st Street Tennis Court Area Site that underwent a Track 4 cleanup [Brownfield Cleanup Program (BCP) Site No. C231059]. The Tennis Court Area (Site) along with the Track 1 Area of the West 61st Street Site (collectively, the Property) comprise approximately 1.44 acres located midblock on West 60th Street and West 61st Street between Amsterdam Avenue (10th Avenue) and West End Avenue (11th Avenue), in Manhattan, New York. The Tennis Court Area consists of the eastern portion of the Property and comprises approximately 0.346 acres on Block 1152, part of Lot 13.

On April 19, 2005, West End Enterprises, LLC and West 60th Street Associates, LLC entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) to develop the 1.44-acre Property. Pursuant to an amendment to the BCA and the execution of a new BCA on May 23, 2007, the Site was bifurcated for the purposes of conducting a dual track cleanup into the Track 1 Area, (BCP Site No. C231043) and the Tennis Court Area (BCP Site No. C231059).

The approved remedial action is complete for the Property. This SoMP provides detailed description of procedures required to manage known and potential, residual contaminated soil on the Tennis Court Area following the completion of the remedial action in accordance with the BCA.

This SoMP has been included as an appendix to the SMP to describe the procedures and protocols for disturbance of soil and groundwater at the Site during long-term use. It will be applied in conjunction with a Site-specific Construction Health and Safety Plan (CHASP).

2.0 SITE DESCRIPTION

2.1 Property History

A Phase I Environmental Site Assessment (ESA) performed by AKRF in June 2003 of the Property identified recognized environmental concerns for the Site, including potential underground storage tanks. Historically, the area around the Site contained tenement houses and some commercial establishments, such as an auto repair shop, a parking garage with gasoline tanks, a gasoline station, a brewing company, a junk yard, a bakery, and a public bathhouse. All buildings on the Property were demolished prior to or during the Remedial Investigation. Remedial activities began in March 2006. During demolition, excavation, and remediation of the Site, nine underground storage tanks were encountered. Details are available in the September 13, 2007 *Tank Closure Report* prepared by AKRF. Currently, the Site has been remediated and a minimum of two feet of soil meeting Technical and Administrative Guidance Memorandum (TAGM) #4046 Recommended Soil Cleanup Objectives (RSCOs) has been imported from an off-Site location and placed on-Site, thereby capping soil located in the Residual Management Zone. In the area containing the tennis court, imported fill meeting the above requirements will be overlain with an asphalt paved tennis court. The landscaped area containing the two feet of clean fill meeting the above requirements and the asphalt paved tennis court comprise the final development and the Site cover system for the Site.

2.2 Applicability

This SoMP applies to the potential excavation activities beneath the Site cover as described in the Site Management Plan (SMP) dated December 2009. After completion of the remedial work, some residual contamination was left in the subsurface on the Tennis Court Area. Under the

SMP, one Residual Management Zone was established for the Site. The locations and elevations of the top of the Residual Management Zone are shown on Figures included in the SMP. This SoMP also includes contingencies to address contaminated soil or groundwater that may be encountered during possible future excavation. All material excavated will be handled, transported and disposed of in accordance with applicable NYSDEC regulations found in 6 NYCRR Parts 360 to 376, and other applicable Federal, State, and Local requirements. The Residual Management Zone consists of the following:

- Disturbance of backfill material placed during remediation and construction prior to issuance of the Certificate of Completion will require oversight and monitoring by a qualified environmental professional. Soil in this Residual Management Zone was characterized previously to meet the Site Specific Action Levels (SSALs) based on remedial investigation and endpoint sample results, but may exceed the Part 375 Soil Cleanup Objectives (SCOs) for Restricted Residential Use or TAGM #4046 RSCOs. The material excavated from Residual Management Zone may be reused on-site (beneath the cover system and demarcation layer) with no additional testing, provided there is no evidence of contamination (such as staining, sheen, or chemical/petroleum odors). Workers will not be required to have special (i.e., OSHA HAZWOPER) training unless evidence of contamination is noted. If evidence of contamination (such as staining, sheen, or chemical/petroleum odors) is noted in the Residual Management Zone, the following soil handling and health and safety procedures will apply:
    - Excavated soil should be handled as contaminated material until laboratory analytical results are received;
    - Material will be sampled for laboratory analyses for potential on-site reuse or off-site disposal in accordance with applicable requirements; and
    - Work zone and community air monitoring will be performed, and workers will have up-to-date OSHA HAZWOPER training.

3.0 HEALTH AND SAFETY PROCEDURES

A CHASP has been prepared for the potential subsurface disturbance activities that would disturb the residual contamination. This Site-specific CHASP is included as Appendix E of the SMP. Included in the CHASP are various items that, where applicable, may be relevant to soil management:

- Worker training (both site training and 40-hour OSHA training required for workers performing intrusive work with potentially contaminated soil);
- Designation of Work Zones, as applicable (Exclusion, Contamination Reduction and Support Zones);
- Air monitoring – both work zone and community air monitoring for Volatile Organic Compounds (VOCs) and particulates during intrusive work in the Residual Management Zone;
- Personal protection equipment (anticipated Level D with upgrades, if necessary); and
- Personnel and equipment decontamination (including controls to prevent dust migration off-site by vehicles).

4.0 SOIL AND GROUNDWATER MANAGEMENT

4.1 Site Access and Control

A fence will be maintained around the work zone, as applicable, to prevent unauthorized access. Necessary sediment and erosion control measures will be installed prior to any intrusive activities. Designated entry points, stockpile areas (clean, contaminated and pending analysis), truck routes and, if needed, decontamination areas, will be defined and updated as necessary.

4.2 Soil Screening Methods

Visual, olfactory and Photoionization Detector (PID) soil screening and assessment will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (Residual Contamination Zone). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the Certificate of Completion (COC).

Screening will be performed by qualified environmental professionals under the oversight of the Remedial Engineer. Resumes will be provided in the Annual Site Management Report for all personnel.

4.3 Dust Control

Soil disturbances for future utility maintenance and landscaping conducted after the completion of site redevelopment are not anticipated to require large-scale disturbances of the soil used for the cover system. This dust suppression plan addresses dust management to be implemented appropriate to the anticipated extent of invasive on-site work. Dust control measures will include, at a minimum:

- The excavation size and/or number of excavations will be minimized as practicable.
- Excavated areas and stockpiled material will be covered with polyethylene sheeting after activity ceases.
- Dust suppression will be achieved though the use of a dedicated on-site water truck or similar wetting/misting device appropriate to reach the full extent of the area of soil disturbance, stockpiles, and on-site haul roads. If excavation activities are generating dust, the work area, including equipment and excavation faces, will be wetted.
- Clearing and grubbing of larger areas will be done in stages to limit the area of exposed, unvegetated soil vulnerable to dust production.
- Gravel will be used on unpaved roadways to provide a clean and dust-free road surface.

Under the CHASP (Appendix E), soil disturbance work will stop if particulate concentrations reach 125 milligrams per cubic meter (mg/m^3) in the work zone or greater than 0.15 mg/m^3 above background at the downwind perimeter. Additional dust control measures will be applied. Work will resume work when particulate concentrations are less than 125 mg/m^3 in the work zone, less than 0.15 mg/m^3 above background levels at the downwind perimeter, and no visible dust is migrating from the work area.

4.4 Odor Control

Based on the soil data collected and observations during remediation at the Site, no elevated levels of VOCs or odorous soil are anticipated. If the work zone or community air monitoring reveal persistent elevated VOC levels, or if nuisance odors are present, this odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and New York State Department of Health (NYSDOH) will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including cessation of work, will be the responsibility of the Controlled Property owner's Remedial Engineer, who is responsible for certifying the Annual Site Management Report.

All necessary means will be employed to prevent on- and off-site nuisances. Emissions of odors will be controlled by minimizing, to the extent possible, the exposure of contaminated soil to the atmosphere. Specific measures that will be implemented include:

- Limiting the area of open excavations – Contaminated soil will be excavated by sections to minimize the size of the excavation that is open at any time.
- Promptly backfilling excavations – Excavations exhibiting odors will be promptly backfilled and adequate volumes of on-site or off-site fill material will be available if it is not possible to backfill with excavated material.
- Using water or foams to cover exposed odorous soil – Biodegradable, non-hazardous, non-flammable foam, such as Rusmar A-600, Allied AFT-400, or equivalent, with an appropriate applicator unit will be present on-site during the excavation work. The foam will be used to cover stockpiles and exposed soil surfaces if necessary. In addition, odor neutralizing agents (such as Ecosorb 606 by Lenntech Water) will be applied directly to the soil, or in the air, if odors persist.
- Hauling soil only in covered trucks – Contaminated material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. All trucks loaded with site materials will exit the vicinity of the Site using only the approved truck routes outlined in Section 8 to minimize travel through residential areas.
- Shrouding open excavations and stockpiles with tarps and other covers.

If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include:

- Direct loading-out of contaminated soil to trucks for off-site disposal to the extent feasible – pre-approval will be obtained from disposal facilities to minimize delay in moving soil off-site. Stockpiling of odorous contaminated soil will be avoided to the extent practicable. If contaminated materials cannot be immediately loaded and transported off-site (in accordance with applicable Federal and State requirements), these materials would be stockpiled on and covered with polyethylene sheeting.
- Using staff to monitor odors in the surrounding neighborhood.

Work performed under the SMP will not result in persistent odor nuisances.

4.5 Erosion Control and Stormwater Management

Smaller-scale soil disturbances for future utility maintenance and landscaping conducted after the completion of Site redevelopment are not anticipated to require coverage under the general State Pollution Discharge and Elimination System (SPDES) Permit or preparation of a Storm Water Pollution Prevention Plan (SWPPP). However, best management practices, such as the placement of barriers, such as silt fencing and hay bales, at the perimeter of soil stockpiles and/or the use of polyethylene liners and covers, will be implemented during small-scale soil disturbance.

Barriers and hay bales will be installed at the perimeter of soil stockpiles to be maintained on-site overnight or longer, and inspected once a week and after every storm event. Results of inspections will be recorded in a log book and maintained at the Property and available for inspection by NYSDEC. All necessary repairs will be made immediately.

Accumulated sediments will be removed as required to keep the barrier functional. All undercutting or erosion of the barrier (e.g., silt fence) toe anchor will be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP will be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing, hay bales or equivalent barriers will be installed around the entire perimeter of the excavation and stockpile area(s). Nearby sewer inlets will be protected with hay bales, silt geofabrics, “silt sack” inserts, or equivalent barriers. Any alterations to this plan would be approved by NYSDEC.

4.6 Construction Water Management

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported, and disposed of in accordance with applicable Federal, State, and local regulations. Produced water will be treated, if necessary, and discharged to the sanitary sewer under a New York City Department of Environmental Protection (NYCDEP) sewer connection permit. Prior to discharge of on-site collected water into the combined sewer system, all on-site collected water, including water pumped from excavations, will be sent to a sedimentation tank to reduce the particulates (suspended and total solids).

4.7 Stockpile Management

Soil will be stockpiled based on known or anticipated type and/or level of contamination (based on previous data, PID readings, odor, staining, etc.). Stockpiles will not be placed outside of the Site boundaries without prior approval of NYSDEC. Stockpiles intended for off-site disposal may be mixed with other compatible stockpiles on-site (compatibility will be determined by the requirements of the receiving disposal facility), but if known hazardous wastes are mixed with non-hazardous wastes, the mixture would be managed as hazardous waste.

Soil exhibiting obvious contamination (e.g., staining, odors, or elevated PID readings) will be stockpiled separately to prevent mixing with potentially uncontaminated excavated material. The location and classification of stockpiles (clean, contaminated, or pending analysis) will be tracked in field notes and updated, if necessary, at the end of each workday. Suspect contaminated soil will be placed on a base consisting of rugged polyethylene tarp. Stockpiles will be kept fully covered whenever excavation and/or loading operations are not occurring with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Soil stockpiles will have side slopes not to exceed 2:1. Soil stockpiles will be continuously encircled with silt fences or other appropriate erosion control, and managed to minimize dust generation, run-off and erosion, using water and/or plastic covers, as necessary. Hay bales or other appropriate erosion control will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles of excavated material will be inspected at a minimum once each week and after every major storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. The location of stockpiles will be selected based on the location and extent of excavation and activities on the Site at that time.

A dedicated water truck equipped with a water cannon or other similar wetting/misting device will be available on-site for dust control, as appropriate, depending on the size and location of the soil disturbance area.

4.8 Drum Storage Plan

Potentially contaminated waste (e.g., excavated soil exhibiting evidence of contamination and pumped groundwater) will be stockpiled in accordance with Section 4.6 or drummed until the results of characterization analysis are received.

Based on the results of characterization analysis, non-liquid waste may be:

- Loaded directly into trucks and disposed of off-site in accordance with Sections 7.0 through 9.0 of this SoMP; or
- Disposed of after mixing with compatible stockpiles on-site. Hazardous waste will not be mixed with non-hazardous waste. Compatibility will be determined by the requirements of the receiving disposal facility. If dissimilar materials are inadvertently mixed, they will be handled according to the standards for the more stringent class.

Based on the results of characterization, liquid waste may be:

- Disposed of off-site in accordance with Sections 7.0 through 9.0 of this SoMP; or
- Disposed of in city sewers in accordance with New York City Department of Environmental Protection (NYCDEP) procedures and permits.

Drums will be stored in accordance with the following:

- A label will be placed on each drum with the name of the generator, contact name and phone number, results of characterization (or pending analysis), date generated, boring or sample identification number, and medium (water, soil, etc.).
- If the results of characterization indicate that a drum contains hazardous waste, requirements relating to maximum accumulation time (generally 90 days) will apply.
- One or more areas of secondary containment will be constructed (using plastic and berms or equivalent) and used for drum storage.
- Spills or releases will be managed as specified in the Emergency Response Procedures of the CHASP.

5.0 BACKFILL

If endpoint samples are collected, backfill will not be placed until receipt of the confirmatory endpoint sample laboratory analytical results, if possible.

5.1 Demarcation

After the completion of soil removal from the Residual Management Zone and any other invasive activities, especially if soil exhibited signs of contamination (e.g., staining, odors, or elevated PID reading), and prior to backfilling, as necessary, a land survey will be performed by a New York State licensed surveyor. A physical demarcation layer, consisting of orange snow fencing material or equivalent material will be placed on this surface [at the base of the final cover soil layer (minimum of two feet)]. The survey will redefine the top elevation of the Residual Management Zone and measure the grade covered by the demarcation layer before the placement of the cover soil. This survey and the demarcation layer placed on this grade surface will constitute a modification of the physical and written record of the upper surface of the Residual Management Zone in the SMP. A map showing the survey results will be included in the Annual Site Management Report.

5.2 Off-Site (Imported) Backfill

All materials proposed for import onto the Site will be approved by the Remedial Engineer, in compliance with provisions in the SMP, prior to delivery at the Site.

Any imported off-site backfill material will be clean and free of debris, cinders, combustibles, wood, roots, and any staining or odors. Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site. Solid waste will not be imported onto the Site.

All imported soil will be considered appropriate for use as on-site backfill if contaminant concentrations are less than TAGM #4046 RSCOs or specific approval has been given by NYSDEC. Sample frequency and analytical requirements are listed in Section 6.3. Off-site backfill sources that have inconsequential exceedances of the applicable SCOs may be considered by NYSDEC for use on-site on a case-by-case basis. Formal requests will be submitted for approval of sources with exceedances. Non-compliant soil will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved SMP or its approval by NYSDEC should be construed as an approval for this purpose.

Soil that meets ‘exempt’ fill requirements under 6 NYCRR Part 360, but does not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Nothing in this SoMP should be construed as an approval for this purpose.

Trucks entering the Site with imported soil will be securely covered with tight fitting covers. Backfill material brought on-site will be stockpiled in an area separate from the excavated material stockpiles. The location and classification of stockpiles will be tracked on the Site drawings and updated, if necessary, at the end of each workday. Stockpiles will be surrounded with silt fences, hay bales, berms or equivalent barriers to limit any sediment-laden runoff.

5.3 On-Site Reuse as Backfill

The Remedial Engineer will ensure that procedures defined for materials reuse in the SMP are followed and that unacceptable material will not remain on the Site. Soil excavated from any Residual Management Zone on the Site that has chemical or petroleum odors, visual chemical or petroleum staining, or elevated PID readings above five ppm will not be reused on-site but will be characterized for off-site disposal.

Soil excavated from the Residual Management Zone is documented to meet SSALs; therefore, it may be reused on-site as subsurface fill beneath the restored Site cover without additional sampling, provided that no evidence of contamination is noted.

Acceptable demolition material proposed for reuse on-site, if any, will also be sampled for asbestos or certified to be free of asbestos-containing materials. Concrete crushing or processing on-site is prohibited without written approval by NYSDEC. NYSDEC will consider the use of specially designed crushing devices that are self-contained and capable of providing misting for dust control. NYSDEC approval must be obtained. If dust-free operations are not achieved with such devices, this exception will be revoked.

Organic matter (wood, tree roots, stumps, etc.) derived from clearing and grubbing of the Site is prohibited from reuse on-Site. Solid waste will not be reused on-site except for on-site soil reused in accordance with the requirements of the SMP.

Contaminated on-site material, including historic fill and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

6.0 SAMPLING REQUIREMENTS

6.1 On-Site Material Reuse Sampling

Soil excavated from any Residual Management Zone on the Site that has chemical or petroleum odors, visual chemical or petroleum staining, or elevated PID readings above five ppm will not be reused on-site but will be characterized for off-site disposal.

Material excavated from the Residual Management Zone is documented to meet SSALs; therefore, it may be reused on-site as subsurface fill beneath the restored cover without additional sampling, provided that no evidence of contamination is noted.

6.2 Waste Characterization Sampling

Waste characterization will be performed for off-site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and quality assurance/quality control (QA/QC) will be reported in the Annual Site Management Report. All data available for soil/material to be disposed of at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

6.3 Imported Backfill Sampling

Imported material will be tested via collection of one composite sample per 500 cubic yards (cy) of material from each source. Samples will be analyzed for Target Compound List (TCL) VOCs using EPA Method 8260, TCL Semi-Volatile Organic Compounds (SVOCs) using EPA Method 8270, polychlorinated biphenyls (PCBs) using EPA Method 8082, pesticides using EPA Method 8081, and Target Analyte List (TAL) metals using EPA Method 6000/7000 series.

If more than 1,000 cy of soil are imported from a given off-site, non-virgin soil source area, and both samples of the first 1,000 cy meet the limits described above, the sample collection frequency will be reduced to one composite sample for every 2,500 cy of additional soil from the same source, up to 5,000 cy. For sources greater than 5,000 cy, sampling frequency may be reduced to one sample per 5,000 cy, provided that all earlier samples meet the prescribed limits.

Native material from a virgin quarry source need not be sampled prior to use as backfill on the Site, provided that detailed information regarding site history and chemical components of the quarry materials is available. If this detailed information is not available, samples will be collected for laboratory analysis as specified in this section.

7.0 TRANSPORTATION

The Remedial Engineer or a qualified environmental professional under his/her supervision will oversee all invasive work that will disturb the Residual Contamination Zone and the excavation and, if needed, load-out of all excavated material. All material to be removed from the Site will be handled and transported in accordance with applicable NYSDEC regulations found in 6 NYCRR Part 360 – 376 and other applicable Federal, State, and local requirements, including licensing of haulers and trucks, placarding, truck routes, manifesting, etc.

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Alternatives to overland truck transport (barge, rail, etc.) will be evaluated as a partial transportation option. The Site is not immediately accessible by rail or by appropriately-sized barge, therefore, loading and off-loading at the Site must be by truck.

A Bill of Lading system or the equivalent will be used for off-site movement of non-hazardous waste and contaminated soil. Manifests and truck tickets or other documentation of transportation and disposal will be collected and submitted to NYSDEC as part of the Annual Site Management Report.

8.0 TRUCK MANAGEMENT

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Trucks will be queued from West End Avenue (11th Avenue) to West 61st Street. Three flagmen will be used to direct traffic to and from the Site and ensure that school busses and school-related traffic will be given priority during school hours, if applicable. Trucks will not be parked or permitted to stand along West 61st Street. Trucks will be prohibited from stopping, parking, or standing along West 61st Street due to the nearby and adjacent schools and to minimize disturbance outside the project Site.

There are two available routes from the Site to the receiving facilities in New Jersey and Pennsylvania – the Lincoln Tunnel, and the George Washington Bridge via the Cross Bronx Expressway. The Cross Bronx Expressway would also provide access to receiving facilities on Long Island or Connecticut (New England). Trucks will pick up soil designated for disposal of at an off-site location on West 61st Street and proceed directly to Amsterdam Avenue (10th Avenue), travel north to West 66th Street, and travel west on West 66th Street to West End Avenue (11th Avenue). From that location, trucks will head north to the Cross Bronx Expressway or south to the Lincoln Tunnel. The route to the Lincoln Tunnel (Figure 1) is as follows:

1. South on West End Avenue to West 40th Street;
2. East on West 40th Street - exit right to Lincoln Tunnel entrance ramp.

The route to the Cross Bronx Expressway/George Washington Bridge (Figure 2) is as follows:

1. North on West End Avenue to West 79th Street;

2. West on West 79th Street to Riverside Drive;
3. North on Riverside Drive to West 165th Street;
4. Exit on right ramp, located approximately 800 feet north of West 165th Street;
5. Follow signs to either the George Washington Bridge or the Cross Bronx Expressway.

All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes. These are the most appropriate routes and take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-Site queuing of trucks entering the Site to the extent practicable; (d) limiting total distance to major highways; (e) promoting safety in access to highways; (f) overall safety in transport; and (g) community input as pertaining to coordination with adjacent schools.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used. Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, and local transportation requirements (an all other applicable transportation requirements).

Prior to leaving the excavation area, all contaminated material containers and transport vehicles will be inspected for evidence of exterior contamination (including inside of wheels and undercarriage), and washed, as necessary, prior to leaving the Site. If trucks wash is used, truck wash waters will be collected and disposed of off-Site in an appropriate manner. Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Locations where vehicles enter or exit the Site will be inspected daily for evidence of off-Site sediment tracking. The Remedial Engineer will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during Site remediation and development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

9.0 DISPOSAL

If excavated soil from the Residual Management Zone exhibits evidence of contamination (chemical or petroleum odors; visual chemical or petroleum staining; or elevated PID readings above five ppm), the material will be not be reused on-site, but will be segregated and samples collected prior to off-site disposal. If analytical results indicate that contaminant concentrations in excavated soil exceed the SSALs, the corresponding stockpile(s) will be disposed of off-site according to applicable Federal, State and local requirements, including those for hazardous waste, industrial waste, petroleum-contaminated soil, construction and demolition debris, etc.

Fill material that meets the SSALs, but cannot be used for backfill due to mechanical properties or composition or because it is in excess of the volume required for backfilling, will be separately stockpiled for waste characterization analysis and off-site disposal. Waste characterization will be performed for off-site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the Annual Site Management Report. All data available for soil/material to be disposed of at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

All soil/fill/solid waste excavated and removed from the Site, except soil which meets the Track 1 Unrestricted Use SCOs, will be treated as contaminated and regulated material and will be disposed of in accordance with all local, State (including 6 NYCRR Part 360) and Federal regulations. Material that does not meet Track 1 Unrestricted Use SCOs is prohibited from being taken to a New York State recycling facility (6 NYCRR Part 360-16 Registration Facility).

Non-hazardous waste, historic fill, and contaminated soil taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6 NYCRR Part 360-1.2. Historical fill and contaminated soil from the Site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).

If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e., clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-site management of materials from this Site is prohibited without formal NYSDEC approval.

Soil that is contaminated but non-hazardous waste, and is being removed from the Site, is considered by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC to be Construction and Demolition (C&D) materials with contamination not typical of virgin soil. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C&D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DSHM. This material is prohibited from being sent or redirected to a Part 360-16 Registration Facility. In this case, as dictated by DSHM, special procedures will include, at a minimum, a letter to the C&D facility that provides a detailed explanation that the material is derived from a DER remediation site, that the soil material is contaminated and that it must not be redirected to on-site or off-site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include, as an attachment, a summary of all analytical data for the material being transported.

Hazardous waste derived from on-site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations.

For large projects (i.e., greater than 1,000 cubic yards), the total quantity of material expected to be disposed of off-site will be reported to NYSDEC prior to performance of work. This will include quantity, breakdown by class of disposal facility, if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C&D recycling facility, etc.

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws:

1. A letter from the Remedial Engineer or BCP Applicant to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include,e as an attachment, a summary of all analytical data for the material being transported; and
2. A letter from all receiving facility stating that it is in receipt of the correspondence (above) and is approved to accept the material.

A Bill of Lading system or equivalent will be used for off-site movement of non-hazardous waste and contaminated soil. Manifests and truck tickets will be collected and submitted to NYSDEC as part of the Annual Site Management Report. Appropriately licensed haulers will be used for material removed from this Site and will be in full compliance with all applicable local, State and Federal regulations.

The disposal locations will be identified and reported to NYSDEC in the Annual Site Management Report. The Annual Site Management Report will include an accounting of the destination of all material removed from the Site during work performed under this plan, including excavated soil, contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material will include records and approvals for receipt of the material. A summary of this information will also be presented in a tabular form in the Annual Site Management Report.

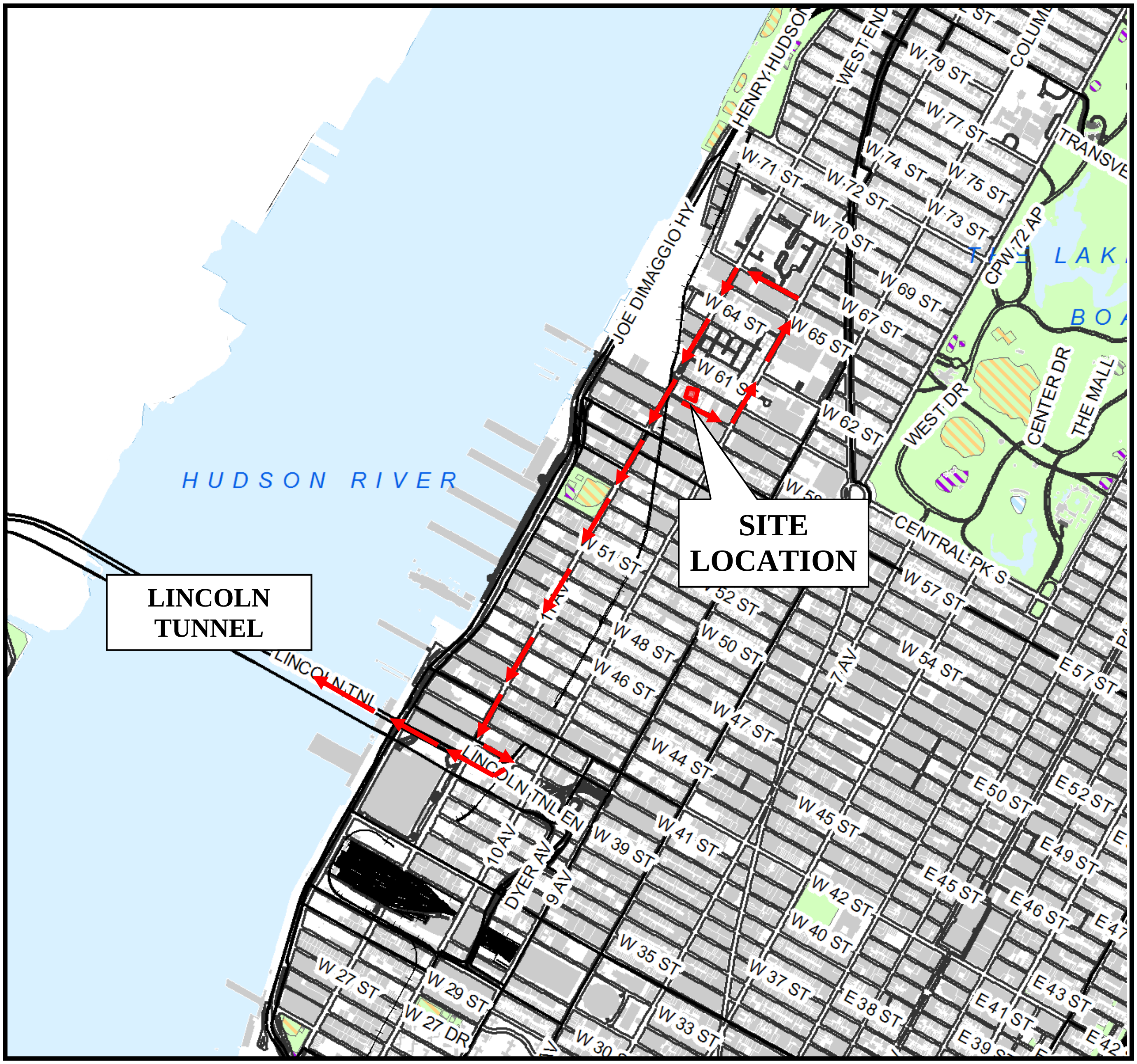
10.0 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

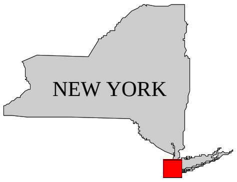
10.1 Analytical Data

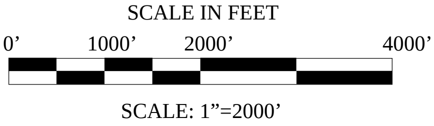
All samples collected during Site post-remediation and redevelopment activities will be analyzed using the most recent NYSDEC Analytical Services Protocol (ASP) at a laboratory certified through the NYSDOH Environmental Laboratory Approval Program (ELAP). Analytical data for the samples will be submitted in ASP Category B data packages, including documentation of laboratory QA/QC procedures that will provide legally defensible data in a court of law. The laboratory will maintain this certification for the duration of this Project.

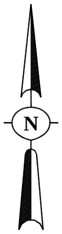
Sampling and decontamination will be conducted according to established Standard Operating Procedures (SOPs) provided in the Remediation Work Plan (RWP). Procedures for chain-of-custody, laboratory instrumentation calibrations, laboratory analyses, reporting of data, internal quality control, and corrective actions will be followed as per NYSDEC ASP, and as per the laboratory's Quality Assurance Plan. Where appropriate, trip blanks, field blanks, field duplicates, and matrix spike/matrix spike duplicate (MS/MSD) samples will be collected at a rate of 5 percent (one sample per up to 20 samples) for samples, and will be used to assess the quality of the data.

FIGURES









WEST 61st STREET TENNIS COURT AREA SITE

NEW YORK, NEW YORK

TRUCK HAUL ROUTE TO LINCOLN TUNNEL

AKRF

Environmental Consultants

440 Park Avenue South, New York, N.Y. 10016

DATE	2.05.08
PROJECT No.	10321
SCALE	AS SHOWN
FIGURE	1

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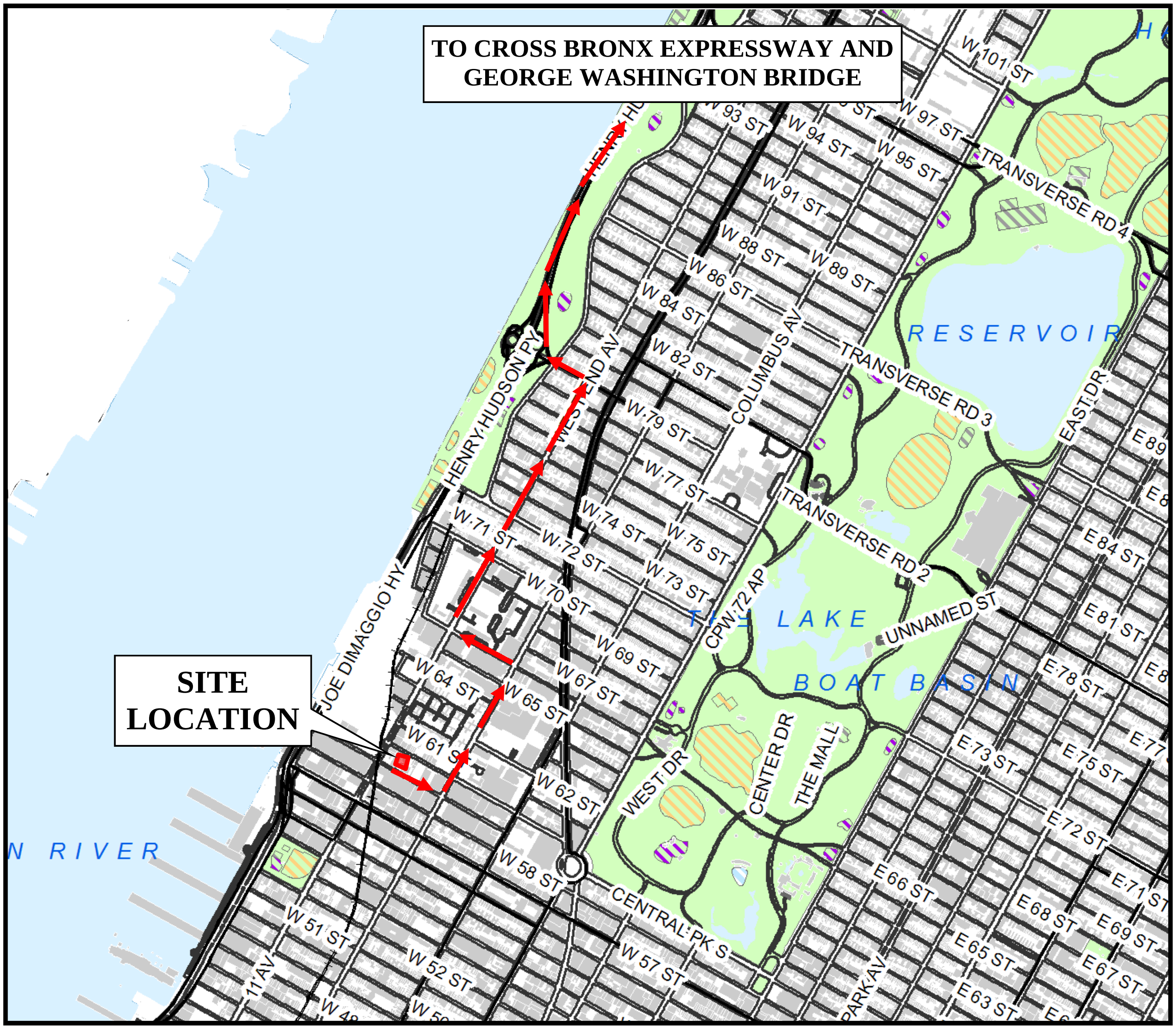

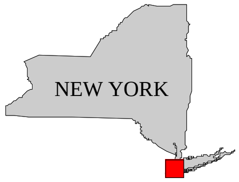

SCALE IN FEET

0' 1000' 2000' 4000'

SCALE: 1"=2000'

N

WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

TRUCK HAUL ROUTE TO CROSS BRONX EXPRESSWAY AND GEORGE WASHINGTON BRIDGE

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
2.05.08

PROJECT No.
10321

SCALE
AS SHOWN

FIGURE
2

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APPENDIX E

CONSTRUCTION HEALTH AND SAFETY PLAN AND COMMUNITY AIR MONITORING PLAN

West 61st Street Tennis Court Area Site

Block 1152, Part of Lot 13

NEW YORK, NEW YORK

Construction Health and Safety Plan

AKRF Project Number: 10321

NYSDEC BCP Site No.: C231059

Prepared by:

AKRF

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Prepared for:

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Forest Hills, NY 11375

DECEMBER 2009

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APPENDICES

1.0 INTRODUCTION

This Construction Health and Safety Plan (CHASP) has been prepared by AKRF Engineering, P.C. (AKRF) for the West 61st Street Site Tennis Court Area Site (referred to as "Tennis Court Area" or "Site"). The Tennis Court Area of the West 61st Street Site is a 0.346-acre portion of an approximately 1.44-acre property (Property) located on West 61st Street between 10th and 11th Avenues in Manhattan, New York, as shown on Figure 1. The Property as a whole consists of the Track 1 area (BCP Site No. C231043) and Tennis Court Area (BCP Site No. C231059). Specifically, the project Site consists of Block 1152, part of Lot 13.

1.1 Planned Development

The planned development of the Tennis Court Area consists of restricted residential use including a landscaped area and an asphalt paved tennis court.

1.2 Purpose

This CHASP was prepared as part of the Tennis Court Area Site Management Plan (SMP) that details the procedures required to manage known or potential residual contamination following completion of the remedial action. The SMP consists of Engineering and Institutional Control Plan, a Monitoring Plan, an Operation and Maintenance Plan, and a Site Management Reporting Plan. A Soil Management Plan (SoMP), which includes provisions for managing excavated soil, is also attached to the SMP.

The purpose of this CHASP is to assign responsibilities, establish personnel protection standards and mandatory safety practices and procedures, and provide for contingencies that may arise during future construction or disturbance of the residual contaminated soil at the Site. The CHASP includes a Community Air Monitoring Plan (CAMP) that will be followed during disturbance of residual, contaminated soil to protect the health of community residents who have the potential to be exposed to known on-site contaminants as a result of fugitive discharge of dust, vapors and/or nuisance odors.

The CHASP is intended to minimize health and safety risks resulting from the known and potential presence of contamination on the Site. It is not designed to address potential geotechnical, mechanical or structural safety concerns, nor to supersede or replace any Occupational Safety and Health Administration (OSHA) regulation and/or local and state construction codes or regulations.

1.3 Applicability

This CHASP is applicable to soil disturbances conducted after remediation has been completed. The SMP details the Residual Management Zone on the Site and associated soil handling procedures. The locations and elevations of the top of the Residual Management Zone are shown on Figures attached to the SMP. The types of work in the Residual Management Zone that would require adherence to the CHASP consists of the following:

- Disturbance of backfill material, beneath the Site cover, placed during remediation and construction prior to issuance of the Certificate of Completion will require oversight and monitoring by a qualified environmental professional. Soil in this Residual Management Zone was characterized previously to meet the Site Specific Soil Action Levels (SSSALs) based on remedial investigation and endpoint sample results, but may exceed the Part 375 Soil Cleanup Objectives (SCOs) for Restricted Residential Use. The material excavated from Residual Management Zone may be reused on-site with no additional testing, provided there is no evidence of contamination (such as staining, sheen, or chemical/petroleum odors).

Workers will not be required to have special (i.e., OSHA HAZWOPER) training unless evidence of contamination is noted. If evidence of contamination (such as staining, sheen, or chemical/petroleum odors) is noted in the Residual Management Zone, then the soil material will be sampled for laboratory analyses for off-site disposal in accordance with applicable requirements. Work zone and community air monitoring will be performed, and workers will have up-to-date OSHA HAZWOPER training.

The contractors and their subcontractors involved in the work in residual contamination or where evidence of contamination is noted will provide a copy of this CHASP for review by their employees whose work involves any potential exposure to the on-site chemical hazards in the soil or groundwater. All work disturbing the subsurface post-remediation will be completed in accordance with this CHASP.

This CHASP does not discuss routine health and safety issues common to general construction/excavation, including, but not limited to, slips, trips, falls, shoring, and other physical hazards. All AKRF employees are directed that all work must also be performed in accordance with the Company's Generic Health and Safety Plan and all OSHA regulations applicable to the work activities required for the project. All project personnel are furthermore directed that they are not permitted to enter Permit Required Confined Spaces (as defined by OSHA). For issues unrelated to contaminated materials, all non-AKRF employees are to be bound by all applicable OSHA regulations and any more stringent requirements specified by their employer in their corporate HASP or otherwise. AKRF is not responsible for providing oversight for issues unrelated to contaminated materials for non-employees. This oversight will be the responsibility of the employer of that worker or other official designated by that employer.

2.0 SITE DESCRIPTION

2.1 Property History

A Phase I Environmental Site Assessment performed by AKRF, Inc. (AKRF) in June 2003 identified recognized environmental concerns for the Site, including potential underground storage tanks. Historically, the area around the Site contained tenement houses and some commercial establishments, such as an auto repair shop, a parking garage with gasoline tanks, a gasoline station, a brewing company, a junk yard, a bakery, and a public bathhouse. All buildings on the Property were demolished prior to or during the Remedial Investigation. Remedial activities began in March 2006. During demolition, excavation, and remediation of the Site, nine underground storage tanks were encountered. Details are available in the September 13, 2007 *Tank Closure Report* prepared by AKRF. Currently, the Site has been remediated and a minimum of two feet of soil meeting TAGM #4046 RSCOS has been imported from an off-Site location and placed on-Site, thereby capping soil located in the Residual Management Zone. A landscaped area with a tennis court is the final development for the Site.

2.2 Property Environmental History

The Phase I ESA, Remedial Investigation, and Remedial Actions were performed, as necessary, on the Property as a whole. As such, the findings for the Tennis Court Area (Site), specifically, are provided in this section and Property-wide information is cited when necessary.

2.2.1 Phase I Environmental Site Assessment

A Phase I ESA was performed by AKRF, Inc. (AKRF) on the Property as a whole in June 2003. The ESA report included the findings of a site inspection, the evaluation of available historical information, and the interpretation of relevant federal and state environmental databases. All buildings discussed in this section were demolished prior to or during the Remedial Investigation.

Former Lot Uses

Historically, former Lot 43 (part of current Lot 13) was occupied by nine, five-story residential buildings until 1926. The lot was then used for parking and as a gasoline station with a small one-story office. It was then a vacant lot from 1976 to 1986, at which time it became a commercial parking lot. NYC Buildings Department records indicated that an unspecified number of gasoline tank installation permits were applied for in 1947. These permits are most likely associated with a former on-site gasoline station noted on the 1951 Sanborn map. The Phase I ESA stated that these tanks apparently remained in place.

The following table summarizes the tanks identified in the Phase I ESA:

Table 1 On-Site Petroleum Storage Tanks Identified in The Phase I ESA

Former Lot No.	Source	Date	Capacity (gallons)	Contents	UST/AST
43	Sanborn Maps	1951	unk	Gasoline Station	unk
	Bldg Dept	1947	unk	GT Permit	unk
Notes: GT = Gasoline Tank unk = Unknown					

During demolition, excavation, and remediation of the Site, nine underground storage tanks were encountered. Details of the removal and disposal are available in the September 13, 2007 *Tank Closure Report* prepared by AKRF.

2.2.2 Remedial Investigation

As part of the Brownfield Cleanup Program, a Remedial Investigation (RI) was completed at the Property. The RI activities began in the late summer of 2005 and were completed in early November 2005. RI activities at the Site, completed by and/or under the supervision of AKRF, included:

- An electromagnetic survey across the Property;
- Investigation of all geophysical anomalies noted in the electromagnetic survey using ground penetrating radar;
- Advancement of soil borings, installation of groundwater monitoring wells and soil vapor wells across the project Property, and the subsequent collection of samples to determine extent of contamination;
- Completion of a elevation survey to establish horizontal and vertical control of sampling locations and geophysical anomalies.

A summary of the findings included in the Remedial Investigation Report (RIR) is as follows:

- The borings and soil analysis indicated the presence of urban fill and construction and demolition debris throughout the Property. The waste appeared to have been placed on the bedrock in the Tennis Court Area. Metals and semi-volatile organic compounds (SVOCs) were detected in a number of surficial and subsurface samples. A sample collected in the parking lot area, analyzed by EPA Method 1311 [Toxic Characteristic Leaching Procedure (TCLP)] exceeded the EPA Hazardous Waste Regulatory Level for lead.

- Groundwater at the Site exceeded the Division of Water Technical and Operational Guidance Series (TOGS) No. 1.1.1. Class GA groundwater standards for both total and dissolved metals for iron, selenium, and sodium.
- The geophysical investigation and subsurface soil sampling program identified three on-Site Areas of Concern (AOC).
- The on-site and off-site health impacts were evaluated in the Health Assessment. It was determined that the Site did not pose a significant threat to public health or the environment. Contamination at the Site was removed to NYSDEC/New York State Department of Health standards, and any remaining contaminants in the Tennis Court Area do not pose a future off-site environmental or health threat.
- Based on the results of the investigations, the following SSSALs for soil were established for the Site:

Table 2 Site-Specific Soil Action Levels

Parameter	Criterion
Individual VOCs	TAGM #4046 RSCO
Total VOCs	10.0 mg/kg
Total SVOCs	200 mg/kg
Benzene	0.06 mg/kg (TAGM #4046 RSCO)
Toluene	1.5 mg/kg (TAGM #4046 RSCO)
Ethylbenzene	5.5 mg/kg (TAGM #4046 RSCO)
o-xylene	1.2 mg/kg (TAGM #4046 RSCO)
m/p-xylene	0.6 mg/kg (TAGM #4046 RSCO)
Naphthalene	13 mg/kg (TAGM #4046 RSCO)
Total PCBs	1 mg/kg
Individual Pesticides	TAGM #4046 RSCO
Arsenic	18 mg/kg
Chromium	40 mg/kg
Lead	1,000 mg/kg
Mercury	2 mg/kg

Note: mg/kg – milligrams per kilogram or parts per million

A Remediation Work Plan (RWP) under the BCP was prepared for the Site with the following proposed remedial actions:

- Remove AOCs by excavating known or suspected underground storage tanks, petroleum-contaminated soil around the tanks, and hazardous waste characterized lead-contaminated soil;
- Remove all of the non-petroleum-contaminated fill material above SSSALs;
- Remove the petroleum-contaminated fill material and native soil that exceeds SSSALs;
- Prevent on-site reuse of soil exceeding SSSALs;

- Prevent inhalation of contaminant vapors and dust;
- Prevent direct contact with contaminants in soil and groundwater; and
- Prevent storm water runoff during soil disturbing activities.

2.2.3 Remedial Activities

Remedial actions were performed at the Site in accordance with the RWP and under the supervision of the NYSDEC. Remedial activities have been completed at the Site.

2.2.4 Current Site Use

The redevelopment plan and end use is a recreation area, consisting of an asphalt paved tennis court and landscaped grounds.

2.3 Hazard Potential

The Residual Contamination Zone has been identified as part of the SMP. The remediation has been completed and soil remaining on-Site beneath the soil cover system and demarcation layer is documented to meet SSSALs. Soil remaining beneath the elevation of documented endpoint sampling is considered the Residual Contamination Zone. During future excavation into the Residual Contamination Zone, there is the potential to uncover the known residual contamination, or additional contaminated soil and/or unanticipated underground storage tanks or other buried structures. If these or other hazards are identified during general construction activities, remedial measures will be implemented using the contingencies summarized in Section 5.0 of this CHASP, which is based on those outlined in the Remediation Work Plan (RWP) for the Property that were previously approved by the NYSDEC.

2.4 Hazard Evaluation

The most likely routes of exposure are the inhalation of volatile and semi-volatile chemicals or particulate-laden air during soil disturbing activities, dermal contact, and accidental ingestion. Appendix A includes specific health effects from the known on-Site chemicals. The remaining sections of this CHASP address procedures (including training, air monitoring, work practices, and emergency response) to reduce the potential for unnecessary and unacceptable exposure to these contaminants.

This CHASP addresses potential environmental hazards from the presence of contaminated materials. It is not intended to address the normal hazards of construction work, which are covered by OSHA regulations and/or local and state construction codes or regulations.

3.0 AREAS OF POTENTIAL CONTAMINATION

Soil excavated from the Residual Management Zone is expected to meet the SSSALs based on remedial investigation and endpoint sampling results; however, previously unknown contamination may be present. Disturbance of soil beneath the demarcation layer (elevation of soil that is known to meet SSSALs) is considered potentially contaminated and will require oversight and monitoring by a qualified environmental professional. The soil remaining directly beneath the demarcation layer was characterized previously to meet the SSSALs; therefore, excavated soil may be reused on-site with no additional testing, provided there is no evidence of contamination.

All excavation on the Site will be continuously monitored for the presence of buried tanks, drums or other containers, sludges, or soil or groundwater that shows evidence of suspected contamination, such as discoloration, staining, or odors. If containers or evidence of suspected contamination is noted, excavation should stop, the area should be cordoned off, and the contingencies outlined in Section 5.0 shall be implemented, as appropriate.

Work zone and community air monitoring will be performed in accordance with Section 4.3. To prevent the potential generation and off-site transport of dust, the dust control measures will be implemented as outlined in the Site Management Plan. Workers will not be required to have special (i.e., OSHA HAZWOPER) training unless evidence of contamination is noted. To prevent the potential generation and off-site transport of dust, the dust control measures will be implemented as outlined in the Site Management Plan.

All those who enter the work area while intrusive activities are being performed must recognize and understand the potential hazards to health and safety. Upon entering the work area, all construction personnel must be made aware of the potential hazards they may encounter, and the procedures to follow in the event evidence of contamination is noted.

The health and safety procedures to be implemented during disturbance of contaminated soil are outlined in Section 4.0. Additional contingencies for contaminated materials are outlined in Section 5.0. Soil management practices are detailed in the SoMP, which is included as Appendix D to the SMP.

4.0 HEALTH AND SAFETY GUIDELINES

If evidence of contamination (such as staining, oily sheen, or chemical/petroleum odors) is otherwise noted on soil or groundwater, the area will be treated as a contaminated work area. Health and safety protocols for contaminated work areas are described in the following subsections.

4.1 Site Safety Personnel

4.1.1 Health and Safety Officer

Dr. Andrew Rudko of AKRF will be the Health and Safety Officer (HSO) for the duration of the construction of the Site. The HSO for extended post-construction work will be assigned as work is undertaken. Dr. Rudko has completed a 40-hour training course, supervisory training and updated annual refresher courses that meet OSHA requirements in 29 CFR Part 1910, Occupational Safety and Health Standards.

4.1.2 Site Safety Officer

AKRF will appoint one of its on-site personnel as the Site Safety Officer (SSO). The SSO will have completed either the 24-hour training course for an Occasional Hazardous Waste Site Worker or the 40-hour Hazardous Waste Operations Worker that meet OSHA requirements 29 CFR Part 1910.120(e). The SSO will be a competent person responsible for the implementation of this plan. The SSO has stop-work authorization, which the SSO will execute upon determination of an imminent safety hazard, emergency situation, or other potentially dangerous situation. If the SSO must be absent from the Site, the SSO will designate a suitably qualified replacement that is familiar with the CHASP.

It will be the responsibility of the HSO to provide the SSO with a copy of this CHASP and to review its contents with him/her. The SSO will make all who enter the potentially contaminated areas of the construction site aware of the potential hazards to health and safety (see Sections 2.3 and 2.4) and will require them to sign the affidavit included in Section 7.0 of this CHASP.

4.1.3 Worker Training

All personnel who enter a contaminated work area while intrusive activities are being performed will have completed a 40-hour training course that meets OSHA requirements of 29 CFR Part 1910, Occupational Safety and Health Standards. All personnel shall also have up to date 8-hour refresher training.

Each member of the field crew will be provided site safety training before going onto the Site. A site safety meeting shall be conducted at the start of the project. Additional meetings shall be conducted, as necessary, for new personnel working at the Site or to provide updates regarding changing site conditions. The site-specific training for workers entering contaminated areas should include the following topics:

- General requirements of this CHASP;
- Review of the Scope of Work;
- Names of personnel responsible for site safety and health;
- Potential hazards and acute effects of compounds present at the Site;
- Air monitoring procedures;
- Proper use of personal protective equipment;
- Safe use of engineering controls and equipment on the Site;
- Decontamination procedures; and
- Work practices by which the employee can minimize risk from hazards. This may include a specific review of heavy equipment safety, safety during inclement weather, changes in common escape rendezvous point, site security measures, or other site-specific issues that need to be addressed before work begins.

4.2 Personal Protection Equipment

The Personal Protection Equipment (PPE) required for various kinds of soil disturbance tasks that disturb known or suspected contaminated soil and groundwater are based on 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, Appendix B, “General Description and Discussion of the Levels of Protection and Protective Gear.”

Contractors and other on-site personnel shall wear, at a minimum, Level D personal protective equipment. Table 3 defines the PPE that, at a minimum, will be used at the Site. The SSO may require additional PPE for any level of protection based on the air monitoring described in Section 4.3 of this CHASP.

Table 3 Personal Protection Equipment

LEVEL OF PROTECTION and PPE	Tasks
Level D (x) Steel Toe Shoes (x) Hard Hat (within 25 ft of drill rig/excavator) (x) Work Gloves (x) Safety Glasses ( ) Face Shield (x) Ear Plugs (within 25 ft of drill rig/excavator) (x) Nitrile Gloves	Potential contact with suspected contaminated materials
Level D – Modified ***(in addition to Level D)*** (x) Tyvek Coveralls ( ) Saranex Coveralls ( ) Overboots	Potential contact with NAPL or soil with elevated PCBs
Level C ***(in addition to Level D – Modified)*** ( ) Half-Face Respirator (x) Full Face Respirator ( ) Full-Face PAPR ( ) Particulate Cartridge ( ) Organic Cartridge (x) Dual Organic/Particulate Cartridge	If PID > 10 ppm or particulate > 5 mg/m^3 in breathing zone
Notes: Cartridges to be changed out at least once per shift unless warranted beforehand (e.g., more difficult to breathe, any odors detected, etc.).	

4.3 Work Zone Air Monitoring

The purpose of the air monitoring program is to identify any exposure of the workers or the public to potential environmental hazards in the soil and groundwater. Results of the air monitoring will be used to determine the appropriate response action, if needed. No air monitoring will be conducted during excavation of the cover system or the Residual Management Zone unless evidence of suspected contamination (such as discoloration, staining, or odors) is noted.

Air monitoring will be performed with the PID and particulate monitor during contaminated soil disturbance activities. Work zone air monitoring measurements will be taken prior to commencement of work and continuously during the work. Measurements will be made as close to the workers as practicable and at the breathing height of the workers. The SSO will set up the equipment and confirm that it is working properly. His/her designee may oversee the air measurements during the day. The initial measurement for the day will be performed before the start of work and will establish the background level for that day. The final measurement for the day will be performed after the end of work. The action levels and required responses are listed in Section 4.3.4. Background readings and any readings that trigger response actions will be recorded in the project logbook or data sheets, which will be available on-site for NYSDEC or the New York State Department of Health (NYSDOH) review and reported in the Annual Site Management Report.

The work zone action levels and required responses are listed in Table 4 (Section 4.3.4). If exceedances of the work zone action levels are noted, the prescribed control measures outlined in Site Management Plan will be implemented immediately, and continuous monitoring at the downwind perimeter station will be conducted until any exceedance is corrected and air monitoring levels are re-established at the background conditions. Any exceedances of work zone action levels and the corrective actions taken will be detailed in an email to the project managers for NYSDEC and NYSDOH.

4.3.1 Volatile Organic Compounds

Continuous air monitoring will be performed with the PID during activities that will disturb soil that has shown evidence of suspected contamination (such as discoloration, staining, or odors). A photoionization detector (PID) will be used to perform work zone air monitoring to determine airborne levels of total VOCs. The PID will be capable of calculating 15-minute running average concentrations and will be equipped with an audible alarm to indicate the exceedance of an action level. The PID will be calibrated daily in accordance with the manufacturer's specifications with a 100 parts per million (ppm) isobutylene standard. The VOC work zone action levels and required responses are listed in Table 4 in Section 4.3.4.

4.3.2 Dust Particulates

Continuous air monitoring will be performed with a particulate monitor used to measure airborne levels of respirable particulates less than 10 microns in size (PM_{10}) during activities that will disturb soil that has shown evidence of suspected contamination (such as discoloration, staining, or odors). The monitor will be capable of calculating 15-minute running average concentrations and equipped with an audible alarm to indicate exceedance of action levels. The particulate monitor will be zeroed daily and used in accordance with the manufacturer's specifications. The dust particulate work zone action levels and required responses are listed in Table 4 in Section 4.3.4.

4.3.3 Oxygen and Combustible Gases

A combined combustible gas indicator and oxygen meter (CGI/O_2) or multi-gas meter that measures the lower explosion limit of combustible gases (LEL), oxygen (O_2), carbon monoxide (CO), and hydrogen sulfide (H_2S) will be used to measure oxygen and combustible gases during tank removal. The combustible gas indicator and/or the multi-gas meter will be calibrated daily in accordance with manufacturer's specifications. The oxygen and combustible gases work zone action levels and required responses are listed in Table 4 in Section 4.3.4.

4.3.4 Work Zone Action Levels and Response Actions

Table 4 Work Zone Air Monitoring Action Levels and Response Actions

Instrument	Task to be monitored	Action Level (Note 1)	Response Action
PID	Soil disturbance	Less than 10 ppm in breathing zone.	Level D or D-Modified
		Between 10 and 500 ppm	Level C
		More than 500 ppm	**Stop work**. Resume work when readings are less than 500 ppm.
Particulate monitor	Soil disturbance	Less than 5 mg/m^3	Level D
		Between 5 mg/m^3 and 125 mg/m^3	Level C. Apply dust suppression measures. If < 2.5 mg/m^3, resume work using Level D. Otherwise, use Level C.
		Above 125 mg/m^3	**Stop work.** Apply additional dust suppression measures. Resume work when less than 125 mg/m^3.
Combustible Gas Indicator (CGI) or Equivalent (Note 2)	Tank Removal	Less than 20% LEL	Continue work.
		Between 20% and 80% LEL	**Stop work.** Resume work when less than 20% LEL.
		Above 80% LEL	**Evacuate Exclusion Zone**
Oxygen Monitor	Tank Removal	Above 19.5%	Continue work.
		Below 19.5%	**Stop work.** Resume work when greater than 19.5%.

Notes:
1 – 15-minute time-weighted average except for CGI, which is instantaneous reading.
2 – CGI or equivalent must measure oxygen (O_2), carbon monoxide (CO), hydrogen sulfide (H_2S), and combustible gas (LEL).
ppm – parts per million
mg/m^3 – milligrams per cubic meter
LEL – lower explosive limit

4.4 Community Air Monitoring

Perimeter community air monitoring for VOCs and dust particulates (PM_{10}) will be conducted during activities that will disturb soil that has shown evidence of suspected contamination (such as discoloration, staining, or odors). At the start of work, air monitoring stations will be established upwind of the work activities and at the downwind perimeter of the work zone. Monitoring for VOCs and PM_{10} at the upwind and downwind stations will be conducted at the start of each workday where potentially contaminated soil is disturbed, and every time the wind direction changes. Monitoring will focus on downwind locations and the adjacent sensitive receptors such as schools or residential buildings.

If exceedances in the community action levels at the downwind Site perimeter station are noted, the prescribed control measures outlined in the Site Management Plan will be implemented immediately, and continuous monitoring at the downwind perimeter station will be conducted until any exceedance is corrected and air monitoring levels are re-established at the background conditions. Background readings and any readings that trigger response actions will be recorded in the project logbook, which will be available on-site for NYSDEC or NYSDOH review. Any exceedances of community air monitoring action levels and the corrective actions taken will be detailed in an email to the project managers for NYSDEC and NYSDOH.

If during the continuous work zone air monitoring, detailed in Sections 4.3, any air monitoring readings in the work zone approach the Work Zone Action Levels, as specified in Table 4, then monitoring at the downwind Site perimeter station will be conducted. If no exceedances of the community action levels are noted at the downwind Site perimeter station at this time, work zone air monitoring will recommence.

4.4.1 Volatile Organic Compounds

Monitoring for volatile organic compounds will be conducted using a PID. The PID will be capable of calculating 15-minute running average concentrations and will be equipped with an audible alarm to indicate the exceedance of an action level. The PID will be calibrated daily in accordance with the manufacturer's specifications with a 100 parts per million (ppm) isobutylene standard.

Monitoring for VOCs at both the upwind and downwind stations will be conducted at the start of each workday and every time the wind direction changes, to establish background conditions. Monitoring for VOCs at the downwind station will be continuous during soil excavation. The VOC community action levels and required responses are listed in Table 5 in Section 4.4.3. If nuisance odors are noted, corrective actions will be implemented in accordance with the SMP.

4.4.2 Dust Particulates

Community air monitoring will be performed with a particulate monitor used to measure airborne levels of respirable particulates less than 10 microns in size (PM_{10}). The monitor will be capable of calculating 15-minute running average concentrations and equipped with an audible alarm to indicate exceedance of action levels. The particulate monitor will be zeroed daily and used in accordance with the manufacturer's specifications.

Community air monitoring for dust particulates at the upwind location will be conducted at the start of each workday and every time the wind direction changes, to establish background conditions. The dust particulate community action levels and required responses are listed in the Table 5 in Section 4.4.3.

4.4.3 Community Action Levels and Response Actions

Table 5 Community Air Monitoring Action Levels and Responses

Instrument	Task to be Monitored	Action Level	Response Action
PID	All soil disturbance tasks	Less than 5 ppm above background at downwind perimeter.	Continue work.
		Between 10 and 25 ppm above background at downwind perimeter.	Stop work and continue monitoring. If organic vapor levels (instantaneous reading) steadily decrease to less than 5 ppm, resume work. If organic vapor levels persists at >5 ppm, identify source and take steps to abate emissions. Work can resume if organic vapor level (15-minute average) is below 5 ppm at 200 feet downwind of work zone or half the distance to the nearest potential receptor, whichever is closer.
		More than 25 ppm above background at downwind perimeter.	Stop work.
Particulate monitor	All soil disturbance tasks	Less than 0.1 mg/m^3 above background (upwind perimeter) at downwind perimeter.	Continue work.
		Between 0.1 mg/m^3 and 0.15 mg/m^3 above background (upwind perimeter) at downwind perimeter.	Apply dust suppression measures. Work can continue provided downwind PM_{10} particulate levels do not exceed 0.15 mg/m^3 above background levels and no visible dust is migrating from the work area.
		Greater than 0.15 mg/m^3 above background (upwind perimeter) at downwind perimeter after dust suppression.	Stop work. Apply additional dust suppression measures. Resume work when less than 0.15 mg/m^3 above background levels and no visible dust is migrating from the work area.

Notes: ppm – parts per million
mg/m^3 – milligrams per cubic meter

4.5 Contingency Community Air Monitoring and Odor/Vapor Control

Community air monitoring during activities that will disturb soil that has shown evidence of suspected contamination (such as discoloration, staining, or odors) in accordance with Section 4.4. If the community air monitoring and action level response measures describe in Section 4.4 are not adequate to prevent repeated exceedances of perimeter monitoring action levels, or to prevent off-site nuisance odor impacts as detected by the community air monitoring program, the following measures will be implemented:

- The invasive activities that resulted in the repeated exceedances will be suspended.
- The NYSDEC and NYSDOH will be notified.

- The suspended activities will not resume until a revised plan for dust, vapor, or odor control with alternative work practices and control measures has been submitted and approved by the NYSDEC and NYSDOH and the alternative work practices and control measures have been implemented.

5.0 CONTAMINATED MATERIALS CONTINGENCIES

The protocols and contingencies outlined in this section apply to construction activities that disturb known or suspected contamination. The contingencies should be implemented if any of the following conditions are encountered: soil or groundwater with chemical or petroleum odors; visual chemical or petroleum staining; sheen or light non-aqueous phase liquid (LNAPL) on groundwater; elevated PID readings above 5 ppm; or previous sampling results indicated exceedance of an SSSAL. In addition to these contingencies, work should be performed in accordance with the health and safety guidelines in Section 4.0 and the soil and groundwater management protocol outlined in the SMP.

5.1 Contaminated Materials Contingency Response

Given the Site’s history, there is a potential for the discovery of additional contaminated or hazardous materials during soil disturbance activities beneath the demarcation layer (into the Residual Management Zone). All excavation will be continuously monitored for the presence of buried tanks, drums or other containers, sludges, or soil that shows evidence of suspected contamination, such as discoloration, staining, or odors. If any of these are detected, excavation in the area will be halted, and the Site Safety Officer (SSO) will notify the following immediately:

AKRF Health and Safety Officer	Andrew D. Rudko, Ph.D. Office Phone: (646) 388-9526
AKRF Project Director	Michelle Lapin, P.E. Office Phone: (646) 388-9520
Project Contact (Owner’s Representative)	Bennet Schonfeld, Esq. Office Phone: (718) 896-9600

The affected area will be cordoned off and no further work will be performed at that location until the appropriate contingency response plan described below is implemented. If any of these contingencies are required, AKRF will notify the project managers for NYSDEC and NYSDOH. All contingency response actions will be carried out in accordance with the procedures specified in Sections 5.2 through 5.4.

5.2 Site Work Zones for Contaminated Areas

If evidence of contamination is noted on the Site, the work area will be divided into various zones as applicable to prevent the spread of contamination, ensure that proper protective equipment is donned, and provide an area for decontamination. The Exclusion Zone is defined as the area where suspected contaminated materials are located. The Contamination Reduction Zone is the area where decontamination procedures take place and is located next to the Exclusion Zone. The Support Zone is the area where support facilities such as vehicles, a field phone, fire extinguisher, and first aid supplies are located. The emergency staging area (part of the Support Zone) is the area where all workers on-site would assemble in the event of an emergency. These zones shall be designated by the SSO and modified as necessary. All field personnel will be informed of the location of these zones before work begins.

Control measures such as “Caution” tape and traffic cones will be placed around the perimeter of the work area when work is being done in the areas of concern to prevent entrance into the area(s) with exposed soil.

5.3 Drum/Container Contingency Plan

Any drums or other containers encountered will be removed and, if necessary, remediated. If unidentifiable buried objects are encountered that potentially contain compressed gas or munitions, a qualified emergency response team will be mobilized.

5.4 Storage Tank Contingency Plan

Any drums or other containers encountered will be removed and, if necessary, remediated. If unidentifiable buried objects are encountered that potentially contain compressed gas or munitions, a qualified emergency response team will be mobilized.

6.0 EMERGENCY RESPONSE

The construction crew will be equipped with emergency equipment, such as a first aid kit and disposable eye washes. In the case of a medical emergency, the SSO will assess the nature of the emergency and he/she will have someone call for an ambulance, if needed. If the nature of the injury is not serious - i.e., the person can be moved without expert emergency medical personnel - he/she should be driven to a hospital by on-site personnel. Field personnel will have cellular phones on-site.

6.1 Emergency Phone Numbers

Table 6 Emergency Contact Numbers*

Agency	Phone Number
Medical, Fire, and Police	911
St. Luke’s Roosevelt Hospital	(212) 523-4000
One Call Center	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center [Local]	(800) 222-1222 [(212) 764-7667]
Pollution Toxic Chemical Oil Spills	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
NYCDEP Hotline	(718) DEP-HELP (337-4357)

Notes: * Contact number subject to change and should be updated as necessary.

6.2 Hospital Directions

Table 7 Hospital Directions

Hospital Name:	St. Luke's Roosevelt Hospital
Phone Number:	(212) 523-4000
Address/Location:	1000 10th Avenue, New York, NY The entrance to the Emergency Room is on West 59th Street between Columbus (9th) Avenue and Amsterdam (10th) Avenue.
Directions:	Drive EAST on 60th Street Turn RIGHT onto Columbus (9th) Avenue Turn RIGHT onto West 59th Street
Distance from Site:	<1 mile (approximately 5 minutes)

A map to the hospital is attached as Figure 1.

6.3 Other Contacts

Table 8 Other Contact Numbers*

Contact, Company	Title	Phone Number
Bennet Schonfeld, Algin Management Co., LLC	Owner's Representative	(718) 896-9600
Michelle Lapin P.E., AKRF	Project Director	(646) 388-9520
Andrew Rudko, PhD., AKRF	Site Safety Officer	(646) 388-5926
Shaminder Chawla, NYSDEC	Project Manager	(718) 482-4909
Bridget K. Callaghan, NYSDOH	Project Manager	(800) 458-1158 x27860

Notes: * Contact number subject to change and should be updated as necessary.

7.0 APPROVAL & ACKNOWLEDGMENT OF CHASP

This affidavit must be signed by all workers who enter the site. A copy of the CHASP must be on-site at all times and will be kept by the SSO.

AFFIDAVIT

I ________________________________ (name), of ____________________________ (company name), have read the Construction Health and Safety Plan (CHASP) for the West 61st Street Site Tennis Court Area in Manhattan, New York. I agree to conduct all on-site work in accordance with the requirements set forth in this CHASP and understand that failure to comply with this CHASP could lead to my removal from the Site.

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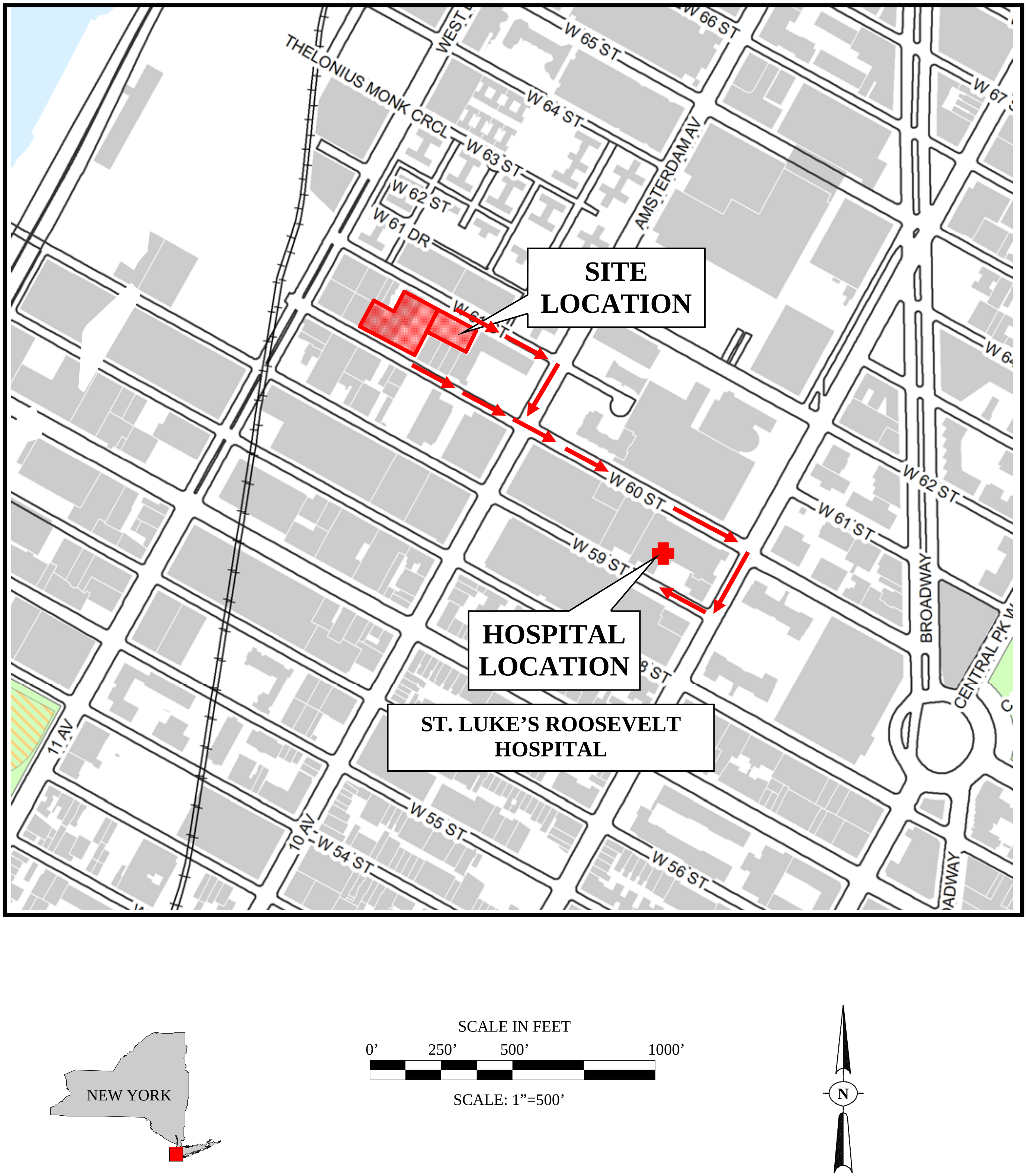
CHASP FIGURES



WEST 61st STREET TENNIS COURT AREA SITE
NEW YORK, NEW YORK

HOSPITAL LOCATION MAP

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
2.07.08

PROJECT No.
10321

SCALE
AS SHOWN

FIGURE
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CHASP APPENDIX A

POTENTIAL HEALTH EFFECTS FROM ON-SITE CONTAMINANTS

ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

BENZENE
CAS # 71-43-2

Agency for Toxic Substances and Disease Registry ToxFAQs **September 1997**

This fact sheet answers the most frequently asked health questions (FAQs) about benzene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Benzene is a widely used chemical formed from both natural processes and human activities. Breathing benzene can cause drowsiness, dizziness, and unconsciousness; long-term benzene exposure causes effects on the bone marrow and can cause anemia and leukemia. Benzene has been found in at least 813 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is benzene?
(Pronounced bĕn′zēn′)

Benzene is a colorless liquid with a sweet odor. It evaporates into the air very quickly and dissolves slightly in water. It is highly flammable and is formed from both natural processes and human activities.

Benzene is widely used in the United States; it ranks in the top 20 chemicals for production volume. Some industries use benzene to make other chemicals which are used to make plastics, resins, and nylon and synthetic fibers. Benzene is also used to make some types of rubbers, lubricants, dyes, detergents, drugs, and pesticides. Natural sources of benzene include volcanoes and forest fires. Benzene is also a natural part of crude oil, gasoline, and cigarette smoke.

What happens to benzene when it enters the environment?

- ☐ Industrial processes are the main source of benzene in the environment.
- ☐ Benzene can pass into the air from water and soil.
- ☐ It reacts with other chemicals in the air and breaks down within a few days.
- ☐ Benzene in the air can attach to rain or snow and be carried back down to the ground.
- ☐ It breaks down more slowly in water and soil, and can pass through the soil into underground water.
- ☐ Benzene does not build up in plants or animals.

How might I be exposed to benzene?

- ☐ Outdoor air contains low levels of benzene from tobacco smoke, automobile service stations, exhaust from motor vehicles, and industrial emissions.
- ☐ Indoor air generally contains higher levels of benzene from products that contain it such as glues, paints, furniture wax, and detergents.
- ☐ Air around hazardous waste sites or gas stations will contain higher levels of benzene.
- ☐ Leakage from underground storage tanks or from hazardous waste sites containing benzene can result in benzene contamination of well water.
- ☐ People working in industries that make or use benzene may be exposed to the highest levels of it.
- ☐ A major source of benzene exposures is tobacco smoke.

How can benzene affect my health?

Breathing very high levels of benzene can result in death, while high levels can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness. Eating or drinking foods containing high levels of benzene can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, and death.

The major effect of benzene from long-term (365 days or longer) exposure is on the blood. Benzene causes harmful effects on the bone marrow and can cause a decrease in red blood cells leading to anemia. It can also cause excessive bleeding and can affect the immune system, increasing the chance for infection.

Some women who breathed high levels of benzene for many months had irregular menstrual periods and a decrease in the size of their ovaries. It is not known whether benzene exposure affects the developing fetus in pregnant women or fertility in men.

Animal studies have shown low birth weights, delayed bone formation, and bone marrow damage when pregnant animals breathed benzene.

How likely is benzene to cause cancer?

The Department of Health and Human Services (DHHS) has determined that benzene is a known human carcinogen. Long-term exposure to high levels of benzene in the air can cause leukemia, cancer of the blood-forming organs.

Is there a medical test to show whether I've been exposed to benzene?

Several tests can show if you have been exposed to benzene. There is test for measuring benzene in the breath; this test must be done shortly after exposure. Benzene can also be measured in the blood, however, since benzene disappears rapidly from the blood, measurements are accurate only for recent exposures.

In the body, benzene is converted to products called metabolites. Certain metabolites can be measured in the urine. However, this test must be done shortly after exposure and is not a reliable indicator of how much benzene you have been exposed to, since the metabolites may be present in urine from other sources.

Has the federal government made recommendations to protect human health?

The EPA has set the maximum permissible level of benzene in drinking water at 0.005 milligrams per liter (0.005 mgL). The EPA requires that spills or accidental releases into the environment of 10 pounds or more of benzene be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set a permissible exposure limit of 1 part of benzene per million parts of air (1 ppm) in the workplace during an 8-hour workday, 40-hour workweek.

Glossary

Anemia: A decreased ability of the blood to transport oxygen.

Carcinogen: A substance with the ability to cause cancer.

CAS: Chemical Abstracts Service.

Chromosomes: Parts of the cells responsible for the development of hereditary characteristics.

Metabolites: Breakdown products of chemicals.

Milligram (mg): One thousandth of a gram.

Pesticide: A substance that kills pests.

References

This ToxFAQs information is taken from the 1997 Toxicological Profile for Benzene (update) produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

TOLUENE
CAS # 108-88-3

Division of Toxicology ToxFAQs™ **February 2001**

This fact sheet answers the most frequently asked health questions (FAQs) about toluene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to toluene occurs from breathing contaminated workplace air, in automobile exhaust, some consumer products paints, paint thinners, fingernail polish, lacquers, and adhesives. Toluene affects the nervous system. Toluene has been found at 959 of the 1,591 National Priority List sites identified by the Environmental Protection Agency

What is toluene?

Toluene is a clear, colorless liquid with a distinctive smell. Toluene occurs naturally in crude oil and in the tolu tree. It is also produced in the process of making gasoline and other fuels from crude oil and making coke from coal.

Toluene is used in making paints, paint thinners, fingernail polish, lacquers, adhesives, and rubber and in some printing and leather tanning processes.

What happens to toluene when it enters the environment?

❑ Toluene enters the environment when you use materials that contain it. It can also enter surface water and groundwater from spills of solvents and petrolieum products as well as from leasking underground storage tanks at gasoline stations and other facilities.

❑ When toluene-containing products are placed in landfills or waste disposal sites, the toluene can enter the soil or water near the waste site.

❑ Toluene does not usually stay in the environment long.

❑ Toluene does not concentrate or buildup to high levels in animals.

How might I be exposed to toluene?

❑ Breathing contaminated workplace air or automobile exhaust.

❑ Working with gasoline, kerosene, heating oil, paints, and lacquers.

❑ Drinking contaminated well-water.

❑ Living near uncontrolled hazardous waste sites containing toluene products.

How can toluene affect my health?

Toluene may affect the nervous system. Low to moderate levles can cause tiredness, confusion, weakness, drunken-type actions, memory loss, nausea, loss of appetite, and

TOLUENE
CAS # 108-88-3

hearing and color vision loss. These symptoms usually disappear when exposure is stopped.

Inhaling High levels of toluene in a short time can make you feel light-headed, dizzy, or sleepy. It can also cause unconsciousness, and even death.

High levels of toluene may affect your kidneys.

How likely is toluene to cause cancer?

Studies in humans and animals generally indicate that toluene does not cause cancer.

The EPA has determined that the carcinogenicity of toluene can not be classified.

How can toluene affect children?

It is likely that health effects seen in children exposed to toluene will be similar to the effects seen in adults.
Some studies in animals suggest that babies may be more sensitive than adults.

Breathing very high levels of toluene during pregnancy can result in children with birth defects and retard mental abilities, and growth. We do not know if toluene harms the unborn child if the mother is exposed to low levels of toluene during pregnancy.

How can families reduce the risk of exposure to toluene?

❑ Use toluene-containing products in well-ventilated areas.

❑ When not in use, toluene-containing products should be tightly covered to prevent evaporation into the air.

Is there a medical test to show whether I've been exposed to toluene?

There are tests to measure the level of toluene or its breakdown products in exhaled air, urine, and blood. To determine if you have been exposed to toluene, your urine or blood must be checked within 12 hours of exposure. Several other chemicals are also changed into the same breakdown products as toluene, so some of these tests are not specific for toluene.

Has the federal government made recommendations to protect human health?

EPA has set a limit of 1 milligram per liter of drinking water (1 mg/L).

Discharges, releases, or spills of more than 1,000 pounds of toluene must be reported to the National Response Center.

The Occupational Safety and Health Administration has set a limit of 200 parts toluene per million of workplace air (200 ppm).

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2000. Toxicological Profile for Toluene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs^{TM} Internet address is http://www.atsdr.cdc.gov/toxfaq.html . ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

ETHYLBENZENE
CAS # 100-41-4

Agency for Toxic Substances and Disease Registry ToxFAQs **June 1999**

This fact sheet answers the most frequently asked health questions (FAQs) about ethylbenzene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Ethylbenzene is a colorless liquid found in a number of products including gasoline and paints. Breathing very high levels can cause dizziness and throat and eye irritation. Ethylbenzene has been found in at least 731 of the 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is ethylbenzene?
(Pronounced ĕth′ əl bĕn′ zēn′)

Ethylbenzene is a colorless, flammable liquid that smells like gasoline. It is found in natural products such as coal tar and petroleum and is also found in manufactured products such as inks, insecticides, and paints.

Ethylbenzene is used primarily to make another chemical, styrene. Other uses include as a solvent, in fuels, and to make other chemicals.

What happens to ethylbenzene when it enters the environment?

☐ Ethylbenzene moves easily into the air from water and soil.

☐ It takes about 3 days for ethylbenzene to be broken down in air into other chemicals.

☐ Ethylbenzene may be released to water from industrial discharges or leaking underground storage tanks.

☐ In surface water, ethylbenzene breaks down by reacting with other chemicals found naturally in water.

☐ In soil, it is broken down by soil bacteria.

How might I be exposed to ethylbenzene?

☐ Breathing air containing ethylbenzene, particularly in areas near factories or highways.

☐ Drinking contaminated tap water.

☐ Working in an industry where ethylbenzene is used or made.

☐ Using products containing it, such as gasoline, carpet glues, varnishes, and paints.

How can ethylbenzene affect my health?

Limited information is available on the effects of ethylbenzene on people's health. The available information shows dizziness, throat and eye irritation, tightening of the chest, and a burning sensation in the eyes of people exposed to high levels of ethylbenzene in air.

Animals studies have shown effects on the nervous system, liver, kidneys, and eyes from breathing ethylbenzene in air.

How likely is ethylbenzene to cause cancer?

The EPA has determined that ethylbenzene is not classifiable as to human carcinogenicity.

No studies in people have shown that ethylbenzene exposure can result in cancer. Two available animal studies suggest that ethylbenzene may cause tumors.

How can ethylbenzene affect children?

Children may be exposed to ethylbenzene through inhalation of consumer products, including gasoline, paints, inks, pesticides, and carpet glue. We do not know whether children are more sensitive to the effects of ethylbenzene than adults.

It is not known whether ethylbenzene can affect the development of the human fetus. Animal studies have shown that when pregnant animals were exposed to ethylbenzene in air, their babies had an increased number of birth defects.

How can families reduce the risk of exposure to ethylbenzene?

Exposure to ethylbenzene vapors from household products and newly installed carpeting can be minimized by using adequate ventilation.

Household chemicals should be stored out of reach of children to prevent accidental poisoning. Always store household chemicals in their original containers; never store them in containers children would find attractive to eat or drink from, such as old soda bottles. Gasoline should be stored in a gasoline can with a locked cap.

Sometimes older children sniff household chemicals, including ethylbenzene, in an attempt to get high. Talk with your children about the dangers of sniffing chemicals.

Is there a medical test to show whether I've been exposed to ethylbenzene?

Ethylbenzene is found in the blood, urine, breath, and some body tissues of exposed people. The most common way to test for ethylbenzene is in the urine. This test measures substances formed by the breakdown of ethylbenzene. This test needs to be done within a few hours after exposure occurs, because the substances leave the body very quickly.

These tests can show you were exposed to ethylbenzene, but cannot predict the kind of health effects that might occur.

Has the federal government made recommendations to protect human health?

The EPA has set a maximum contaminant level of 0.7 milligrams of ethylbenzene per liter of drinking water (0.7 mg/L).

The EPA requires that spills or accidental releases into the environment of 1,000 pounds or more of ethylbenzene be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set an occupational exposure limit of 100 parts of ethylbenzene per million parts of air (100 ppm) for an 8-hour workday, 40-hour workweek.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for ethylbenzene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

XYLENE

CAS # 1330-20-7

Agency for Toxic Substances and Disease Registry ToxFAQs **September 1996**

This fact sheet answers the most frequently asked health questions (FAQs) about xylene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to xylene occurs in the workplace and when you use paint, gasoline, paint thinners and other products that contain it. People who breathe high levels may have dizziness, confusion, and a change in their sense of balance. This substance has been found in at least 658 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is xylene?

(Pronounced zī′lēn)

Xylene is a colorless, sweet-smelling liquid that catches on fire easily. It occurs naturally in petroleum and coal tar and is formed during forest fires. You can smell xylene in air at 0.08–3.7 parts of xylene per million parts of air (ppm) and begin to taste it in water at 0.53–1.8 ppm.

Chemical industries produce xylene from petroleum. It's one of the top 30 chemicals produced in the United States in terms of volume.

Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, a thinner for paint, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.

What happens to xylene when it enters the environment?

- Xylene has been found in waste sites and landfills when discarded as used solvent, or in varnish, paint, or paint thinners.
- It evaporates quickly from the soil and surface water into the air.
- In the air, it is broken down by sunlight into other less harmful chemicals.
- It is broken down by microorganisms in soil and water.
- Only a small amount of it builds up in fish, shellfish, plants, and animals living in xylene-contaminated water.

How might I be exposed to xylene?

- Breathing xylene in workplace air or in automobile exhaust.
- Breathing contaminated air.
- Touching gasoline, paint, paint removers, varnish, shellac, and rust preventatives that contain it.
- Breathing cigarette smoke that has small amounts of xylene in it.
- Drinking contaminated water or breathing air near waste sites and landfills that contain xylene.
- The amount of xylene in food is likely to be low.

How can xylene affect my health?

Xylene affects the brain. High levels from exposure for short periods (14 days or less) or long periods (more than 1 year) can cause headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance. Exposure of people to high levels of xylene for short periods can also cause irritation of the skin, eyes, nose, and throat; difficulty in breathing; problems with the lungs; delayed reaction time; memory difficulties; stomach discomfort; and possibly changes in the liver and kidneys. It can cause unconsciousness and even death at very high levels.

Studies of unborn animals indicate that high concentrations of xylene may cause increased numbers of deaths, and delayed growth and development. In many instances, these same concentrations also cause damage to the mothers. We do not know if xylene harms the unborn child if the mother is exposed to low levels of xylene during pregnancy.

How likely is xylene to cause cancer?

The International Agency for Research on Cancer (IARC) has determined that xylene is not classifiable as to its carcinogenicity in humans.

Human and animal studies have not shown xylene to be carcinogenic, but these studies are not conclusive and do not provide enough information to conclude that xylene does not cause cancer.

Is there a medical test to show whether I've been exposed to xylene?

Laboratory tests can detect xylene or its breakdown products in exhaled air, blood, or urine. There is a high degree of agreement between the levels of exposure to xylene and the levels of xylene breakdown products in the urine. However, a urine sample must be provided very soon after exposure ends because xylene quickly leaves the body. These tests are not routinely available at your doctor's office.

Has the federal government made recommendations to protect human health?

The EPA has set a limit of 10 ppm of xylene in drinking water.

The EPA requires that spills or accidental releases of xylenes into the environment of 1,000 pounds or more must be reported.

The Occupational Safety and Health Administration (OSHA) has set a maximum level of 100 ppm xylene in workplace air for an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH) also recommend exposure limits of 100 ppm in workplace air.

NIOSH has recommended that 900 ppm of xylene be considered immediately dangerous to life or health. This is the exposure level of a chemical that is likely to cause permanent health problems or death.

Glossary

Evaporate: To change from a liquid into a vapor or a gas.

Carcinogenic: Having the ability to cause cancer.

CAS: Chemical Abstracts Service.

ppm: Parts per million.

Solvent: A liquid that can dissolve other substances.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for xylenes (update). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone:1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

NAPHTHALENE
CAS # 91-20-3

1-METHYLNAPHTHALENE
CAS # 90-12-0

2-METHYLNAPHTHALENE
CAS # 91-57-6

Division of Toxicology ToxFAQs™ August 2005

This fact sheet answers the most frequently asked health questions (FAQs) about naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because these substances may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene happens mostly from breathing air contaminated from the burning of wood, tobacco, or fossil fuels, industrial discharges, or moth repellents. Exposure to large amounts of naphthalene may damage or destroy some of your red blood cells. Naphthalene has caused cancer in animals. Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene have been found in at least 687, 36, and 412, respectively, of the 1,662 National Priority List sites identified by the Environmental Protection Agency (EPA).

What are naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene?

Naphthalene is a white solid that evaporates easily. Fuels such as petroleum and coal contain naphthalene. It is also called white tar, and tar camphor, and has been used in mothballs and moth flakes. Burning tobacco or wood produces naphthalene. It has a strong, but not unpleasant smell. The major commercial use of naphthalene is in the manufacture of polyvinyl chloride (PVC) plastics. Its major consumer use is in moth repellents and toilet deodorant blocks.

1-Methylnaphthalene and 2-methylnaphthalene are naphthalene-related compounds. 1-Methylnaphthalene is a clear liquid and 2-methylnaphthalene is a solid; both can be smelled in air and in water at very low concentrations.

1-Methylnaphthalene and 2-methylnaphthalene are used to make other chemicals such as dyes and resins. 2-Methylnaphthalene is also used to make vitamin K.

What happens to naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene when they enter the environment?

❑ Naphthalene enters the environment from industrial and domestic sources, and from accidental spills.

❑ Naphthalene can dissolve in water to a limited degree and may be present in drinking water from wells close to hazardous waste sites and landfills.

❑ Naphthalene can become weakly attached to soil or pass through soil into underground water.

❑ In air, moisture and sunlight break it down within 1 day. In water, bacteria break it down or it evaporates into the air.

❑ Naphthalene does not accumulate in the flesh of animals or fish that you might eat.

❑ 1-Methylnaphthalene and 2-methylnaphthalene are expected to act like naphthalene in air, water, or soil because they have similar chemical and physical properties.

How might I be exposed to naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene?

❑ Breathing low levels in outdoor air.

❑ Breathing air contaminated from industrial discharges or smoke from burning wood, tobacco, or fossil fuels.

❑ Using or making moth repellents, coal tar products, dyes or inks could expose you to these chemicals in the air.

❑ Drinking water from contaminated wells.

❑ Touching fabrics that are treated with moth repellents containing naphthalene.

❑ Exposure to naphthalene, 1-methylnaphthalene and 2-methylnaphthalene from eating foods or drinking beverages is unlikely.

How can naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene affect my health?

Exposure to large amounts of naphthalene may damage or destroy some of your red blood cells. This could cause you to have too few red blood cells until your body replaces the destroyed cells. This condition is called hemolytic anemia. Some symptoms of hemolytic anemia are fatigue, lack of appetite, restlessness, and pale skin. Exposure to large amounts of naphthalene may also cause nausea, vomiting, diarrhea, blood in the urine, and a yellow color to the skin. Animals sometimes develop cloudiness in their eyes after swallowing high amounts of naphthalene. It is not clear whether this also develops in people. Rats and mice that breathed naphthalene vapors daily for a lifetime developed irritation and inflammation of their nose and lungs. It is unclear if naphthalene causes reproductive effects in animals; most evidence says it does not.

There are no studies of humans exposed to 1-methylnaphthalene or 2-methylnaphthalene.

Mice fed food containing 1-methylnaphthalene and 2-methylnaphthalene for most of their lives had part of their lungs filled with an abnormal material.

How likely are naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene to cause cancer?

There is no direct evidence in humans that naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene cause cancer. However, cancer from naphthalene exposure has been seen in animal studies. Some female mice that breathed naphthalene vapors daily for a lifetime developed lung tumors. Some male and female rats exposed to naphthalene in a similar manner also developed nose tumors.

Based on the results from animal studies, the Department of Health and Humans Services (DHHS) concluded that naphthalene is reasonably anticipated to be a human carcinogen. The International Agency for Research on Cancer (IARC) concluded that naphthalene is possibly carcinogenic to humans. The EPA determined that naphthalene is a possible human carcinogen (Group C) and that the data are inadequate to assess the human carcinogenic potential of 2-methylnaphthalene.

How can naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene affect children?

Hospitals have reported many cases of hemolytic anemia in children, including newborns and infants, who either ate naphthalene mothballs or deodorants cakes or who were in close contact with clothing or blankets stored in naphthalene mothballs.

Naphthalene can move from a pregnant woman's blood to the unborn baby's blood. Naphthalene has been detected in some samples of breast milk from the general U.S. population, but not at levels that are expected to be of concern.

There is no information on whether naphthalene has affected development in humans. No developmental abnormalities were observed in the offspring from rats, mice, and rabbits fed naphthalene during pregnancy.

We do not have any information on possible health effects of 1-methylnaphthalene or 2-methylnaphthalene on children.

How can families reduce the risks of exposure to naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene?

❏ Families can reduce the risks of exposure to naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene by avoiding smoking tobacco, generating smoke during cooking, or using fireplaces or heating appliances in the their homes.

❏ If families use naphthalene-containing moth repellents, the material should be enclosed in containers that prevent vapors from escaping, and kept out of the reach from children.

❏ Blankets and clothing stored with naphthalene moth repellents should be aired outdoors to remove naphthalene odors and washed before they are used.

❏ Families should inform themselves of the contents of air deodorizers that are used in their homes and refrain from using deodorizers with naphthalene.

Is there a medical test to determine whether I've been exposed to naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene?

Tests are available that measure levels of these chemicals and their breakdown products in samples of urine, feces, blood, maternal milk, or body fat. These tests are not routinely available in a doctor's office because they require special equipment, but samples can be sent to special testing laboratories. These tests cannot determine exactly how much naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene you were exposed to or predict whether harmful effects will occur. If the samples are collected within a day or two of exposure, then the tests can show if you were exposed to a large or small amount of naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene.

Has the federal government made recommendations to protect human health?

The EPA recommends that children not drink water with over 0.5 parts per million (0.5 ppm) naphthalene for more than 10 days or over 0.4 ppm for any longer than 7 years. Adults should not drink water with more than 1 ppm for more than 7 years. For water consumed over a lifetime (70 years), the EPA suggests that it contain no more than 0.1 ppm naphthalene.

The Occupational Safety and Health Administration (OSHA) set a limit of 10 ppm for the level of naphthalene in workplace air during an 8-hour workday, 40-hour workweek. The National Institute for Occupational Safety and Health (NIOSH) considers more than 500 ppm of naphthalene in air to be immediately dangerous to life or health. This is the exposure level of a chemical that is likely to impair a worker's ability to leave a contaminate area and therefore, results in permanent health problems or death.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2005. Toxicological Profile for Naphthalene, 1-Methylnaphthalene, and 2-Methylnaphthalene (Update). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

LEAD

CAS # 7439-92-1

Agency for Toxic Substances and Disease Registry ToxFAQs **June 1999**

This fact sheet answers the most frequently asked health questions (FAQs) about lead. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to lead can happen from breathing workplace air or dust, eating contaminated foods, or drinking contaminated water. Children can be exposed from eating lead-based paint chips or playing in contaminated soil. Lead can damage the nervous system, kidneys, and reproductive system. Lead has been found in at least 1,026 of 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is lead?

(Pronounced lĕd)

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead can be found in all parts of our environment. Much of it comes from human activities including burning fossil fuels, mining, and manufacturing.

Lead has many different uses. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays.

Because of health concerns, lead from gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years.

What happens to lead when it enters the environment?

☐ Lead itself does not break down, but lead compounds are changed by sunlight, air, and water.

☐ When lead is released to the air, it may travel long distances before settling to the ground.

☐ Once lead falls onto soil, it usually sticks to soil particles.

☐ Movement of lead from soil into groundwater will depend on the type of lead compound and the characteristics of the soil.

☐ Much of the lead in inner-city soils comes from old houses painted with lead-based paint.

How might I be exposed to lead?

☐ Eating food or drinking water that contains lead.

☐ Spending time in areas where lead-based paints have been used and are deteriorating.

☐ Working in a job where lead is used.

☐ Using health-care products or folk remedies that contain lead.

☐ Engaging in certain hobbies in which lead is used (for example, stained glass).

How can lead affect my health?

Lead can affect almost every organ and system in your body. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the reproductive system. The effects are the same whether it is breathed or swallowed.

At high levels, lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect the memory. Lead may cause anemia, a disorder of the blood. It can also damage the male reproductive system. The connection between these effects and exposure to low levels of lead is uncertain.

How likely is lead to cause cancer?

The Department of Health and Human Services has determined that lead acetate and lead phosphate may reasonably be anticipated to be carcinogens based on studies in animals. There is inadequate evidence to clearly determine lead's carcinogenicity in people.

How can lead affect children?

Small children can be exposed by eating lead-based paint chips, chewing on objects painted with lead-based paint, or swallowing house dust or soil that contains lead.

Children are more vulnerable to lead poisoning than adults. A child who swallows large amounts of lead may develop blood anemia, severe stomachache, muscle weakness, and brain damage. A large amount of lead might get into a child's body if the child ate small pieces of old paint that contained large amounts of lead. If a child swallows smaller amounts of lead, much less severe effects on blood and brain function may occur. Even at much lower levels of exposure, lead can affect a child's mental and physical growth.

Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. These effects are more common if the mother or baby was exposed to high levels of lead.

How can families reduce the risk of exposure to lead?

Avoid exposure to sources of lead. Do not allow children to chew or mouth painted surfaces that may have been painted with lead-based paint (homes built before 1978). Run your water for 15 to 30 seconds before drinking or cooking with it. This will get rid of lead that may have leached out of pipes. Some types of paints and pigments that are used as make-up or hair coloring contain lead. Keep these kinds of products away from children. Wash children's hands and faces often to remove lead dusts and soil, and regularly clean the house of dust and tracked in soil.

Is there a medical test to show whether I've been exposed to lead?

A blood test is available to measure the amount of lead in your blood and to estimate the amount of your exposure to lead. Blood tests are commonly used to screen children for lead poisoning. Lead in teeth and bones can be measured with X-rays, but this test is not as readily available. Medical treatment may be necessary in children if the lead concentration in blood is higher than 45 micrograms per deciliter (45 µg/dL).

Has the federal government made recommendations to protect human health?

The Centers for Disease Control and Prevention (CDC) recommends that children ages 1 and 2 be screened for lead poisoning. Children who are 3 to 6 years old should be tested for lead if they have never been tested for lead before and if they receive services from public assistance programs; if they live in or regularly visit a building built before 1950; if they live in or visit a home built before 1978 that is being remodeled; or if they have a brother, sister, or playmate who has had lead poisoning. CDC considers children to have an elevated level of lead if the amount in the blood is 10 µg/dL.

The EPA requires lead in air not to exceed 1.5 micrograms per cubic meter (1.5 $\mu g/m^3$) averaged over 3 months. EPA limits lead in drinking water to 15 µg per liter.

The Occupational Health and Safety Administration (OSHA) develops regulations for workers exposed to lead. The Clean Air Act Amendments of 1990 banned the sale of leaded gasoline. The Federal Hazardous Substance Act bans children's products that contain hazardous amounts of lead.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for lead. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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POLYCHLORINATED BIPHENYLS

Division of Toxicology ToxFAQs™ **February 2001**

This fact sheet answers the most frequently asked health questions (FAQs) about polychlorinated biphenyls. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Polychlorinated biphenyls (PCBs) are a mixture of individual chemicals which are no longer produced in the United States, but are still found in the environment. Health effects that have been associated with exposure to PCBs include acne-like skin conditions in adults and neurobehavioral and immunological changes in children. PCBs are known to cause cancer in animals. PCBs have been found in at least 500 of the 1,598 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are polychlorinated biphenyls?

Polychlorinated biphenyls are mixtures of up to 209 individual chlorinated compounds (known as congeners). There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs have no known smell or taste. Many commercial PCB mixtures are known in the U.S. by the trade name Aroclor.

PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment and can cause harmful health effects. Products made before 1977 that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and old microscope and hydraulic oils.

What happens to PCBs when they enter the environment?

❑ PCBs entered the air, water, and soil during their manufacture, use, and disposal; from accidental spills and leaks during their transport; and from leaks or fires in products containing PCBs.

❑ PCBs can still be released to the environment from hazardous waste sites; illegal or improper disposal of industrial wastes and consumer products; leaks from old electrical transformers containing PCBs; and burning of some wastes in incinerators.

❑ PCBs do not readily break down in the environment and thus may remain there for very long periods of time. PCBs can travel long distances in the air and be deposited in areas far away from where they were released. In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments. PCBs also bind strongly to soil.

❑ PCBs are taken up by small organisms and fish in water. They are also taken up by other animals that eat these aquatic animals as food. PCBs accumulate in fish and marine mammals, reaching levels that may be many thousands of times higher than in water.

How might I be exposed to PCBs?

❑ Using old fluorescent lighting fixtures and electrical devices and appliances, such as television sets and refrigerators, that were made 30 or more years ago. These items may leak small amounts of PCBs into the air when they get hot during operation, and could be a source of skin exposure.

❑ Eating contaminated food. The main dietary sources of PCBs are fish (especially sportfish caught in contaminated lakes or rivers), meat, and dairy products.

❑ Breathing air near hazardous waste sites and drinking contaminated well water.

❑ In the workplace during repair and maintenance of PCB transformers; accidents, fires or spills involving transformers, fluorescent lights, and other old electrical devices; and disposal of PCB materials.

How can PCBs affect my health?

The most commonly observed health effects in people exposed to large amounts of PCBs are skin conditions such as acne and rashes. Studies in exposed workers have shown changes in blood and urine that may indicate liver damage. PCB exposures in the general population are not likely to result in skin and liver effects. Most of the studies of health effects of PCBs in the general population examined children of mothers who were exposed to PCBs.

Animals that ate food containing large amounts of PCBs for short periods of time had mild liver damage and some died. Animals that ate smaller amounts of PCBs in food over several weeks or months developed various kinds of health effects, including anemia; acne-like skin conditions; and liver, stomach, and thyroid gland injuries. Other effects of PCBs in animals include changes in the immune system, behavioral alterations, and impaired reproduction. PCBs are not known to cause birth defects.

How likely are PCBs to cause cancer?

Few studies of workers indicate that PCBs were associated with certain kinds of cancer in humans, such as cancer of the liver and biliary tract. Rats that ate food containing high levels of PCBs for two years developed liver cancer. The Department of Health and Human Services (DHHS) has concluded that PCBs may reasonably be anticipated to be carcinogens. The EPA and the International Agency for Research on Cancer (IARC) have determined that PCBs are probably carcinogenic to humans.

How can PCBs affect children?

Women who were exposed to relatively high levels of PCBs in the workplace or ate large amounts of fish contaminated with PCBs had babies that weighed slightly less than babies from women who did not have these exposures. Babies born to women who ate PCB-contaminated fish also showed abnormal responses in tests of infant behavior. Some of these behaviors, such as problems with motor skills and a decrease in short-term memory, lasted for several years. Other studies suggest that the immune system was affected in children born to and nursed by mothers exposed to increased levels of PCBs. There are no reports of structural birth defects caused by exposure to PCBs or of health effects of PCBs in older children. The most likely way infants will be exposed to PCBs is from breast milk. Transplacental transfers of PCBs were also reported In most cases, the benefits of breast-feeding outweigh any risks from exposure to PCBs in mother's milk.

How can families reduce the risk of exposure to PCBs?

❏ You and your children may be exposed to PCBs by eating fish or wildlife caught from contaminated locations. Certain states, Native American tribes, and U.S. territories have issued advisories to warn people about PCB-contaminated fish and fish-eating wildlife. You can reduce your family's exposure to PCBs by obeying these advisories.

❏ Children should be told not play with old appliances, electrical equipment, or transformers, since they may contain PCBs.

❏ Children should be discouraged from playing in the dirt near hazardous waste sites and in areas where there was a transformer fire. Children should also be discouraged from eating dirt and putting dirty hands, toys or other objects in their mouths, and should wash hands frequently.

❏ If you are exposed to PCBs in the workplace it is possible to carry them home on your clothes, body, or tools. If this is the case, you should shower and change clothing before leaving work, and your work clothes should be kept separate from other clothes and laundered separately.

Is there a medical test to show whether I've been exposed to PCBs?

Tests exist to measure levels of PCBs in your blood, body fat, and breast milk, but these are not routinely conducted. Most people normally have low levels of PCBs in their body because nearly everyone has been environmentally exposed to PCBs. The tests can show if your PCB levels are elevated, which would indicate past exposure to above-normal levels of PCBs, but cannot determine when or how long you were exposed or whether you will develop health effects.

Has the federal government made recommendations to protect human health?

The EPA has set a limit of 0.0005 milligrams of PCBs per liter of drinking water (0.0005 mg/L). Discharges, spills or accidental releases of 1 pound or more of PCBs into the environment must be reported to the EPA. The Food and Drug Administration (FDA) requires that infant foods, eggs, milk and other dairy products, fish and shellfish, poultry and red meat contain no more than 0.2-3 parts of PCBs per million parts (0.2-3 ppm) of food. Many states have established fish and wildlife consumption advisories for PCBs.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2000. Toxicological profile for polychlorinated biphenyls (PCBs). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-498-0093. ToxFAQs^{TM} Internet address is http://www.atsdr.cdc.gov/toxfaq.html . ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

APPENDIX F

ELECTRONIC DATABASE INFORMATION

APPENDIX F

ELECTRONIC DATABASE INFORMATION
West 61st Street Tennis Court Area Site (BCP Site No. C231059)

1. Location of the site:

   The entire Property is currently known as the West 61st Street Site. Addresses applicable to the Property may include 218-240 West 61st Street and 229-251 West 60th Street. There will be no individual address for the development on the Tennis Court Area Site.

2. A. Current site owner: West End Enterprises, LLC and West 60th Street Associates, LLC.

   B. Party implementing the Site Management Plan: West End Enterprises, LLC and West 60th Street Associates, LLC.

3. Site summary:

   The Tennis Court Area Site (BCP Site No. C231059) is a 0.346-acre portion of an approximately 1.44-acre Property located mid-block on West 60th Street and West 61st Street between 10th Avenue (Amsterdam Avenue) and 11th Avenue (West End Avenue), in New York, New York.

4. Current status of remedial activity:

   The West 61st Street Tennis Court Area Site was remediated in accordance with the NYSDEC-approved Remediation Work Plan and addenda under Brownfield Cleanup Agreement (BCA) Index #A2-0580-0107, Site #C231059. Remedial action work on Tennis Court Area Site began in July 2006, and was completed in November 2009. A Site Management Plan (SMP) was prepared to manage residual contamination on the Tennis Court Area Site in perpetuity or until extinguishment of the Environmental Easement.

5. Contact name and phone number of person knowledgeable about the Environmental Easement's requirements:

   Jesse Hiney
   Attorney at Law
   Paul, Hastings, Janofsky & Walker, LLP
   75 East 75th Street
   New York, NY 10022-3205
   (212) 318-6578

APPENDIX G

SITE INSPECTION AND CERTIFICATION FORMS

SITE COVER INSPECTION FORM
West 61st Street Tennis Court Area Site (BCP Site No. C231059)
West 61st Street, New York, NY

Inspector: ____________________

Date: ____________________

1. Landscaped areas:

Adequate top soil cover present?

Signs of erosion?

Recommended corrective action:

2. Outdoor paving (tennis court):

Note any signs of cracking or other damage:

Note any areas where greater than 25% of surface is cracked/damaged:

Recommended corrective action:

Comments (attach photos/sketches to illustrate any damage noted): ____________________

SITE-WIDE INSPECTION FORM
West 61st Street Tennis Court Area Site (BCP Site No. C231059)
West 61st Street, New York, NY

Inspector: ____________________________________

Date: ____________________________________

1. Site Use Restrictions

No on-site vegetable gardens?

No groundwater withdrawal for potable/non-potable use?

Restricted residential use maintained?

2. Site Cap

Note the date that the annual site cap inspection was performed:

Repairs made as noted during inspection?

3. Soil Management

Note the date(s) of any soil disturbance activities conducted during the past year:

Proper soil management procedures implemented (cite appropriate close-out reports)?

4. Recordkeeping

Check that the following records/reports are being maintained/completed (note report/log dates as appropriate):

1) Annual site cap inspection log

2) Close-out report(s) for soil disburbance activities (including manifests for soil disposal)

5. Comments

(Note any deficiencies and recommendations for corrective actions.)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
INSTITUTIONAL AND ENGINEERING CONTROLS CERTIFICATION FORM

SITE DETAILS

SITE NO.	**C231059**
SITE NAME:	**West 61st Street Site, Tennis Court Area Site**
SITE ADDRESS:	West 61st Street, New York, NY
ZIP CODE:	10023
CITY/TOWN:	Manhattan
COUNTY:	New York
CURRENT USE:	Residential and Commercial

CURRENT CERTIFICATION FREQUENCY: EVERY 1 YEAR

VERIFICATION OF SITE DETAILS

		YES	NO
1.	Are the SITE DETAILS above, correct?	☐	☐
	If NO, are changes handwritten above or included on a separate sheet?	☐	
2.	Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
3.	Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
4.	Has a change of use occurred since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
5.	Has any new information come to your attention to indicate that assumptions made in the qualitative exposure assessment for offsite contamination are no longer valid (applies to non-significant threat sites subject to ECL 27-1415.7(c)?	☐	☐
	If YES, is the new information or evidence that new information has been previously submitted included with this certification?	☐	
6.	Are the assumptions in the qualitative exposure assessment still valid (must be certified every five years for non-significant threat sites subject to ECL 27-1415.7(c)?	☐	☐
	If NO, are changes in the assessment included with this certification:	☐	☐

Description of Institutional/Engineering Control	**Control Certification**
	YES
ENVIRONMENTAL EASEMENT	☐
DEED RESTRICTIONS	☐
OTHER CONTROLS	
COVER MATERIAL	☐

CONTROL CERTIFICATION STATEMENT

For each institutional or engineering control listed above, I certify by checking “Yes” that all of the following statements are true:

(a) the institutional control and/or engineering control employed at this site is unchanged from the date the control was put in-place, or last approved by the Department;’

(b) nothing has occurred that would impair the ability of such control to protect public health and the environment;

(c) nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control; and

(d) access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control.

(e) if a financial assurance mechanism is required under the remedial work plan for the site, the mechanism remains valid and sufficient for their intended purpose under the work plan.

CONTROL CERTIFICATIONS
SITE NO. C-231059

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I ____ (print name), ______________________________________ (print business address), am certifying as ____ (Owner or Owner's Designated Site Representative (if the site consists of multiple properties, I have been authorized and designated by all site owners to sign this certification) for the Site named in the Site Details section of this form.

____ ____________________

Signature of Site Owner or Representative Rendering Certification Date

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QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I ____ (print name), ______________________________________ (print business address), am certifying as a Qualified Environmental Professional for the _________________ ________________ (Owner or Owner's Representative) for the Site named in the Site Details section of this form.

Signature of Qualified Environmental Professional, for Site Owner or Representative, Rendering Certification Stamp (if Required) Date

Certification of Institutional Controls/Engineering Controls (ICs/ECs)
Step-by-Step Instructions, Certification Requirements and Definitions

The Site owner, or Site owner's representative, and when necessary, a Professional Engineer (P.E.), or the Qualified Environmental Professional (QEP), must review and complete the IC/EC Certification Form, sign it, and return it, along with the Periodic Site Management Report, within 45 days of the date of this notice.

Institutional Controls (defined below) are organized into 4 categories: Governmental Controls (e.g., groundwater-use restrictions), Proprietary Controls (e.g., Environmental Easements), Enforcement and Permit Tools (e.g., Consent Orders), and Information Devices (e.g., State Registries of Inactive Hazardous Waste Sites). The Certification Form shows the Control information the Department has for this Site. Please use the following instructions to complete the IC/EC Certification.

I. Verification of Site Details (First and Second Boxes):

1. Verify the accuracy of information in the **Site Details** section by answering the 6 questions. If necessary, you and/or your P.E. or QEP may handwrite changes and submit supporting documentation.

II. Verification of Institutional/Engineering Controls (Third and Fourth Boxes):

1. Review the listed Institutional/Engineering Controls and select "YES" or "NO" for **Control Certification** for each IC/EC, based on Sections (a)-(d) of the **Control Certification Statement.**

2. If you cannot certify "Yes" for each Control, please continue to complete the remainder of this **Control Certification** form. Attach supporting documentation that explains why the **Control Certification** cannot be rendered, as well as a statement of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Control Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is conducted.

   If the Department concurs with the explanation, the corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued. If the Department has any questions or concerns regarding the completion of the certification, the Project Manager will contact you.

III. **Certification of Signature** (Fifth and Sixth Boxes):

1. WHY IC/EC Certification is required:
   The Section of the New York Environmental Conservation Law that includes the requirement of a periodic certification of IC(s) and EC(s) is as follows:

   For Environmental Restoration Projects: N.Y. Envtl Conserv. Law Section 56-0503 (Environmental restoration projects; state assistance)

   For State Superfund Projects: Envtl Conserv. Law Section 27-1415. (Remedial program requirements)

   Voluntary Cleanup Program: Applicable program guidance.

2. To determine WHO signs the **Control Certification,** please use the following table:

Signature Requirements for IC/EC Certification Form

Type of Control	Example of IC/EC	Required Signatures
IC	Environmental Easement Deed Restriction.	Site Owner or their designated representative, e.g., a Property Manager.
EC with no treatment system, or engineered caps.	Fence, Clean Soil Cover.	Site Owner or their designated representative, and QEP. (P.E. license not required)
EC that includes treatment systems, or engineered caps.	Pump & Treat System providing hydraulic control of a plume, Part 360 Cap.	Site Owner or his designated representative, and QEP with P.E. License.

3. WHERE to mail the signed Certification Form within 45 days of the date of the notice:

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21st Street
Long Island City, NY 11101-5407
Attn: Shaminder Chawla, Project Manager

Please note that extra postage may be required.

IV. Definitions:

"Engineering Control" (EC), means any physical barrier or method employed to actively or passively contain, stabilize, or monitor any hazardous waste or petroleum waste to ensure the long-term effectiveness of an inactive site remedial program or brownfield site remedial program or environmental restoration project, or to eliminate potential exposure pathways to any such hazardous waste or petroleum waste. Engineering Controls include, but are not limited to: pavement, caps, covers, subsurface barriers and slurry walls; building ventilation systems; fences, other barriers and access controls; and provision of alternative water supplies via connection to an existing public water supply, addition of treatment technologies to an existing public water supply, and installation of filtration devices on an existing private water supply.

"Institutional Control" (IC), means any non-physical means of enforcing a restriction on the use of real property, that limits human or environmental exposure to any hazardous waste or petroleum waste, restricts the use of groundwater; provides notice to potential owners, operators, or members of the public; or prevents actions that would interfere with the effectiveness of an inactive site remedial program or brownfield site remedial program or environmental restoration project, or with the effectiveness and/or integrity of Site Management activities at or pertaining to any site.

"Professional Engineer" means a person, including a firm headed by such a person, who holds a current New York State Professional Engineering license or registration, and has the equivalent of three (3) years of full-time relevant experience in site investigation and remediation of the type detailed in this Control Certification.

"Property Owner" means, for purposes of an IC/EC certification, the actual owner of a property. If the site has multiple properties with different owners, the Department requires that the owners be represented by a single representative to sign the certification.

"Oversight Document" means any document the Department issues pursuant to each Remedial Program (see below) to define the role of a person participating in the investigation and/or remediation of a site or area(s) of concern. Examples for the various programs are as follows:

BCP (after approval of the BCP application by DEC) – Brownfield Site Cleanup Agreement.
ERP (after approval of the ERP application by DEC) – State Assistance Contract.
Federal Superfund Sites - Federal Consent Decrees, Administrative Orders on Consent or Unilateral Orders issued pursuant to CERCLA.
Oil Spill Program – Order on Consent, or Stipulation pursuant to Article 12 of the Navigation Law (and the New York Environmental Conservation Law).
State Superfund Program – Administrative Consent Order.
VCP (after approval of the VCP application by DEC) – Voluntary Cleanup Agreement.
RCRA Corrective Action Sites - Federal Consent Decrees, Administrative Orders on Consent or permit conditions issued pursuant to RCRA.

“Qualified Environmental Professional” (QEP), means a person, including a firm headed by such a person, who possesses sufficient specific education, training, and experience necessary to exercise professional judgment, to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of a property or off-site areas, sufficient to meet the objectives and performance factors for the areas of practice identified by this guidance (DER10 Technical Guide).

1. Such a person must:
   i. Hold a current Professional Engineering or a Professional Geologist license or registration, and have the equivalent of three (3) years of full-time relevant experience in site investigation and remediation of the type detailed in this guidance; or
   ii. Be a site remediation professional licensed or certified by the federal government, a state; or a recognized, accrediting agency, to perform investigation or remediation tasks identified by this guidance, and have the equivalent of three (3) years of full-time relevant experience. Examples of such license or certification include, but are not limited to, the following titles:
      - Licensed Site Professional, by the State of Massachusetts
      - Licensed Environmental Professional, by the State of Connecticut
      - Qualified Environmental Professional, by the Institute of Professional Environmental Practice
      - Certified Hazardous Materials Manager, by the Institute of Hazardous Materials Management

2. The definition of QEP provided above does not preempt State Professional licensing or registration requirements such as those for a Professional Geologist, Engineer, or Site Remediation Professional. Before commencing work, a person should determine the applicability of State professional licensing or registration laws to the activities to be undertaken pursuant to section 1.5 (DER10 Technical Guide).

3. A person who does not meet the above definition of a QEP under the foregoing definition may assist in the conduct of all appropriate investigation or remediation activities in accordance with this document is such person is under the supervision or responsible charge of a person meeting the definition provided above.

“Remedial Party” means any person or persons, as defined in 6NYCRR 375, who executes, or is otherwise subject to, an oversight document (State Superfund, BCP, ERP or VCP Program). For purposes of this guidance, remedial party also includes:

1. Any person or persons who is performing the investigation and/or remediation, or has control over the person (for example, contractor or consultant) who is performing the investigation and/or remediation, including, without limitation, an owner, operator or volunteer; and

2. The DER for State-funded investigation and/or remediation activities.

“Site Management” (SM) means the activities included in the last phase of the remediation of a site, in accordance with a Site Management Plan, which continue until the remedial action objectives for the project are met and the site can be closed-out. Site Management includes the management of the institutional and engineering controls required for a site, as well as the implementation of any necessary long-term monitoring and/or operation and maintenance of the remedy. (Formerly referred to as Operation and Maintenance (O&M)).

"Site Management Plan" (SMP) means a document which details the steps necessary to assure that the institutional and engineering controls required for a site are in-place, and any physical components of the remedy are operated, maintained and monitored to assure their continued effectiveness, developed pursuant to Section 6 (DER10 Technical Guide).

"Site Owner" means the actual owner of a site. If the site has multiple owners of multiple properties with ICs and/or ECs, the Department requires that the owners designate a single representative for IC/EC Certification activities.

"Site Owner's Designated Representative" means a person, including a firm headed by such a person, who has been designated in writing by the Site Owner(s) to complete and sign the Institutional and Engineering Controls Certification Form.

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APPENDIX H

QUALITY ASSURANCE PROJECT PLAN

West 61st Street Tennis Court Area Site

Block 1152, Part of Lot 13

NEW YORK, NEW YORK

Quality Assurance Project Plan

AKRF Project Number: 10321

NYSDEC BCP Site No.: C231059

Prepared for:

West 60th Street Associates, LLC
West End Enterprises, LLC
64-35 Yellowstone Boulevard
Forest Hills, NY 11375

Prepared by:

AKRF Engineering, P.C.
440 Park Avenue South
New York, NY 10016
212-696-0670

DECEMBER 2009

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TABLES

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) describes the protocols and procedures that will be followed during activities performed under the Site Management Plan (SMP) at the West 61st Street Tennis Court Area Site in New York, New York (Site). The Site is being managed under the oversight of the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) under the Brownfield Cleanup Program (BCP) (Site No. C231059). The objective of the QAPP is to provide for Quality Assurance (QA) and maintain Quality Control (QC) of environmental sampling and analysis conducted under the SMP. Adherence to the QAPP will ensure that defensible data will be obtained.

2.0 PROJECT TEAM

The project team will be professional/technical personnel and subcontractors. All field personnel and subcontractors will have completed a 40-hour training course and updated 8-hour refresher course that meet the Occupational Safety and Health Administration (OSHA) requirements of 29 CFR Part 1910. The following sections describe the key project personnel and their responsibilities.

2.1 PROJECT DIRECTOR

The project director will be responsible for the general oversight of all aspects of the project, including scheduling, budgeting, data management and decision-making regarding the field program. The project director will communicate regularly with all members of the project team, NYSDEC, NYSDOH, West 60th Street Associates, LLC, and West End Enterprises, LLC to ensure a smooth flow of information between involved parties.

2.2 PROJECT MANAGER

The project manager will be responsible for directing and coordinating all activities performed under the SMP including preparation of reports and participation in meetings with NYSDEC, NYSDOH and/or West 60th Street Associates, LLC and West End Enterprises, LLC.

2.3 FIELD TEAM LEADER

The field team leader will be responsible for supervising the daily sampling and health and safety activities in the field and will ensure adherence to the work plan and Construction Health and Safety Plan (CHASP) and will report to the project manager on a regular basis regarding daily progress and any deviations from the work plan. The field team leader will be a qualified, responsible person, able to act professionally and promptly during soil sampling activities.

2.4 PROJECT QUALITY ASSURANCE/QUALITY CONTROL OFFICER

The Quality Assurance/Quality Control (QA/QC) Officer will be responsible for adherence to the QAPP and will review the procedures with all personnel prior to commencing any fieldwork and will conduct periodic Site visits to assess implementation of the procedures. The QA/QC officer will also be responsible for performing a data usability review for laboratory analytical results, as described in Section 5.0 of this QAPP.

2.5 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL OFFICER

The laboratory QA/QC officer will be responsible for quality control procedures and checks in the laboratory and ensuring adherence to laboratory protocols. He/she will track the movement of samples from the time they are checked in at the laboratory to the time that analytical results are issued. He/she will conduct a final check on the analytical calculations and sign off on the laboratory reports. The laboratory QA/QC officer will be a representative of a qualified laboratory where the samples will be analyzed.

3.0 STANDARD OPERATING PROCEDURES

The following sections describe the standard operating procedures (SOPs) for the field activities included in the SMP. During these operations, safety monitoring will be performed as described in the site-specific CHASP and all field personnel will wear appropriate personal protective equipment.

3.1 SOIL SAMPLING

Soil samples will be collected to characterize imported soil, soil in excavation areas for waste disposal and soil management purposes, and to document conditions at the bottom of excavated areas (endpoint samples) below the residual management zone (discussed in the SMP). Soil samples for imported soil will be collected, analyzed and approved by NYSDEC prior to arrival on-Site. Waste characterization samples will be collected by advancing borings to the anticipated soil removal depth for each given excavation. Endpoint samples will be collected from the bottom of the excavation areas using the excavator bucket.

Soil borings will be advanced using a direct push probe (e.g., Geoprobe) rig or hand auger, depending on accessibility. If using a direct push probe, soil samples will be collected using a two-foot long, 2-inch diameter stainless steel split spoon or a four-foot long, 2-inch diameter, macro-core piston rod sampler fitted with an acetate liner. Soil samples from borings advanced using a hand auger will be collected directly from the hand auger barrel. Split spoon/macro-core samples will be split lengthwise and hand auger samples will be extruded or shaken from the barrel onto plastic sheeting for inspection and logging. Logging of the samples will consist of: describing the soil according to the modified Burmister soil classification system; describing any evidence of contamination (e.g., oil-like or tar-like NAPL, staining, sheens, odors); and screening for organic vapors using a photoionization detector (PID).

Waste characterization samples will consist of both grab and composite samples collected across the proposed excavation interval. Endpoint samples will consist of one grab sample collected at the final depth of the each excavation area. Imported material will be tested via collection of one grab sample and one composite sample per 500 cubic yards of material from each source. If more than 1,000 cubic yards of soil are imported from a given off-site, non-virgin soil source area, and both samples of the first 1,000 cubic yards meet the soil cleanup objectives defined in the SMP, the sample collection frequency will be reduced to one composite sample for every 2,500 cubic yards of additional soil from the same source, up to 5,000 cubic yards. For sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided that all earlier samples meet the above limits. Native material from a virgin quarry source need not be sampled prior to use as backfill on the Site, provided that detailed information regarding site history and chemical components of the quarry materials is available. If this detailed information is not available, samples will be collected for laboratory analysis as specified above.

The soil samples slated for analysis will be collected into laboratory-supplied containers, sealed and labeled, and placed in an ice-filled cooler. The samples will be analyzed by New York State Department of Health Environmental Laboratory Approval Program (NYSDOH-ELAP) certified laboratories following NYSDEC Analytical Services Protocol (ASP), with Category B deliverables for the imported and endpoint samples and Category A deliverables for the waste characterization samples. Anticipated analytical parameters are summarized in Table 1 of Section 4.2. The analytical parameters are subject to change based on the requirement of the selected soil disposal facility; any other changes would require NYSDEC approval.

All soil sampling equipment (hand auger, probe rods, split spoon/macro-core sampler) will be decontaminated between sampling locations. The decontamination procedures are described in Section 3.2.

3.2 DECONTAMINATION OF SAMPLING EQUIPMENT

All sampling equipment will be either dedicated or decontaminated between sampling locations. The decontamination procedure will be as follows:

1. Scrub using tap water/Simple Green® mixture and bristle brush.
2. Rinse with tap water.
3. Scrub again with tap water/ Simple Green® and bristle brush.
4. Rinse with tap water.
5. Rinse with distilled water.
6. Air-dry the equipment, if possible.

Decontamination will be conducted on plastic sheeting (or equivalent) that is bermed to prevent discharge to the ground.

3.3 MANAGEMENT OF INVESTIGATION DERIVED WASTE

It is anticipated that investigation-derived waste (IDW) will include soil cuttings, personal protective equipment (PPE), and decontamination liquids. All IDW will be containerized in Department of Transportation (DOT)-approved 55-gallon drums. The drums will be sealed at the end of each work day and labeled with the date, the well or boring number(s), the type of waste (i.e., drill cuttings, decontamination water) and the consultant’s point-of-contact. Waste characterization soil samples for drum disposal will be collected from the drums, as required by the intended disposal facilities. Grab samples will be collected from drums containing decontamination liquids, and composite samples will be collected from drums containing drill cuttings. The samples will be analyzed for appropriate parameters as required by the intended disposal facility. All drums will be labeled "pending analysis" until laboratory data is available. All IDW will be disposed of or treated according to applicable local, state and federal regulations.

4.0 SAMPLING AND LABORATORY PROCEDURES

4.1 SOIL SAMPLING

Soil sampling will be conducted according to the following procedures:

- Decontaminate any soil sampling equipment to be used as described in Section 3.2 of this QAPP.
- Advance the sampling device (hand auger, split spoon, macro-core, or excavator bucket) to the desired sample depth.
- Retrieve the sampler and place it on plastic sheeting. If using a hand auger, push or shake the sample out of the auger barrel, minimizing disturbance to the extent feasible. If using a macro-core or split spoon samples, split the sample lengthwise to allow inspection. For the macro-core sampler, this will require cutting the acetate liner. If using the excavator bucket

to collect a post remediation sample, retrieve the sample from material that is not in direct contact with the sides of the bucket. The sample can be collected directly from the bucket using the designate sampling container.

- Inspect the soil core/sample for visual evidence of contamination including staining, sheens, odor and/or the presence of tar-like or oil-like material.
- Create small holes in the core at one-foot intervals using a sampling spoon (or similar) and place the PID probe in the hole to obtain an organic vapor concentration measurement. For samples collected directly from the excavator bucket, collect an organic vapor reading by creating a small hole in the top of the sample after it has been placed in the sample jar.
- Characterize the sample according to the modified Burmister soil classification system.
- For waste characterization soil borings, place an aliquot of soil from each sample interval in labeled sealed plastic bag for later compositing, and select the required number of grab samples from each boring at evenly space intervals. Waste characterization samples slated for VOC analysis should be collected by placing an undisturbed aliquot of soil from the depth interval exhibiting the greatest evidence of contamination directly into the sample jar. For post-delineation samples, place the collected sample directly into the sample jar.
- After selecting the samples that will be analyzed in the laboratory, fill the required laboratory-supplied sample jars with the soil from the selected sampling location or labeled sealable plastic bags. Composite samples should be collected by combining the aliquots collected from each sample interval into one plastic bag, gently mixing the soil, and transferring the resulting composite sample into the required jars. Seal and label the sample jars as described in Section 4.2 of this QAPP and place in an ice-filled cooler.
- Record boring number, sample depth and sample observations (evidence of contamination, PID readings, soil classification) in field log book and boring log data sheet, if applicable.

4.2 LABORATORY METHODS

Table 1 summarizes the laboratory methods that will be used to analyze field samples as well as the sample container type, preservation, and applicable holding times.

A New York State NYSDOH-ELAP laboratory certified to perform NYSDEC ASP will be used for all chemical analyses in accordance with DER-10 2.1(b) and 2.1(f), i.e., Category B Deliverables and ELAP Certification will be required for confirmatory (endpoint) samples and Category A laboratory data deliverables will be required for all other analyses (e.g., waste characterization sampling).

Additional analysis will be included for quality control measures, as required by the Category B sampling techniques. These samples will include equipment rinsate blanks, trip blanks, matrix spike/matrix spike duplicates (MS/MSD), and duplicate/blind duplicate samples at a frequency of one sample per 20 field samples collected. The trip blanks will be analyzed for VOCs only.

Table 1 – Laboratory Analytical Methods for Field Samples

Matrix	Analysis	EPA Method	Bottle Type	Preservative	Hold Time
Potential Soil Parameters	TCL VOCs	8260	2 oz. clear glass w/ septa top	4^{o}C	14 days
	TCL SVOCs	8270	Glass 4 oz. Jar	4^{o}C	7 days
	TCL Metals	6010	Glass 4 oz. Jar	4^{o}C	6 months
	Pesticides	8081	Glass 4 oz. Jar	4^{o}C	7 days
	PCBs	8082	Glass 4 oz. Jar	4^{o}C	7 days

4.3 SAMPLE HANDLING

4.3.1 Sample Identification

All samples will be consistently identified in all field documentation and log book, chain-of-custody documents and laboratory reports using an alpha-numeric code. Waste characterization samples collected from 55-gallon drums will be identified by the drum number (e.g., DRUM 1 or DRUM 2).

The designation “Tennis Court Area” will be added at the end of the designation for matrix spike/matrix spike duplicate samples. The field duplicate samples will be labeled with a dummy sample location to ensure that they are submitted as blind samples to the laboratory. The dummy identification will consist of the sample type followed by a letter. For duplicate soil boring samples, the sample depth will be the actual sample depth interval. Trip blanks and field blanks will be identified with “TB” and “FB”, respectively.

4.3.2 Sample Labeling and Shipping

Samples to be analyzed in the laboratory will be placed in the required laboratory-supplied sample containers. All sample containers will be provided with labels containing the following information:

- Project identification;
- Sample identification;
- Date and time of collection;
- Analyses to be performed; and
- Sampler’s initials.

Once the samples are collected and labeled, they will be placed in chilled coolers and stored in a cool area away from direct sunlight to await shipment to the laboratory. At the start and end of each workday, field personnel will add ice to the coolers as needed. Soil samples will be shipped or delivered to the laboratory at the end of each workday or as needed.

Soil or water samples will be prepared for shipment/delivery by placing each sample in a sealable plastic bag, then wrapping each container in bubble wrap to prevent breakage, adding freezer packs and/or fresh ice in sealable plastic bags and the chain-of-custody form. Samples will be shipped overnight (e.g., via Federal Express) or transported by a laboratory courier. All coolers shipped to the laboratory will include chain of custody (COC) documentation and a COC seal to ensure that the coolers remain sealed during delivery.

4.3.3 Sample Custody

Sample custody is an integral part of any laboratory or field operation. Sample custody procedures are designed to provide documentation of the preparation, handling, storage, delivery, and receipt of samples.

The chain-of-custody forms will be completed prior to sample shipment and contain the following information: project name; names of sampling personnel; sample number; date and time of collection and matrix; signatures of individuals involved in sample transfer; and the dates and times of transfers. Stringent chain-of-custody procedures will be adhered to at all times. All sample identifications and chain of custody entries will be crosschecked and verified before samples are either received or relinquished by any party.

Field personnel will be responsible for maintaining the sample coolers in a secured location until they are picked up and/or sent to the laboratory. The record of possession of samples from the time they are obtained in the field to the time they are delivered to the laboratory or shipped off-site will be documented on COC forms. The laboratory will document the receipt of the shipping containers by signing the chain of custody and recording the date and time of receipt, and assess the condition of the custody tape, shipping containers and any other potential discrepancies. The sample custodian will bring any discrepancies to the attention of the designated laboratory program administrator for reconciliation with the project Owner’s environmental consultant.

4.4 FIELD INSTRUMENTATION

Field personnel will be trained in the proper operation of all field instruments at the start of the field program. Instruction manuals for the equipment will be on file at the site for referencing proper operation, maintenance and calibration procedures. The equipment will be calibrated according to manufacturer specifications at the start of each day of fieldwork, if applicable. If an instrument fails calibration, the project manager or QA/QC officer will be contacted immediately to obtain a replacement instrument. Calibration will be documented in the field book or a separate calibration log to record the date of each calibration, any failure to calibrate and corrective actions taken. The PID will be calibrated each day using 100 parts per million (ppm) isobutylene standard gas.

5.0 DATA REVIEW

The QA/QC officer will conduct a review of all analytical data to assess the quality of the data and determine its usability. To assess the data, the QA/QC officer will:

- Ensure the data package is complete using established and agreed upon protocols.
- Check that all holding times were met.
- Check that all QC data (blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data) fall within the protocol required limits and specifications.
- Compare raw data with results provided in the data summary sheets and quality control verification forms.
- Check that correct data qualifiers were used.

The data review will identify any data deficiencies, analytical protocol deviations and quality control problems and discuss their effect on the data. Recommendations for resampling and/or reanalysis will be made, if required. As part of the laboratory deliverables, data validation will be performed in accordance with the USEPA ASP Category B guidelines. Since ASP Category B deliverables will be provided by the laboratory, a Data Usability Summary Report (DUSR) for data validation will not be prepared.