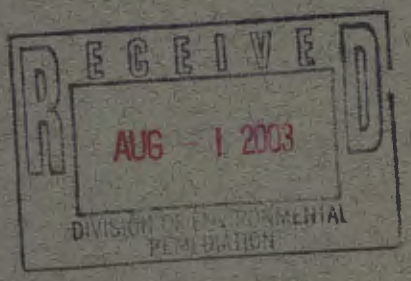
HISTORICAL ENVIRONMENTAL REPORTS

RIVER PLACE 1 AND 2



Prepared By:

Langan Engineering & Environmental Services, P.C.
21 Penn Plaza
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New York, New York 10001-2727

30 July 2003
582401

Langan
Engineering & Environmental Services

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New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation, Region 2
47-40 21st Street
Long Island City, New York 11101
(718) 482-4995 Fax: (718) 482-4954

Michael D. Zagata
Commissioner

April 25, 1996

Andrew J. Ciancia, P.E., Vice President
Woodward-Clyde Consultants
P.O.Box 290
201 Willowbrook Boulevard
Wayne, N.J. 07470

Dear Mr. Ciancia:

Re: Silverstein Property, 500-516 Twelfth Avenue, New York, N.Y.

The Division of Hazardous Waste Remediation (DHWR) has reviewed your letter report of January 30, 1996 which provided summary results of a limited field investigation conducted at the above referenced property in November 1995 for the possible presence of PCBs and or RCRA Characteristics Waste as a result of the site's past use as Manufactured Gas Plant.

Eighteen borings were drilled to the water table and sampled for coal gas wastes; five of these were subjected to the TCLP test. Shallow soil samples for PCBs analysis were also collected from the upper two feet in eleven of these plus seven other locations. The results did not show any evidence of PCBs disposal or the presence of MGP wastes or any any other hazardous wastes. The DHWR therefore does not plan to pursue this site any further.

The results however do show several volatile and semi-volatile organic compounds indicative of petroleum contamination. The site therefore is being referred back to the Oil Spill program for their review and action. Please contact Michael Mulqueen at 718 - 482-4933 for the cleanup or disposal of petroleum contaminated soils.

You are also advised that any soil that is disturbed, excavated, and removed from this property must be considered a non-hazardous industrial waste and any such work must be done pursuant to a proper health and safety plan and any transport of soil must first secure a proper Part 364 permit.

Sincerely,

Hari O. Agrawal, P.E.
Environmental Engineer

cc:
Rich Gardineer; Michael Mulqueen; James Van Hoesen, DHWR, Albany 7010

New York State Department of Environmental Conservation
47-40 21st Street, Long Island City, N.Y. 11101
Phone:(718) 482-4933 Fax:(718) 482-4954

Michael D. Zagata
Commissioner

August 2, 1996

Silverstein 42nd Associates, L.P., care of
Rosenman & Colin, LLP
575 Madison Avenue
New York, New York 10022-2585

Attn: Richard G. Leland, Esq.

Re: NYSDEC Spill # 95-04838, 500 - 516 Twelfth Avenue, New York, New York.

Dear Mr. Leland:

The DEC Oil Spill program has reviewed the underground storage tank removal and investigation for the above referenced site. The DEC Oil Spill program concerns itself with contaminants of regulated compounds associated with petroleum storage, and is therefore limited to the assessment concerning diesel fuel and gasoline at the above site. The site assessment with regards to the UST's revealed that the tanks were in good condition, and previously abandoned with water. The previous abandonment is most likely the source of a petroleum release which was addressed by excavation of soils around the tanks. The installation of subsequent groundwater observation wells revealed that the petroleum release has had minimal impact to groundwater and the fate and transport modeling for volatile organic hydrocarbons indicates that there will be no impact to offsite receptors.

It should be noted that the site does contain high concentrations of Poly Nuclear Aromatic Hydrocarbons (PAH's) that are bound to the soils. These PAH's were deposited during former site activities that are not regulated by DEC since they failed to meet the criteria of Part 371 Listed or Characteristic Wastes. Silverstein 42nd Associates, L.P. has agreed to address the presence of PAH's with a site specific health and safety plan and a health risk evaluation. It is our understanding that you will be discussing this matter with the NYC Health Department.

As a result of these findings, Spill # 95-04838 is closed, requiring no further action. If for some unforseen circumstance, this spill impacts any resources of New York State, or impacts public health and welfare, then more investigation or remediation may be required.

If you have any questions regarding the content of this letter, please do not hesitate to contact me at (718) 482-4933 X 7121.

Sincerely,

Michael Mulqueen
Engineering Geologist
Div. of Spills Management - Reg.2

cc:R. Austin, Reg. 2 DEC Spills Management
R. Gardineer, Reg. 2 DEC Hazardous Waste Remediation
H. Agrawal, Reg. 2 DEC Hazardous Waste Remediation
File-SILVER4.WPD
A. Lent - ECKLAND CONSULTANTS

The City of New York

DEPARTMENT OF ENVIRONMENTAL PROTECTION

EXECUTIVE OFFICES
59-17 JUNCTION BLVD., 19TH FLOOR, CORONA, NEW YORK 11368-5107

JOEL A. MIELE, SR., P.E., COMMISSIONER

(718) 595-6565 FAX: (718) 595-3525

Richard G. Leland
Rosenman & Colin LLP
575 Madison Avenue
New York, NY 10022-2585

October 9, 1996

Dear Mr. Leland:

In response to your request, Department of Environmental Protection has reviewed the documents sent to us regarding the Silverstein Properties at 500-516 Twelfth Avenue in Manhattan and performed a site visit. The following documents prepared by Woodward-Clyde Consultants, Inc. were reviewed: Results of Environmental Investigation Field Activities (July 10, 1995, Human Health and Environmental Risk Evaluation (August 19, 1996), Health and Safety Guidelines for Foundation Construction (July 16, 1996), and Underground Storage Tank Closure Report (July 1995). *DEP has conducted this review solely to provide your client with objective and informed comments and recommendations with respect to the documents provided. DEP has no jurisdiction or approval authority over the documents. Moreover, DEP assumes no liability with respect to any of the recommendations or statements made in this letter or your client's implementation, or failure to implement the same.*

The conclusions and recommendations are contingent on your representation that little excavation will occur, and the building will be emplaced on a concrete surface slab, and are as follows. Several soil boring samples were taken from the site . The soil sample results revealed low levels of volatile organic compounds (VOCs), elevated levels of semi-volatile organic compounds (SVOCs), and also some metals at slightly elevated levels. There were no polychlorinated biphenyl's detected. No samples were determined to fall within the classification criteria for hazardous wastes.

Several groundwater monitoring wells were installed on site. The groundwater samples retrieved from these wells revealed low levels of VOCs, low levels of SVOCs, and low levels of metals in the groundwater. No floating product, including coal tar was found in any of the wells. The groundwater at the site is not used for drinking purposes, and is not anticipated to be used as drinking water. DEP is not aware of any intended use of the ground water, such as a car wash or garden watering. DEP recommends further evaluation should any of the ground water be contemplated for use.

.... DEP recommends the following remedial measures for the soil. The soil represented by borings SB26A, SB28B, SB31B, and SB32B should be excavated and disposed of in accordance with all applicable regulations. A suitable method of odor and dust suppression should be used during excavation and staging for disposal, along with air monitoring. As a minimum, the soil represented by boring SB26A should be excavated to a depth of six feet, with a six foot radius from the original boring location. Soil borings SB28B, SB31B, and SB32B should be excavated to depth of eight feet, and six feet radially from the original boring location. If additional contaminated areas are noted during construction, they also should be disposed. Plans should be made to expedite excavated soil off-site quickly. All excavated areas should be replaced with clean fill. All areas of the site that will not be covered by buildings or pavement should be covered by two feet of clean fill.

The Health and Safety Plan (HASP) for the site was acceptable with the following caveats. The plan should include greater specificity regarding the odor and dust suppression techniques to be used on site. A full-time, on-site health and safety officer (HSO) should be assigned during construction. Any health and safety incidents involving chemical exposure should be reported to DEP immediately at (718) 595-6700.

The site inspection performed on September 30, 1996 revealed a flat surface covered with concrete in most areas and asphalt in other areas. Sixteen 55-gallon drums and a 50 cubic yard pile of dirt was observed in the NW corner of the property. One of the drums had a hazardous waste label dating back to 1995. Other drums had no labels, but were marked "drill cuttings" or similar terminology. This material should be disposed of expeditiously in accordance with NYS DEC regulations.

Lastly, note that compliance with all applicable regulations of NYSDEC, NYSDOH, NYCDOH and OSHA is necessary during all phases of this project.

Very truly yours,

Fredric L. Sachs
Assistant Commissioner
Bureau of Air, Noise, and Hazardous Materials

cc: Robert Avaltroni
Charles Sturcken
John Wuthenow
Steven Schmaler

UNDERGROUND STORAGE TANK CLOSURE REPORT

Silverstein 42nd Associates, L.P.
500-516 Twelfth Avenue
New York, NY 10036

Prepared For:

Silverstein 42nd Associates, L.P.
521 Fifth Avenue
New York, New York 10036

Prepared By:

Woodward-Clyde Consultants, Inc.
363 Seventh Avenue
New York, New York 10001

JULY 1995

5E04530

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*Documentation will be provided following the offsite disposal of the contaminated soil stockpile.

1.0 INTRODUCTION

This report describes activities relating to the closure by removal of three underground storage tank systems consisting of eighteen underground storage tanks at the Silverstein 42nd Associates, L.P. property located at 500-516 Twelfth Avenue New York, New York (Figure 1).

Currently located at the property is a parking lot operated by Edison Parking. City of New York, Department of Buildings correspondence indicates that the property was formerly owned by the Railway Express Agency , Inc. Two underground storage tank (UST) systems accounting for a total of sixteen tanks were described in the correspondence. Two additional oil tanks were located at the property during the removal of the initial sixteen tanks. The table below provides a status of the USTs located at the site in May 1995.

TANK SIZE	QUANTITY	CONTENTS
550	8	Gasoline/Water
550	8	Gasoline/Water
550	2	Oil/Water

The UST systems probably provided gasoline used by the Railway Express Agency motor vehicle fleet and stored petroleum products used in vehicle maintenance operations. We understand that all eighteen tanks were out of service prior to the purchase of the property by Silverstein 42nd Associates, L.P.

Fieldwork for the closure of the underground storage tank systems was conducted from May 8 through May 24, 1995. Woodward-Clyde Consultants, Inc. (WCCI) provided environmental oversight for the fieldwork conducted by American Hi-Tech, Inc. (AHT).

Appendix A contains the New York State Department of Environmental Conservation Petroleum Bulk Storage Application for the registration of the initial 16 underground storage tanks located at the property. Also contained in this Appendix is EPA Form 8700-12 (Notification of Regulated Waste Activity) required for the disposal of the liquid wastes stored in the tanks.

A photograph log and photographs of activities relating to work conducted at the property are located in Appendix B.

2.0 TANK CLOSURE AND SAMPLING BY AREA OF CONCERN

The tank closures are discussed by Area of Concern (AOC). The three AOCs are designated as follows: Area A - Eight 550 gallon gasoline tanks installed in 1960; Area B - Eight 550 gallon gasoline tanks closed in place in 1960; and Area C - Two 550 gallon oil tanks. See Figure 2.

2.1 AREA OF CONCERN A

Tank closure work at the property commenced on May 8, 1995 with the removal of the gasoline and water mixture remaining in the tanks. The concrete slab covering the tanks was then broken using a hydraulic hammer. On May 9, 1995 the concrete residue was removed from the excavation and stockpiled for disposal at an offsite facility. The soil located above the concrete tank vault was then excavated. The excavated soil exhibited no evidence of contamination based on its appearance, odor, and HNu photoionization detector readings. The soil was temporarily staged on the concrete surface adjacent to the excavation pending later use as backfill material. Following the removal of the soil overburden, the concrete vault containing the tanks was exposed. The hydraulic hammer was used to break into the concrete covering the tanks.

On May 10, 1995 six 550 gallon tanks were removed from the concrete vault. The remaining two 550 gallon tanks were removed on May 11, 1995. The base of the concrete vault was then broken with the hydraulic hammer and removed from the excavation. Soils containing petroleum constituents identified by their appearance, odor, and HNu photoionization detector readings were encountered in the excavation below and adjacent to the base of the concrete vault. Groundwater was encountered at a depth of approximately 7.5 feet. On May 12, 1995 this soil was excavated and stockpiled onsite for later disposal.

Post-excavation soil samples were collected from the base of the excavation walls at the points G1 - G8 as shown in Figure 3. The sampling locations were selected in accordance with New York State Department of Environmental Conservation Spill Prevention Operations

Technology Series (SPOTS) Memo #14 "Site Assessment at Bulk Storage Facilities," May 1991.

2.2 AREA OF CONCERN B

Work in AOC B began on May 8, 1995 with the removal of the concrete slab above the tanks. On May 9, 1995 the concrete overburden was stockpiled for later disposal at an offsite facility. The soil located above the concrete tank vault was excavated on May 15, 1995. The excavated soil exhibited no evidence of petroleum constituents based on its appearance, odor, and HNu photoionization detector readings. The soil was temporarily staged on the concrete surface adjacent to the excavation pending later use as backfill material. Following the removal of the soil overburden, the concrete vault containing the tanks was exposed. The tanks were partially filled with a gasoline/water mixture. The gasoline/water mixture was removed from the tanks prior to proceeding with the excavation. The hydraulic hammer was used to break into the concrete vault.

On May 16, 1995 eight 550 gallon tanks were removed from the concrete vault in which they were encased. The base of the concrete vault was then broken with the hydraulic hammer and removed from the excavation. Removal of the concrete was completed on May 17, 1995. Soils containing petroleum constituents identified by their appearance, odor and Hnu photoionization detector readings were encountered in the excavation below and adjacent to the base of the concrete vault. Groundwater was encountered at a depth of approximately 7.5 feet. On May 18, 1995 the soil was excavated and stockpiled onsite for later disposal.

Post-excavation soil samples were collected from the base of the excavation walls at the points G9 - G16 as shown in Figure 3. The sampling locations were selected in accordance with New York State Department of Environmental Conservation Spill Prevention Operations Technology Series (SPOTS) Memo #14 "Site Assessment at Bulk Storage Facilities," May 1991.

Two groundwater monitoring wells, MW-1D and MW-2, located within AOC B were sampled to determine the potential impact of the UST systems on the groundwater.

2.3 AREA OF CONCERN C

Two additional 550 gallon oil tanks were located on May 22,1995 by observing the exposed tanks fill covers. The concrete overburden was removed from above the tanks and stockpiled for later disposal. The excavated soil overburden and soil surrounding the tanks exhibited no evidence of contamination based on its appearance, odor, and HNu photoionization detector readings. Groundwater was encountered at a depth of approximately 7.5 feet. The soil was temporarily staged on the concrete surface adjacent to the excavation pending later use as backfill material. The tanks contained an oil/water mixture. The oil/water mixture was removed from the tanks prior to proceeding with the removal of the tanks.

Post-excavation soil samples were collected from the base of the excavation walls at the points WO1 - WO4 as shown in Figure 3. The sampling locations were selected in accordance with New York State Department of Environmental Conservation Spill Prevention Operations Technology Series (SPOTS) Memo #14 "Site Assessment at Bulk Storage Facilities," May 1991.

3.0 TANK CLEANING AND DISPOSAL

Residual product and water remaining in the tanks were pumped into a waste product tank truck for transportation and disposal offsite. The tanks were removed from the excavations, cut open and cleaned internally. The tanks were then transported offsite for disposal at Jacob Goldberg & Son, Inc. and Waste Control Service, Inc. disposal facilities. Prior to removing the tanks from the excavation and again before cutting the tanks, the tanks were monitored for hazardous vapors. The tanks were purged in accordance with the New York City Fire Prevention Code and API Standard 2015 (Safe Entry and Cleaning of Petroleum Storage Tanks).

Residual product disposal documentation, tank disposal documentation, and tank purging affidavits are provided in Appendix C.

4.0
SITE RESTORATION

The tank excavations were backfilled with both clean soil previously removed from the excavation and with imported fill. Initially, 3/4 inch stone was placed within the bottom of the excavation to a level above the water table. Plastic sheeting was then placed on the stone surface prior to backfilling with imported sand and previously excavated soil. The tank excavation area was then resurfaced with recycled concrete to provide a temporary road surface.

Imported fill load tickets are contained in Appendix D.

5.1 AREA OF CONCERN A

Eight post-excavation discrete soil samples were collected from the excavation at sample points G1 through G8 (Figure 3). Soil samples G6, G7 and G8 detected the presence of gasoline constituent compounds in excess of the New York State Toxicity Characteristic Leaching Procedure (TCLP) Alternative Guidance Values. The post-excavation soil samples were analyzed for the compounds listed in STARS Memo #1, Appendix B, Table 1. The soil sample analytical results are presented in Table 1. Laboratory analytical results are contained in Appendix F.

5.2 AREA OF CONCERN B

Eight post-excavation discrete soil samples were collected from the excavation at sample points G9 through G16 (Figure 3). Soil samples G9, G10, G13 and G14 detected the presence of gasoline constituent compounds in excess of the New York State Toxicity Characteristic Leaching Procedure (TCLP) Alternative Guidance Values. The post-excavation soil samples were analyzed for the compounds listed in STARS Memo #1, Appendix B, Table 1. The soil sample analytical results are presented in Table 2. Laboratory analytical results are contained in Appendix F.

Two groundwater samples were collected during the removal of the UST systems. The groundwater samples were obtained from monitoring wells MW-2 and MW-1D (Figure 3). Both groundwater samples contained gasoline constituent compounds in excess of the New York State Department of Environmental Conservation Groundwater Quality Criteria. The groundwater samples were analyzed for the compounds listed in STARS Memo #1, Appendix B, Table 1. The groundwater sample analytical results are presented in Table 4. Laboratory analytical results are contained in Appendix F.

5.3 AREA OF CONCERN C

Four post-excavation discrete soil samples were collected from the excavation at sample points WO1 through WO4 (Figure 3). Soil samples WO1 , WO2 and WO4 detected the presence of fuel oil constituent compounds in excess of the New York State Toxicity Characteristic Leaching Procedure (TCLP) Alternative Guidance Values. The post-excavation soil samples were analyzed for the compounds listed in STARS Memo #1, Appendix B, Table 2. The soil sample analytical results are presented in Table 3. Laboratory analytical results are contained in Appendix F.

6.0 SOIL CLASSIFICATION AND DISPOSAL

Approximately 50 cubic yards of soil containing petroleum constituents were removed from the tank excavations and stockpiled temporarily on site. This soil was placed on and covered with plastic to prevent the migration of the petroleum constituents. A soil sample was sent to the analytical laboratory for analysis. The soil disposal manifests will be provided for inclusion in Appendix F following disposal of the soil at an offsite disposal facility.

The concrete removed from the tank excavations was transported offsite to a recycling facility. Concrete disposal documentation is also included in Appendix F.

7.0
CONCLUSIONS AND RECOMMENDATIONS

Post-excavation soil sample analytical results indicate that residual concentrations of petroleum constituents remain in all Areas of Concern (Figure 4). The probable source of those constituents, the underground storage tank systems, has been removed. Approximately 50 cubic yards of impacted soil have been stockpiled on site and will be transported offsite for disposal following acceptance at an offsite disposal facility.

Based on the laboratory analytical data results, the petroleum constituents in the soil in the vicinity of the former gasoline tanks appear to be concentrated between Area of Concern A and Area of Concern B. A possible pathway for their presence in the soil could have been the fuel dispensing system formerly located between the two Areas of Concern.

The groundwater sample results indicate the presence of gasoline constituent compounds in monitoring wells MW-1D and MW-2 located in Area of Concern B.

Based on the previously discussed analytical results, WCCI recommends a site investigation be focused on the three Areas of Concern to determine the extent of the petroleum constituents in the soil caused by the former underground storage tank systems.

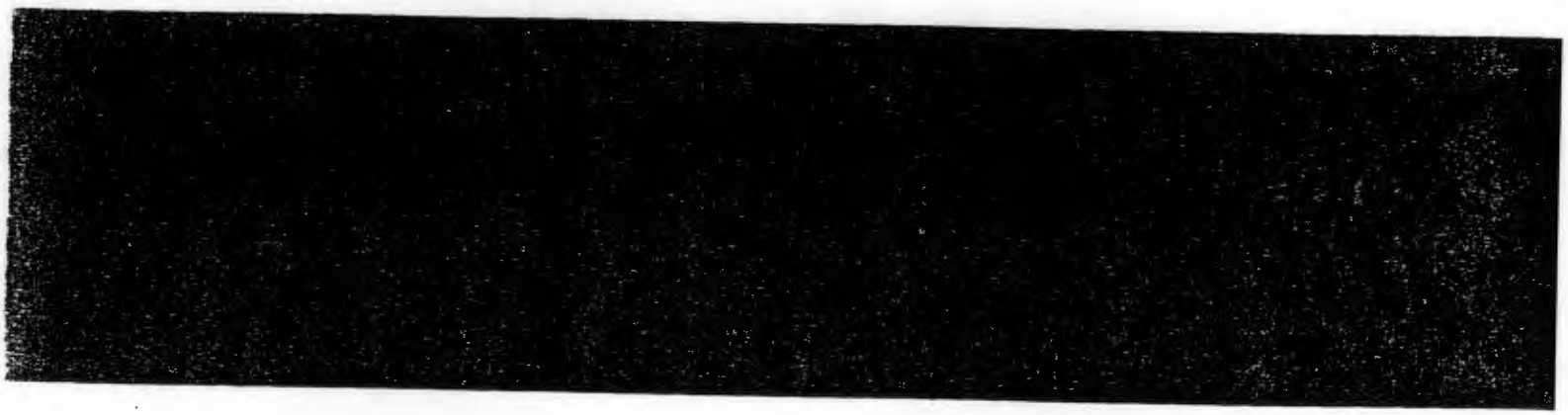


TABLE 1
Analytical Results, Soil: Area of Concern A
Silverstein Properties, Inc.
500-516 Twelfth Avenue
New York, New York 10036
Project No. 5E04530

SAMPLE NO.	NYS TCLP ALTERNATIVE GUIDANCE VALUES SOIL	G1 T505270-1			G2 T505270-2			G3 T505270-3			G4 T505270-4			G5 T505270-5			G6 T505270-6			G7 T505270-7			G8 T505270-8			FB051295 T505270-9		
SAMPLE ID																												
DEPTH		7.5 - 8.0			7.5 - 8.0			7.5 - 8.0			7.5 - 8.0			7.5 - 8.0			7.5 - 8.0			7.5 - 8.0			7.5 - 8.0					
SAMPLE COLLECTION DATE		12-May-95			12-May-95			12-May-95			12-May-95			12-May-95			12-May-95			12-May-95			12-May-95			12-May-95		
LABORATORY RECEIPT DATE		13-May-95			13-May-95			13-May-95			13-May-95			13-May-95			13-May-95			13-May-95			13-May-95			13-May-95		
MATRIX		SOIL			SOIL			SOIL			SOIL			SOIL			SOIL			SOIL			SOIL			Water		
UNITS	µg/kg	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
		pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q
Volatile Compounds																												
Benzene	14	0.63	--		0.65	--		0.62	--		0.71	--		0.76	--		30	***47***		32	--		32	--		0.5	--	
Ethylbenzene	100	0.63	--		0.65	2.2		0.62	2.4		0.71	--		0.75	--		30	***260***		32	56		32	***1500***		0.5	--	
Toluene	100	0.63	--		0.65	3.3		0.62	--		0.71	--		0.75	--		30	***220***		32	--		32	***150***		0.5	--	
m-Xylene	100	0.65	--		0.65	7.7		0.62	1.7		0.71	--		0.75	--		30	***1600***		32	71		32	***1700***		0.5	--	
o-Xylene	100	0.63	--		0.65	5.5		0.62	2.3		0.71	--		0.75	--		30	***680***		32	--		32	***440***		0.5	--	
p-Xylene	100	0.65	--		0.65	7.7		0.62	1.7		0.71	--		0.75	--		30	***1600***		32	71		32	***1700***		0.5	--	
Isopropylbenzene	100	0.63	--		0.66	1.2		0.62	--		0.71	--		0.75	--		30	***140***		32	--		32	***2200***		0.5	--	
n-Propylbenzene	100	0.63	--		0.65	--		0.62	--		0.71	--		0.75	--		30	***230***		32	93		32	***2100***		0.5	--	
p-Isopropyltoluene	100	0.63	--		0.65	--		0.62	--		0.71	--		0.75	--		30	***170***		32	--		32	--		0.5	--	
1,2,4-Trimethylbenzene	100	0.63	--		0.65	4.6		0.62	--		0.71	--		0.75	--		30	***5100***		32	***1300***		32	***3000***		0.5	--	
1,3,5-Trimethylbenzene	100	0.63	--		0.65	3.1		0.62	--		0.71	--		0.75	--		30	***1600***		32	***380***		32	***7100***		0.5	--	
n-Butylbenzene	100	0.63	--		0.65	--		0.62	--		0.71	--		0.75	--		30	***2000***		32	***170***		32	--		0.5	--	
sec-Butylbenzene	100	0.63	--		0.65	--		0.62	--		0.71	--		0.75	--		30	***250***		32	53		32	***2100***		0.5	--	
Naphthalene	200	0.63	--		0.65	--		0.62	--		0.71	--		0.75	--		30	***2100***		32	***430***		32	--		0.5	--	
Methyl Tertiary Butyl Ether	1000	0.63	--		0.65	--		0.62	--		0.71	--		0.75	--		30	--		32	--		32	--		0.5	--	
tert-Butylbenzene	100	0.63	--		0.66	--		0.62	--		0.71	--		0.75	--		30	--		32	--		32	--		0.5	--	
Total Volatile Compounds						35.3			8.1									15997			2624			21990				

Notes:
Bold & Italicized Numbers = Exceedence of Alternative Guidance Values
pql = practical quantification limit of method as reported by the analytical laboratory
conc = concentration
Q = Qualifier
J = Indicates an estimated value
-- = Not detected
µg/kg = micrograms per kilogram

Methodologies: Volatile organic compounds by EPA method 8021

NYS TCLP Alternative Guidance Values were obtained from STARS Memo #1.

TABLE 2
Analytical Results, Soil: Area of Concern B
Silverstein Properties, Inc.
500-516 Twelfth Avenue
New York, New York 10036
Project No. 5E04530

SAMPLE NO. / SAMPLE ID / DEPTH / SAMPLE COLLECTION DATE / LABORATORY RECEIPT DATE / MATRIX / UNITS	NYS TCLP ALTERNATIVE GUIDANCE VALUES SOIL µg/kg	G9 T505394-4 7.5 - 8.0 18-May-94 19-May-95 SOIL µg/kg			G10 T505394-5 7.5 - 8.0 18-May-94 19-May-95 SOIL µg/kg			G11 T505394-6 7.5 - 8.0 18-May-94 19-May-95 SOIL µg/kg			G12 T505394-7 7.5 - 8.0 18-May-94 19-May-95 SOIL µg/kg			G13 T505394-8 7.5 - 8.0 18-May-94 19-May-95 SOIL µg/kg			G14 T505394-9 7.5 - 8.0 18-May-94 19-May-95 SOIL µg/kg			G15 T505394-10 7.5 - 8.0 18-May-94 19-May-95 SOIL µg/kg			G16 T505394-11 7.5 - 8.0 18-May-94 19-May-95 SOIL µg/kg			FB051895S T505394-12 18-May-94 19-May-95 Water µg/kg		
		pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q
Volatile Compounds																													
Benzene	14	35	***160***		0.67	***18***		0.66	–		0.76	–		130	–		67	–		0.6	–		0.72	–		0.5	–	
Ethylbenzene	100	35	***400***		0.67	17		0.66	9.9		0.76	1		130	***2900***		67	–		0.6	–		0.72	–		0.5	–	
Toluene	100	35	***250***		0.67	13		0.66	1.2		0.76	–		130	***520***		67	***120***		0.6	–		0.72	–		0.5	–	
m-Xylene	100	35	***770***		0.67	94		0.66	34		0.76	7.6		130	***2500***		67	***420***		0.6	1.8		0.72	–		0.5	–	
o-Xylene	100	35	–		0.67	66		0.66	19		0.76	–		130	–		67	***640***		0.6	–		0.72	–		0.5	–	
p-Xylene	100	35	***770***		0.67	94		0.66	34		0.76	7.6		130	***2500***		67	***420***		0.6	1.8		0.72	–		0.5	–	
Isopropylbenzene	100	35	–		0.67	9.1		0.66	–		0.76	–		130	–		67	–		0.6	–		0.72	–		0.5	–	
n-Propylbenzene	100	35	–		0.67	3.9		0.66	–		0.76	–		130	–		67	–		0.6	–		0.72	–		0.5	–	
p-Isopropyltoluene	100	35	–		0.67	1.6		0.66	–		0.76	–		130	–		67	–		0.6	2.2		0.72	–		0.5	–	
1,2,4-Trimethylbenzene	100	35	–		0.67	32		0.66	–		0.76	–		130	–		67	–		0.6	1.8		0.72	1.3		0.5	–	
1,3,5-Trimethylbenzene	100	35	–		0.67	36		0.66	–		0.76	–		130	–		67	–		0.6	1.2		0.72	1.7		0.5	–	
n-Butylbenzene	100	35	–		0.67	3.2		0.66	–		0.76	–		130	–		67	–		0.6	5.3		0.72	–		0.5	–	
sec-Butylbenzene	100	35	–		0.67	3		0.66	–		0.76	–		130	–		67	–		0.6	–		0.72	–		0.5	–	
Naphthalene	200	35	–		0.67	12		0.66	–		0.76	–		130	–		67	–		0.6	4.4		0.72	–		0.5	–	
Methyl Tertiary Butyl Ether	1000	35	–		0.67	–		0.66	–		0.76	–		130	–		67	–		0.6	–		0.72	–		0.5	–	
tert-Butylbenzene	100	35	–		0.67	–		0.66	–		0.76	–		130	–		67	–		0.6	–		0.72	–		0.5	–	
Total Volatile Compounds			2350			406.8			96.1			16.6			8420			1600			16.5			3				

Notes:
Bold & Italicized Numbers = Exceedance of Alternative Guidance Values
pql = practical quantification limit of method as reported by the analytical laboratory
conc = concentration
Q = Qualifier
J = Indicates an estimated value
– = Not detected
µg/kg = microgrems per kilogram

Methodologies: Volatile organic compounds by EPA method 8021

NYS TCLP Alternative Guidance Values were obtained from STARS Memo #1.

TABLE 3
Analytical Results, Soil: Area of Concern C
Silverstein Properties, Inc.
500-516 Twelfth Avenue
New York, New York 10036
Project No. 5E04530

SAMPLE NO.	NYS TCLP ALTERNATIVE GUIDANCE VALUES SOIL	W01			W02			W03			W04			FB052395		
SAMPLE ID		T505450-1B			T505450-2B			T505450-3B			T505450-4B			T505450-5A		
DEPTH		7.5 - 8.0			7.5 - 8.0			7.5 - 8.0			7.5 - 8.0					
SAMPLE COLLECTION DATE		23-May-95			23-May-95			23-May-95			23-May-95			23-May-95		
LABORATORY RECEIPT DATE		24-May-95			24-May-95			24-May-95			24-May-95			24-May-95		
MATRIX		SOIL			SOIL			SOIL			SOIL			Water		
UNITS	µg/kg	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
		pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q
Volatile Compounds																
Benzene	14	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
Ethylbenzene	100	0.6	0.84		0.61	–		0.62	–		0.56	–		0.50	–	
Toluene	100	0.6	0.63		0.61	–		0.62	–		0.56	0.59		0.50	–	
o-Xylene	100	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
m&p-Xylene	100	1.2	–		1.20	–		1.20	–		1.10	–		1.00	–	
Isopropylbenzene	100	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
n-Propylbenzene	100	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
p-Isopropyltoluene	100	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
1,2,4-Trimethylbenzene	100	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
1,3,5-Trimethylbenzene	100	0.6	0.78		0.61	–		0.62	–		0.56	–		0.50	–	
n-Butylbenzene	100	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
sec-Butylbenzene	100	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
Naphthalene	200	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
Methyl Tertiary Butyl Ether	1000	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
tert-Butylbenzene	100	0.6	–		0.61	–		0.62	–		0.56	–		0.50	–	
Total Volatile Compounds			2.43	J								0.59				
Semi-Volatile Compounds																
Naphthalene	200	400	–		400	*720*		420	–			*2700*		10	–	
Acenaphthene	400	400	–		400	300	J	420	–			*4700*		10	–	
Fluorene	1000	400	–		400	380	J	420	–			*4000*		10	–	
Phenanthrene	1000	400	250	J	400	*3800*		420	57.0	J		*13000*		10	–	
Anthracene	1000	400	78	J	400	*1200*		420	–			*6100*		10	–	
Fluoranthene	1000	400	610		400	*4800*		420	87.0	J		*14000*		10	–	
Pyrene	1000	400	580		400	*5500*		420	81.0	J		*15000*		10	–	
Benzo (a) Anthracene	0.04	400	*370*	J	400	*3800*		420	55.0	J		*12000*		10	–	
Chrysene	0.04	400	*370*	J	400	*3600*		420	57.0	J		*10000*		10	–	
Benzo (b) Fluoranthene	0.04	400	*410*		400	*4800*		420	45.0	J		*10000*		10	–	
Benzo (k) Fluoranthene	0.04	400	*340*	J	400	*3000*		420	48.0	J		*3800*		10	–	
Benzo (a) Pyrene	0.04	400	*450*		400	*4100*		420	54.0	J		*9400*		10	–	
Indeno (1,2,3-cd) Pyrene	0.04	400	*310*	J	400	*2500*		420	–			*5500*		10	–	
Dibenz (a,h) Anthracene	0.04	400	–		400	*970*		420	–			*2300*		10	–	
Benzo (g,h,i) Perylene	0.04	400	*360*	J	400	*2600*		420	–			*5200*		10	–	
Total Semi-Volatile Compounds			4128			42070			482			117700				

Notes:

Bold & Italicized Numbers = Exceedence of Alternative Guidance Values
pql = practical quantification limit of method as reported by the analytical laboratory
conc = concentration
Q = Qualifier
J = Indicates an estimated value
– = Not detected
µg/kg = microgram per kilogram

Methodologies: Volatile organic compounds by EPA method 8021
Semi-volatile compounds by EPA method 8270
NYS TCLP Alternative Guidance Values were obtained from STARS Memo #1.

G:/SILVER/REPORT/TABLE-1C.XLS

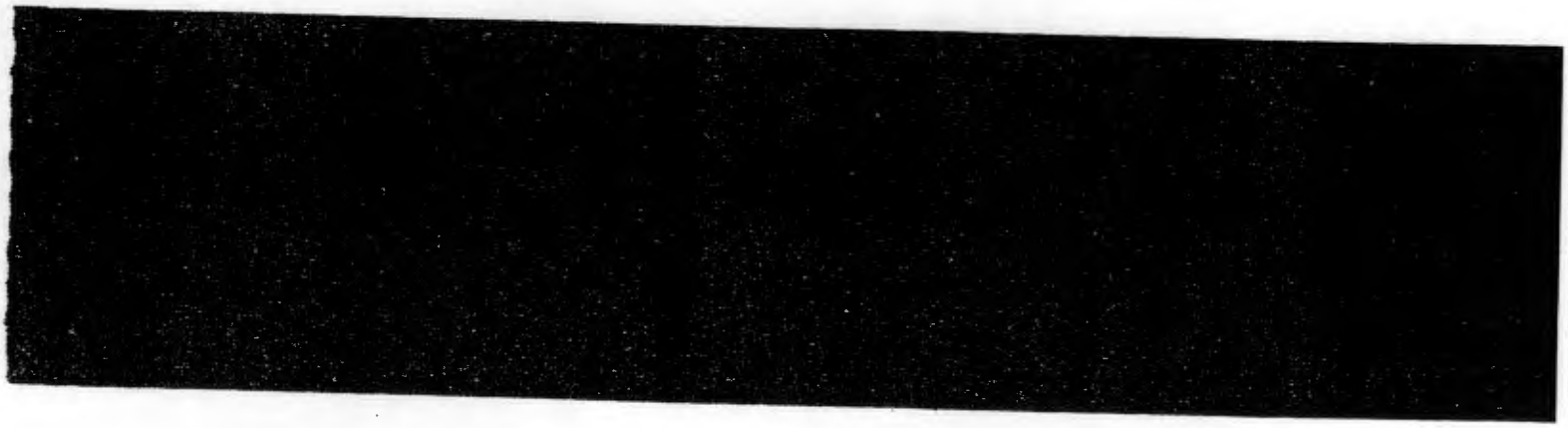
TABLE 4
Analytical Results; Groundwater Sampling
Silverstein Properties, Inc.
500-516 Twelfth Avenue
New York, New York 10036
Project No. 5E04530

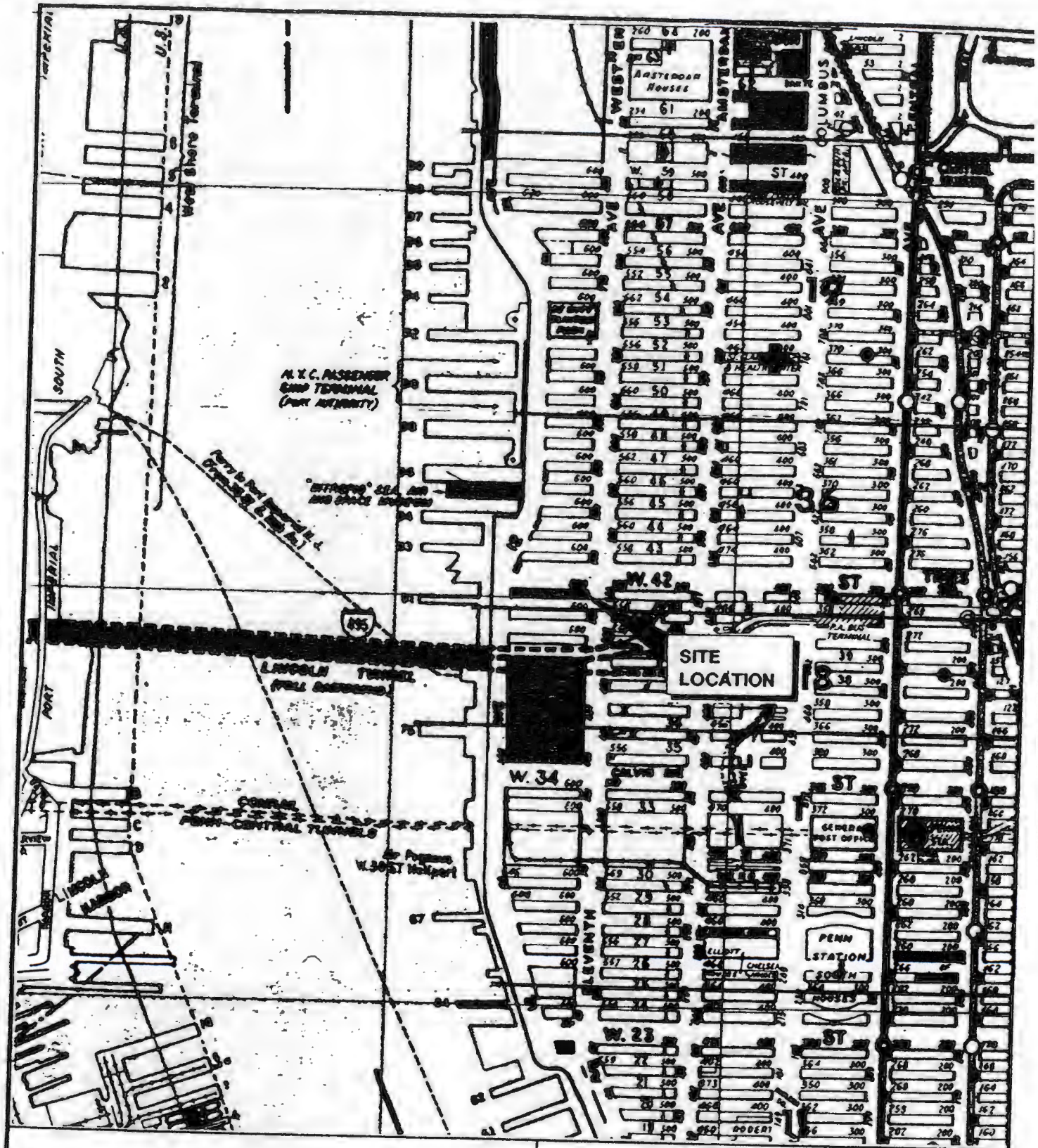
SAMPLE NO.	NYSDEC Water Quality Regulations Title 6, Chapter X Parts 700 - 705*	MW-2			MW-1D			FB051895			TB051895		
SAMPLE ID		T505394-1			T505394-2			T505394-3					
SAMPLE COLLECTION DATE		5/18/95			5/18/95			5/18/95			5/18/95		
LABORATORY RECEIPT DATE		5/19/95			5/19/95			5/19/95			5/19/95		
MATRIX		Water			Water			Water			Water		
UNITS	µg/l	µg/l			µg/l			µg/l			µg/l		
		POL	CONC	Q	POL	CONC	Q	POL	CONC	Q	POL	CONC	Q
ORGANIC COMPOUNDS													
VOLATILE ORGANIC COMPOUNDS													
Benzene	0.7	1	***67***		0.5	***1.3***		0.5	–		0.5	–	
n-Butylbenzene	5	1	***7.3***		0.5	1.8		0.5	–		0.5	–	
sec-Butylbenzene	5	1	–		0.5	–		0.5	–		0.5	–	
tert-Butylbenzene	5	1	–		0.5	–		0.5	–		0.5	–	
Ethylbenzene	5	1	***14***		0.5	3.8		0.5	–		0.5	–	
Isopropylbenzene	5	1	3.9		0.5	0.93		0.5	–		0.5	–	
p-Isopropyltoluene	5	1	–		0.5	0.58		0.5	–		0.5	–	
Naphthalene	10	1	***140***		0.5	***27***		0.5	–		0.5	–	
n-Propylbenzene	5	1	1.2		0.5	1.1		0.5	–		0.5	–	
Toluene	5	1	1.6		0.5	–		0.5	–		0.5	–	
1,2,4-Trichlorobenzene	5	1	3		0.5	***14***		0.5	–		0.5	–	
1,3,5-Trimethylbenzene	5	1	1.4		0.5	2.9		0.5	–		0.5	–	
m-Xylene	5	1	4		0.5	4.7		0.5	–		0.5	–	
o-Xylene	5	1	3.7		0.5	1.3		0.5	–		0.5	–	
p-Xylene	5	1	4		0.5	4.7		0.5	–		0.5	–	
Total Volatile Compounds			247.1			59.41			0			0	

Notes: ***Bold & Italicized Numbers*** = Exceedence of Alternative Guidance Values
pql = practical quantification limit of method as reported by the analytical laboratory
conc = concentration
Q = Qualifier
J = Indicates an estimated value
– = Not detected
µg/l = micrograms per liter

Methodologies: Volatile organic compounds by EPA method 8021

* NYSDEC Water Quality Regulations Title 6, Chapter X Parts 700 - 705 were obtained from STARS Memo #1.





0 1500 3000 FT

SCALE

MAP SOURCE:

MAP ENTITLED "BOROUGH OF THE MANHATTAN CITY OF NEW YORK" FROM THE HAGSTROM MAP COMPANY, DATED 1992.

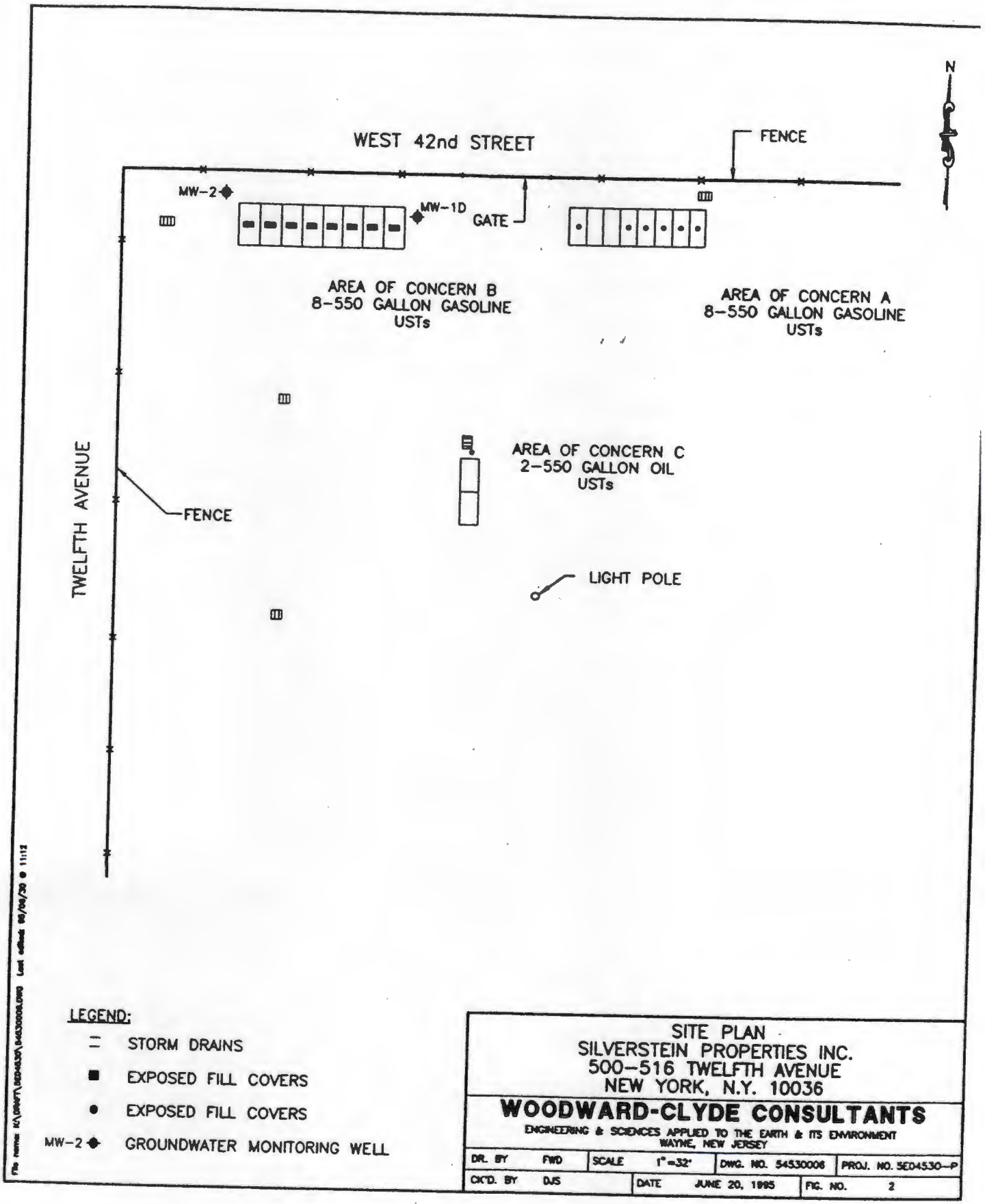
SITE LOCATION MAP
SILVERSTEIN PROPERTIES
500–516 TWELFTH AVENUE
NEW YORK, NEW YORK 10036

WOODWARD-CLYDE CONSULTANTS

ENGINEERING & SCIENCES APPLIED TO THE EARTH & IT'S ENVIRONMENT

WAYNE, NEW JERSEY

DR. BY:	BAS	SCALE:	AS SHOWN	PROJ. NO.:	5E04530
CK'D. BY:	DJS	DATE:	JUNE 7, 1995	FIG. NO:	1



LEGEND:

- STORM DRAINS
- EXPOSED FILL COVERS
- EXPOSED FILL COVERS
- MW-2 ◆ GROUNDWATER MONITORING WELL

SITE PLAN
SILVERSTEIN PROPERTIES INC.
500-516 TWELFTH AVENUE
NEW YORK, N.Y. 10036

WOODWARD-CLYDE CONSULTANTS

ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
WAYNE, NEW JERSEY

DR. BY	FWD	SCALE	1"=32'	DWG. NO. 54530006	PROJ. NO. 5ED4530-P
CK'D. BY	DJS	DATE	JUNE 20, 1995	FIG. NO.	2

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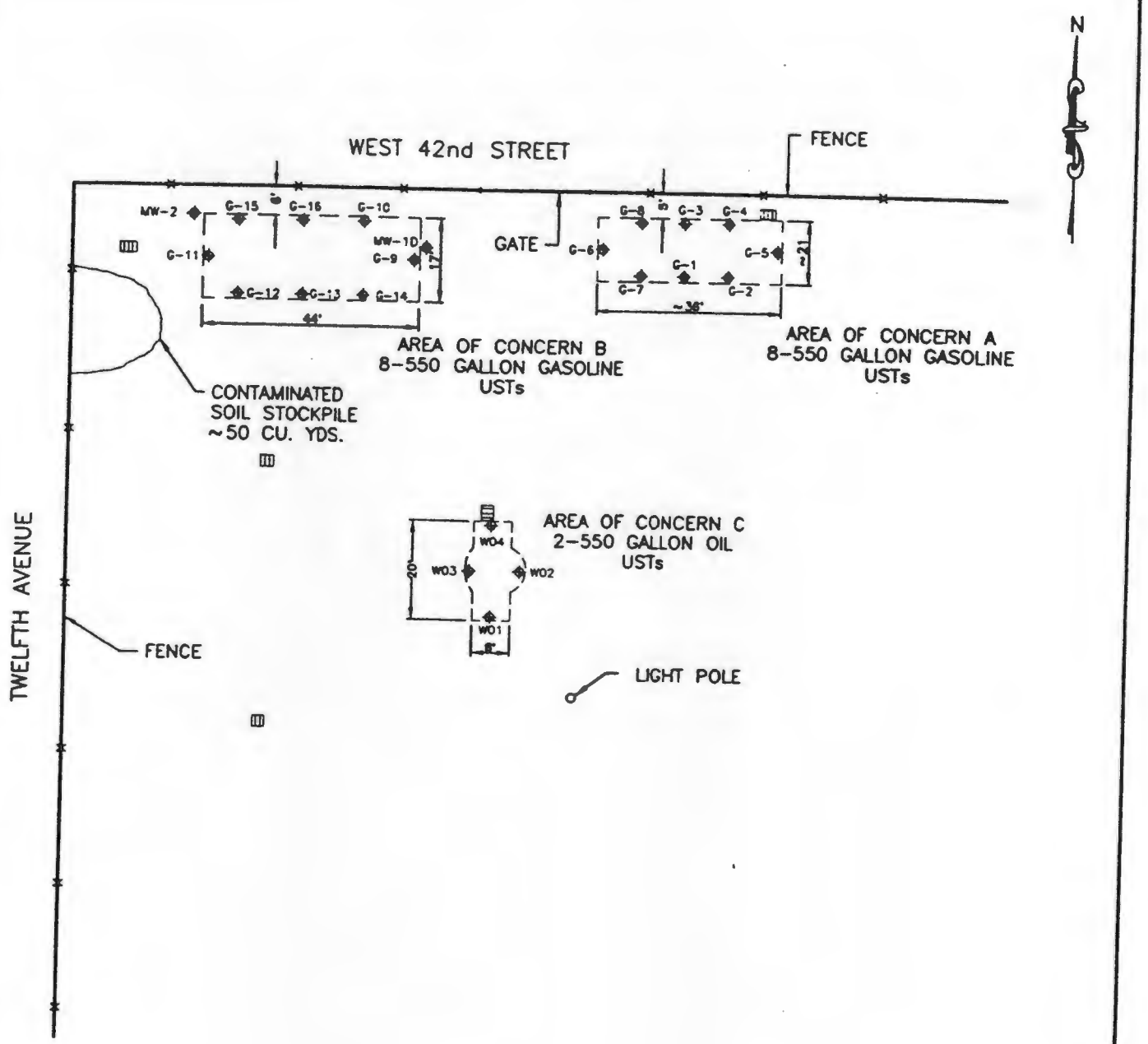

LEGEND:

G-10 ◆ SOIL SAMPLE LOCATION

STORM DRAINS

---- EXTENT OF EXCAVATION

MW-2 ◆ GROUNDWATER MONITORING WELL

SAMPLE LOCATION PLAN
SILVERSTEIN PROPERTIES INC.
500-516 TWELFTH AVENUE
NEW YORK, N.Y. 10036

WOODWARD-CLYDE CONSULTANTS

ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
WAYNE, NEW JERSEY

DR. BY	FWD	SCALE	1"=32'	DWG. NO. 54530007	PROJ. NO. 5ED4530-P
CK'D. BY	DJS	DATE	JUNE 20, 1995	FIG. NO.	3

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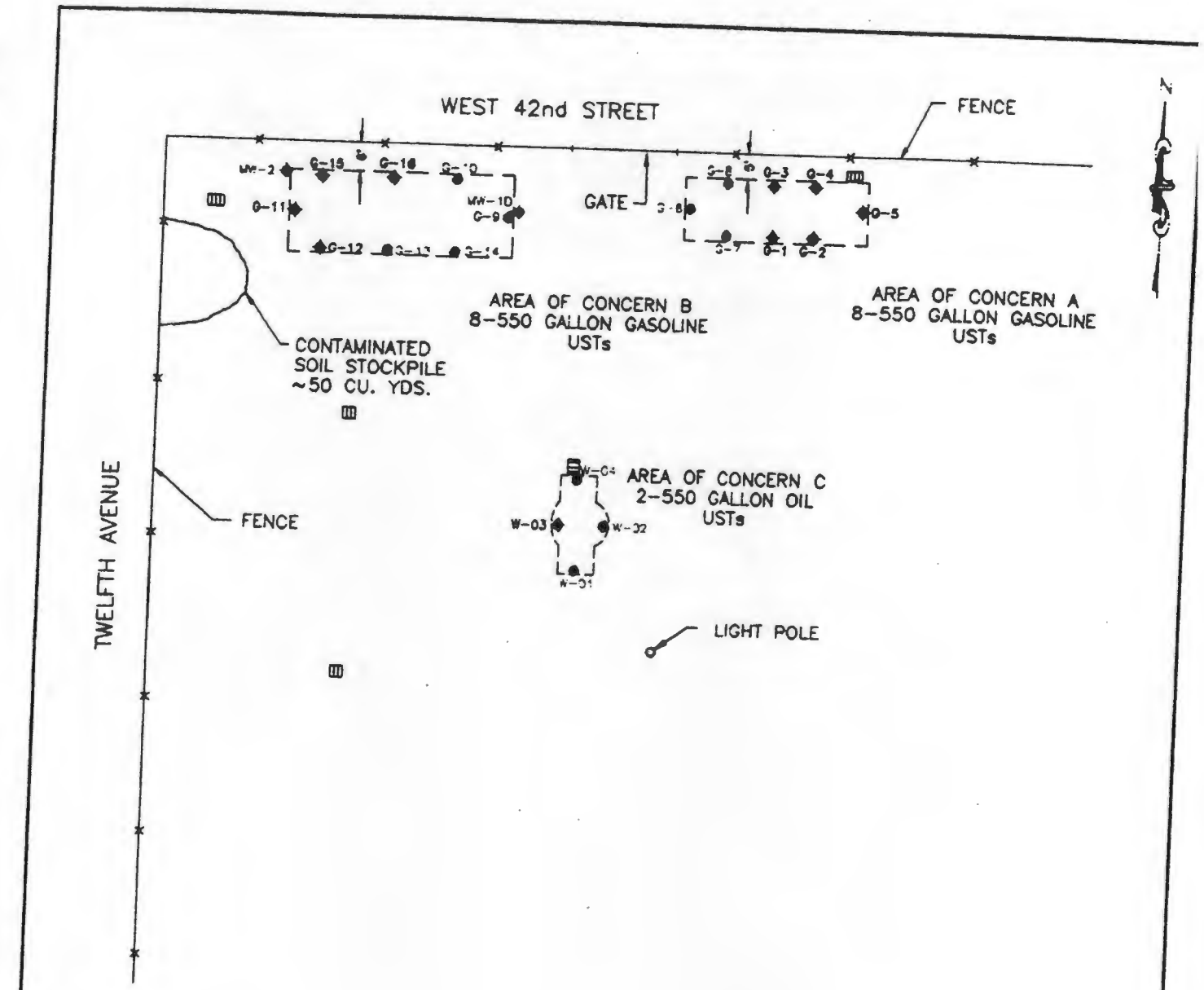


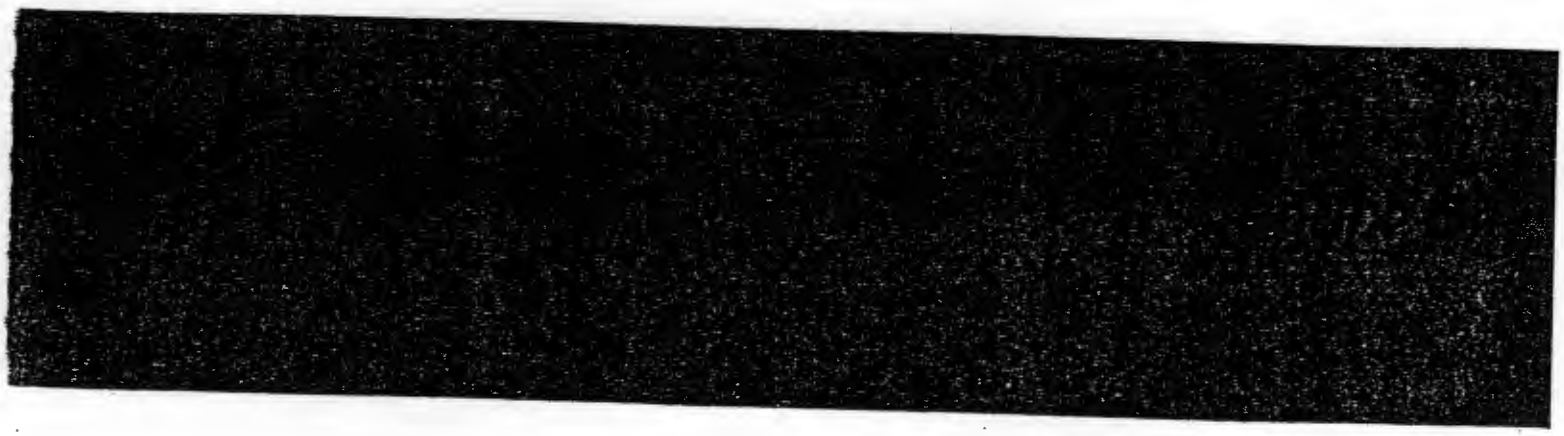
LEGEND:

- G-5 ◆ SOIL SAMPLE LOCATION
- G-13 ● SOIL SAMPLE IN EXCESS OF NYSDEC GUIDANCE VALUES
- STORM DRAINS
- ---- EXTENT OF EXCAVATION
- MW 2 ◆ GROUNDWATER SAMPLE IN EXCESS ON NYSDEC GROUNDWATER QUALITY CRITERIA

SAMPLES EXCEEDING NYSDEC GUIDANCE VALUES
SILVERSTEIN PROPERTIES INC.
500-516 TWELFTH AVENUE
NEW YORK, N.Y. 10036

WOODWARD-CLYDE CONSULTANTS
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
WAYNE, NEW JERSEY

DR. BY	FWD	SCALE	1"=32'	DWG. NO. 54530008	PROJ. NO. 5E04530-P
CK'D. BY	DJS	DATE	JUNE 20, 1995	FIG. NO.	4



DJS

Woodward-Clyde Consultants, Inc.
Engineering & sciences applied to the earth & its environment

May 1, 1995
5E04350 K

New York State Department of Environmental Conservation
Petroleum Bulk Storage Unit
47-40 21st. Street
Long Island City, New York 11101

RE: **Notification of Intent to Close by Removal USTs**
Edison Parking Lot
500 - 516 Twelfth Avenue
New York, NY 10036

To Whom It May Concern:

Enclosed is an application for Petroleum Bulk Storage to be issued Silverstein Properties, Inc. for the registration and removal of sixteen underground storage tanks located at the above-referenced property. Eight tanks were closed in place and replaced with eight new tanks in 1960. A check in the sum of $150 for registration of the eight new tanks from Woodward-Clyde Consultants, Inc. (WCCI) is also enclosed.

Work to close the sixteen USTs is scheduled to begin the week of May 8, 1995. If you have any questions please do not hesitate to contact the undersigned. Thank you for your cooperation in this matter.

Very truly yours,

Daniel J. Stettner

Daniel J. Stettner
Senior Staff Scientist

Attachments: Petroleum Bulk Storage Application - Initial
Petroleum Bulk Storage Application - Closure
Check

cc: R. Leland (Rosenmon & Colin)
A.J. Ciancia (WCCI, Wayne)
J.J. Java (WCCI, Wayne)
File

G:\silver\NOTIFYDC.DOC

New York Office
363 Seventh Avenue, 11th Floor • New York, New York 10001
212-926-2878 • 212-594-2118 • Fax 212-629-3298

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Petroleum Bulk Storage Program
Facility Information Report

Printed : 05/03/95

PBS # : 2-602201

Site : EDISON PARKING LOT
500-516 12TH AVENUE
NEW YORK, NY 10036

County : NEW YORK Town : NEW YORK CITY
Latitude : N Longitude : W
SPDES# : CBS# :
Site Type : Info Not Given.

Operator : BRIAN COLLINS (201) 643-2884
Emergency : BRIAN COLLINS (201) 643-2884

Site status : Under 1100 gal.
Total Active Tanks : 0
Active Capacity : 0 gals.

Reg Expires : 05/02/80
Last Inspection : / /
Cert Printed : / /

Site Errors : Complete
Owner Error : Minor Data Missing
Tank Errors : Major Data Missing

Owner : SILVERSTEIN PROPERTIES, INC.
521 FIFTH AVENUE
NEW YORK, NY 10175

Phone : (212) 551-7300
Owner Type : Corporate/Commercial

Mail : ROSENMAN & COLIN
575 MADISON AVENUE
NEW YORK, NY 10022-2585

Att : MR. RICHARD G. LELAND (212) 940-8700

TankNo	TankLoc	Stat	DateIn	Capac (G)	Product	TankType	TankInt	TankExt	PipeLoc	PipeType	PipeInt	PipeExt	SecCont	Leak	OverFil	Disp	LastTest	NextTest . TStat
001	4	3	00/00	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
002	4	3	00/00	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
003	4	3	00/00	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
004	4	3	00/00	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
005	4	3	00/00	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
006	4	3	00/00	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
007	4	3	00/00	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
008	4	3	00/00	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
009	4	3	05/60	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
010	4	3	05/60	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
011	4	3	05/60	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
012	4	3	05/60	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
013	4	3	05/60	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
014	4	3	05/60	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95
015	4	3	05/60	550	1	1	0	00	2	1	0	00	01	00	00	2		REMOVED : 05/95

93-19-1 (10/93)

NEW YORK STATE DEPARTMENT OF ENVIRONMENT[illegible] ...SERVATION
DIVISION OF SPILLS MANAGEMENT • BUREAU O[illegible] ...CE CONTROL

PETROLEUM BULK STORAGE APPLICATION

Pursuant to the Petroleum Bulk Storage Law, Article 17, Title 10 of ECL; and 6 NYCRR 612-614.

Please Type or Print Clearly and Complete All Items

(Continued on Reverse Side—Please Be Sure to Complete Section B)

SECTION A—See Instructions on Cover Sheet

PBS NUMBER

Indicate Other Existing DEC Numbers, if any, for this Facility:

CBS Number: N/A

SPDES Number: N/A

TRANSACTION TYPE (Check all that apply)
NOTE: Transaction Types 1, 2 and 5 require a fee.

1. ☐ Initial/New Facility
2. ☐ Change of Ownership
3. ☐ Substantial Tank Modification
4. ☒ Information Correction
5. ☐ Renewal

Geographical Locator for this Facility: (If known)

LATITUDE: DEG MIN SEC

LONGITUDE: DEG MIN SEC

FACILITY

NAME: Edison Parking Lot

LOCATION (Not P.O. Boxes): 500-516 Twelfth Avenue

LOCATION (Continued):

CITY/TOWN/VILLAGE: New York | STATE: NY | ZIP CODE: 10036

COUNTY: | TOWNSHIP OR CITY: Manhattan

NAME OF OPERATOR AT FACILITY: Brian Collins | FACILITY TELEPHONE NUMBER: (201) 643-2884

EMERGENCY CONTACT NAME: | EMERGENCY CONTACT PHONE NO.: ( )

OWNER

NAME: Silverstein Properties, Inc.

ADDRESS (Street and/or P.O. Box): 521 Fifth Avenue

CITY: New York | STATE: NY | ZIP CODE: 10175

FEDERAL TAX ID NO.: | OWNER TELEPHONE NUMBER: (212) 551-7300

TYPE OF OWNER (Check only one)
1 ☐ Private Resident 2 ☐ State Government 3 ☐ Local Government
4 ☐ Federal Government 5 ☒ Corporate/Commercial

MAILING CORRESPONDENCE

ATTENTION: Mr. Richard G. Leland

NAME OF COMPANY: Roseamon + Colin

ADDRESS: 575 Madison Avenue

ADDRESS:

CITY/STATE/ZIP CODE: New York, NY 10022-2585

TELEPHONE NUMBER: (212) 940-8700

TYPE OF PETROLEUM FACILITY: (Check all that apply)

A. ☐ Storage Terminal/Petroleum Distributor
B. ☐ Retail Gasoline Sales
C. ☐ Other Retail Sales
D. ☐ Manufacturing
E. ☐ Utility
F. ☐ Trucking/Transportation
G. ☐ Apartment Building
H. ☐ School
I. ☐ Farm
J. ☐ Private Residence
K. ☐ Airline (Air Taxi)
L. ☒ Other (Specify)

Automobile Parking Lot

I hereby certify under penalty of perjury that the information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

NAME OF OWNER OR AUTHORIZED REPRESENTATIVE: Daniel J. Stettner (UKC) | AMOUNT ENCLOSED: $

TITLE: Senior Staff Scientist

SIGNATURE: Daniel J. Stettner | DATE: 5-1-95

OFFICIAL USE ONLY

Page ____ of ____

Date Received: ____/____/____

Date Processed: ____/____/____

Amount Received $ ____

Reviewed By: ____

PBS NUMB.

Tank Information for Petroleum Bulk Storage Facility

SECTION B—See Instructions on Cover Sheet

Action	Tank Number	Tank Location	Status	Installation or Permanent Closure Date (MO)	(YR)	Capacity (Gallons)	Product Stored	Tank Type	Tank Internal Prot.	Tank External Protection	Piping Location	Piping Type	Piping Internal Prot.	Piping External Protection	Secondary Containment	Leak Detection	Spill/ Overfill Prevention	Dispenser	Last Test Date (underground Tanks) (MO)	(YR)
3	16	4	2	05	95	550	1	1	0	0	2	1	0	0	1	0	0	2		

KEY FOR SECTION B

ACTION
1 Initial Listing
2 Add Tank
3 Close/Remove Tank
4 Information Correction
5 Recondition/Repair/ Reline Tank

TANK LOCATION
1 Aboveground
2 Aboveground on saddles legs, stilts, rack, or cradle
3 Aboveground: 10% or more below ground
4 Underground
5 Underground, vaulted, with access

STATUS
1 In-service
2 Temporarily out-of-service
3 Closed—Removed
4 Closed—In Place
5 Tank Converted to Non-Regulated Use

PRODUCT STORED
0 Empty
1 Leaded Gasoline
2 Unleaded Gasoline
3 Nos. 1, 2, or 4 Fuel Oil
4 Nos. 5 or 6 Fuel Oil
5 Kerosene
6 Diesel
A Lube Oil
9 Other*

TANK TYPE
1 Steel/Carbon Steel
2 Stainless Steel Alloy
3 Concrete
4 Fiberglass Coated Steel
5 Fiberglass Reinforced Plastic (FRP)
6 Equivalent Technology
9 Other*

PIPING TYPE
0 None
1 Steel/Iron
2 Galvanized Steel
3 Fiberglass (FRP)
4 Copper
9 Other*

INTERNAL PROTECTION: Tank/Piping
0 None
1 Epoxy Liner
2 Rubber Liner
3 Fiberglass Liner (FRP)
4 Glass Liner
9 Other*

EXTERNAL PROTECTION: Tank/Piping
0 None
1 Painted/Asphalt Coating
2 Sacrificial Anode
3 Impressed Current
4 Fiberglass
5 Jacketed
6 Wrapped (Piping)
9 Other*

PIPING LOCATION
0 None
1 Aboveground
2 Underground

SECONDARY CONTAINMENT
0 None
1 Vault
2 Double-Walled Tank
3 Excavation Liner
4 Cut-off Walls
5 Impervious Underlayment
6 Earthen Dike
7 Prefabricated Steel Dike
8 Concrete Dike
A Synthetic Liner
B Natural Liner
9 Other*

LEAK DETECTION
0 None
1 Interstitial Monitoring
2 Vapor Well
3 Groundwater Well
4 In-tank System
5 Concrete Pad w/channels

SPILL/OVERFILL PREVENTION
0 None
1 Float Vent Valve
2 High Level Alarm
3 Automatic Shut-off
4 Product Level Gauge
5 Catch Basin
6 Vent Whistle
9 Other*

DISPENSER
1 Submersible
2 Suction
3 Gravity

* If Other, please list on separate sheet including the Tank Number

93-19-1 (10/93)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILLS MANAGEMENT • BUREAU OF [illegible] CONTROL

PETROLEUM BULK STORAGE APPLICATION

Pursuant to the Petroleum Bulk Storage Law, Article 17, Title 10 of ECL; and 6 NYCRR 612-614.

(Continued on Reverse Side—Please Be Sure to Complete Section B)

Please Type or Print Clearly and Complete All Items

SECTION A—See Instructions on Cover Sheet

PBS NUMBER

Indicate Other Existing DEC Numbers, if any, for this Facility:

CBS Number: N/A

SPDES Number: N/A

TRANSACTION TYPE (Check all that apply)
NOTE: Transaction Types 1, 2 and 5 require a fee.

1. ☒ Initial/New Facility
2. ☐ Change of Ownership
3. ☐ Substantial Tank Modification
4. ☐ Information Correction
5. ☐ Renewal

Geographical Locator for this Facility: (If known)

LATITUDE: DEG MIN SEC

LONGITUDE: DEG MIN SEC

FACILITY

NAME: Edison Parking Lot

LOCATION (Not P.O. Boxes): 500 - 516 Twelfth Avenue

LOCATION (Continued):

CITY/TOWN/VILLAGE: New York | STATE: NY | ZIP CODE: 10036

COUNTY: | TOWNSHIP OR CITY: Manhatten

NAME OF OPERATOR AT FACILITY: Brian Collins | FACILITY TELEPHONE NUMBER: (201) 643 - 2884

EMERGENCY CONTACT NAME: | EMERGENCY CONTACT PHONE NO.: ( )

OWNER

NAME: Silverstein Properties, Inc.

ADDRESS (Street and/or P.O. Box): 521 Fifth Avenue

CITY: New York | STATE: NY | ZIP CODE: 10175

FEDERAL TAX ID NO.: | OWNER TELEPHONE NUMBER: (212) 551 - 7300

TYPE OF OWNER (Check only one)
1 ☐ Private Resident 2 ☐ State Government 3 ☐ Local Government
4 ☐ Federal Government 5 ☒ Corporate/Commercial

MAILING CORRESPONDENCE

ATTENTION: Mr Richard G. Leland

NAME OF COMPANY: Roseman + Colin

ADDRESS: 575 Madison Avenue

ADDRESS:

CITY/STATE/ZIP CODE: New York, NY 10022 - 2585

TELEPHONE NUMBER: (212) 940 - 8700

TYPE OF PETROLEUM FACILITY: (Check all that apply)

A. ☐ Storage Terminal/Petroleum Distributor
B. ☐ Retail Gasoline Sales
C. ☐ Other Retail Sales
D. ☐ Manufacturing
E. ☐ Utility
F. ☐ Trucking/Transportation
G. ☐ Apartment Building
H. ☐ School
I. ☐ Farm
J. ☐ Private Residence
K. ☐ Airline (Air Taxi)
L. ☒ Other (Specify): Automobile Parking Lot

I hereby certify under penalty of perjury that the information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

NAME OF OWNER OR AUTHORIZED REPRESENTATIVE: Daniel J. Stettner (WCC) | AMOUNT ENCLOSED: $ 150.00

TITLE: Senior Staff Scientist

SIGNATURE: [signature] | DATE: 5-1-95

OFFICIAL USE ONLY

Page _____ of _____

Date Received: ____/____/____

Date Processed: ____/____/____

Amount Received $ _____

Reviewed By: _____

PBS NUMBER:

Tank Information for Petroleum Bulk Storage Facility

SECTION B—See Instructions on Cover Sheet

Action	Tank Number	Tank Location	Status	Installation or Permanent Closure Date (MO)	(YR)	Capacity (Gallons)	Product Stored	Tank Type	Tank Internal Prot.	Tank External Protection	Piping Location	Piping Type	Piping Internal Prot.	Piping External Protection	Secondary Containment	Leak Detection	Spill/ Overfill Prevention	Dispenser	Last Test Date (underground Tanks) (MO)	(YR)
1	16	4	2	05	60	550	1	1	0	0	2	1	0	0	1	0	0	2		

KEY FOR SECTION B

ACTION
1 Initial Listing
2 Add Tank
3 Close/Remove Tank
4 Information Correction
5 Recondition/Repair/ Refine Tank

TANK LOCATION
1 Aboveground
2 Aboveground on saddles legs, stilts, rack, or cradle
3 Aboveground: 10% or more below ground
4 Underground
5 Underground, vaulted, with access

STATUS
1 In-service
2 Temporarily out-of-service
3 Closed—Removed
4 Closed—In Place
5 Tank Converted to Non-Regulated Use

PRODUCT STORED
0 Empty
1 Leaded Gasoline
2 Unleaded Gasoline
3 Nos. 1, 2, or 4 Fuel Oil
4 Nos. 5 or 6 Fuel Oil
5 Kerosene
6 Diesel
A Lube Oil
9 Other*

TANK TYPE
1 Steel/Carbon Steel
2 Stainless Steel Alloy
3 Concrete
4 Fiberglass Coated Steel
5 Fiberglass Reinforced Plastic (FRP)
6 Equivalent Technology
9 Other*

PIPING TYPE
0 None
1 Steel/Iron
2 Galvanized Steel
3 Fiberglass (FRP)
4 Copper
9 Other*

INTERNAL PROTECTION: Tank/Piping
0 None
1 Epoxy Liner
2 Rubber Liner
3 Fiberglass Liner (FRP)
4 Glass Liner
9 Other*

EXTERNAL PROTECTION: Tank/Piping
0 None
1 Painted/Asphalt Coating
2 Sacrificial Anode
3 Impressed Current
4 Fiberglass
5 Jacketed
6 Wrapped (Piping)
9 Other*

PIPING LOCATION
0 None
1 Aboveground
2 Underground
3 Aboveground/Underground Combination

SECONDARY CONTAINMENT
0 None
1 Vault
2 Double-Walled Tank
3 Excavation Liner
4 Cut-off Walls
5 Impervious Underlayment
6 Earthen Dike
7 Prefabricated Steel Dike
8 Concrete Dike
A Synthetic Liner
B Natural Liner
9 Other*

LEAK DETECTION
0 None
1 Interstitial Monitoring
2 Vapor Well
3 Groundwater Well
4 In-tank System
5 Concrete Pad w/channels
6 Double Bottom

SPILL/OVERFILL PREVENTION
0 None
1 Float Vent Valve
2 High Level Alarm
3 Automatic Shut-off
4 Product Level Gauge
5 Catch Basin
6 Vent Whistle
9 Other*

DISPENSER
1 Submersible
2 Suction
3 Gravity

* If Other, please list on separate sheet including the Tank Number

Woodward-Clyde Consultants
201 Willowbrook Boulevard
P.O. Box 290
Wayne, New Jersey 07470

CORPORATE SERVICE CENTER
BANK OF AMERICA NT & SA
North American Division
315 Montgomery Street
San Francisco, CA 94137

0018182

11-36
1210

PAY WOODWARD-CLYDE CONSULTANTS 150dol's00cts

DATE	AMOUNT
05/01/95	$150.00******

TO THE ORDER OF NYSDEC

Woodward-Clyde Consultants

⑈0018182⑈ ⑆121000358⑆ 12332⑈0125 2⑈

Woodward-Clyde Consultants

THE ABOVE CHECK IS IN FULL PAYMENT OF THE FOLLOWING

0018182

DATE	VOUCHER NO.	INVOICE NO.	AMOUNT
5/1/95	NYSDEC Petroleum Bulk Storage Application		$150.00

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Please refer to the *Instructions for Filling Notification* before completing this form. The information requested here is required by law (Section 3010 of the *Resource Conservation and Recovery Act*).

EPA Notification of Regulated Waste Activity

United States Environmental Protection Agency

Date Received (For Official Use Only)

I. Installation's EPA ID Number *(Mark 'X' in the appropriate box)*

[X] A. First Notification [ ] B. Subsequent Notification *(Complete item C)*

C. Installation's EPA ID Number

II. Name of Installation *(Include company and specific site name)*

Edison Parking Lot

III. Location of Installation *(Physical address not P.O. Box or Route Number)*

Street: 500-516 Twelfth Avenue

Street (Continued):

City or Town: New York | State: NY | Zip Code: 10036-

County Code: | County Name:

IV. Installation Mailing Address *(See Instructions)*

Street or P.O. Box: 575 Madison Avenue

City or Town: New York | State: NY | Zip Code: 10022-2585

V. Installation Contact *(Person to be contacted regarding waste activities at site)*

Name (Last): Collins | (First): Brian

Job Title: Operator | Phone Number (Area Code and Number): 201-643-2894

VI. Installation Contact Address *(See Instructions)*

A. Contract Address Location [ ] Mailing [X] Other [ ]

B. Street or P.O. Box:

City or Town: | State: | Zip Code: -

VII. Ownership *(See Instructions)*

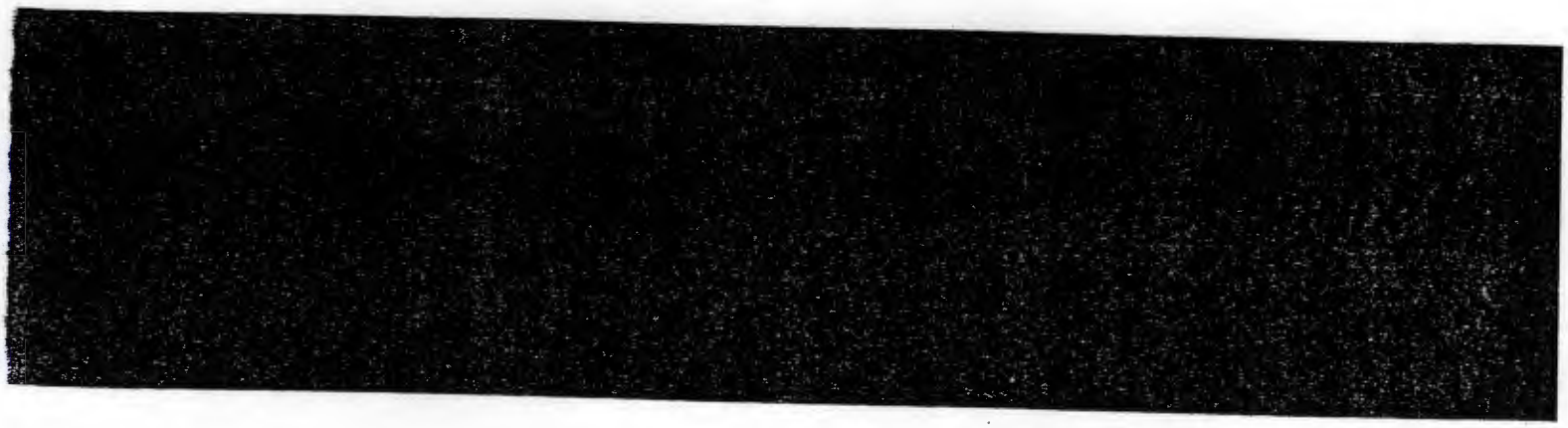
A. Name of Installation's Legal Owner: Silverstein Properties Inc

Street, P.O. Box, of Route Number: 521 5th Avenue

City or Town: New York | State: NY | Zip Code: 10175-

Phone Number (Area Code and Number): 212-551-7300 | B. Land Type: P | C. Owner Type: P | D. Change of Owner Indicator: Yes [ ] No [X] | (Date Changed) Month Day Year:

Continued on Reverse



WOODWARD-CLYDE CONSULTANTS

Consulting Engineers, Geologists and Environmental Scientists

PHOTOGRAPH LOG

Photograph Numbers: 1 thru 17 **Project Number:** 5E04530
Photographer: D. Stettner **Location:** New York, NY

Photograph No.	Description	Date
1	Waste product truck removing residual contents of gasoline tanks located in Area of Concern (AOC) A.	5-8-95
2	Removal of soil overburden above concrete tank vault in AOC A	5-9-95
3	Removal of tanks from concrete vault in AOC A.	5-11-95
4	Photo of AOC A following removal of tanks.	5-11-95
5	Backfill AOC A with 3/4 inch stone to above water table	5-15-95
6	Resurface AOC A with recycled concrete to provide temporary parking surface.	5-15-95
7	Waste product truck removing residual contents of gasoline tanks located in AOC B.	5-15-95
8	Exposed gasoline tank at the western end of the concrete tank vault in AOC B	5-15-95
9	Removing gasoline tank from AOC B	5-15-95
10	Photo of AOC B following removal of tanks.	5-17-95
11	Photo of AOC B following removal of the floor of the concrete tank vault.	5-18-95
12	Backfill AOC B with 3/4 inch stone to above water table.	5-19-95
13	Waste product truck removing residual contents of the oil tanks in AOC C.	5-22-95
14	Exposed oil tank in AOC C.	5-23-95
15	Removed oil tank from AOC C.	5-23-95
16	Backfilling AOC C with previously excavated soil and imported fill.	5-23-95
17	AOC C resurfaced with 3/4 inch stone to provide temporary parking surface.	5-24-95

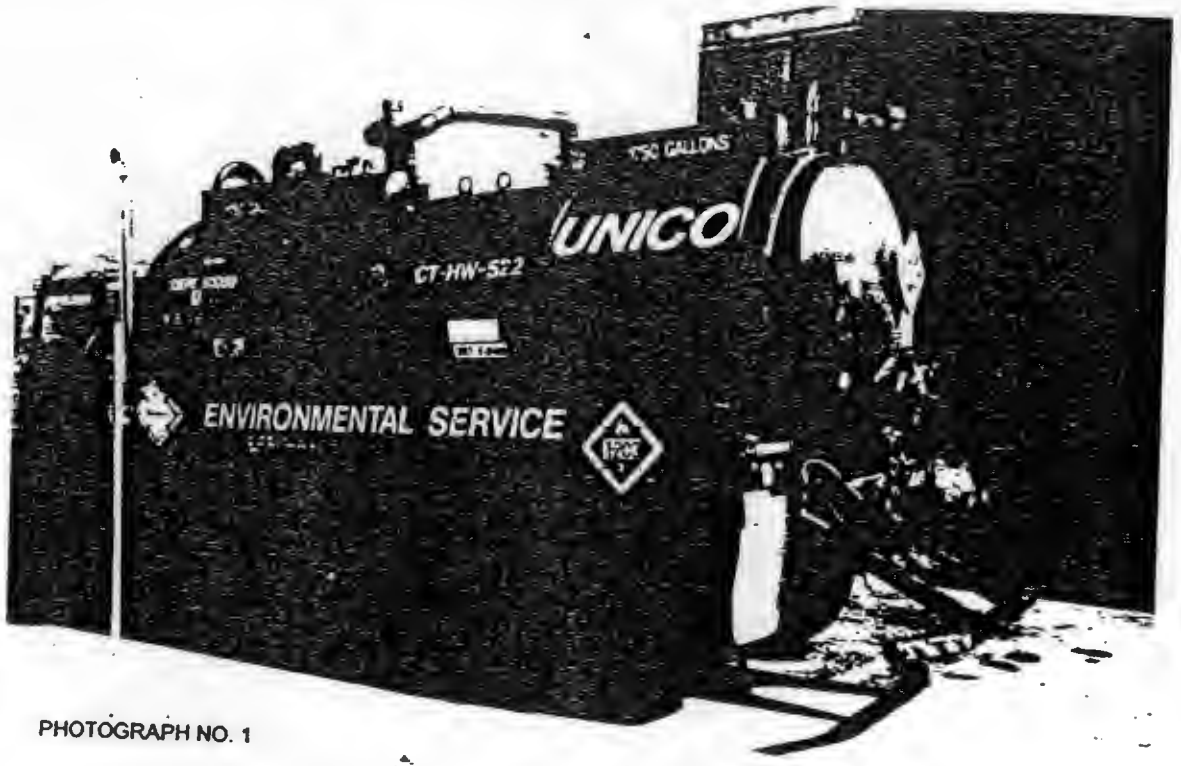
WOODWARD-CLYDE CONSULTANTS

Consulting Engineers, Geologists and Environmental Scientists

PHOTOGRAPH LOG

Photograph Numbers: 18 thru 21 **Project Number:** 5E04530
Photographer: D. Stettner **Location:** New York, NY

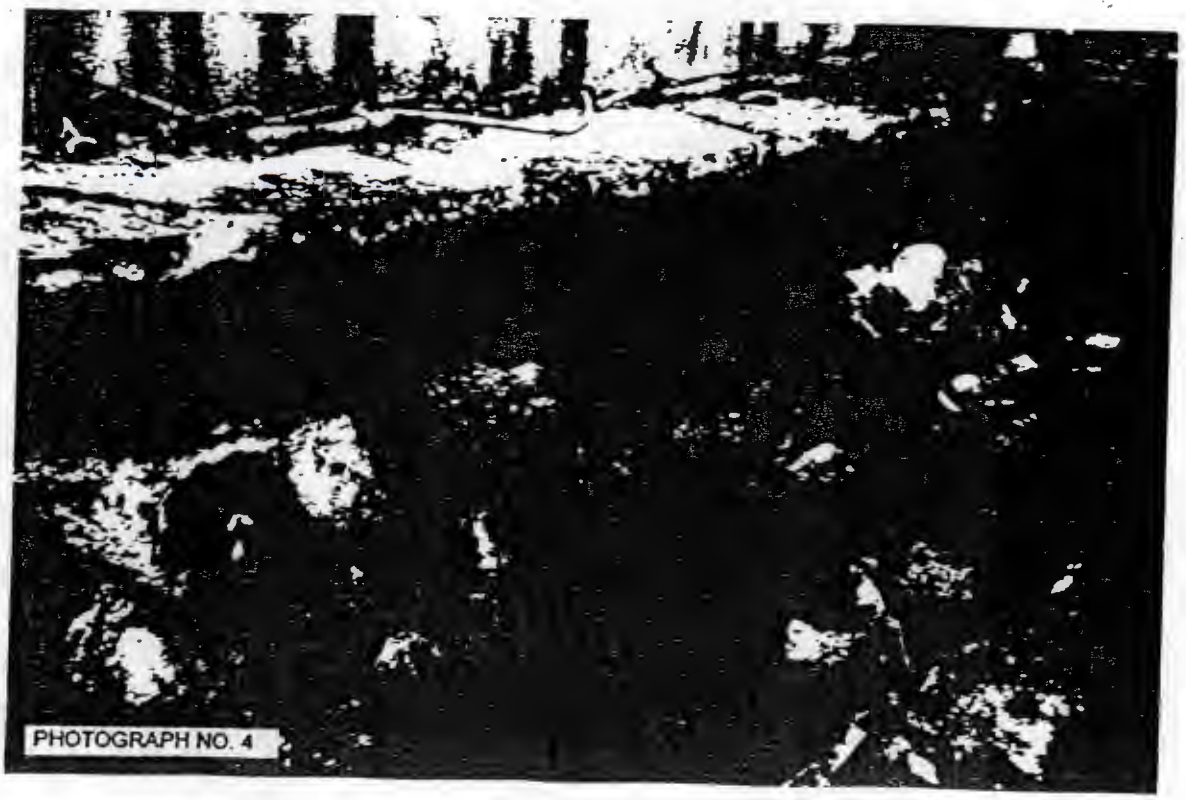
Photograph No.	Description	Date
18	Personnel from American Hi-Tech cutting open tanks prior to cleaning.	5-12-95
19	550 gallon oil tank from AOC C cut open and cleaned prior to removal from site for disposal.	5-24-95
20	Tanks strapped to lowboy for transport to scrap yard.	5-19-95
21	Contaminated soil stockpile located in the northwestern corner of the site awaiting transport and disposal offsite.	5-24-95



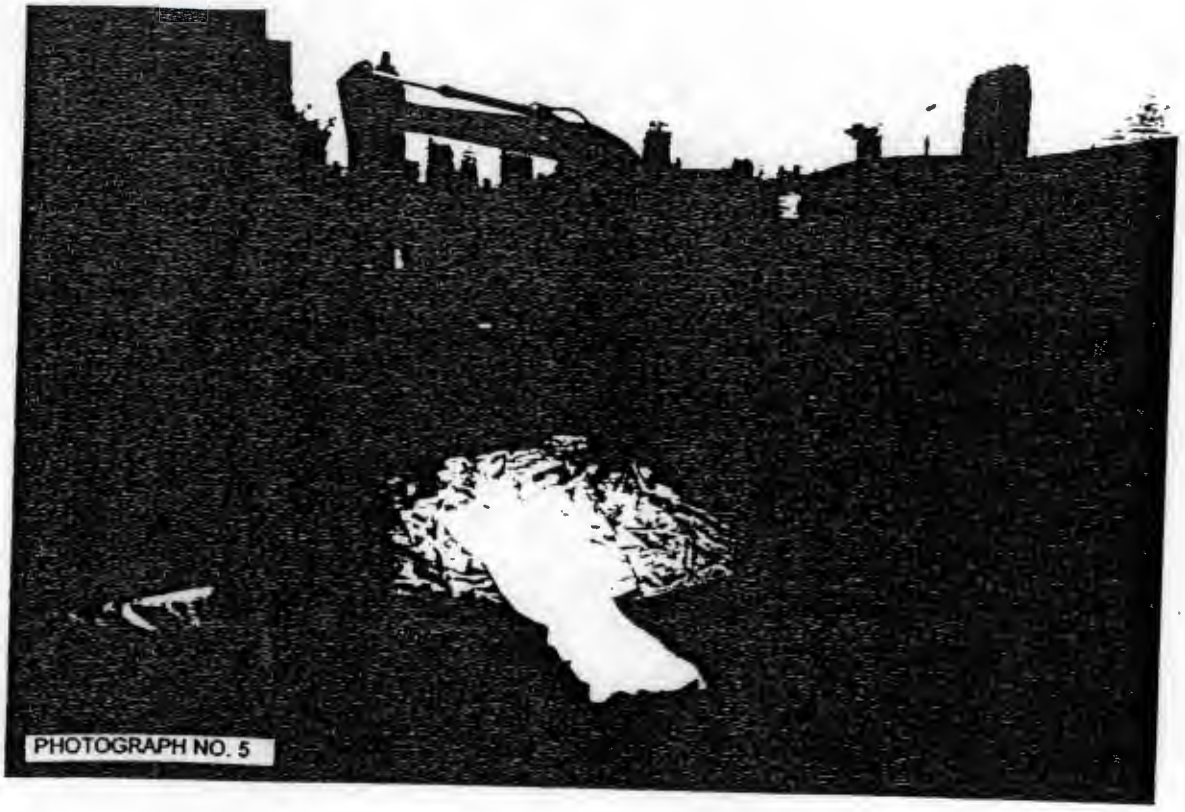
PHOTOGRAPH NO. 1

PHOTOGRAPH NO. 2

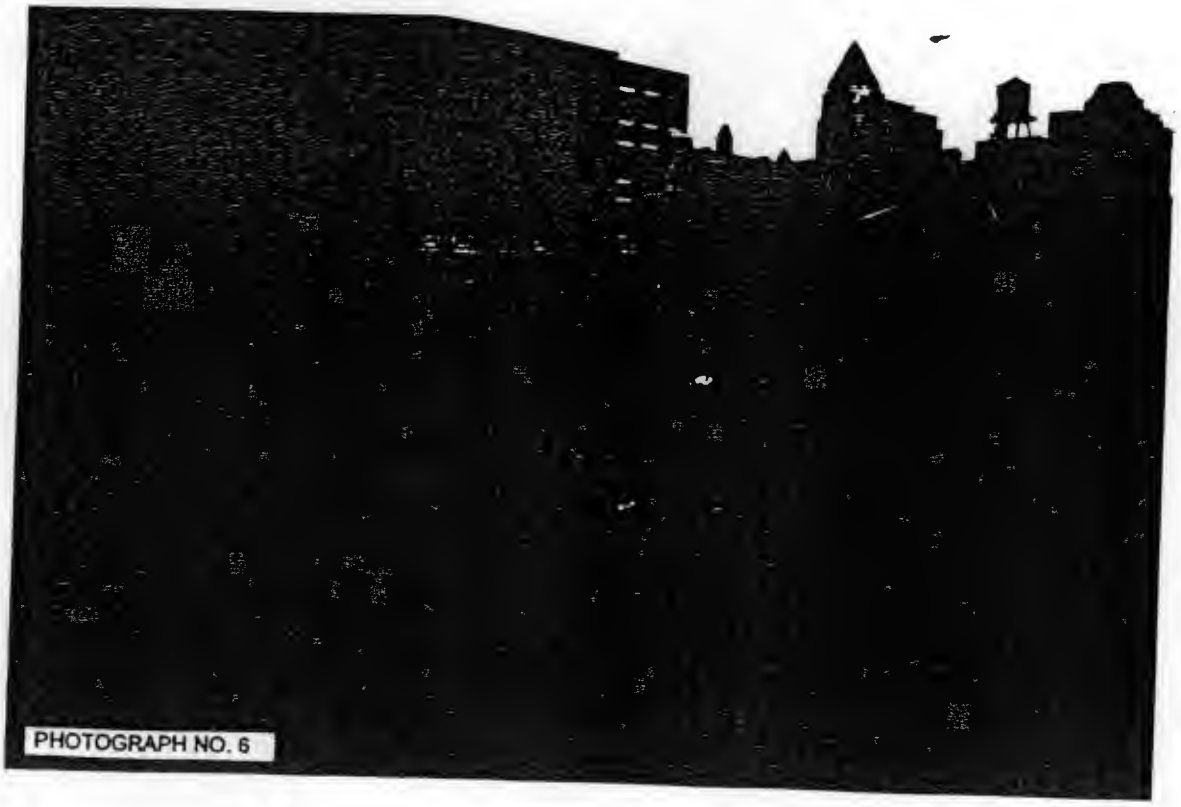
PHOTOGRAPH NO. 3



PHOTOGRAPH NO. 4



PHOTOGRAPH NO. 5



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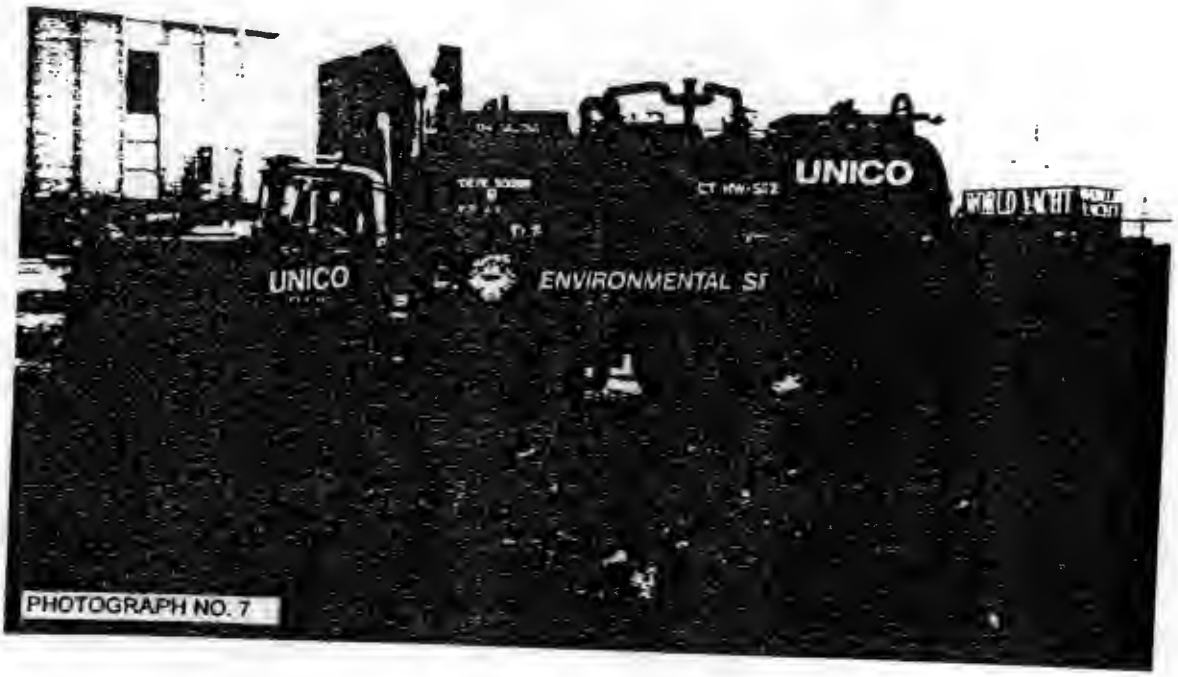
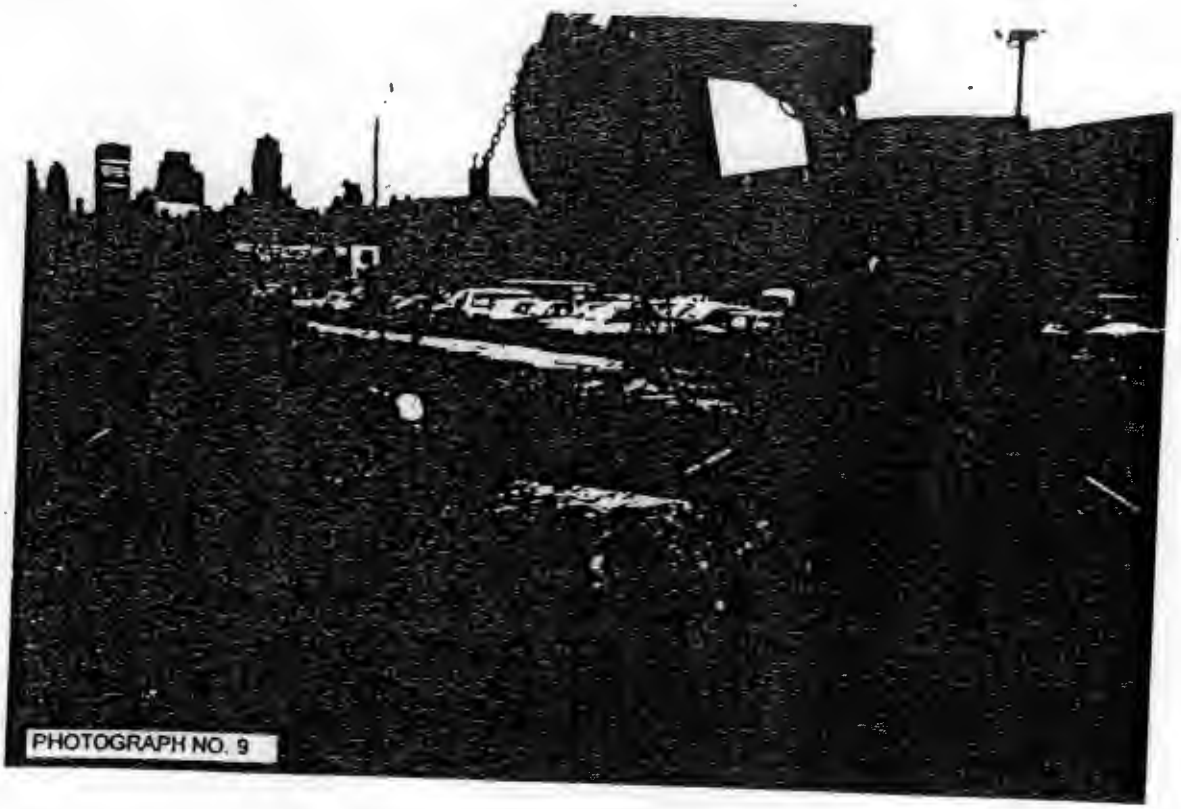


PHOTOGRAPH NO. 7


PHOTOGRAPH NO. 8



PHOTOGRAPH NO. 9

PHOTOGRAPH NO. 10

LOG OF BORING MW-2

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov (ft)	Penetr. Resist BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
No Recovery- brick, concrete and rock stuck in spoon tip, wet.			-			50/ 0"					Using 4-inch spin casing. Spoon bouncing-refusal. Attempt to drill through obstruction with rollerbit.
			11		0.0		1537				
Drill to 13 ft.- hard drilling.			12								Stop at 12 ft., 2/24/95
											Start at 12 ft, 2/27/95. Broke through obstruction at 13 ft.
			13								
FILL- Coarse-med. sand, gravel, rubble (brick and concrete), some gray silt at bottom.						14					
			14		0.9	16	0907				
						22					PID not working due to humidity.
			15			30					
FILL- same as above.						60					PID not working due to humidity.
			16		0.8	32	0924				
						36					
						43					Collect sample MW-2 for STARS VOCs & BNAs, 16.5 - 17 ft.
Wood chunk stuck in spoon tip.			17								
					0.2	100 / 3"					Spoon bouncing at 17 ft. Drill to 17 ft and construct MW-2. Screen is from 16 to 6 ft (1 ft of sand in bottom of hole). MW-2 is 2-inch diam. PVC.
End of boring- 18 ft.			18								
			19								
			20								
			21								
			22								
			23								
			24								
			25								

- Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING MW-3

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 5E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc.	FOREMAN Sal D'Amico	DATE STARTED February 24, 1995 / DATE COMPLETED February 24, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 20.0	ROCK DEPTH (FT) NA
TYPE BIT	tricone rollerbit	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES — DIST. — / UNDIST. — / CORE NA
CASING	NA		WATER LEVEL FIRST — / COMPL — / 24HR —
CASING HAMMER	NA	DROP NA	BORING LOCATION upgradient of tanks
SAMPLER	3-inch & 2-inch Split Spoons		
SAMPLER HAMMER	WEIGHT 300 lb. / 140lb	DROP 30"	INSPECTOR K. Smith

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Concrete- drill with tricone rollerbit to 3 ft.			0								
			1								
			2								
			3								
Auger to 5 ft. to take first spoon. Lots of (treated) wood in cuttings.			4								
			5								
FILL- Silty sand and large rock fragments (quartz and decomposed schist), dry.			6		1.0		1246	0.8	0.8		2-inch spoon, refusal with 140 lb. hammer, moved with 300 lb. hammer.
			7			10					
FILL- Same as above, moist at 9 ft.			8		0.5	9 11 4	1251	0.8	0.9		2-inch spoon, 300 lb hammer.
			9								
			10								

- Not Recorded

MW-3

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. Bl./6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
FILL- Med. to coarse sand and gravel (rock fragments), wet.	▽		- 11 -		0.3	7 5 2 2	1309	1.0	0.8		
			- 12 -								
FILL- Same as above, concrete frags, wet. Slight staining and petroleum odor.			- 13 -		0.2	2 4 6 7	1311	1.5	0.8		
			- 14 -								
			- 15 -								Augering to 15 ft.
SM- Brown fine to med. silty SAND, wet. Black staining at 17 ft, petroleum odor.			- 16 -		0.5	5 2 1 2	1324	3 - 15.0	0.8		
			- 17 -								
Same as above, some clay at 18 ft., Black staining and strong petroleum odor at 18.5-19 ft.			- 18 -		2.0	2 4 6 10		5 - 22.0	0.8		Collected sample MW-3 for STARS VOCs, BNAs, 18.5 to 19 ft.
			- 19 -								
Brick and decomposed concrete stuck in spoon tip at 20 ft.			- 20 -		0.0	100/ 2"					Augering to 20 ft. Spoon bouncing at 20 ft-- refusal. Construct MW-3 at 20 ft , 2-inch diam PVC, 15 feet of screen.
End of boring - 20 ft.			- 21 -								
			- 22 -								
			- 23 -								
			- 24 -								
			- 25 -								

- Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **SB-25**

SHEET 1 OF

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 5E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc. / FOREMAN Sal D'Amico	DATE STARTED May 3, 1995	DATE COMPLETED May 3, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 8.0	ROCK DEPTH (FT) NA
TYPE BIT	4-inch tricone roller (0-1 ft)	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES DIST. 2 / UNDIST. – / CORE NA
CASING	4-inch temporary		WATER LEVEL FIRST 6 / COMPL – / 24HR –
CASING HAMMER	300 lb.	DROP 30"	BORING LOCATION within proposed building footprint
SAMPLER	3-inch Split Spoons		
SAMPLER HAMMER	WEIGHT 300 lb.	DROP 30"	INSPECTOR K. Smith

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Concrete			0								Drilled with 4-inch tricone rollerbit through concrete to 1 ft.
FILL- Sand, decomposed concrete and brick, rock fragments (schist), silt. Some black staining, 1-1.5' and 2.5-3'. Large schist frag. in tip, dry.			1			7					TCLP grab for composite "TOWER1", 1-1.5 ft.
			2		2.0	10	1048	1.0	0.9		
						13					Sample SB25A for VOC, BN, Metals– 2-2.5 ft.
			3			8					No odors noticeable.
Pound casing to 6 ft.			4					-			
			5								
FILL- Brown-gray sand, silt, gravel, wet.	▽		6			8					Sample SB25B for VOC, BN, Metals– 6-6.5 ft.
OL- Black organic silt with wood and shell fragments, cohesive, damp, somewhat plastic.			7		2.0	3	1115	1.0	0.9		No odors noticeable.
						2					
End of boring- 8 ft.			8			2					
			9								
			10								

- Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **SB-26 (MW-4)**

SHEET 1 O

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 5E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc. / FOREMAN Sal D'Amico	DATE STARTED May 3, 1995	DATE COMPLETED May 3, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 10.0	ROCK DEPTH (FT) NA
TYPE BIT	4-inch tricone roller (0-1 ft)	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES DIST. 3 / UNDIST. – / CORE NA
CASING	NA		WATER LEVEL FIRST 9 / COMPL – / 24HR –
CASING HAMMER	NA / DROP NA	BORING LOCATION within proposed building footprint	
SAMPLER	3-inch Split Spoons / 4-inch Hollow Stem Augers		
SAMPLER HAMMER	WEIGHT 300 lb. / DROP 30"	INSPECTOR K. Smith	

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penet. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Concrete			0								Drilled with 4-inch tricone rollerbit through concrete to 1 ft.
FILL- Sand, gravel, concrete frags, large brick chunks, cinders, trace silt and clay, dry to damp.			1								TCLP grab for composite "TOWER1", 1-1.5 ft.
			2		1.0	–	1210	1.1	1.0		
			3								Sample SB26A for VOC, BN, Metals– 2.5-3 ft.
Auger to 6 ft.			4								
			5								
			6								
FILL- Wood chunks, some silty sand, damp.			7		0.3	4 100/ 3"	–	–	–		Sample SB25B for VOC, BN, Metals– 6-6.5 ft.
FILL- Black fine to med. sand and gravel, saturated with sticky, tar-like material. Strong petroleum odor, wet at 9 ft.			8								
	▽		9		1.0	–	1415	S - 250	1.9		Sample SB26B for VOC, BN, Metals– 8.5-9 ft.
End of boring– 10 ft.			10								Auger to 12 ft. and complete as MW-4 (2" PVC, 10ft screen)

- Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **SB-27**

SHEET 1 OF

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 5E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc. / FOREMAN Jorge Tirado	DATE STARTED May 4, 1995	DATE COMPLETED May 4, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 8.0	ROCK DEPTH (FT) NA
TYPE BIT	4-inch tricone roller (0-1 ft)	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES DIST. 3 / UNDIST. – / CORE NA
CASING	4-inch temporary		WATER LEVEL FIRST 7.5 / COMPL – / 24HR –
CASING HAMMER	300 lb.	DROP 30"	BORING LOCATION within proposed building footprint
SAMPLER	3-inch Split Spoons		
SAMPLER HAMMER	WEIGHT 300 lb.	DROP 30"	INSPECTOR K. Smith

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Concrete			0								Drilled with 4-inch tricone rollerbit through concrete to 1 ft.
FILL- Black sand, charcoal, ash, cinders, decomposed brick (1.5-2 ft). 2-3 ft is Black-tan silty sand, cinders.			1			7					TCLP grab for composite "TOWER2", 1-1.5 ft.
Black-tan silty sand, stained.			2		0.8	10 14	0945	1.0	1.0		
Hardened slag and cinders stuck in spoon tip.			3			15					
Same as above: gray-yellow hardened cinders and slag, dry.			4		1.0	13 5 13	1010	1.3	1.2		Sample SB27A for VOC, BN, Metals– 3-3.5 ft. No odors noticeable.
Pound casing to 6 ft.			5			16					
Same as above.			6			3					
FILL- Gray silt and clay, some sand and gravel, brick frags., compact, wet.	▽		7		1.0	2 1	1020	1.0	0.9		Sample SB27B for VOC, BN, Metals– 7-7.5 ft. No odors noticeable.
End of boring- 8 ft.			8			1					
			9								
			10								

- Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists
LOG OF BORING **SB-28**

SHEET 1 OF

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 5E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc. / FOREMAN Jorge Tirado	DATE STARTED May 4, 1995	DATE COMPLETED May 4, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 8.0	ROCK DEPTH (FT) NA
TYPE BIT	NA	NO. SAMPLES DIST. 3	UNDIST. – CORE NA
CASING	4-inch temporary / SIZE AND TYPE CORE BARREL NA	WATER LEVEL FIRST 8	COMPL – 24HR –
CASING HAMMER	300 lb. / DROP 30"	BORING LOCATION within proposed building footprint	
SAMPLER	3-inch Split Spoons		
SAMPLER HAMMER	WEIGHT 300 lb. / DROP 30"	INSPECTOR K. Smith	

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
FILL- Sand, gravel, concrete frags, slag, rock frags. Large hard chunk of yellow-stained fibrous material.			1		0.3	8 13 9 7	0815	1.0	1.0		TCLP grab for composite "TOWER2", 0.5-1 ft.
FILL- Sand, gravel, decomposed schist and brick frags, yellow fibrous material, charcoal, slag, metal frags. Bottom 4 in. is rust-colored silty f. sand.			3		1.2	16 21 13 8	0830	1.0	1.0		Sample SB28A for VOC, BN, Metals– 3.5-4 ft.
Pound casing to 6 ft.			6								
FILL- Top 6" is decomposed brick and sand, bottom 6" is black-stained sand and gravel with cinders, glass, slag– slight petroleum odor. Wet at 8 ft.			7		1.0	5 3 4 2	0900	5-7.5	1.3		Sample SB28B for VOC, BN, Metals– 7.5-8 ft.
End of boring- 8 ft.	▽		8								
			9								
			10								

- Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **SB-29 (MW-5)**

SHEET 1 O

PROJECT NAME	Silverstein Properties		GROUND ELEVATION (FT)	PROJECT NUMBER	SE04530
LOCATION	42nd St. between 11th and 12th, New York, NY		DATE STARTED	DATE COMPLETED	May 5, 1995
DRILLING CONTRACTOR	Warren George, Inc.	FOREMAN Sal D'Amico	May 5, 1995	ROCK DEPTH (FT)	NA
DRILLING EQUIPMENT	Mobile Drill B-61		COMPLETION DEPTH (FT) 8.0		
TYPE BIT	4-inch tricone roller	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES DIST. 2	UNDIST. –	CORE NA
CASING	4-inch temporary		WATER LEVEL FIRST 8	COMPL –	24HR –
CASING HAMMER	300 lb.	DROP 30"	BORING LOCATION within proposed elevator pit		
SAMPLER	3-inch Split Spoons / 4 inch Hollow Stem Augers		INSPECTOR K. Smith		
SAMPLER HAMMER	WEIGHT 300 lb.	DROP 30"			

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist BLS/in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Concrete			0								Drill with tricone rollerbit through concrete.
			1								
			2								
FILL- Black-brown sand, gravel, brick, cinders, concrete, damp.			3		0.5	6 9 10 12	1205	0.7	0.7		TCLP grab for composite "ELEV1", 3.5-4 ft.
Drive casing to 6 ft.			4								
			5								
			6								
FILL- Brown and black f. silty sand.						72					
FILL- Black gravel with sand, cinders, charcoal, glass, wet.			7		1.75	83 12	1225	0.7	0.7		Sample SB29A for VOC, BN, Metals-- 7.5-8 ft.
End of boring-- 8 ft.	▽		8			10					
			9								Auger to 13 feet and complete as MW-5 (2-inch PVC monitoring well, 10 ft. screen.
			10								

- Not Recorded

Woodward-Clyde Consultants

Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **SB-30**

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 5E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc.	FOREMAN Sal D'Amico	DATE STARTED May 5, 1995 / DATE COMPLETED May 5, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 8.0	ROCK DEPTH (FT) " NA
TYPE BIT	4-inch tricone roller	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES DIST. 3 / UNDIST. – / CORE NA
CASING	NA		WATER LEVEL FIRST 9 / COMPL – / 24HR –
CASING HAMMER	NA	DROP NA	BORING LOCATION within proposed elevator pit
SAMPLER	3-inch Split Spoons		
SAMPLER HAMMER	WEIGHT 300 lb.	DROP 30"	INSPECTOR K. Smith

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Concrete			0 -								
			-								Drill with tricone rollerbit through concrete.
			1 -								
			-								
			2 -								
FILL- Black sandy silt with brick and concrete rags, cohesive, slightly damp.			-			23					
			-			100/					TCLP grab for composite "ELEV1", 2.5-3 ft.
			3 -		0.3	2"	1100	1.0	1.1		
Concrete 3.5 - 4 ft. Drill through with rollerbit.			-					-			
Hole staying open. Drill to 5 ft. with rollerbit.			4 -								
			-								
			5 -								
FILL- Brick frags, some sand, dry to damp.			-			6					
			-			10					
			6 -		0.5		1126	1.0	1.0		
			-			7					
			-			10					
			7 -								Hole staying open.
			-			10					
Same as above, moist.			-			7					
			8 -		0.5		1128	1.0	1.0		
			-			4					
	▽		-			2					Sample SB30A for VOC, BN, Metals-- 8.5-9 ft.
End of boring- 9 ft.			9 -								
			-								
			10 -								

- Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **SB-31**

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 5E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc. / FOREMAN Jorge Tirado	DATE STARTED May 4, 1995	DATE COMPLETED May 4, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 8.0	ROCK DEPTH (FT) NA
TYPE BIT	4-inch tricone roller (0-1 ft)	NO. SAMPLES DIST. 2	UNDIST. – CORE NA
CASING	4-inch temporary / SIZE AND TYPE CORE BARREL NA	WATER LEVEL FIRST 8	COMPL – 24HR –
CASING HAMMER	300 lb. / DROP 30"	BORING LOCATION proposed "open space"	
SAMPLER	3-inch Split Spoons		
SAMPLER HAMMER	WEIGHT 300 lb. / DROP 30"	INSPECTOR K. Smith	

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Bangas	Ambient Air	Time	REMARKS
Concrete			0								Drilled with 4-inch tricone rollerbit through concrete to 1 ft.
FILL- Black sand and gravel with cinders, slag, glass, brick frags. Gray silt in spoon tip, dry.			1			9					Sample SB31A for VOC, BN, Metals– 1-1.5 ft.
			2		2.0	9	1100	1.2	1.1		
						9					
			3			26					
FILL- Pink, yellow and red fine-grained brick-like material, large chunks, dry			4		1.0	–	–	–	–		
			5								
Drive casing to 6 ft.			6								
Same as above, more fragmented, dry. Wet at 8 ft.						3					
			7		0.5	4	1135	1.1	1.0		
	▽					4					
			8			4					Sample SB31B for VOC, BN, Metals– 7.5-8 ft.
End of boring- 8 ft.											
			9								
			10								

• Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **SB-32**

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 6E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc. / FOREMAN Sal D'Amico	DATE STARTED May 5, 1995	DATE COMPLETED May 5, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 8.0	ROCK DEPTH (FT) NA
TYPE BIT	4-inch tricone roller (0-1 ft)	NO. SAMPLES DIST. 3	UNDIST. – CORE NA
CASING	4-inch temporary / SIZE AND TYPE CORE BARREL NA	WATER LEVEL FIRST 8	COMPL – 24HR –
CASING HAMMER	300 lb. / DROP 30"	BORING LOCATION proposed "open space"	
SAMPLER	3-inch Split Spoons		
SAMPLER HAMMER	WEIGHT 300 lb. / DROP 30"	INSPECTOR K. Smith	

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Asphalt 0-4 inches, then FILL- Brown fine to med. sand with gravel and brick frags, dry.			0								Expected concrete beneath asphalt, so drilled to 1 ft. with rollerbit. Collected sample SB32A by hand (stainless steel teaspoon) from open hole, 0.5-1 ft for VOC, BN, Metals.
Concrete 1 to 2 ft. Drill through with tricone rollerbit.			1			100/ 2"					
			2		0.0		0920	0.9	0.9		Try pounding spoon 1-3 ft.– refusal. Continue drilling with rollerbit to 2 feet.
Drive casing to 6 ft.			3								
			4								
			5								
			6								
FILL- Yellow and red chunks of brick-like material with dust. Bottom 3 inches (and stuck in spoon tip) is black, extremely stiff tarry material, somewhat plastic, strong petroleum odor.			7		1.0	7 9 23 54	0950	6 - 22.0	1.3		Sample SB32B for VOC, BN, Metals– 7.5-8 ft.
End of boring- 8 ft.	▽		8								
			9								
			10								

- Not Recorded

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LOG OF BORING **SB-33 (MW-7)**

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER SE04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc. / FOREMAN Sal D'Amico	DATE STARTED May 8, 1995	DATE COMPLETED May 8, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 8.0	ROCK DEPTH (FT) NA
TYPE BIT	4-inch tricone roller (0-1 ft)	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES DIST. 2 / UNDIST. – / CORE NA
CASING	NA		WATER LEVEL FIRST 7 / COMPL – / 24HR –
CASING HAMMER	NA	DROP NA	BORING LOCATION proposed "open space"
SAMPLER	3-inch Split Spoons / 4-inch Hollow Stem Augers		
SAMPLER HAMMER	WEIGHT 300 lb.	DROP 30"	INSPECTOR K. Smith

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Concrete			0								Drill through concrete with 4-inch tricone rollerbit.
			1								
FILL- Black fine to med. sand with slag, charcoal frags, loose, dry.		■				10					
FILL- Brown-tan fine silty sand with decomposed schist frags, dense, damp.		■	2		2.0	11	1135	0.8	0.8		Sample SB33A for VOC, BN, Metals, 1.5-2 ft.
						17					
			3			12					
Auger to 6 ft.			4								
			5								
			6								
FILL- Same as above, loose. Concrete stuck in spoon tip. Wet at 7 ft.	▽	■				1					
			7		0.3	4	1215	0.9	0.9		Sample SB33B for VOC, BN, Metals– 6.5-7 ft.
						15					
						7					
End of boring- 8 ft.			8								Auger to 13 ft. and complete as monitoring well MW-7, (2-inch PVC, 10 ft screen).
			9								
			10								

- Not Recorded

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Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **SB-34 (MW-6)**

SHEET 1 OF *

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 5E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc. / FOREMAN Jorge Tirado	DATE STARTED May 4, 1995	DATE COMPLETED May 4, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 8.0	ROCK DEPTH (FT) NA
TYPE BIT	4-inch tricone roller (0-1 ft)	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES DIST. 3 / UNDIST. – / CORE NA
CASING	NA		WATER LEVEL FIRST 9 / COMPL – / 24HR –
CASING HAMMER	NA	DROP NA	BORING LOCATION proposed "open space"
SAMPLER	3-inch Split Spoons / 4-inch Hollow Stem Augers		
SAMPLER HAMMER	WEIGHT 300 lb.	DROP 30"	INSPECTOR K. Smith

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Concrete			0								Drill through concrete with 4-inch tricone rollerbit and hollow stem augers
FILL- Black sand and gravel, cinders, charcoal, glass, some silt.			1			9					Sample SB34A for VOC, BN, Metals, 1-1.5 ft.
			2		0.8	11	1300	0.9	1.0		
FILL- Brick frags and sand						21					
			3			10					
Auger to 6 ft.			4								
			5								
			6								
FILL- Red-brown gravel, sand, silt, cinders, brick, rock and concrete frags; damp to moist.			7		0.5	15	–	–	–		
						19					
						3					
FILL- Same as above, wet at 9 ft.			8			3					Sample SB34B for VOC, BN, Metals– 8.5-9 ft.
	▽		9		2.0	5	1320	1-3.0	1.2		
						8					Auger to 14 ft. and complete as monitoring well MW-6, (2-inch PVC, 10 ft screen).
FILL- Lt. brown silty sand w/ black staining and cinders. Slight petroleum odor. End of boring 9 ft.			10			7					

• Not Recorded

APPENDIX B

WOODWARD-CLYDE CONSULTANTS
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CONSTRUCTION OF BEDROCK WELL / PIEZOMETER **MW-1S**

Project name & location Silverstein Properties, 42nd St., NY, NY	*Well lock No.* 712	*Elevation datum*
Drilling company Warren George, Inc.	*Surveyor*	*Ground elevation* ft
Date and time of completion 2/24/1995 1530	*Longitude*	*Top of protective steel casing elevation* ft
Inspector K. Smith	*Latitude*	*Top of riser pipe elevation* ft

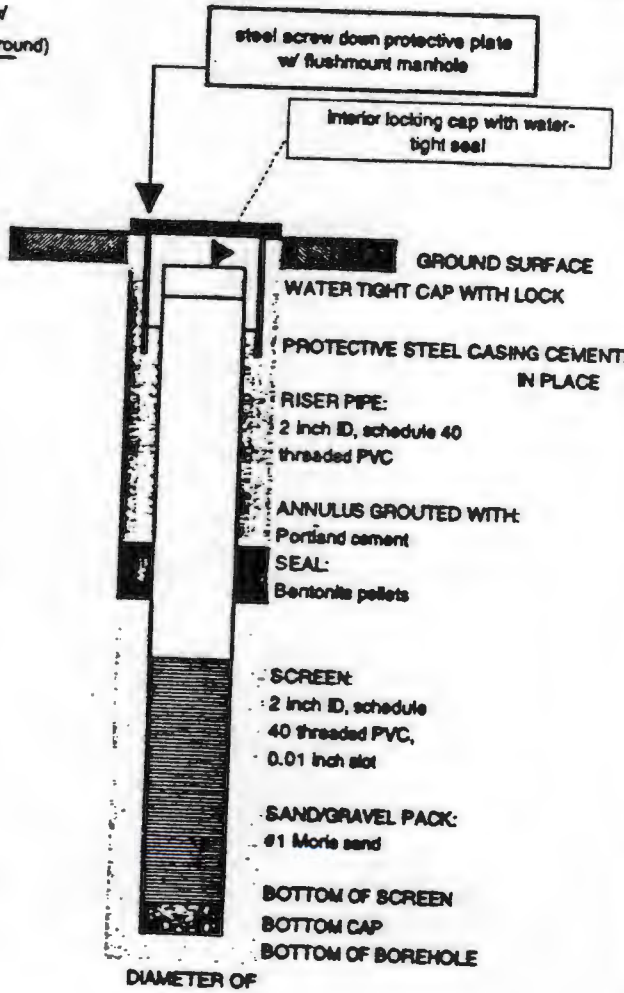
A = Ground Surface
B = Top of Riser
C = Top of Bentonite Seal
D = Top of Sand Pack
E = Top of Screen
F = Bottom of Screen
G = Bottom of Borehole

	ELEV. (ft above BD)	DEPTHS (ft below/ above ground)
A		0
B		
C		2
D		3
E		6
F		16
G		18

GENERALIZED SOIL DESCRIPTION

0-16 ft:
FILL-Sand, Silt, Gravel, Wood, Brick, Concrete

16-18 ft:
OH-Black organic SILT, Some Clay



REMARKS (Installation, development):
Developed until clear of fines, 2/27/95. Approximately 25 gallons removed.

MW-1S destroyed 5/95 during tank removal.

WOODWARD-CLYDE CONSULTANTS
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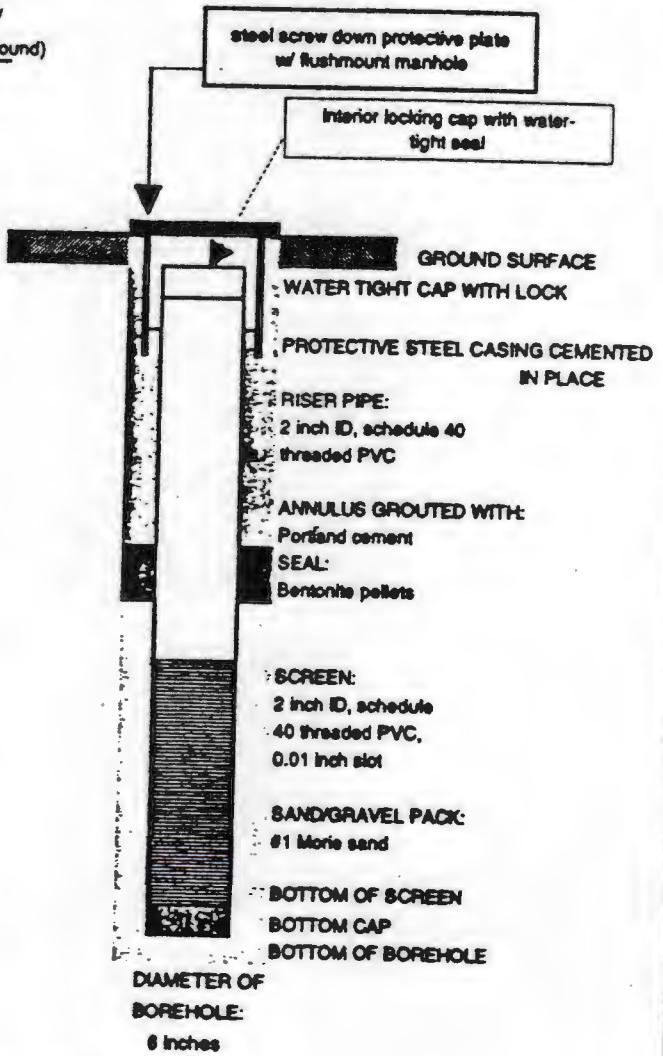
CONSTRUCTION OF BEDROCK WELL / PIEZOMETER **MW-1D**

Project name & location Silverstein Properties, 42nd St., NY, NY	*Well lock No.* 712	*Elevation datum*
Drilling company Warren George, Inc.	*Surveyor*	*Ground elevation* ft
Date and time of completion 2/24/1995 1400	*Longitude*	*Top of protective steel casing elevation* ft
Inspector K. Smith	*Latitude*	*Top of riser pipe elevation* ft

A = Ground Surface
B = Top of Riser
C = Top of Bentonite Seal
D = Top of Sand Pack
E = Top of Screen
F = Bottom of Screen
G = Bottom of Borehole

GENERALIZED SOIL DESCRIPTION		ELEV. (ft above BD)	DEPTHS (ft below/ above ground)
0-16 ft: FILL-Sand, Gravel, Silt	A B		0
16-46 ft: OH-Black-gray organic SILT			
46-47.5 ft: PT-Woody Peat Material	C D		32 33
47.5 ft: Bedrock (Schist)	E		36
	F		46
	G		47.5



REMARKS (Installation, development):
Developed until clear of fines, 2/27/95. Approximately 25 gallons removed.

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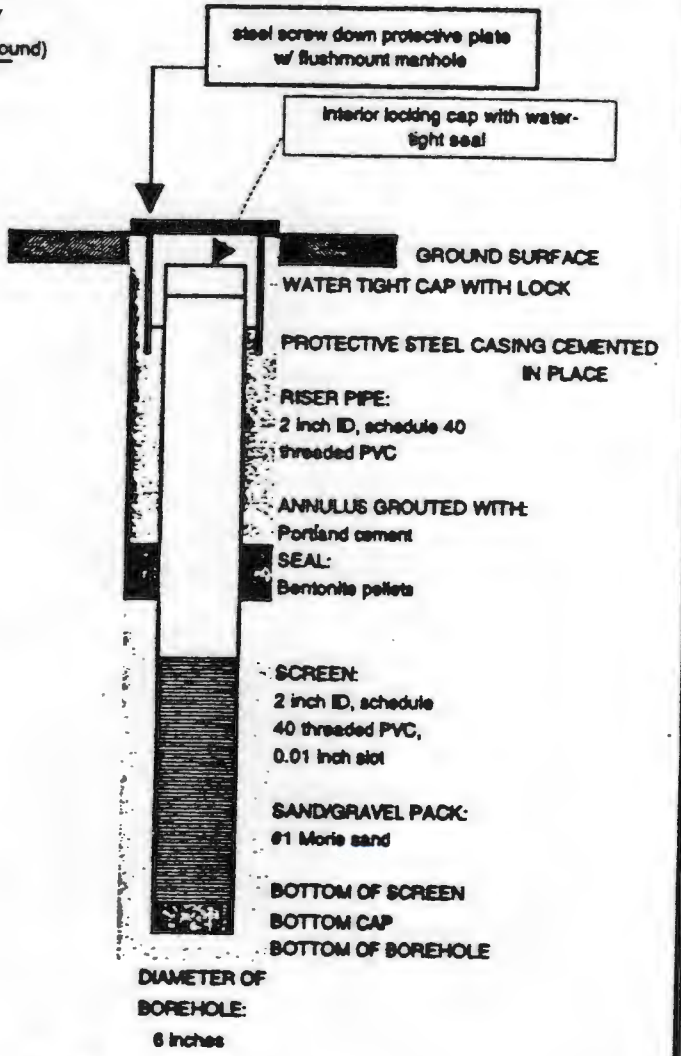
CONSTRUCTION OF BEDROCK WELL / PIEZOMETER **MW-2**

Project name & location Silverstein Properties, 42nd St., NY, NY	*Well lock No.* 712	*Elevation datum*
Drilling company Warren George, Inc.	*Surveyor*	*Ground elevation* ft
Date and time of completion 2/27/1995 1300	*Longitude*	*Top of protective steel casing elevation* ft
Inspector K. Smith	*Latitude*	*Top of riser pipe elevation* ft

A = Ground Surface
B = Top of Riser
C = Top of Bentonite Seal
D = Top of Sand Pack
E = Top of Screen
F = Bottom of Screen
G = Bottom of Borehole

GENERALIZED SOIL DESCRIPTION		ELEV. (ft above BD)	DEPTHS (ft below/ above ground)
0-17 ft: FILL-Sand, Gravel, Silt Concrete, Brick, Wood	A		0
	B		
	C		3
	D		4
	E		6
	F		16
	G		17



REMARKS (Installation, development):
Developed until clear of fines, 2/27/95. Approximately 25 gallons removed.

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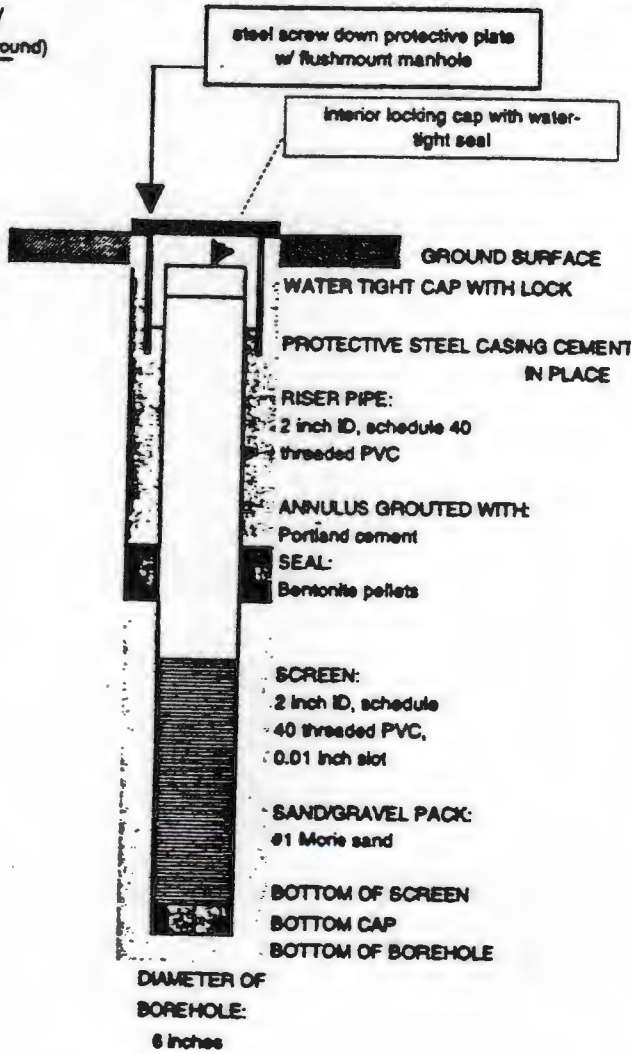
CONSTRUCTION OF BEDROCK WELL / PIEZOMETER **MW-3**

Project name & location Silverstein Properties, 42nd St., NY, NY	*Well lock No.* 712	*Elevation datum*
Drilling company Warren George, Inc.	*Surveyor*	*Ground elevation* ft
Date and time of completion 2/24/1995 1500	*Longitude*	*Top of protective steel casing elevation* ft
Inspector K. Smith	*Latitude*	*Top of riser pipe elevation* ft

A = Ground Surface
B = Top of Riser
C = Top of Bentonite Seal
D = Top of Sand Pack
E = Top of Screen
F = Bottom of Screen
G = Bottom of Borehole

GENERALIZED SOIL DESCRIPTION		ELEV. (ft above BD)	DEPTHS (ft below/ above ground)
0-20 ft: FILL-Sand, Gravel, Silt Concrete	A		0
	B		
	C		2
	D		3
	E		5
	F		20
	G		20



REMARKS (Installation, development) :
Developed until clear of fines, 2/27/95. Approximately 25 gallons removed.

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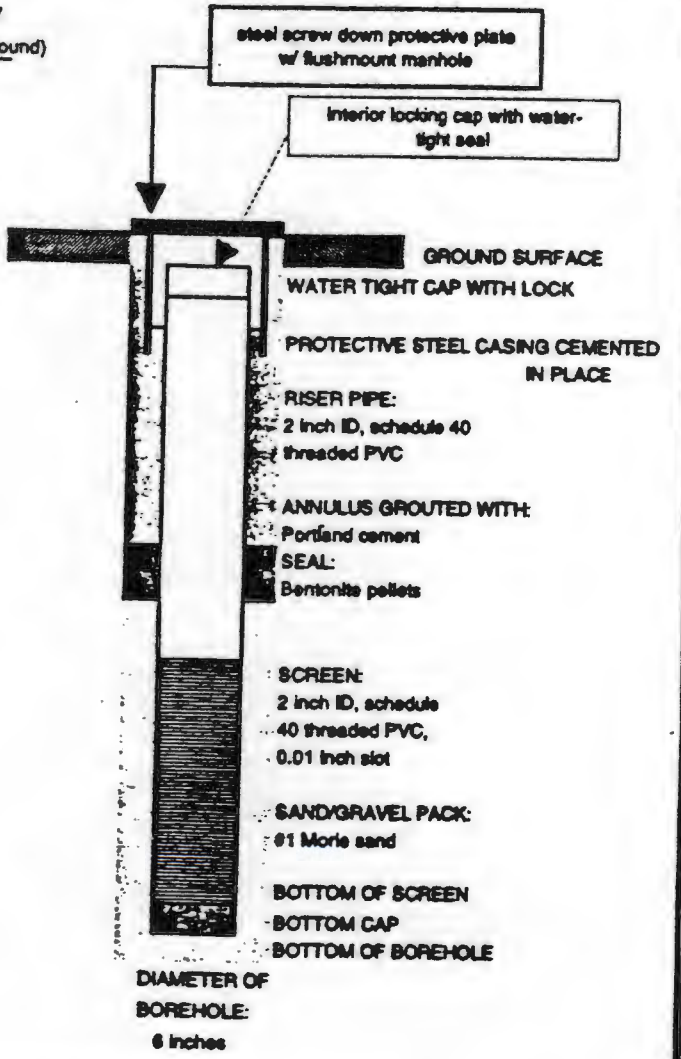
CONSTRUCTION OF BEDROCK WELL / PIEZOMETER **MW-4**

Project name & location Silverstein Properties, 42nd St., NY, NY	*Well lock No.* 712	*Elevation datum*
Drilling company Warren George, Inc.	*Surveyor*	*Ground elevation* ft
Date and time of completion 5/3/1995 1500	*Longitude*	*Top of protective steel casing elevation* ft
Inspector K. Smith	*Latitude*	*Top of riser pipe elevation* ft

A = Ground Surface
B = Top of Riser
C = Top of Bentonite Seal
D = Top of Sand Pack
E = Top of Screen
F = Bottom of Screen
G = Bottom of Borehole

	ELEV. (ft above BD)	DEPTHS (ft below/ above ground)
GENERALIZED SOIL DESCRIPTION		
0-12 ft: FILL-Sand, Gravel, Concrete, Silt, Wood		
	A	0
	B	
	C	0.5
	D	1
	E	2
	F	12
	G	12



REMARKS (Installation, development):
Developed 5/10/95 until clear of fines. Approximately 18 gallons removed.

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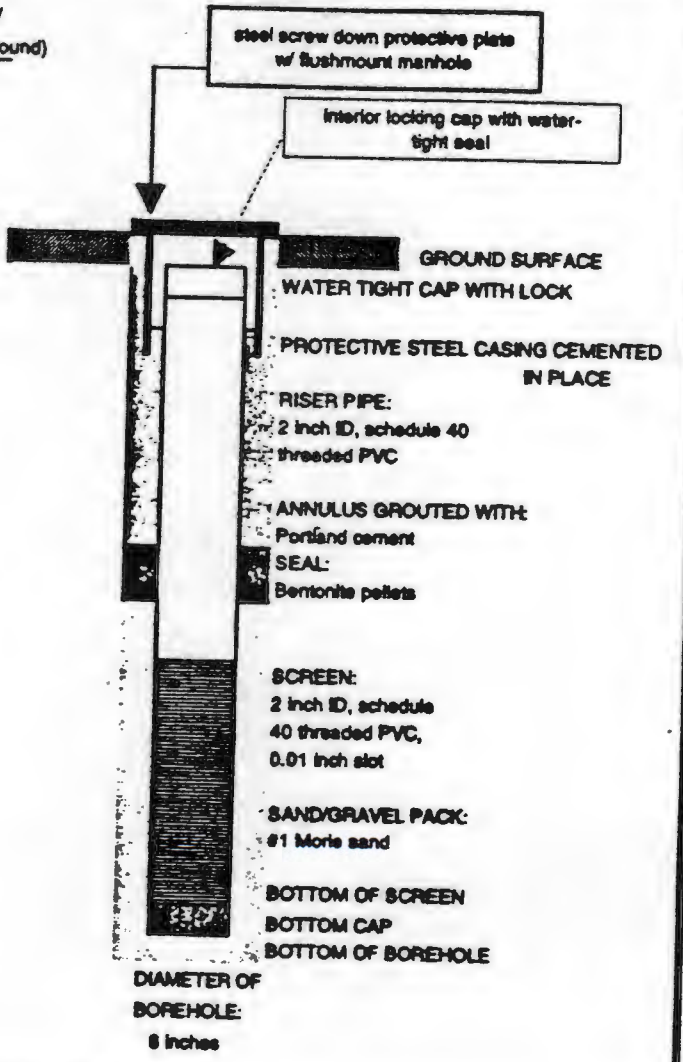
CONSTRUCTION OF BEDROCK WELL / PIEZOMETER **MW-5**

Project name & location Silverstein Properties, 42nd St., NY, NY	*Well lock No.* 712	*Elevation datum*
Drilling company Warren George, Inc.	*Surveyor*	*Ground elevation* ft
Date and time of completion 5/8/1995 1035	*Longitude*	*Top of protective steel casing elevation* ft
Inspector K. Smith	*Latitude*	*Top of riser pipe elevation* ft

A = Ground Surface
B = Top of Riser
C = Top of Bentonite Seal
D = Top of Sand Pack
E = Top of Screen
F = Bottom of Screen
G = Bottom of Borehole

	ELEV. (ft above BD)	DEPTHS (ft below/ above ground)
GENERALIZED SOIL DESCRIPTION		
0-13 ft: FILL-Sand, Gravel, Brick, Cinders		
	A	0
	B	
	C	0.5
	D	1
	E	2
	F	12
	G	13



REMARKS (Installation, development) :
Developed 5/10/95 until clear of fines. Approximately 33 gallons removed.

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

CONSTRUCTION OF BEDROCK WELL / PIEZOMETER **MW-6**

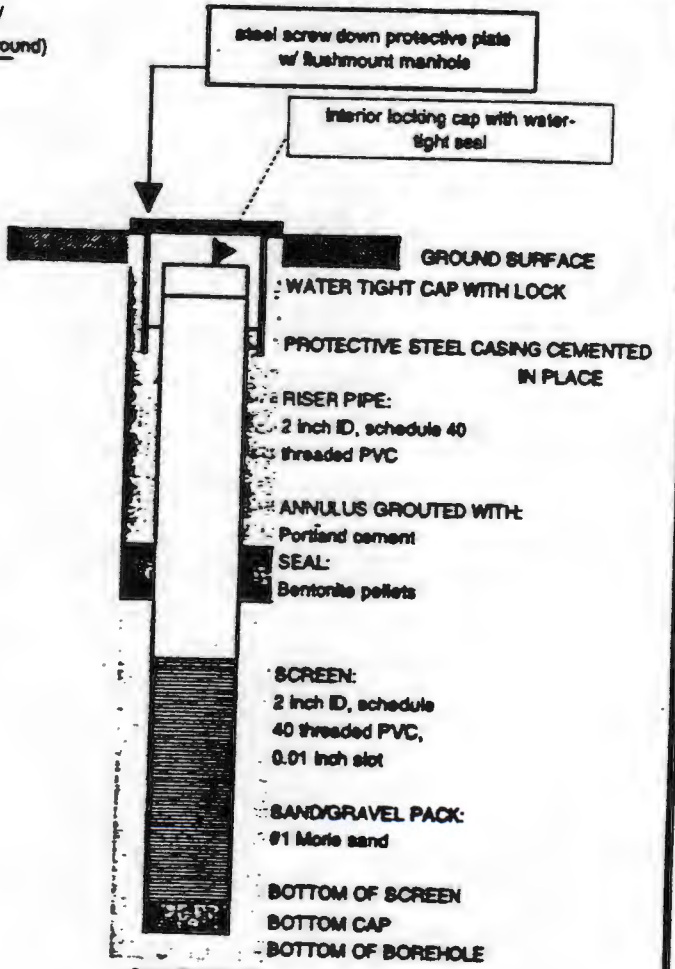
Project name & location Silverstein Properties, 42nd St., NY, NY	*Well lock No.* 712	*Elevation datum*
Drilling company Warren George, Inc.	*Surveyor*	*Ground elevation* ft
Date and time of completion 5/5/1995 1500	*Longitude*	*Top of protective steel casing elevation* ft
Inspector K. Smith	*Latitude*	*Top of riser pipe elevation* ft

A = Ground Surface
B = Top of Riser
C = Top of Bentonite Seal
D = Top of Sand Pack
E = Top of Screen
F = Bottom of Screen
G = Bottom of Borehole

	ELEV. (ft above BD)	DEPTHS (ft below/ above ground)
A		0
B		
C		2.5
D		3
E		4
F		14
G		14

GENERALIZED SOIL DESCRIPTION

0-14 ft:
FILL-Sand, Gravel, Cinders, Brick, Concrete



REMARKS (Installation, development):
Developed 5/10/95 until clear of fines. Approximately 22 gallons removed.

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

CONSTRUCTION OF BEDROCK WELL / PIEZOMETER **MW-7**

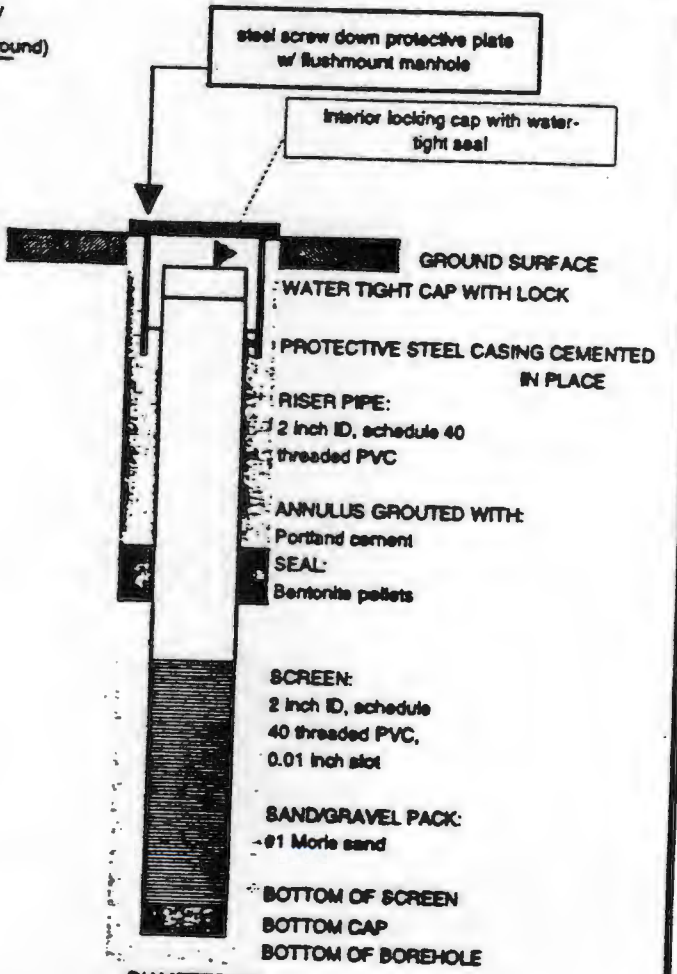
Project name & location Silverstein Properties, 42nd St., NY, NY	*Well lock No.* 712	*Elevation datum*
Drilling company Warren George, Inc.	*Surveyor*	*Ground elevation* ft
Date and time of completion 5/8/1995 1400	*Longitude*	*Top of protective steel casing elevation* ft
Inspector K. Smith	*Latitude*	*Top of riser pipe elevation* ft

A = Ground Surface
B = Top of Riser
C = Top of Bentonite Seal
D = Top of Sand Pack
E = Top of Screen
F = Bottom of Screen
G = Bottom of Borehole

	ELEV. (ft above BD)	DEPTHS (ft below/ above ground)
A		0
B		
C		1
D		1.5
E		3
F		13
G		13

GENERALIZED SOIL DESCRIPTION

0-13 ft:
FILL-Sand, Gravel, Slag, Concrete



REMARKS (Installation, development) :
Developed 5/10/95 using hand bailer.

.esults, Soil: Delineation Sampling
...rem Properties L.P.
500-516 Twelfth Avenue
New York, New York 10036
Project No. 5E04530

SAMPLE NO.	NYS TCLP ALTERNATIVE GUIDANCE VALUES SOIL	SBT1			SBT2			SBT3			SBT4			SBT5		
LABORATORY ID NO.		AA32439			AA32442			AA32441			AA32444			AA32443		
DEPTH		7.0'-7.5'			7.5'-8.0'			7.0'-7.5'			7.0'-7.5'			5.5'-6.0'		
SAMPLE COLLECTION DATE		7-Aug-95			7-Aug-95			7-Aug-95			7-Aug-95			7-Aug-95		
LABORATORY RECEIPT DATE		7-Aug-95			7-Aug-95			7-Aug-95			7-Aug-95			7-Aug-95		
MATRIX		SOIL			SOIL			SOIL			SOIL			SOIL		
UNITS	µg/kg	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
		pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q
Volatile Organic Compounds																
Benzene	14	1	***28***		1	–		1	–		6	***29***		1	–	
Ethylbenzene	100	6	***190***		7	–		7	–		32	70		6	–	
Toluene	100	6	2	J	7	–		7	–		32	–		6	–	
o-Xylene	100	6	2	J	7	–		7	–		32	58		6	–	
m&p-Xylene	100	6	3	J	7	–		7	–		32	60		6	–	
Isopropylbenzene	100	6	35		7	–		7	–		32	***430***		6	–	
n-Propylbenzene	100	6	69		7	3	J	7	–		32	***440***		6	–	
p-Isopropyltoluene	100	6	7		7	–		7	–		32	***160***		6	–	
1,2,4-Trimethylbenzene	100	6	40		7	–		7	–		32	***360***		6	–	
1,3,5-Trimethylbenzene	100	6	6		7	2	J	7	–		32	***220***		6	–	
n-Butylbenzene	100	6	15		7	–		7	–		32	–		6	–	
sec-Butylbenzene	100	6	–		7	–		7	–		32	–		6	–	
Naphthalene	200	6	3	J	7	3	J	7	2	J	32	***330***		6	–	
Methyl Tertiary Butyl Ether	1000	6	–		7	–		7	–		32	NA		6	–	
tert-Butylbenzene	100		NA		7	–		7	–		32	–		6	–	
Total Volatile Organic Compounds			422			6	J		2	J		2157	J			
Semi-Volatile Organic Compounds																
Naphthalene	200		NA		240	–		2400	***10000***		240	83	J	850	***4600***	
Acenaphthene	400		NA		240	–		2400	***50000***		240	***1500***		850	520	J
Fluorene	1000		NA		240	–		2400	***230000***		240	***1500***		850	–	
Phenanthrene	1000		NA		240	120.0	J	2400	***690000***		240	***6000***		850	***6700***	
Anthracene	1000		NA		240	100.0	J	2400	***220000***		240	***1800***		850	***1800***	
Fluoranthene	1000		NA		240	320.0		2400	***470000***		240	***1900***		850	***6700***	
Pyrene	1000		NA		240	280.0		2400	***360000***		240	***3300***		850	***5900***	
Benzo (a) Anthracene	0.04		NA		240	170.0	J	2400	***200000***		240	140	J	850	***4300***	
Chrysene	0.04		NA		240	160.0	J	2400	***190000***		240	110	J	850	***4400***	
Benzo (b) Fluoranthene	0.04		NA		240	240.0	J	2400	***190000***		240	98	J	850	***7800***	
Benzo (k) Fluoranthene	0.04		NA		96	–		980	***76000***		95	***99***		340	***2700***	
Benzo (a) Pyrene	0.04		NA		240	130.0	J	2400	***180000***		240	100	J	850	***7100***	
Indeno (1,2,3-cd) Pyrene	0.04		NA		240	–		2400	***25000***		240	–		850	***2700***	
Dibenz (a,h) Anthracene	0.04		NA		240	–		2400	***7900***		240	–		850	820	J
Benzo (g,h,i) Perylene	0.04		NA		240	–		2400	***23000***		240	–		850	***2800***	
Total Semi-Volatile Compounds						1520.0			2661900.0			16630.0			58640.0	
TOTAL ORGANIC COMPOUNDS			422.0			1526.0			2661902.0			18787.0			58640.0	

Notes:

Bold & Italicized Numbers = Exceedence of Alternative Guidance Values
pql = practical quantification limit of method as reported by the analytical laboratory
conc = concentration
Q = Qualifier
J = Indicates an estimated value
– = Not detected
µg/kg = micrograms per kilogram
E = Concentration exceeds the calibration range of the GC/MS for that compound
NA = Not analyzed

Methodologies: Volatile organic compounds by EPA method 8021
Semi-volatile compounds by EPA method 8270
NYS TCLP Alternative Guidance Values were obtained from STARS Memo #1

Results, Soil: Delineation Sampling
Silverstein Properties L.P.
500-516 Twelfth Avenue
New York, New York 10036
Project No. 5E04530

SAMPLE NO.	NYS TCLP	SBT6			SBT7			SBT8			SBT9			SBT10		
SAMPLE ID	ALTERNATIVE	AA32440			AA32437			AA32438			AA32447			AA32444		
DEPTH	GUIDANCE	5.5'-6.0'			6.5'-7.0'			7.0'-7.5'			7.0'-7.5'			7.0'-7.5'		
SAMPLE COLLECTION DATE	VALUES SOIL	7-Aug-95			7-Aug-95			7-Aug-95			9-Aug-95			9-Aug-95		
LABORATORY RECEIPT DATE		7-Aug-95			7-Aug-95			7-Aug-95			10-Aug-95			10-Aug-95		
MATRIX		SOIL			SOIL			SOIL			SOIL			SOIL		
UNITS	µg/kg	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
		pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q
Volatile Organic Compounds																
Benzene	14	1	--		1	--		6	--		7	--		1	--	
Ethylbenzene	100	6	--		7	--		32	49		33	12	J	6	--	
Toluene	100	6	--		7	--		32	--		33	--		6	--	
o-Xylene	100	6	--		7	--		32	--		33	7	J	6	--	
m&p-Xylene	100	6	--		7	--		32	--		33	15	J	6	--	
Isopropylbenzene	100	6	--		7	--		32	32	J	33	99		6	--	
n-Propylbenzene	100	6	--		7	--		32	77		33	***410***		6	--	
p-Isopropyltoluene	100	6	--		7	--		32	--		33	***100***		6	--	
1,2,4-Trimethylbenzene	100	6	--		7	--		32	13	J	33	41		6	--	
1,3,5-Trimethylbenzene	100	6	--		7	--		32	--		33	--		6	--	
n-Butylbenzene	100	6	--		7	--		32	--		33	***460***		6	--	
sec-Butylbenzene	100	6	--		7	--		32	--		33	--		6	--	
Naphthalene	200	6	4	J	7	--		32	13	J	33	140		6	5	J
Methyl Tertiary Butyl Ether	1000	6	--		7	--		32	--			NA			NA	
tert-Butylbenzene	100		NA			NA			NA		33	--		6	--	
Total Volatile Organic Compounds			4	J					184	J		1284	J		5	J
Semi-Volatile Organic Compounds																
Naphthalene	200		NA			NA			NA		220	--		1300	1100	J
Acenaphthene	400		NA			NA			NA		220	--		1300	--	
Fluorene	1000		NA			NA			NA		220	--		1300	--	
Phenanthrene	1000		NA			NA			NA		220	130	J	1300	***6500***	
Anthracene	1000		NA			NA			NA		220	--		1300	***1900***	
Fluoranthene	1000		NA			NA			NA		220	220		1300	***19000***	
Pyrene	1000		NA			NA			NA		220	180	J	1300	***17000***	
Benzo (a) Anthracene	0.04		NA			NA			NA		220	120	J	1300	***12000***	
Chrysene	0.04		NA			NA			NA		220	100	J	1300	***12000***	
Benzo (b) Fluoranthene	0.04		NA			NA			NA		220	130	J	1300	***18000***	
Benzo (k) Fluoranthene	0.04		NA			NA			NA		89	51	J	520	***4800***	
Benzo (a) Pyrene	0.04		NA			NA			NA		220	110	J	1300	***15000***	
Indeno (1,2,3-cd) Pyrene	0.04		NA			NA			NA		220	--		1300	***6000***	
Dibenz (a,h) Anthracene	0.04		NA			NA			NA		220	--		1300	***1500***	
Benzo (g,h,i) Perylene	0.04		NA			NA			NA		220	--		1300	***5900***	
Total Semi-Volatile Compounds												1041.0			120800.0	
TOTAL ORGANIC COMPOUNDS			4.0						184.0			2325.0			120805.0	

Notes:

Bold & Italicized Numbers = Exceedence of Alternative Guidance Values
pql = practical quantification limit of method as reported by the analytical laboratory
conc = concentration
Q = Qualifier
J = Indicates an estimated value
-- = Not detected
µg/kg = micrograms per kilogram
E = Concentration exceeds the calibration range of the GC/MS for that compound
NA = Not analyzed

Methodologies: Volatile organic compounds by EPA method 8021
Semi-volatile compounds by EPA method 8270
NYS TCLP Alternative Guidance Values were obtained from STARS Memo #1

Results, Soil: Delineation Sampling
Silverstein Properties L.P.
500-516 Twelfth Avenue
New York, New York 10036
Project No. 5E04530

SAMPLE NO.	NYS TCLP ALTERNATIVE GUIDANCE VALUES SOIL	SBT11			SBT12			FB080795			FB080995		
SAMPLE ID		AA32545			AA32546			AA32445			AA32548		
DEPTH		6.5'-7.0'			6.0'-6.5'								
SAMPLE COLLECTION DATE		9-Aug-95			9-Aug-95			7-Aug-95			9-Aug-95		
LABORATORY RECEIPT DATE		10-Aug-95			10-Aug-95			7-Aug-95			10-Aug-95		
MATRIX		SOIL			SOIL			Water			Water		
UNITS	µg/kg	µg/kg			µg/kg			µg/kg			µg/L		
		pql	conc	Q	pql	conc	Q	pql	conc	Q	pql	conc	Q
Volatile Organic Compounds													
Benzene	14	1	--		170	--		1	--		1	--	
Ethylbenzene	100	6	--		840	***470***	J	5	--		5	--	
Toluene	100	6	--		840	--		5	--		5	--	
o-Xylene	100	6	--		840	--		5	--		5	--	
m&p-Xylene	100	6	--		840	--		5	--		5	--	
Isopropylbenzene	100	6	--		840	***1300***		5	--		5	--	
n-Propylbenzene	100	6	--		840	***6500***		5	--		5	--	
p-Isopropyltoluene	100	6	--		840	***440***	J	5	--		5	--	
1,2,4-Trimethylbenzene	100	6	--		840	***290***	J	5	--		5	--	
1,3,5-Trimethylbenzene	100	6	--		840	--		5	--		5	--	
n-Butylbenzene	100	6	--		840	***2800***		5	--		5	--	
sec-Butylbenzene	100	6	--		840	--		5	--		5	--	
Naphthalene	200	6	--		840	***2300***		5	2	J	5	1	J
Methyl Tertiary Butyl Ether	1000		NA			NA		5	--		5	--	
tert-Butylbenzene	100	6	--		840	--			NA		5	--	
Total Volatile Organic Compounds						14100	J		2	J		1	J
Semi-Volatile Organic Compounds													
Naphthalene	200	190	***340***		230	***430***			NA			NA	
Acenaphthene	400	190	210		230	140	J		NA			NA	
Fluorene	1000	190	250		230	340			NA			NA	
Phenanthrene	1000	190	***3800***		230	***2100***			NA			NA	
Anthracene	1000	190	630		230	580			NA			NA	
Fluoranthene	1000	190	***5400***		230	***2300***			NA			NA	
Pyrene	1000	190	***4600***		230	***3700***			NA			NA	
Benzo (a) Anthracene	0.04	190	***2700***		230	***1700***			NA			NA	
Chrysene	0.04	190	***3600***		230	***1800***			NA			NA	
Benzo (b) Fluoranthene	0.04	190	***4900***		230	***2300***			NA			NA	
Benzo (k) Fluoranthene	0.04	74	***1700***		90	***1100***			NA			NA	
Benzo (a) Pyrene	0.04	190	***3500***		230	***2500***			NA			NA	
Indeno (1,2,3-cd) Pyrene	0.04	190	***1300***		230	***870***			NA			NA	
Dibenz (a,h) Anthracene	0.04	190	***280***		230	***280***			NA			NA	
Benzo (g,h,i) Perylene	0.04	190	***1300***		230	***970***			NA			NA	
Total Semi-Volatile Compounds			33910.0			21110.0							
TOTAL ORGANIC COMPOUNDS			33910.0			35210.0			2.0			1.0	

Notes:

Bold & Italicized Numbers = Exceedance of Alternative Guidance Values
pql = practical quantification limit of method as reported by the analytical laboratory
conc = concentration
Q = Qualifier
J = Indicates an estimated value
-- = Not detected
µg/kg = micrograms per kilogram
E = Concentration exceeds the calibration range of the GC/MS for that compound
NA = Not analyzed

Methodologies: Volatile organic compounds by EPA method 8021
Semi-volatile compounds by EPA method 8270
NYS TCLP Alternative Guidance Values were obtained from STARS Memo #1

TABLE 3 ..., Groundwater Sampling
...rties L.P.
500-510 Twelfth Avenue
New York, New York 10036
Project No. 5E04530

WCC SAMPLE NO.	NYSDEC	MWT-1			MWT-2			MW-2			FB081695			TB081695		
LABORATORY ID NO.	Water Quality	AA32683			AA32684			AA32685			AA32686			AA32687		
SAMPLE COLLECTION DATE	Regulations	8/16/95			8/16/95			8/16/95			8/16/95			8/16/95		
LABORATORY RECEIPT DATE	Title 6, Chapter X Parts 700 - 705	8/16/95			8/16/95			8/16/95			8/16/95			8/16/95		
MATRIX		Water			Water			Water			Water			Water		
UNITS	µg/l	µg/l			µg/l			µg/l			µg/l			µg/l		
		MDL	conc	Q	MDL	conc	Q	MDL	conc	Q	MDL	conc	Q	MDL	conc	Q
ORGANIC COMPOUNDS																
Volatile Organic Compounds																
Benzene	0.7	0.20	***9.6***		0.20	--		0.20	***59***		0.20	--		0.20	--	
Ethylbenzene	5	0.16	2.1		0.16	--		0.16	5		0.16	--		0.16	--	
Toluene	5	0.14	--		0.14	--		0.14	--		0.14	--		0.14	--	
o-Xylene	5	0.13	1.2		0.13	--		0.13	1.1	J	0.13	--		0.13	--	
m&p-Xylene	5	0.44	1.1		0.44	--		0.44	1.8	J	0.44	--		0.44	--	
Isopropylbenzene	5	0.32	2.3		0.32	--		0.32	***5.2***	J	0.32	--		0.32	--	
n-Propylbenzene	5	0.30	1.1		0.30	--		0.30	1.6	J	0.30	--		0.30	--	
p-Isopropyltoluene	5	0.43	--		0.43	--		0.43	0.65		0.43	--		0.43	--	
1,2,4-Trimethylbenzene	5	0.26	4.5		0.26	--		0.26	1.2	J	0.26	--		0.26	--	
1,3,5-Trimethylbenzene	5	0.28	4.9		0.28	--		0.28	0.58		0.28	--		0.28	--	
n-Butylbenzene	5	0.34	--		0.34	--		0.34	--		0.34	--		0.34	--	
sec-Butylbenzene	5	0.36	--		0.36	--		0.36	--		0.36	--		0.36	--	
tert-Butylbenzene	5	0.33	--		0.33	--		0.33	--		0.33	--		0.33	--	
Naphthalene	10	0.43	3.7		0.43	--		0.43	***16***		0.43	--	J	0.43	--	
Total Volatile Organic Compounds			30.5			0			92.13			0			0	
Semi-Volatile Organic Compounds																
Anthracene	50	0.61	--		0.61	--		0.65	9.9		2.40	--			NA	
Fluorene	50	1.10	--		1.10	--		1.20	5.9		4.40	--			NA	
Phenanthrene	50	0.66	--		0.66	--		0.70	6.7		2.60	--			NA	
Pyrene	50	0.67	--		0.67	--		0.71	11.0		2.70	--			NA	
Acenaphthene	20	1.40	***100***		1.40	--		1.50	***41.0***		5.60	--			NA	
Benzo(a)anthracene	0.002	0.80	--		0.90	--		0.95	***5.5***		3.60	--			NA	
Fluoranthene	50	0.70	--		0.70	--		0.74	11.0		2.80	--			NA	
Benzo(b)fluoranthene	0.002	0.64	--		0.64	--		0.68	--		2.60	--			NA	
Benzo(k)fluoranthene	0.002	0.87	--		0.87	--		0.92	***3.1***		3.50	--			NA	
Chrysene	0.002	0.60	--		0.60	--		0.64	***4.0***		2.40	--			NA	
Benzo(a)pyrene	0.002	0.76	--		0.76	--		0.79	--		3.00	--			NA	
Benzo(g,h,i)perylene	0.002	0.74	--		0.74	--		0.78	--		3.00	--			NA	
Indeno(1,2,3-cd)pyrene	0.002	0.59	--		0.69	--		0.63	--		2.40	--			NA	
Dibenzo(a,h)anthracene	50	0.66	--		0.66	--		0.70	--		2.80	--			NA	
Naphthalene	10	2.20	2.7		2.20	--		2.30	***11.0***		8.80	--			NA	
Total Semi-Volatile Organic Compounds			102.7			0			109.1			0			0	
TOTAL ORGANIC COMPOUNDS			133.2			0			201.23			0			0	

Notes:

Bold & Italicized Numbers = Exceedence of Alternative Guidance Values

MDL = method detection limit as reported by the analytical laboratory

conc = concentration

Q = Qualifier

J = Indicates an estimated value

-- = Not detected

µg/l = micrograms per liter

E = Concentration exceeds the calibration range of the GC/MS for that compound

NA = Not analyzed

Methodologies: Volatile organic compounds by EPA method 8021; Semi-volatile compounds by EPA method 8270

PHOTOGRAPH NO. 11

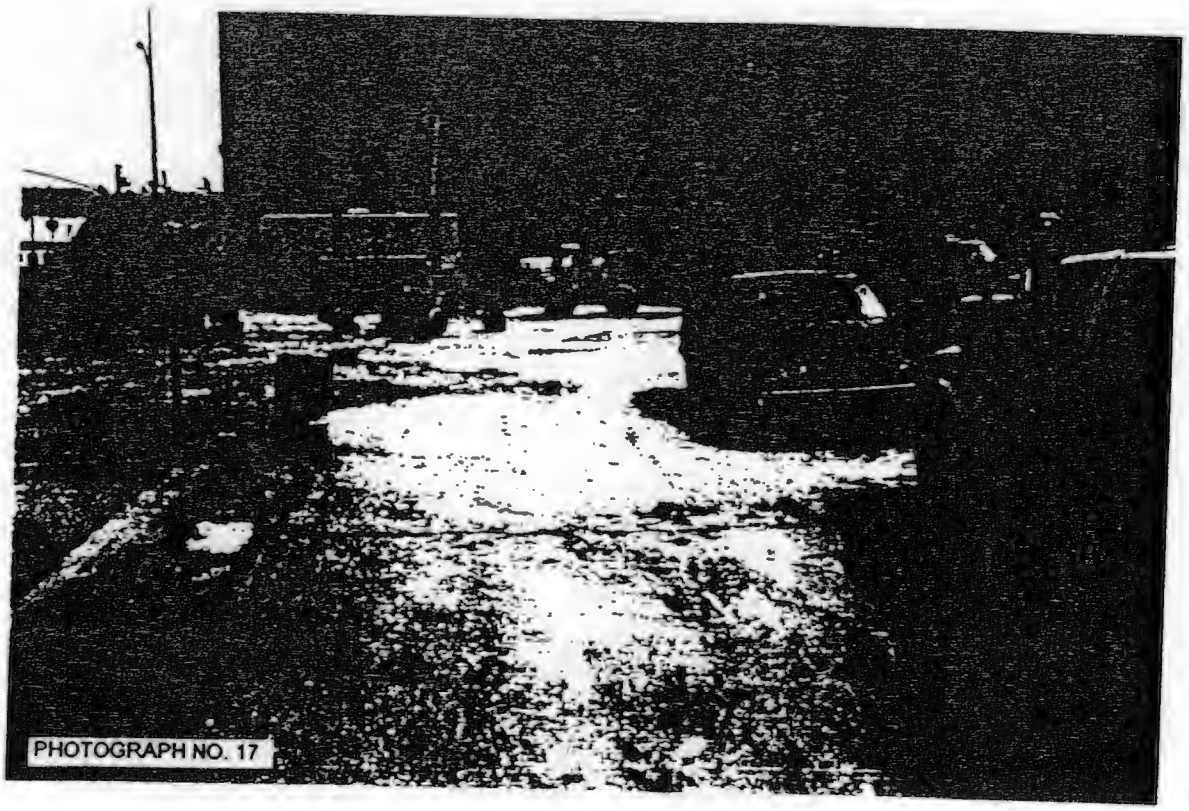
PHOTOGRAPH NO. 12

PHOTOGRAPH NO. 13

PHOTOGRAPH NO. 14

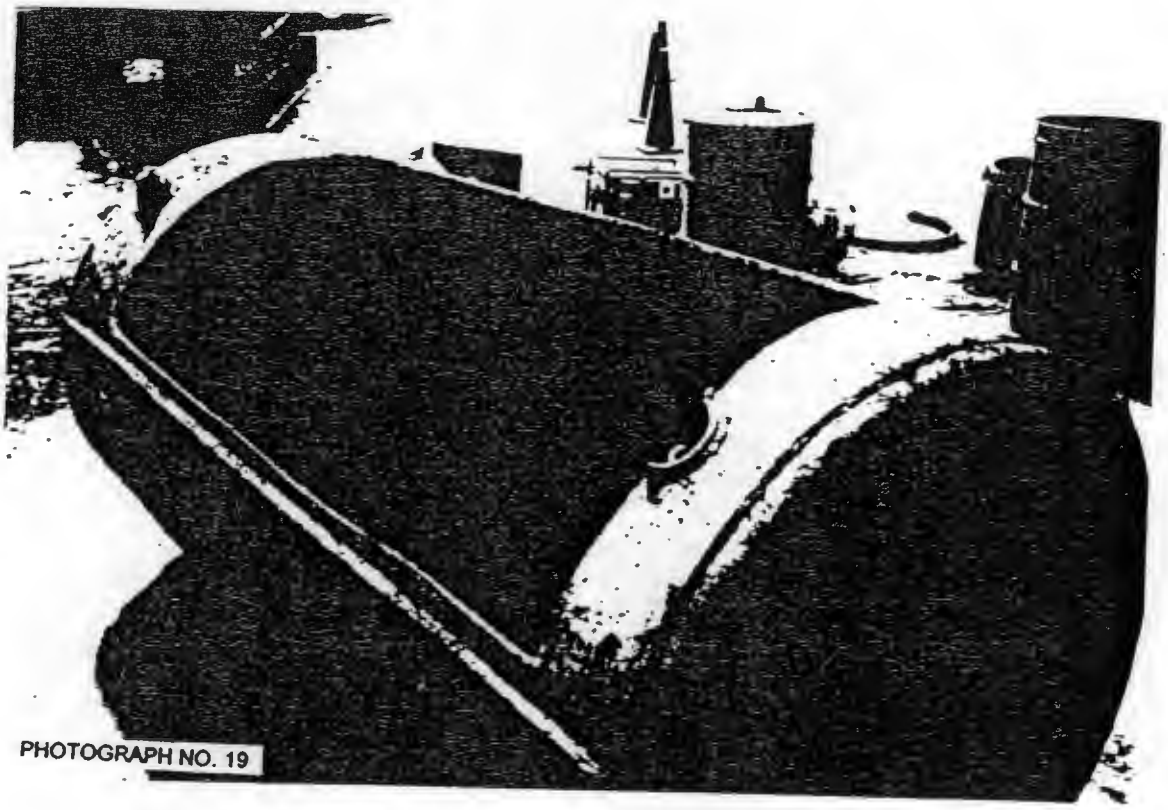
PHOTOGRAPH NO. 15

PHOTOGRAPH NO. 16



PHOTOGRAPH NO. 17

PHOTOGRAPH NO. 18



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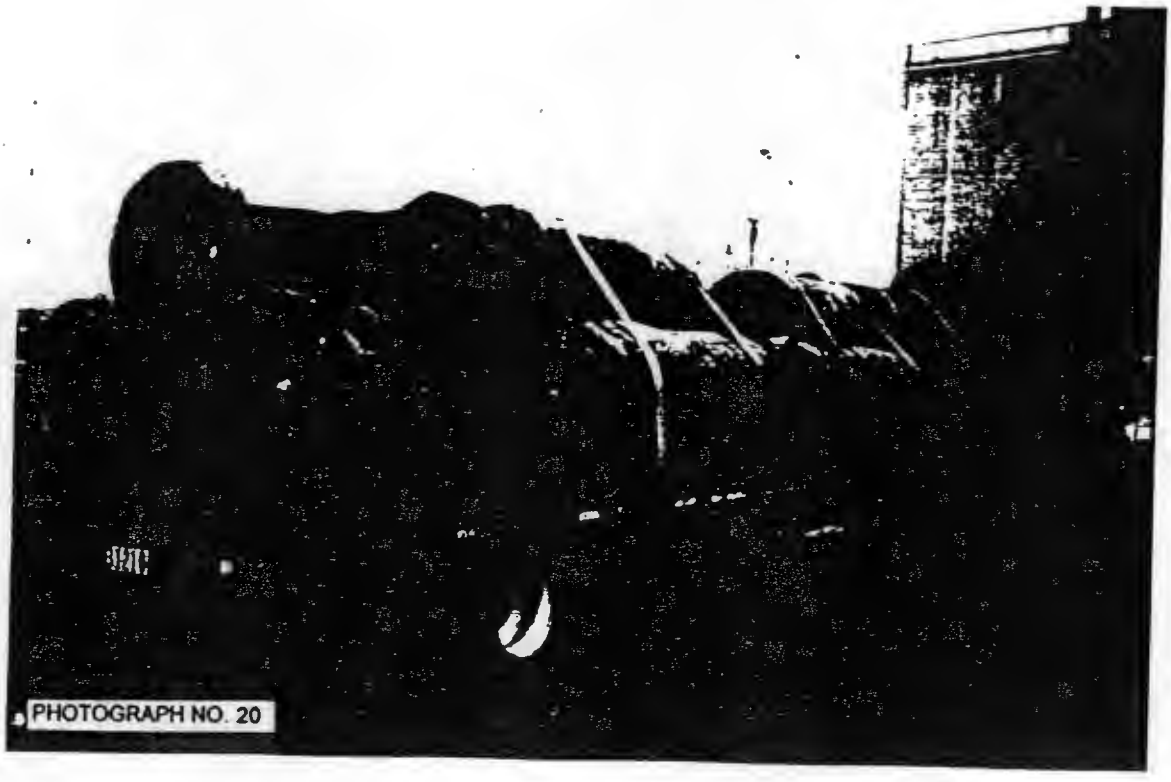

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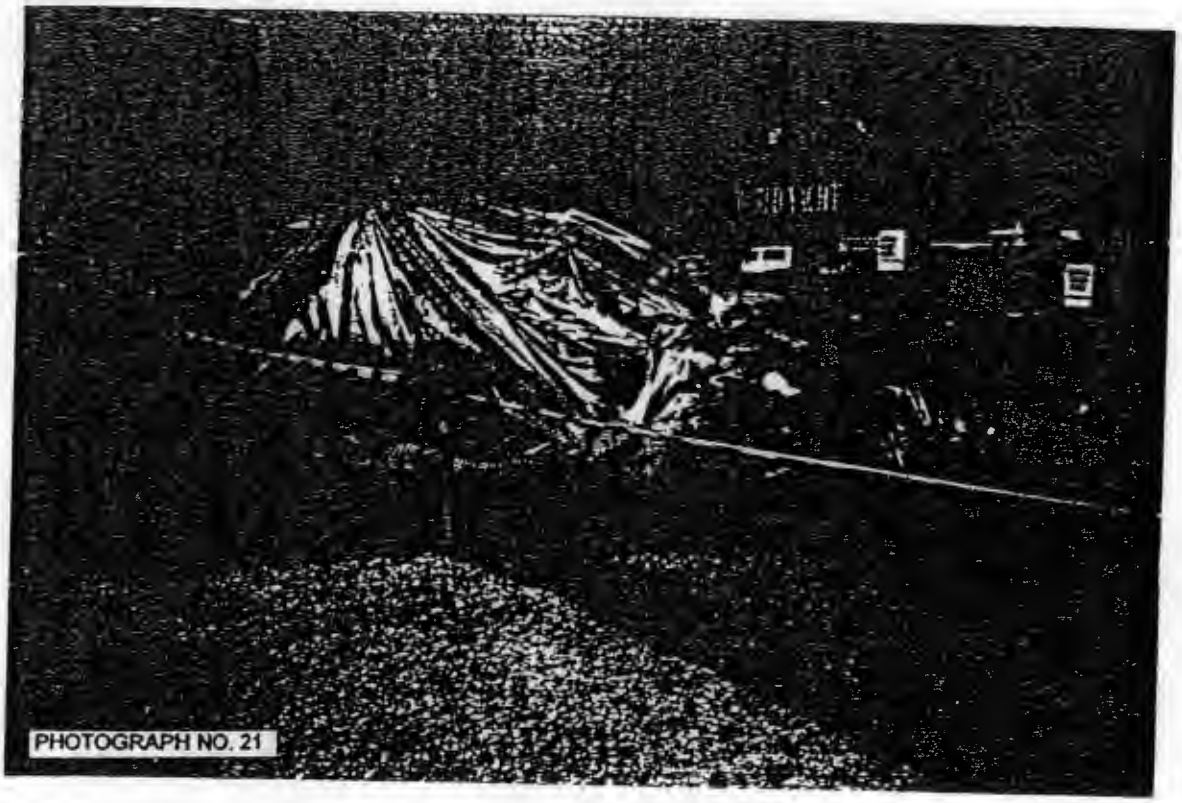
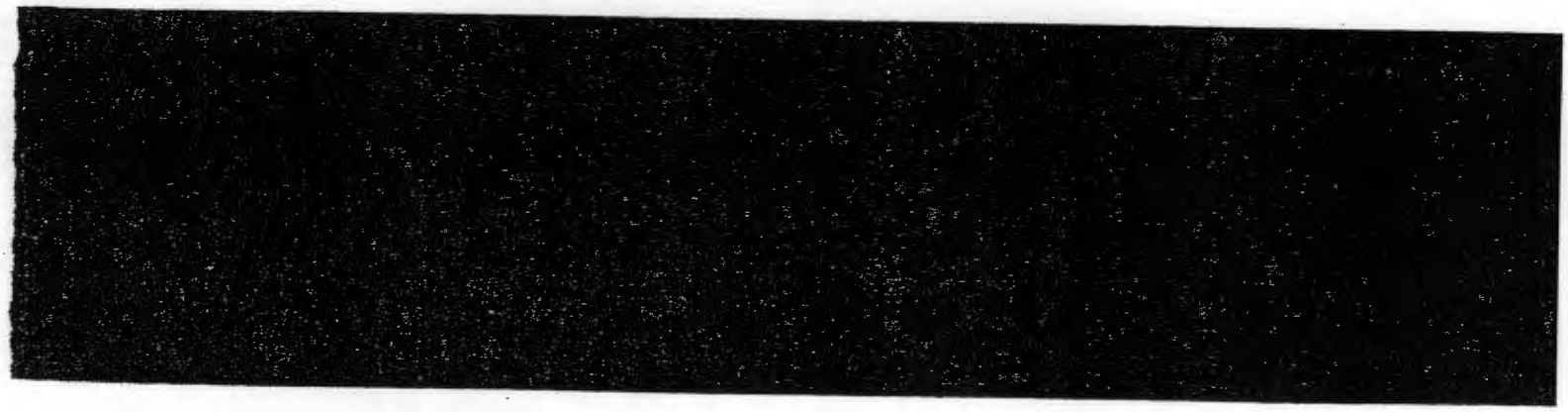


PHOTOGRAPH NO. 21



This Shipping Order must be legibly filled in, in ink, in indelible Pencil, or in Carbon, and retained by the Agent.

Shipper No. _____

Page 1 of 1

UNICO Environmental
(Name of carrier) (SCAC)

Carrier No. 16

Date 5-15-9

On Collect on Delivery shipments the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec. 1

TO:
Consignee UNICO
Street 57 Main St
City Commack State NY Zip Code

FROM:
Shipper American Hi-Tech
Street 12th Ave & 42nd St
City NY State NY Zip Code
24 hr. Emergency Contact Tel. No. 516 864 1775

Route

Vehicle Number PP137

No. of Units & Container Type	HM	BASIC DESCRIPTION Proper Shipping Name, Hazard Class, Identification Number (UN or NA), Packing Group, per 172.101, 172.202, 172.203	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGE (For Carrier Use Only)
1-TT	X	Gasoline 3 UN1203 I	4200 GAL			

PLACARDS TENDERED: YES ☐ NO ☐

REMIT C.O.D. TO:
ADDRESS

Note — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ _____ per _____

I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by (Rail & Highway & Water (DELETE NON-APPLICABLE MODE OF TRANSPORT) according to applicable international and national governmental regulations.
_____ Signature

COD Amt: $

Subject to Section 7 of the conditions, if the shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
_____ Signature of Consignor

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

TOTAL CHARGES: $

FREIGHT CHARGES
FREIGHT PREPAID except when box at right is checked ☐ Check box if charges are to be collected

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER American Hi-Tech
PER _____

CARRIER UNICO
PER _____
DATE 5-15-9

Permanent post-office address of shipper.

FREIGHT CHARGES ARE PREPAID ON THIS BILL OF LADING UNLESS MARKED COLLECT

STRAIGHT BILL OF LADING

ORIGINAL – NOT NEGOTIABLE

Shipper No.

Page 1 of 1

UNICO Environmental (Name of carrier) (SCAC)

Carrier No. 28

Date 5-23-95

TO: Consignee UNICO
Street 57 [illegible] Dr
City Commack State NY Zip Code

FROM: Shipper American Hi Tech Parking lot
Street 12th AVE & 42nd ST
City NY State NY Zip Code
24 hr. Emergency Contact Tel. No. 516 864 1775

Route FTCK

Vehicle Number [illegible] 1384

No. of Units & Container Type	HM	BASIC DESCRIPTION Proper Shipping Name, Hazard Class, Identification Number (UN or NA), Packing Group, per 172.101, 172.202, 172.203	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
1-TT		WASTE WATER	530 gal			

PLACARDS TENDERED: YES ☐ NO ☐

REMIT C.O.D. TO: ADDRESS

COD Amt: $

C.O.D. FEE PREPAID ☐ COLLECT ☐ $

TOTAL CHARGES $

FREIGHT CHARGES

SHIPPER American Hi Tech
PER [signature]

CARRIER UNICO
PER [signature]
DATE 5/23/95

Permanent post-office address of shipper.

1

STYLE F6 LABELMASTER, An American Labelmark Co., Chicago, IL 60646 800/621-5808

I certify that the above mentioned work was done by me, (us) in a workman like manner. I further certify that these repairs were made

JACOB GOLDBERG & SON INC.

NO. 34859

450 Seventeenth Street • P.O. Box 940 • Perth Amboy, NJ 08862 • (908) 826-1438
Jersey & Van Dyke Avenues • New Brunswick, NJ 08901 • (908) 846-1234
Fax (908) 826-6059

MEMBER Institute of Scrap Recycling Industries, Inc.

AMERICAN HIGH TECH

DATE 5/19/95

P. O. B.			SHIP VIA	TERMS	
GROSS	TARE	NET	COMMODITY	AMOUNT	
		16	TANKS - PICKED UP IN N.Y.C.		
			CUT & RECYCLE		
			Thank You		

The undersigned certifies that he is the legal and lawful owner of the above mentioned material for which he has received full value.

Signed

Serving the Industrial & Private Sector Since 1911
Roll-Off Container Service 13 to 50 Yards

ORIGINAL COPY

ROLL OFF DIVISION 26643

10-42 CU. YD. Containers

(516) 328-8400
(212) 425-9700
(718) 633-4200

Phase 2.

Waste Control Service Inc.

6016 - 15th Avenue
Brooklyn, N.Y. 11219
D.C.A. Lic. # 483-168

Name American Hi Tech Date 5-23-95.

Address W 42 ST + 12 AV.

Job Location N.Y.C. (EDISON PARKING)

	Container Size	Time Lmt.	Charge	C.O.D.
	10 YARD	2 Days		
	15 YARD	4 Days		
✓	20 YARD	4 Days	✓ (2)	~~Stat~~
	30 YARD	4 Days	TANKS	INV.
	40 YARD	4 Days	Dumpster	
	COMPACTOR			
TRUCK # 87		TAX		
DRIVER mal		TOTAL		
BOX # 222				

CUSTOMER SIGNATURE X ok

Please Read Reverse Side Of Ticket Before Signing

White Office Copy - Yellow File Copy - Pink Customer Copy - Goldenrod Inventory

AMERICAN HI-TECH, INC.
ENVIRONMENTAL ENGINEERING AND CONTRACTING

39 Avenue at the Commons
Suite 103
Shrewsbury, NJ 07702
(908)-389-8181
(908) 542-7776 Fax

180 E 88 St # 6
NYC, NY 10128

New York City Fire Dept.
250 Livingston Street
Brooklyn, NY 11202
Attn: Buried Tank Unit - 4th Floor

May 16, 1995

Re: Silverstein Properties
500-560 12th Ave.
NY, NY

STATE OF NEW YORK)
)S.S.
COUNTY OF KINGS)

AFFIDAVIT

RONALD MARKEY, BEING DULY SWORN, DISPOSES AND STATES:

1. "THAT HE IS OVER 21 YEARS OF AGE"

2. "THAT HE IS A LICENSED INSTALLER OF GASOLINE TANKS AND EQUIPMENT, UNDER LICENSE #62489679".

3. "THAT HE PURGED (16) 550 GALLON GASOLINE TANK
The tanks were removed on 5/8/95 thru 5/16/95

AS PER CODE OF CHAPTER 19

Very truly yours,

Ronald Markey

Sworn to before me this

24 day of MAY 1995

MICHAEL L. ACAMPORA
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires Oct. 16, 1996
Qualified in Monmouth County

AMERICAN HI-TECH, INC.
ENVIRONMENTAL ENGINEERING AND CONTRACTING

39 Avenue at the Commons
Suite 103
Shrewsbury, NJ 07702
(908)-389-8181
(908) 542-7776 Fax

180 E 88 St. # 6
NYC, NY 10128

New York City Fire Dept.
250 Livingston Street
Brooklyn, NY 11202
Attn: Buried Tank Unit - 4th Floor

June 9,1995

Re: Silverstein Property
500-560 12th Ave.
NY, NY

STATE OF NEW YORK)
)S.S.
COUNTY OF KINGS)

AFFIDAVIT

RONALD MARKEY, BEING DULY SWORN, DISPOSES AND STATES:

1. "THAT HE IS OVER 21 YEARS OF AGE"

2. "THAT HE IS A LICENSED INSTALLER OF GASOLINE TANKS AND EQUIPMENT, UNDER LICENSE #62489679".

3. "THAT HE PURGED (2) 550 gallon underground storage tanks
(1) waste oil
(1) hydraulic oil
The tanks were removed on 5/22/95 & 5/23/95

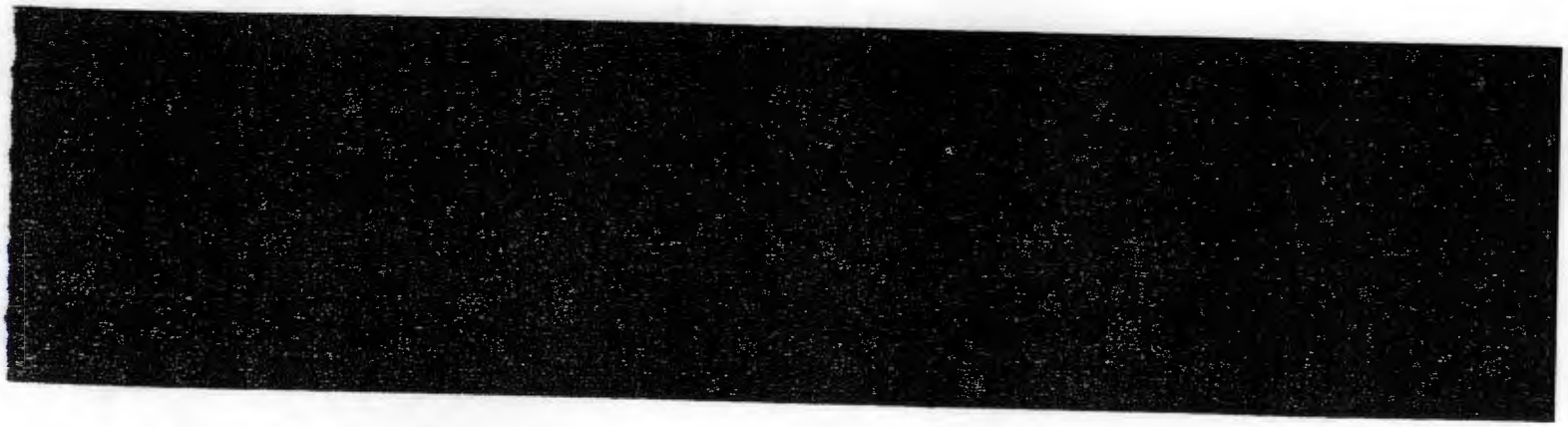
AS PER CODE OF CHAPTER 19

Very truly yours,

Ronald Markey

Sworn to before me this
9th day of June 1995

BARBARA L JOHNSON
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires August 10, 1997
Qualified in Monmouth County



G. CALABRESE & SON TRUCKING CORP.
(516) 924-2220
36-1 RICE COURT
MEDFORD, NEW YORK 11763

5/22 173

DATE 5/23 19 95

Deliver To Hi tech
Address Manhattan
42nd St & 12th ave

Driver Dink Pick Up Delivered ✓

QUANTITY		DESCRIPTION
	Cu. Yds.	Concrete Sand
	Cu. Yds.	Grit
	Cu. Yds.	Gravel ydn
	Cu. Yds.	[illegible] 40 [illegible]
	Cu. Yds.	Fill 3/4 Blend
	Cu. Yds.	Soil
	Cu. Yds.	Bankrun
	Cu. Yds.	Fly Ash
	Cu. Yds.	Fine Sand

KEEP THIS TICKET

Received by [signature]

G. CALABRESE & SON TRUCKING CORP.
(516) 924-2220
36-1 RICE COURT
MEDFORD, NEW YORK 11763

5/5

DATE 5/?/? 19 2

Deliver To
Address A Miller
HITECH

Driver Pick Up Delivered

QUANTITY		DESCRIPTION
	Cu. Yds.	Concrete Sand
	Cu. Yds.	Grit
	Cu. Yds.	Gravel
	Cu. Yds.	Stone
	Cu. Yds.	Fill
	Cu. Yds.	Soil
	Cu. Yds.	Bankrun
	Cu. Yds.	Fly Ash
	Cu. Yds. 40	Fine Sand Fill

KEEP THIS TICKET

Received by [signature]

G. CALABRESE & SON TRUCKING CORP.
(516) 924-2220
36-1 RICE COURT
MEDFORD, NEW YORK 11763

12613

DATE 5-19 1995

Deliver To Hi-Tech Construction
Address 42 St & 12 Ave.
Manhattan

Driver [illegible] Delivered

QUANTITY		DESCRIPTION
	Cu. Yds.	Concrete Sand
	Cu. Yds.	Grit
	Cu. Yds.	Gravel
	Cu. Yds.	Stone
40	Cu. Yds.	Fill
	Cu. Yds.	Soil
	Cu. Yds.	Bankrun
	Cu. Yds.	Fly Ash
	Cu. Yds.	Fine Sand

KEEP THIS TICKET

Received by [signature]

5/19

G. CALABRESE & SON TRUCKING CORP.

(516) 924-2220
36-1 RICE COURT
MEDFORD, NEW YORK 11763

5/19 2653

DATE 5/17 19 15

Deliver To Hi Tech

Address 42nd St + 12th Ave
Manhattan

Driver Gene | Pick Up | Delivered

QUANTITY		DESCRIPTION
	Cu. Yds.	Concrete Sand
	Cu. Yds.	Grit
	Cu. Yds.	Gravel
	Cu. Yds.	3/4 Blue Stone 40 tons
~~15~~	~~Cu. Yds.~~	~~Fill~~
	Cu. Yds.	Soil
	Cu. Yds.	Bankrun
	Cu. Yds.	Fly Ash
	Cu. Yds.	Fine Sand
		1 Hr Wait

KEEP THIS TICKET

G. CALABRESE & SON TRUCKING CORP.

(516) 924-2220
36-1 RICE COURT
MEDFORD, NEW YORK 11763

NO. 2652

DATE 5/19 19 15

Deliver To Hi Tech

Address 42nd St + 12th Ave
Manhattan

Driver Mike | Pick Up | Delivered X

QUANTITY Waiting Time (2 hrs) DESCRIPTION

	Cu. Yds.	Concrete Sand
	Cu. Yds.	Grit
	Cu. Yds.	Gravel
40	~~Cu. Yds.~~	Tons Stone 3/4 Blue
	Cu. Yds.	Fill
	Cu. Yds.	Soil
	Cu. Yds.	Bankrun
	Cu. Yds.	Fly Ash
	Cu. Yds.	Fine Sand

KEEP THIS TICKET

G. CALABRESE & SON TRUCKING CORP.

(516) 924-2220
36-1 RICE COURT
MEDFORD, NEW YORK 11763

1 152

DATE 5/15 1995

Deliver To: American Hi tech
Address: 42nd & 12th ave
Manhattan

Driver: Dink
Pick Up
Delivered ✓

QUANTITY		DESCRIPTION
	Cu. Yds.	Concrete Sand
	Cu. Yds.	Grit
	Cu. Yds.	Gravel
40 tons	Cu. Yds.	Stone (circled) 3/4
	Cu. Yds.	Fill
	Cu. Yds.	Soil
	Cu. Yds.	Bankrun 121420
	Cu. Yds.	Fly Ash 41220
	Cu. Yds.	Fine Sand
		40.10

KEEP THIS TICKET

Received by [signature]

G. CALABRESE & SON TRUCKING CORP.

(516) 924-2220
36-1 RICE COURT
MEDFORD, NEW YORK 11763

5/22 (circled)

DATE 5/15 1994

Deliver To:
Address: America
H Tech

Driver
Pick Up
Delivered B

QUANTITY		DESCRIPTION
	Cu. Yds.	Concrete Sand
	Cu. Yds.	Grit
	Cu. Yds.	Gravel
	Cu. Yds.	Stone
40	Cu. Yds.	Fill (circled)
	Cu. Yds.	Soil
	Cu. Yds.	Bankrun
	Cu. Yds.	Fly Ash
	Cu. Yds.	Fine Sand

KEEP THIS TICKET

Received by [signature]

G. CALABRESE & SON TRUCKING CORP.

(516) 924-2220
36-1 RICE COURT
MEDFORD, NEW YORK 11763

DATE 5/15 1995

Deliver To: AMERICAN-HI-TECH
Address: 42 ND ST & 12 AVE
MANHATTAN

Driver: MIKE
Pick Up: Brooklyn
Delivered

QUANTITY		DESCRIPTION
	Cu. Yds.	Concrete Sand
	Cu. Yds.	Grit 120400
	Cu. Yds.	Gravel 35500
3/4	Cu. Yds.	Stone (circled) 80900
	Cu. Yds.	Fill
	Cu. Yds.	Soil
	Cu. Yds.	Bankrun
	Cu. Yds.	Fly Ash
	Cu. Yds.	Fine Sand
TONS 40.45		

KEEP THIS TICKET

Received by [signature]

G. CALABRESE & SON TRUCKING CORP.

(516) 924-2220
36-1 RICE COURT
MEDFORD, NEW YORK 11763

17179

DATE 5/23 1995

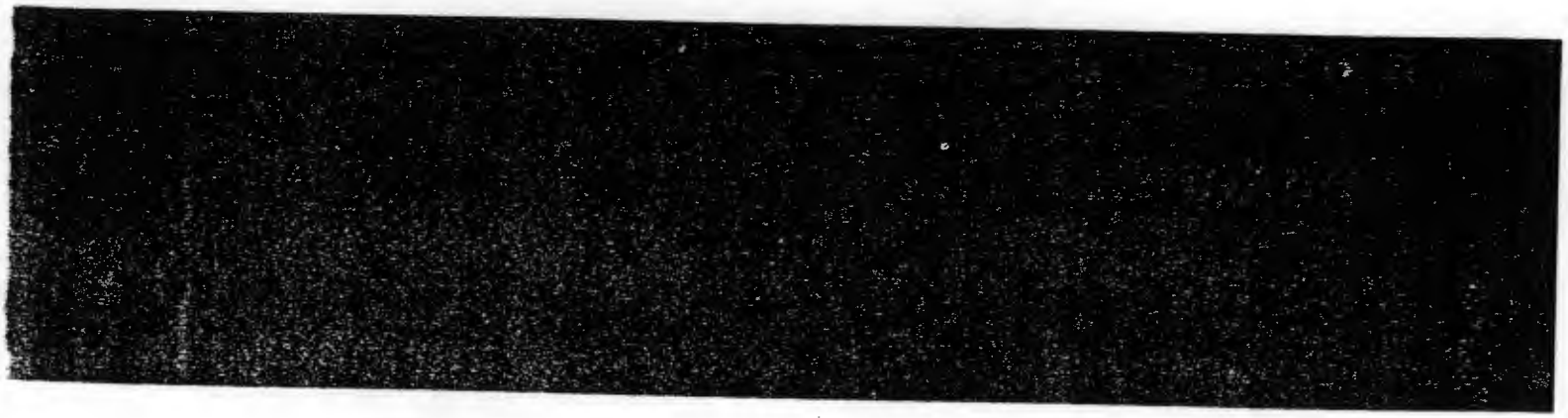
Deliver To Hi tech
Address 42nd St & 12th ave
Manhattan

Driver Dink. Pick Up | Delivered V

QUANTITY		DESCRIPTION
	Cu. Yds.	Concrete Sand
	Cu. Yds.	Grit
	Cu. Yds.	Gravel
	Cu. Yds.	(Stone) 3/4
	Cu. Yds.	Fill
	Cu. Yds.	Soil 42.36
	Cu. Yds.	Bankrun
	Cu. Yds.	Fly Ash
	Cu. Yds.	Fine Sand

KEEP THIS TICKET

Received by



Laboratory Resources INC
Teterboro Division
100 Hollister Road
Teterboro, New Jersey 07608
FAX: 201-288-5311
201-288-3700

LABORATORY ANALYSIS REPORT

Client: Woodward Clyde Consultants
201 Willowbrook Blvd
Wayne NJ 07470

Project Manager: Mr Dan Stettner
Project: Silverstine

Laboratory Report: T505270

Date Received: 5/12/95 **Date Reported:** 6/8/95

Lab ID No.	Client Sample ID	Matrix	Collection Date & Time
T505270 - 1	G1	Soil	05/12/95 9:05 AM
T505270 - 2	G2	Soil	05/12/95 9:10 AM
T505270 - 3	G3	Soil	05/12/95 9:16 AM
T505270 - 4	G4	Soil	05/12/95 9:20 AM
T505270 - 5	G5	Soil	05/12/95 9:25 AM
T505270 - 6	G6	Soil	05/12/95 9:30 AM
T505270 - 7	G7	Soil	05/12/95 9:35 AM
T505270 - 8	G8	Soil	05/12/95 9:40 AM
T505270 - 9	FB051295	Water	05/12/95 11:15 AM

Moe R. Amirsoleymani
Quality Assurance Manager

N.J. Certification #02046
N.Y. Certification #11321
P.A. Certification #68-420

TABLE OF CONTENTS

LRI QUOTE # A505006

Laboratory Resources, Inc.

CHAIN OF CUSTODY T505290 PAGE 1 OF 1

CUSTOMER INFORMATION

CUSTOMER: Woodward-Clyde Consultants
ADDRESS: 201 Willowbrook Blvd
Wayne, NJ 07470
Attention: Dan Stettner
TELEPHONE: (201) 785-0700
FAX: (201) 785-0875

PROJECT INFORMATION

PROJECT: Silverstein
PROJECT LOCATION: Manhattan STATE: NY
PROJECT MANAGER: Dan Stettner
IN CASE WE HAVE ANY QUESTIONS WHEN SAMPLES ARRIVE WE SHOULD CALL:
NAME: Dan Stettner / John Jowa
TELEPHONE: (201) 785-0700
FAX: (201) 785-0875

BILLING INFORMATION

BILL TO: Woodward-Clyde Consultants
ADDRESS: 201 Willowbrook Blvd
Wayne, NJ 07470
ATTENTION: Dan Stettner
TELEPHONE: (201) 785-0700
PO #: SE04530

LAB ID CODE	SAMPLE IDENTIFICATION	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE: COMPOSITE	SAMPLE TYPE: GRAB	SAMPLE MATRIX	# OF BOTTLES	ANALYSIS: VOC EPA 8021	PRESERVA: H2SO4	HCL	HNO3	NAOH
1	G1	5-12-95	0905			Soil	1					
2	G2		0910				1					
3	G3		0916				1					
4	G4		0920				1					
5	G5		0925				1					
6	G6		0930				1					
7	G7		0935				1					
8	G8		0940				1					
9	FB051295		1115			H_2O	3					

TURNAROUND (INDICATE IN CALENDAR DAYS): _____ FAX _____ HARD COPY _____ DELIV. PKG.
NAME OF LAB PERSONNEL CONFIRMING: Dan Glenn
DELIVERABLES / (CIRCLE ONE): DATA DATA/QC RED/DELIV NJ/CLP I NJ/CLP II Appendix B
NJ/REGL NY/ASP CLP. OTHER NJ STARS Memo 1 Table 1

SAMPLER / AFFILIATION:	Daniel J. Stettner WCC	DATE:
RECEIVED / AFFILIATION:		TIME:
RELINQUISHED / AFFILIATION:	Daniel J. Stettner WCC	DATE:
RECEIVED / AFFILIATION:		TIME:
RELINQUISHED / AFFILIATION:		DATE: 5/15/95

☐ RETURN TO CLIENT FOR DISPOSAL ☒ LAB DISPOSAL
KNOWN HAZARD (FLAMMABLE, EXPLOSIVE, TOXIC)
☐ YES ☒ NO (IF YES EXPLAIN UNDER COMMENTS)
LAB USE CONDITIONS OF BOTTLES AND COOLER AT RECEIPT:
☐ COMPLIANT ☐ NOT COMPLIANT (IF NOT EXPLAIN UNDER COMMENTS
COMMENTS

Rev. 2.0, 2/92

INTERNAL CHAIN OF CUSTODY

INSTRUCTIONS: Use 1 form for each 20 samples or aliquot.

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample	Laboratory: Laboratory Resources Name: Krishna Daggumati	Location: Teterboro Title: Sample Management Su
Field Sample Seal No:	Date Broken 5/12/95	Military Time Seal Broken:
CaseNo:	Analytical Parameter/Fraction	

SAMPLE NO.	ALIQUOT/EXTRACT NO.	SAMPLE NO.	ALIQUOT/EXTRACT NO.
T505270-01			
-02			
-03			
-04			
-05			
-06			
-07			
-08			
-09			

Date	Time	RELINQUISHED BY	RECEIVED BY	PURPOSE OF CHANGE OF CUSTODY
5/23	8:00	PRINTED NAME JOSE SILVA SIGNATURE [signature]	PRINTED NAME [illegible] SIGNATURE [signature]	1-9, [illegible]
5/23	10:30	PRINTED NAME [illegible] SIGNATURE [signature]	PRINTED NAME JOSE SILVA SIGNATURE [signature]	ret
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	0002

METHODS SUMMARY

VOLATILE ORGANIC ANALYSIS BY METHOD 8021

Method 8021 provides gas chromatographic conditions for the detection of halogenated and aromatic volatile organic compounds. Samples can be analyzed using direct injection or purge-and-trap (Method 5030). Ground water samples must be analyzed using Method 5030. A temperature program is used in the gas chromatograph to separate the organic compounds. Detection is achieved by a halogen-specific (HALL) and a photoionization detector (PID) in series.

Tentative identifications are obtained by analyzing standards under the sample conditions used for samples and comparing resultant GC retention times. Confirmatory information can be gained by comparing the relative response from the two detectors. Concentrations of the identified components are measured by relating the response produced for that compound to the response produced by a compound that is used as an internal standard.

ORGANIC NON-CONFORMANCE SUMMARY

GC VOLATILE

1. The quantitation limits are elevated due to the dilution required for samples T505270-06, 07 and 08.

Fax:
Report: 05/30/95
Received: 05/12/95
"ent: Woodward Clyde Consultants
iverable: Reduced Deliverables Disk Due:
gulation: NY-Spill Tech And Remediation Series
Special Requirements:

LRI Laboratory Chronicle
GC Volatiles

Report # T505270

Page: 1
5/17/95
9:34:35 AM

QT	Lb	pH	Sample	mat	Test Type	Collected Date	Collected By	Analysis Date	Analysis By	Batch	Data File	Dil File	Calc	% Sol	#
			1 : G1	S	8021SVOA-/~~STARS~~ ✓	05/12									
			2 : G2	S	8021SVOA-/~~STARS~~ ✓	05/12									
			3 : G3	S	8021SVOA-/~~STARS~~ ✓	05/12									
			4 : G4	S	8021SVOA-/~~STARS~~ ✓	05/12									
			5 : G5	S	8021SVOA-/~~STARS~~ ✓	05/12									
			6 : G6	S	8021SVOA-/~~STARS~~ ✓	05/12									
			7 : G7	S	8021SVOA-/~~STARS~~ ✓	05/12									
			8 : G8	S	8021SVOA-/~~STARS~~ ✓	05/12									
			9 : FB051295	W	8021WVOA-/~~STARS~~ ✓	05/12									

QC CHRONICLE

Blanks				Spikes			
	#	mat		sample	M file	MS file	MSD file
EHC523		S	H0256	TJ2527-1	H0295	HC317	HC318
		W	H0295				

Calibration

	Date	File	MS
init	5/12	H	
chk	5/23	H0294	✓
			0005

DL LIST: DC802 REVIEWED: a, t LAB TAT: CHECKED:

6-6-95

HOLDING TIMES, PRESERVATION TECHNIQUES, AND REQUIRED TECHNIQUES

Name	Container[1]	Preservation	Max. Holding Time
Bacterial Tests:			
Coliform, fecal & total	P,G	Cool,4°C,0.008% $Na_2S_2O_3$	6 hours
Fecal streptococci	P,G	Cool,4°C,0.008% $Na_2S_2O_3$	6 hours
Metals:			
Chromium VI	P,G	Cool,4°C	24 hours
Mercury	P,G	HNO_3 to pH<2	28 days
Metals, except chromium VI & mercury	P,G	HNO_3 to pH<2	6 months
Inorganic Tests:			
Acidity	P,G	Cool,4°C	14 days
Alkalinity	P,G	Cool,4°C	14 days
Ammonia	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Biochemical oxygen demand(5)	P,G	Cool,4°C	48 hours
Biochemical oxygen demand(20)	P,G	Cool,4°C	48 hours
Biochemical oxygen demand, carbonaceous	P,G	Cool,4°C	48 hours
Bromide	P,G	None required	28 days
Chemical oxygen demand	P,G	Cool,4°C, H_2SO_4 to pH<2	28 days
Chloride	P,G	None required	28 days
Chlorine, total residual	P,G	None required	Analyze immed
Color	P,G	Cool,4°C	48 hours
Cyanide, total & amenable to chlorination	P,G	Cool,4°C, NaOH to pH>12, 0.6g ascorbic acid	14 days
Cyanide, reactive	P,G	None required	NA
Fluoride	P	None required	28 days
Hardness	P,G	HNO_3 to pH<2,H_2SO_4 to pH<2	6 months
Hydrogen ion (pH)	P,G	None required	Analyze immed
Ignitability (flash points)	P,G	None required	NA
Kjeldahl & organic nitrogen	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Nitrate	P,G	Cool,4°C	48 hours
Nitrate-Nitrite	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Nitrite	P,G	Cool,4°C	48 hours
Odor	P,G	None required	Analyze immed
Oil & Grease	G	Cool,4°C,H_2SO_4 to pH<2	28 days
Total Organic Carbon	P,G	Cool,4°C,HCl or H_2SO_4 to pH<2	28 days
Orthophosphate	P,G	Filter immediately,Cool,4°C	48 hours
Phosphate, total	P,G	H_2SO_4 to pH<2	28 days
Oxygen, Dissolved Probe	G Bottle & top	None required	Analyze immed
Winkler	do	Fix in site & store in dark	8 hours
Phenols	G only	Cool,4°C,H_2SO_4 to pH<2	28 days
Phophorus (elemental)	G	Cool,4°C	48 hours
Phosphorus, total	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Residue, Total	P,G	Cool,4°C	7 days
Residue, Filterable (TDS)	P,G	Cool,4°C	7 days
Residue, Nonfilterable(TSS)	P,G	Cool,4°C	7 days
Residue, Settleable	P,G	Cool,4°C	48 hours
Residue, volatile	P,G	Cool,4°C	7 days
Silica	P	Cool,4°C	28 days
Specific Conductance	P,G	Cool,4°C	28 days
Sulfate	P,G	Cool,4°C	28 days
Sulfide, reactive	P,G	Cool,4°C	NA
Sulfide, total	P,G	Cool,4°C, add zinc acetate plus sodium hydoxide to pH>9	7 days

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Name	Container[1]	Preservation	Max. Holding Time
Sulfite	P,G	None Required	Analyze immed.
Surfactants (MBAS)	P,G	Cool, 4°C	48 hours
TPH (water)	G	H_2SO_4 to pH<2	7 days
TPH (soil)	G	H_2SO_4 to pH<2	28 days
Temperature	P,G	None Required	Analyze
Turbidity	P,G	Cool, 4°C	48 hours
Organic Tests:			
Purgeable halocarbons	G, Teflon-lined septum	Cool, 4°C, 0.008% $Na_2S_2O_3$	14 days
Purgeable aromatic hydrocarbons	G, Teflon-lined septum	Cool, 4°C, 0.008% $Na_2S_2O_3$ HCl to pH2	14 days
Acrolein & acrylonitrile	G, Teflon-lined septum	Cool, 4°C, 0.008% $Na_2S_2O_3$ adjust pH to 4-5	14 days
Phenols	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$	7 days til extraction 40 days after extract
Benzidines	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$	7 days til extraction
Phthalate esters	G, Teflon-lined cap	Cool, 4°C	7 days til extraction 40 days after extract
Nitrosamines	G, Teflon-lined cap	Cool, 4°C, store in dark 0.008% $Na_2S_2O_3$	40 days after extraction
PCBs, acrylonitrile	G, Teflon-lined cap	Cool, 4°C	40 days after extraction
Nitroaromatics & isophorone	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$, store in dark	40 days after extraction
Polynuclear aromatic hydrocarbons	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$, store in dark	40 days after extraction
Haloethers	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$,	40 days after extraction
Chlorinated hydrocarbons	G, Teflon-lined cap	Cool, 4°C	40 days after extraction
TCDD	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$,	40 days after extraction
Total organic halogens	G, Teflon-lined cap	Cool, 4°C, H_2SO_4 to pH <2	28 days
Pesticides Tests:			
Pesticides	G, Teflon-lined cap	Cool, 4°C, pH 5-9	40 days after extraction
Radiological Tests:			
Alpha, beta, & radium	P,G	HNO_3 to pH<2	6 months

[1] Polyethylene (P) or Glass (G).

Note: All holding times mentioned above are based upon the date of sample collection.

Test Method for Evaluating Solid Waste Physical/Chemical Methods SW 846 Final Update-I July 1992.

Standard Method for the Examination of Water and Waste Water 18th Edition 1992.

0007

CASE NARRATIVE

Laboratory Resources, New Jersey Division, received eight soil samples plus a field blank for Reduced Deliverables Format on May 12, 1995. The samples were analyzed for the parameters outlined in the chain of custody.

The samples were analyzed within the required holding time. Any parameters which were outside of their respective quality control ranges are noted in the non-conformance summary.

All soil, sludge and sediment samples are reported in dry weight.

Please contact us if there are any questions regarding the enclosed results.

SUMMARY SPREADSHEET REPORT

<LRI Sample No> Client Sample Description
Collection Date

GC Volatiles	<1>G1 05/12/95	<2>G2 05/12/95	<3>G3 05/12/95	<4>G4 05/12/95	<5>G: 05/12/9
Benzene	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND	ND
Ethylbenzene	ND	2.2 ug/kg	2.4 ug/kg	ND	ND
Isopropylbenzene	ND	1.2 ug/kg	ND	ND	ND
p-Isopropyltoluene	ND	ND	ND	ND	ND
Methyl-tert-butyl ether	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND	ND
Toluene	ND	3.3 ug/kg	ND	ND	ND
1,2,4-Trichlorobenzene					
1,2,4-Trimethylbenzene	ND	4.6 ug/kg	ND	ND	ND
1,3,5-Trimethylbenzene	ND	3.1 ug/kg	ND	ND	ND
m-Xylene	ND	7.7 ug/kg	1.7 ug/kg	ND	ND
o-Xylene	ND	5.5 ug/kg	2.3 ug/kg	ND	ND
p-Xylene	ND	7.7 ug/kg	1.7 ug/kg	ND	ND

GC Volatiles	<6>G6 05/12/95	<7>G7 05/12/95	<8>G8 05/12/95	<9>FB051295 05/12/95
?ene	47 ug/kg	ND	ND	ND
?tylbenzene	2000 ug/kg	170 ug/kg	ND	ND
?utylbenzene	250 ug/kg	53 ug/kg	2100 ug/kg	ND
?nylbenzene	260 ug/kg	56 ug/kg	1500 ug/kg	ND
Isopropylbenzene	140 ug/kg	ND	2200 ug/kg	ND
p-Isopropyltoluene	170 ug/kg	ND	ND	ND
Methyl-tert-butyl ether	ND	ND	ND	
Naphthalene	2100 ug/kg	430 ug/kg	ND	ND
n-Propylbenzene	230 ug/kg	93 ug/kg	2100 ug/kg	ND
Toluene	220 ug/kg	ND	150 ug/kg	ND
1,2,4-Trichlorobenzene				ND
1,2,4-Trimethylbenzene	5100 ug/kg	1300 ug/kg	3000 ug/kg	
1,3,5-Trimethylbenzene	1600 ug/kg	380 ug/kg	7500 ug/kg	ND
m-Xylene	1600 ug/kg	71 ug/kg	1700 ug/kg	ND
o-Xylene	680 ug/kg	ND	440 ug/kg	ND
p-Xylene	1600 ug/kg	71 ug/kg	1700 ug/kg	ND

NON-CLP

Organic Flags Used in Result Sheet
"B" = Found in method blank
"J" = Estimated result, less than the quantitation limit
"E" = Exceeds calibration range
"D" = Dilution performed
"ND" = Not Detected

Inorganic Flags Used in Result Sheet
"EC" = Estimated count
"TNTC" = Too numerous to count
"S" = Result quantified by method of standard addition
"ND" = Not Detected

CLP

Organic Flags Used in Result Sheet
"R" = Found in method blank
Estimated result, less than the quantitation limit
: This flag is used for a pesticide/aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns
This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument
= Dilution performed

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SUMMARY SPREADSHEET REPORT

<LRI Sample No> Client Sample Description
Collection Date

"U"= Not Detected

Inorganic Flags Used in Result Sheet
"E" = The reported value is estimated because of the presence of interference
"M" = Duplicate injection precision not met
"N" = Spiked sample recovery not within control limits
"S" = Result quantified by method of standard addition
"W" = Post-digestion spike for furnace AA analysis is out of control limits
"*" = Duplicate analysis not within control limits
"+" = Correlation coefficient for the MSA is less than 0.995
"U"= Not Detected

GC CONFORMANCE/NONCONFORMANCE SUMMARY

		No	Yes
1.	Chromatograms Labeled/Compounds Identified	___	✓
	Standards Summary Submitted	___	✓
3.	Calibration Frequency Initial calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis	___	✓
4.	Blank Contamination If yes, list compounds and concentrations in each blank:	✓	___

a. Volatile Fraction ______
b. Pesticides/PCBs ______
c. Herbicide Fraction ______
d. Other ______

		No	Yes
5.	Surrogate Recoveries Meet Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range:	___	✓

a. Volatile Fraction ______
b. Pesticides/PCBs ______
c. Herbicide Fraction ______
d. Other ______

		No	Yes
	If not met, were the calculations checked and the results qualified as estimated?	___	___
6.	Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range:	___	✓

a. Volatile Fraction ______
b. Pesticides/PCBs ______
c. Herbicide Fraction ______
d. Other ______

		No	Yes
7.	Retention Time Shifts Meet Criteria If not, list those samples which fall outside the acceptable range:	___	✓

a. Volatile Fraction ______
b. Pesticides/PCBs ______
c. Herbicide Fraction ______
d. Other ______

		No	Yes
8.	Extraction Holding Time Met If not met, list analysis and number of days exceeded for each sample:	___	NA

______
______
______

		No	Yes
9.	Analysis Holding Time Met If not met, list analysis and number of days exceeded for each sample:	___	✓

______
______
______

0011

Laboratory Supervisor: Andy Panayiotou (signature)　　Date: 6-6-95

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G1

Lab Sample ID: T505270-1

Matrix: [soil/water] SOIL

Lab File ID: >H0299

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOS

Level: [low/med] LOW

Date Received: 05/12/95

% Moisture: 20.0

Date Analyzed : 05/23/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.631	U
108-88-3	Toluene	.631	U
100-41-4	Ethylbenzene	.631	U
108-38-3	meta + para-Xylenes	1.301	U
95-47-6	ortho-Xylene	.631	U
98-82-8	Isopropylbenzene	.631	U
103-65-1	n-Propylbenzene	.631	U
99-87-6	p-Isopropyltoluene	.631	U
108-67-8	1,3,5-Trimethylbenzene	.631	U
95-63-6	1,2,4-Trimethylbenzene	.631	U
1634-04-4	Methyl-tert-butyl ether	.631	U
135-98-8	sec-Butylbenzene	.631	U
104-51-8	n-Butylbenzene	.631	U
91-20-3	Naphthalene	.631	U

SADF: 1.25

Total Hit(s): 0

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G2

Lab Sample ID: T505270-2

Lab File ID: >H0300

Matrix: [soil/water] SOIL

Run Type: 8021SVOS

Sample wt/vol: 5.0 [g/mL] G

Date Received: 05/12/95

Level: [low/med] LOW

Date Analyzed : 05/23/95

% Moisture: 23.3

Dilution Factor: 1.0

GC Column: DB-VRX ID: 0.45 (mm)

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.65	U
108-88-3	Toluene	3.3	
100-41-4	Ethylbenzene	2.2	
108-38-3	meta + para-Xylenes	7.7	
95-47-6	ortho-Xylene	5.5	
98-82-8	Isopropylbenzene	1.2	
103-65-1	n-Propylbenzene	.65	U
99-87-6	p-Isopropyltoluene	.65	U
108-67-8	1,3,5-Trimethylbenzene	3.1	
95-63-6	1,2,4-Trimethylbenzene	4.6	
1634-04-4	Methyl-tert-butyl ether	.65	U
135-98-8	sec-Butylbenzene	.65	U
104-51-8	n-Butylbenzene	.65	U
91-20-3	Naphthalene	.65	U

SADF: 1.30

Total Hit(s): 7

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G3

Lab Sample ID: T505270-3

Matrix: [soil/water] SOIL

Lab File ID: >H0501

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOS

Level: [low/med] LOW

Date Received: 05/12/95

% Moisture: 19.6

Date Analyzed : 05/23/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.62	U
108-88-3	Toluene	.62	U
100-41-4	Ethylbenzene	2.4	
108-38-3	meta + para-Xylenes	1.7	
95-47-6	ortho-Xylene	2.3	
98-82-8	Isopropylbenzene	.62	U
103-65-1	n-Propylbenzene	.62	U
99-87-6	p-Isopropyltoluene	.62	U
108-67-8	1,3,5-Trimethylbenzene	.62	U
95-63-6	1,2,4-Trimethylbenzene	.62	U
1634-04-4	Methyl-tert-butyl ether	.62	U
135-98-8	sec-Butylbenzene	.62	U
104-51-8	n-Butylbenzene	.62	U
91-20-3	Naphthalene	.62	U

SADF: 1.24

Total Hit(s): 3

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G4

Lab Sample ID: T505270-4

Matrix: [soil/water] SOIL

Lab File ID: >H0302

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOS

Level: [low/med] LOW

Date Received: 05/12/95

% Moisture: 29.7

Date Analyzed : 05/23/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.71	U
108-88-3	Toluene	.71	U
100-41-4	Ethylbenzene	.71	U
108-38-3	meta + para-Xylenes	1.40	U
95-47-6	ortho-Xylene	.71	U
98-82-8	Isopropylbenzene	.71	U
103-65-1	n-Propylbenzene	.71	U
99-87-6	p-Isopropyltoluene	.71	U
108-67-8	1,3,5-Trimethylbenzene	.71	U
95-63-6	1,2,4-Trimethylbenzene	.71	U
1634-04-4	Methyl-tert-butyl ether	.71	U
135-98-8	sec-Butylbenzene	.71	U
104-51-8	n-Butylbenzene	.71	U
91-20-3	Naphthalene	.71	U

SADF: 1.42

Total Hit(s): 0

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G5

Lab Sample ID: T505270-5

Matrix: [soil/water] SOIL

Lab File ID: >H0303

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOS

Level: [low/med] LOW

Date Received: 05/12/95

% Moisture: 33.5

Date Analyzed : 05/23/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.75	U
108-88-3	Toluene	.75	U
100-41-4	Ethylbenzene	.75	U
108-38-3	meta + para-Xylenes	1.50	U
95-47-6	ortho-Xylene	.75	U
98-82-8	Isopropylbenzene	.75	U
103-65-1	n-Propylbenzene	.75	U
99-87-6	p-Isopropyltoluene	.75	U
108-67-8	1,3,5-Trimethylbenzene	.75	U
95-63-6	1,2,4-Trimethylbenzene	.75	U
1634-04-4	Methyl-tert-butyl ether	.75	U
135-98-8	sec-Butylbenzene	.75	U
104-51-8	n-Butylbenzene	.75	U
91-20-3	Naphthalene	.75	U

SADF: 1.50

Total Hit(s): 0

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G6

Lab Sample ID: T505270-6

Lab File ID: >H0304

Matrix: [soil/water] SOIL

Sample wt/vol: 0.1 [g/mL] G

Run Type: 8021SVOS

Level: [low/med] LOW

Date Received: 05/12/95

% Moisture: 16.6

Date Analyzed : 05/23/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 50.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	47	
108-88-3	Toluene	220	
100-41-4	Ethylbenzene	260	
108-38-3	meta + para-Xylenes	1600	
95-47-6	ortho-Xylene	680	
98-82-8	Isopropylbenzene	140	
103-65-1	n-Propylbenzene	230	
99-87-6	p-Isopropyltoluene	170	
108-67-8	1,3,5-Trimethylbenzene	1600	
95-63-6	1,2,4-Trimethylbenzene	5100	
1634-04-4	Methyl-tert-butyl ether	30.00	U
135-98-8	sec-Butylbenzene	250	
104-51-8	n-Butylbenzene	2000	
91-20-3	Naphthalene	2100	

SADF: 59.95

Total Hit(s): 13

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G7

Lab Sample ID: T505270-7

Matrix: [soil/water] SOIL

Lab File ID: >H0305

Sample wt/vol: 0.1 [g/mL] G

Run Type: 8021SVOS

Level: [low/med] LOW

Date Received: 05/12/95

% Moisture: 21.6

Date Analyzed : 05/23/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 50.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	32.00	U
108-88-3	Toluene	32.00	U
100-41-4	Ethylbenzene	56	
108-38-3	meta + para-Xylenes	71	
95-47-6	ortho-Xylene	32.00	U
98-82-8	Isopropylbenzene	32.00	U
103-65-1	n-Propylbenzene	93	
99-87-6	p-Isopropyltoluene	32.00	U
108-67-8	1,3,5-Trimethylbenzene	380	
95-63-6	1,2,4-Trimethylbenzene	1300	
1634-04-4	Methyl-tert-butyl ether	32.00	U
135-98-8	sec-Butylbenzene	53	
104-51-8	n-Butylbenzene	170	
91-20-3	Naphthalene	430	

SADF: 63.78

Total Hit(s): 8

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G8

Lab Sample ID: T505270-8

Lab File ID: >H0306

Matrix: [soil/water] SOIL

Sample wt/vol: 0.1 [g/mL] G

Run Type: 8021SVOS

Level: [low/med] LOW

Date Received: 05/12/95

% Moisture: 22.1

Date Analyzed : 05/23/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 50.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	32.00	U
108-88-3	Toluene	150	
100-41-4	Ethylbenzene	1500	
108-38-3	meta + para-Xylenes	1700	
95-47-6	ortho-Xylene	440	
98-82-8	Isopropylbenzene	2200	
103-65-1	n-Propylbenzene	2100	
99-87-6	p-Isopropyltoluene	32.00	U
108-67-8	1,3,5-Trimethylbenzene	7500	
95-63-6	1,2,4-Trimethylbenzene	3000	
1634-04-4	Methyl-tert-butyl ether	32.00	U
135-98-8	sec-Butylbenzene	2100	
104-51-8	n-Butylbenzene	32.00	U
91-20-3	Naphthalene	32.00	U

SADF: 64.18

Total Hit(s): 9

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: FB051295

Lab Sample ID: T505270-9

Matrix: [soil/water] WATER

Lab File ID: >H0297

Sample wt/vol: 5.0 [g/mL] ML

Run Type: 8021SVOS

Level: [low/med] LOW

Date Received: 05/12/95

% Moisture: NA

Date Analyzed : 05/23/95

GC Column : DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CONCENTRATION UNITS:

CAS NO.	COMPOUND	UG/L	Q
71-43-2	Benzene	.50	U
108-88-3	Toluene	.50	U
100-41-4	Ethylbenzene	.50	U
108-38-3	meta + para-Xylenes	1.00	U
95-47-6	ortho-Xylene	.50	U
98-82-8	Isopropylbenzene	.50	U
103-65-1	n-Propylbenzene	.50	U
99-87-6	p-Isopropyltoluene	.50	U
108-67-8	1,3,5-Trimethylbenzene	.50	U
95-63-6	1,2,4-Trimethylbenzene	.50	U
1634-04-4	Methyl-tert-butyl ether	.50	U
135-98-8	sec-Butylbenzene	.50	U
104-51-8	n-Butylbenzene	.50	U
91-20-3	Naphthalene	.50	U

SADF: 1.00

Total Hit(s): 0

Laboratory Resources INC.
Teterboro Division
100 Hollister Road
Teterboro, New Jersey 07608
201-288-5311
288-3700

LABORATORY ANALYSIS REPORT

Client: Woodward Clyde Consultants
201 Willowbrook Blvd
Wayne NJ 07470

Project Manager: Mr Dan Stettner
Project: Silverstine

Laboratory Report: T505394

Date Received: 5/19/95 **Date Reported:** 6/13/95

Lab ID No.	Client Sample ID	Matrix	Collection Date & Time
T505394 - 1	MW-2	Water	05/18/95 9:15 AM
T505394 - 2	MW-1D	Water	05/18/95 9:20 AM
T505394 - 3	FB051895	Water	05/18/95 10:20 AM
T505394 - 4	G9	Soil	05/18/95 11:12 AM
T505394 - 5	G10	Soil	05/18/95 11:15 AM
T505394 - 6	G11	Soil	05/18/95 11:20 AM
T505394 - 7	G12	Soil	05/18/95 11:25 AM
T505394 - 8	G13	Soil	05/18/95 11:28 AM
T505394 - 9	G14	Soil	05/18/95 11:33 AM
T505394 - 10	G15	Soil	05/18/95 11:40 AM
T505394 - 11	G16	Soil	05/18/95 11:45 AM
T505394 - 12	FB051895S	Water	05/18/95 1:20 PM

M. Amirsoleymani

Moe R. Amirsoleymani
Quality Assurance Manager

N.J. Certification #02046
N.Y. Certification #11321
P.A. Certification #68-420

TABLE OF CONTENTS

LRI QUOTE # T505394

Laboratory Resources Inc
CHAIN OF CUSTODY

PAGE 1 OF 2

CUSTOMER INFORMATION

CUSTOMER: Don Stettner
ADDRESS: Woodward-Clyde Consultants
201 Willowbrook blvd
Wayne, NJ 07470
TELEPHONE: (201) 785-0700
FAX: (201) 785-0875

PROJECT INFORMATION

PROJECT: Silverstein
PROJECT LOCATION: Manhattan STATE: NY
PROJECT MANAGER: Andy Ciancia
IN CASE WE HAVE ANY QUESTIONS WHEN SAMPLES ARRIVE WE SHOULD CALL:
NAME: Don Stettner or John Java
TELEPHONE: (201) 785-0700
FAX: (201) 785-0875

BILLING INFORMATION

BILL TO: ~~Don Stettner~~
ADDRESS: WCC
ATTENTION: Don Stettner
TELEPHONE: 201-785-0700
PO #: 5E04530

LAB ID CODE	SAMPLE IDENTIFICATION	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE: COMPOSITE	SAMPLE TYPE: GRAB	SAMPLE MATRIX	# OF BOTTLES	ANALYSIS: 8021												PRESERVATIVE: H2SO4	HCL	HNO3	NAOH	NON-P
1	MW-2	5-18-95	915		↓	H_2O	3	↓																
2	MW-1D	↓	920		↓	H_2O	3	↓																
3	FB051895	↓	1020		↓	H_2O	3	↓																
4	G9	↓	1112		↓	Soil	1	↓																
5	G10	↓	1115		↓	↓	1	↓																
6	G11	↓	1120		↓	↓	1	↓																
7	G12	↓	1125		↓	↓	1	↓																
8	G13	↓	1128		↓	↓	1	↓																
9	G14	↓	1133		↓	↓	1	↓																

TURNAROUND (INDICATE IN CALENDAR DAYS): ____ FAX ____ HARD COPY ____ DELIV. PKG.
NAME OF LAB PERSONNEL CONFIRMING: Don Gloon
DELIVERABLES (CIRCLE ONE): DATA DATA/QC RED/DELIV NJ/CLP I NJ/CLP II NJ/REGL NY/ASP CLP OTHER Silvers Memo 1 Appendix A Table 1

SAMPLER / AFFILIATION: Don Stettner WCC
RECEIVED / AFFILIATION: M. P. Mar[illegible]
RELINQUISHED / AFFILIATION: M. P. Mar[illegible]
RECEIVED / AFFILIATION: K. [illegible] LRI
RELINQUISHED / AFFILIATION:

DATE: 5/19/95
TIME: 9:10
DATE: 5/19/95
TIME: 10:40
DATE:

☐ RETURN TO CLIENT FOR DISPOSAL ☐ LAB DISPOSAL
KNOWN HAZARD (FLAMMABLE, EXPLOSIVE, TOXIC)
☐ YES ☐ NO (IF YES EXPLAIN UNDER COMMENTS)
LAB USE CONDITIONS OF BOTTLES AND COOLER AT RECEIPT:
☐ COMPLIANT ☐ NOT COMPLIANT (IF NOT EXPLAIN UNDER COMMENTS)
COMMENTS

T505394

LRI QUOTE # T505394

Laboratory Resources Inc

CHAIN OF CUSTODY

PAGE 2 OF 2

CUSTOMER INFORMATION

CUSTOMER: Dan Stettner

ADDRESS: WCC

201 Willowbrook Blvd

Wayne NJ 07470

TELEPHONE: (201) 785-0700

FAX: (201) 785-0875

PROJECT INFORMATION

PROJECT: Silverstein

PROJECT LOCATION: Manhattan STATE: NY

PROJECT MANAGER: Cady Cianciu

IN CASE WE HAVE ANY QUESTIONS WHEN SAMPLES ARRIVE WE SHOULD CALL:

NAME: Dan Stettner or John Jam

TELEPHONE: (201) 785-0700

FAX: (201) 785-0875

BILLING INFORMATION

BILL TO: WCC

ADDRESS:

ATTENTION: Dan Stettner

TELEPHONE: 201 785 0700

PO #: 5E04530

LAB ID CODE	SAMPLE IDENTIFICATION	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE: COMPOSITE	SAMPLE TYPE: GRAB	SAMPLE MATRIX	# OF BOTTLES	ANALYSIS: 8021	PRESERVATIVE: H2SO4	HCL	HNO3	NAOH	NONE
10	G15	5-18-95	1140		↓	soil	1	↓					
11	G16	↓	1145		↓	↓	1	↓					
12	FB051895S	↓	1320		↓	H_2O	3	↓					

TURNAROUND (INDICATE IN CALENDAR DAYS): ____ FAX ____ HARD COPY ____ DELIV. PKG.

NAME OF LAB PERSONNEL CONFIRMING: Don Glean

DELIVERABLES / (CIRCLE ONE): DATA DATA/QC RED/DELIV NJ/CLP I NJ/CLP II NJ/REGL NY/ASP CLP OTHER See Memo / Appendix 6 Table I

SAMPLER / AFFILIATION: Dan Stettner, WCC

RECEIVED / AFFILIATION: [signature]

RELINQUISHED / AFFILIATION: [signature]

RECEIVED / AFFILIATION: [signature] LRS

RELINQUISHED / AFFILIATION:

DATE: 5/19/95 TIME: 9:10

DATE: 5/19/95 TIME: 10:40

DATE:

☐ RETURN TO CLIENT FOR DISPOSAL ☐ LAB DISPOSAL

KNOWN HAZARD (FLAMMABLE, EXPLOSIVE, TOXIC)

☐ YES ☐ NO (IF YES EXPLAIN UNDER COMMENTS)

LAB USE CONDITIONS OF BOTTLES AND COOLER AT RECEIPT:

☐ COMPLIANT ☐ NOT COMPLIANT (IF NOT EXPLAIN UNDER COMMENTS)

COMMENTS

T505394

DEPE-077
Rev. 2.0, 2/92

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

INTERNAL CHAIN OF CUSTODY

INSTRUCTIONS: Use 1 form for each 20 samples or aliquot.

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample	Laboratory: Laboratory Resources Name: Krishna Daggumati	Location: Teterboro Title: Sample Management Superv
Field Sample Seal No:	Date Broken 5/19/95	Military Time Seal Broken:
CaseNo:	Analytical Parameter/Fraction	

SAMPLE NO.	ALIQUOT/EXTRACT NO.	SAMPLE NO.	ALIQUOT/EXTRACT NO.
T505394-01		T505394-11	
-02		-12	
-03			
-04			
-05			
-06			
-07			
-08			
-09			
-10			

Date	Time	RELINQUISHED BY	RECEIVED BY	PURPOSE OF CHANGE OF CUSTODY
5/26	1500	PRINTED NAME Ashok SIGNATURE AP	PRINTED NAME CHOJOKIN ZHAO SIGNATURE [signature]	1-12. GCVOA
5/26	1600	PRINTED NAME CHOJOKIN ZHAO SIGNATURE [signature]	PRINTED NAME Ashok SIGNATURE AP	rt
6/9/95	8:00	PRINTED NAME Ashok SIGNATURE AP	PRINTED NAME JEAN HEARSTIN SIGNATURE [signature]	4-11 moisture
6/9/95	10:30	PRINTED NAME JEAN HEARSTIN SIGNATURE [signature]	PRINTED NAME Ashok SIGNATURE AP	rt
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	

METHODS SUMMARY

VOLATILE ORGANIC ANALYSIS BY METHOD 8021

Method 8021 provides gas chromatographic conditions for the detection of halogenated and aromatic volatile organic compounds. Samples can be analyzed using direct injection or purge-and-trap (Method 5030). Ground water samples must be analyzed using Method 5030. A temperature program is used in the gas chromatograph to separate the organic compounds. Detection is achieved by a halogen-specific (HALL) and a photoionization detector (PID) in series.

Tentative identifications are obtained by analyzing standards under the sample conditions used for samples and comparing resultant GC retention times. Confirmatory information can be gained by comparing the relative response from the two detectors. Concentrations of the identified components are measured by relating the response produced for that compound to the response produced by a compound that is used as an internal standard.

ORGANIC NON-CONFORMANCE SUMMARY

GC VOLATILE

1. The quantitation limits are elevated due to the dilution required for samples T505394-01, 04, 08 and 09.

Fax:
Report: 06/06/95
Received: 05/19/95
nt: Woodward Clyde Consultants
iverable: Reduced Deliverables
Regulation: NY-Spill Tech And Remediation Series
Special Requirements:

LRI Laboratory Chronicle
GC Volatiles

Report # T505394

Disk Due:

Page: 1
5/25/95
10:55:14 AM

QT	Lb	pH	Sample	mat	Test Type	Collected Date	Collected By	Analysis Date	Analysis By	Batch	Data File	Dil File	Calc	% Sol	#
			4 : G9	S	8021SVOA-/STARS	05/18		5/31	10.2	EH0531	H0431		70.5	70.9	4
			5 : G10	S	8021SVOA-/STARS	05/18		5/27		EH0526	H0387		1.34	74.9	1
			6 : G11	S	8021SVOA-/STARS	05/18		〃			H0388		1.37	73.1	4
			7 : G12	S	8021SVOA-/STARS	05/18		〃			H0389		1.57	63.7	2
			8 : G13	S	8021SVOA-/STARS	05/18		6/1		EH0531	H0444		255.7	78.2	3
			9 : G14	S	8021SVOA-/STARS	05/18		5/31		EH0531	H0429		134.9	74.1	3
			10 : G15	S	8021SVOA-/STARS	05/18		5/30		EH0530	H0414		1.20	83.4	6
			11 : G16	S	8021SVOA-/STARS	05/18		5/31		〃	H0415		1.44	69.5	2
			1 : MW-2	W	8021WVOA-/STARS	05/18		〃		EH0531	H0428		2.0	N/A	11
			2 : MW-1D	W	8021WVOA-/STARS	05/18		5/30		EH0530	H0406		1.0	N/A	11
			3 : FB051895	W	8021WVOA-/STARS	05/18		〃		〃	H0403		1.0	N/A	0
			12 : FB051895S	W	8021WVOA-/STARS	05/18		〃		〃	H0404		1.0	N/A	0

QC CHRONICLE

Blanks	#	mat		Spikes sample	M file	MS file	MSD file
EH0526		S	H0374				
EH0530		S	H0402	T505399-8	H0411	H0412	H0413
EH0531		S	H0427				
EH0530		W	H0401				
EH0531		W	H0423	T505374-2	H0425	H0442	H0443

Calibration

	Date	File	MS
init	5/22	H	
chk	5/26	H0372	
	5/30	H0406	✓
	5/31	H0422	✓
			0006

DL LIST: DL8025 REVIEWED: C.Z LAB TAT: CHECKED: Andy P
6-12-95

HOLDING TIMES, PRESERVATION TECHNIQUES, AND REQUIRED TECHNIQUES

Name	Container[1]	Preservation	Max. Holding Time
Bacterial Tests:			
Coliform, fecal & total	P,G	Cool,4°C,0.008% $Na_2S_2O_3$	6 hours
Fecal streptococci	P,G	Cool,4°C,0.008% $Na_2S_2O_3$	6 hours
Metals:			
Chromium VI	P,G	Cool,4°C	24 hours
Mercury	P,G	HNO_3 to pH<2	28 days
Metals, except chromium VI & mercury	P,G	HNO_3 to pH<2	6 months
Inorganic Tests:			
Acidity	P,G	Cool,4°C	14 days
Alkalinity	P,G	Cool,4°C	14 days
Ammonia	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Biochemical oxygen demand(5)	P,G	Cool,4°C	48 hours
Biochemical oxygen demand(20)	P,G	Cool,4°C	48 hours
Biochemical oxygen demand, carbonaceous	P,G	Cool,4°C	48 hours
Bromide	P,G	None required	28 days
Chemical oxygen demand	P,G	Cool,4°C, H_2SO_4 to pH<2	28 days
Chloride	P,G	None required	28 days
Chlorine, total residual	P,G	None required	Analyze immed.
Color	P,G	Cool,4°C	48 hours
Cyanide, total & amenable to chlorination	P,G	Cool,4°C, NaOH to pH>12, 0.6g ascorbic acid	14 days
Cyanide, reactive	P,G	None required	NA
Fluoride	P	None required	28 days
Hardness	P,G	HNO_3 to pH<2,H_2SO_4 to pH<2	6 months
Hydrogen ion (pH)	P,G	None required	Analyze immed.
Ignitability (flash points)	P,G	None required	NA
Kjeldahl & organic nitrogen	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Nitrate	P,G	Cool,4°C	48 hours
Nitrate-Nitrite	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Nitrite	P,G	Cool,4°C	48 hours
Odor	P,G	None required	Analyze immed.
Oil & Grease	G	Cool,4°C,H_2SO_4 to pH<2	28 days
Total Organic Carbon	P,G	Cool,4°C,HCl or H_2SO_4 to pH<2	28 days
Orthophosphate	P,G	Filter immediately,Cool,4°C	48 hours
Phosphate, total	P,G	H_2SO_4 to pH<2	28 days
Oxygen, Dissolved Probe	G Bottle & top	None required	Analyze immed.
Winkler	do	Fix in site & store in dark	8 hours
Phenols	G only	Cool,4°C,H_2SO_4 to pH<2	28 days
Phophorus (elemental)	G	Cool,4°C	48 hours
Phosphorus, total	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Residue, Total	P,G	Cool,4°C	7 days
Residue, Filterable (TDS)	P,G	Cool,4°C	7 days
Residue, Nonfilterable(TSS)	P,G	Cool,4°C	7 days
Residue, Settleable	P,G	Cool,4°C	48 hours
Residue, volatile	P,G	Cool,4°C	7 days
Silica	P	Cool,4°C	28 days
Specific Conductance	P,G	Cool,4°C	28 days
Sulfate	P,G	Cool,4°C	28 days
Sulfide, reactive	P,G	Cool,4°C	NA
Sulfide, total	P,G	Cool,4°C, add zinc acetate plus sodium hydoxide to pH>9	7 days

Name	Container[1]	Preservation	Max. Holding Time
Sulfite	P,G	None Required	Analyze immed.
Surfactants (MBAS)	P,G	Cool, 4°C	48 hours
TPH (water)	G	H_2SO_4 to pH<2	7 days
TPH (soil)	G	H_2SO_4 to pH<2	28 days
Temperature	P,G	None Required	Analyze
Turbidity	P,G	Cool, 4°C	48 hours
Organic Tests:			
Purgeable halocarbons	G,Teflon-lined septum	Cool, 4°C, 0.008% $Na_2S_2O_3$	14 days
Purgeable aromatic hydrocarbons	G,Teflon-lined septum	Cool, 4°C, 0.008% $Na_2S_2O_3$ HCl to pH2	14 days
Acrolein & acrylonitrile	G,Teflon-lined septum	Cool, 4°C, 0.008% $Na_2S_2O_3$ adjust pH to 4-5	14 days
Phenols	G,Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$	7 days til extraction 40 days after extract.
Benzidines	G,Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$	7 days til extraction 40 days after extract.
Phthalate esters	G,Teflon-lined cap	Cool, 4°C	7 days til extraction 40 days after extract.
Nitrosamines	G,Teflon-lined cap	Cool, 4°C, store in dark 0.008% $Na_2S_2O_3$	40 days after extraction
PCBs, acrylonitrile	G,Teflon-lined cap	Cool, 4°C	40 days after extraction
Nitroaromatics & isophorone	G,Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$, store in dark	40 days after extraction
Polynuclear aromatic hydrocarbons	G,Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$, store in dark	40 days after extraction
Haloethers	G,Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$,	40 days after extraction
Chlorinated hydrocarbons	G,Teflon-lined cap	Cool, 4°C	40 days after extraction
TCDD	G,Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$,	40 days after extraction
Total organic halogens	G,Teflon-lined cap	Cool, 4°C, H_2SO_4 to pH <2	28 days
Pesticides Tests:			
Pesticides	G,Teflon-lined cap	Cool, 4°C, pH 5-9	40 days after extraction
Radiological Tests:			
Alpha, beta, & radium	P,G	HNO_3 to pH<2	6 months

[1] Polyethylene (P) or Glass (G).

Note: All holding times mentioned above are based upon the date of sample collection.

Test Method for Evaluating Solid Waste Physical/Chemical Methods SW 846 Final Update-I July 1992.

Standard Method for the Examination of Water and Waste Water 18th Edition 1992.

0008

CASE NARRATIVE

Laboratory Resources, New Jersey Division, received ten samples plus two field blanks for Reduced Deliverables Format on May 19, 1995. The samples were analyzed for the parameters outlined in the chain of custody.

The samples were analyzed within the required holding time. Any parameters which were outside of their respective quality control ranges are noted in the non-conformance summary.

All soil, sludge and sediment samples are reported in dry weight.

Please contact us if there are any questions regarding the enclosed results.

Laboratory Resources, Inc.
New Jersey Division

Client: Woodward Clyde Consultants
Project: Silverstine
Report No.: T505394
Report Date: 06/13/95

SUMMARY SPREADSHEET REPORT

<LRI Sample No> Client Sample Description
Collection Date

GC Volatiles	<1>MW-2 05/18/95	<2>MW-1D 05/18/95	<3>FB051895 05/18/95	<4>G9 05/18/95	<5>G 05/18/
Benzene	67 ug/L	1.3 ug/L	ND	160 ug/kg	18 ug/kg
n-Butylbenzene	7.3 ug/L	1.8 ug/L	ND	ND	3.2 ug/kg
sec-Butylbenzene	ND	ND	ND	ND	3.0 ug/kg
Ethylbenzene	14 ug/L	3.8 ug/L	ND	400 ug/kg	17 ug/kg
Isopropylbenzene	3.9 ug/L	.93 ug/L	ND	ND	9.1 ug/kg
p-Isopropyltoluene	ND	.58 ug/L	ND	ND	1.6 ug/kg
Methyl-tert-butyl ether				ND	ND
Naphthalene	140 ug/L	27 ug/L	ND	ND	12 ug/kg
n-Propylbenzene	1.2 ug/L	1.1 ug/L	ND	ND	3.9 ug/kg
Toluene	1.6 ug/L	ND	ND	250 ug/kg	13 ug/kg
1,2,4-Trichlorobenzene	3.0 ug/L	14 ug/L	ND		
1,2,4-Trimethylbenzene				ND	32 ug/kg
1,3,5-Trimethylbenzene	1.4 ug/L	2.9 ug/L	ND	ND	38 ug/kg
m-Xylene	4.0 ug/L	4.7 ug/L	ND	770 ug/kg	94 ug/kg
o-Xylene	3.7 ug/L	1.3 ug/L	ND	ND	68 ug/kg
p-Xylene	4.0 ug/L	4.7 ug/L	ND	770 ug/kg	94 ug/kg

Volatiles	<6>G11 05/18/95	<7>G12 05/18/95	<8>G13 05/18/95	<9>G14 05/18/95	<10>G1 05/18/9
.uzene	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	5.3 ug/kg
sec-Butylbenzene	ND	ND	ND	ND	ND
Ethylbenzene	9.9 ug/kg	1.0 ug/kg	2900 ug/kg	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND
p-Isopropyltoluene	ND	ND	ND	ND	2.2 ug/kg
Methyl-tert-butyl ether	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	4.4 ug/kg
n-Propylbenzene	ND	ND	ND	ND	ND
Toluene	1.2 ug/kg	ND	520 ug/kg	120 ug/kg	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	1.8 ug/kg
1,2,4-Trimethylbenzene	ND	ND	ND	ND	1.2 ug/kg
1,3,5-Trimethylbenzene	34 ug/kg	7.8 ug/kg	2500 ug/kg	420 ug/kg	1.8 ug/kg
m-Xylene	19 ug/kg	ND	ND	640 ug/kg	ND
o-Xylene	34 ug/kg	7.8 ug/kg	2500 ug/kg	420 ug/kg	1.8 ug/kg
p-Xylene					

0010

SUMMARY SPREADSHEET REPORT

<LRI Sample No> Client Sample Description
Collection Date

GC Volatiles	<11>G16 05/18/95	<12>FB051895S 05/18/95
Benzene	ND	ND
n-Butylbenzene	1.7 ug/kg	ND
sec-Butylbenzene	ND	ND
Ethylbenzene	ND	ND
Isopropylbenzene	ND	ND
p-Isopropyltoluene	ND	ND
Methyl-tert-butyl ether	ND	
Naphthalene	ND	ND
n-Propylbenzene	ND	ND
Toluene	ND	ND
1,2,4-Trichlorobenzene		ND
1,2,4-Trimethylbenzene	ND	
1,3,5-Trimethylbenzene	1.3 ug/kg	ND
m-Xylene	ND	ND
o-Xylene	ND	ND
p-Xylene	ND	ND

NON-CLP

Organic Flags Used in Result Sheet
= Found in method blank
Estimated result, less than the quantitation limit
"E" = Exceeds calibration range
"D" = Dilution performed
"ND" = Not Detected

Inorganic Flags Used in Result Sheet
"EC" = Estimated count
"TNTC" = Too numerous to count
"S" = Result quantified by method of standard addition
"ND" = Not Detected

CLP

Organic Flags Used in Result Sheet
"B" = Found in method blank
"J" = Estimated result, less than the quantitation limit
"P" = This flag is used for a pesticide/aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns
"E" = This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument
"D" = Dilution performed
"U" = Not Detected

Inorganic Flags Used in Result Sheet
"E" = The reported value is estimated because of the presence of interference
"M" = Duplicate injection precision not met
"N" = Spiked sample recovery not within control limits
"S" = Result quantified by method of standard addition
"W" = Post-digestion spike for furnace AA analysis is out of control limits
"*" = Duplicate analysis not within control limits
"+" = Correlation coefficient for the MSA is less than 0.995
"U" = Not Detected

GC CONFORMANCE/NONCONFORMANCE SUMMARY

	No	Yes
1. Chromatograms Labeled/Compounds Identified	—	✓
Standards Summary Submitted	—	✓
3. Calibration Frequency Initial calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis	—	✓
4. Blank Contamination If yes, list compounds and concentrations in each blank:	✓	—

a. Volatile Fraction _____
b. Pesticides/PCBs _____
c. Herbicide Fraction _____
d. Other _____

5. Surrogate Recoveries Meet Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range:	—	✓

a. Volatile Fraction _____
b. Pesticides/PCBs _____
c. Herbicide Fraction _____
d. Other _____

If not met, were the calculations checked and the results qualified as estimated?	—	—
6. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range:	—	✓

a. Volatile Fraction _____
b. Pesticides/PCBs _____
c. Herbicide Fraction _____
d. Other _____

7. Retention Time Shifts Meet Criteria If not, list those samples which fall outside the acceptable range:	—	✓

a. Volatile Fraction _____
b. Pesticides/PCBs _____
c. Herbicide Fraction _____
d. Other _____

8. Extraction Holding Time Met If not met, list analysis and number of days exceeded for each sample:	—	N/A

_____
_____
_____

9. Analysis Holding Time Met If not met, list analysis and number of days exceeded for each sample:	—	✓

_____
_____
_____

Laboratory Supervisor: Andy Lanagin Date: 6-12-95

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: MW-2

Lab Sample ID: T505394-1

Matrix: [soil/water] WATER

Lab File ID: >H0428

Sample wt/vol: 2.5 [g/mL] ML

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: NA

Date Analyzed : 05/31/95

GC Column : DB-VRX ID: 0.45 (mm)

Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/L	Q
71-43-2	Benzene	67	
108-88-3	Toluene	1.6	
100-41-4	Ethylbenzene	14	
108-38-3	meta + para-Xylenes	4.0	
95-47-6	ortho-Xylene	3.7	
98-82-8	Isopropylbenzene	3.9	
103-65-1	n-Propylbenzene	1.2	
99-87-6	p-Isopropyltoluene	1.00	U
108-67-8	1,3,5-Trimethylbenzene	1.4	
95-63-6	1,2,4-Trimethylbenzene	3.0	
1634-04-4	Methyl-tert-butyl ether	1.00	U
135-98-8	sec-Butylbenzene	1.00	U
104-51-8	n-Butylbenzene	7.3	
91-20-3	Naphthalene	140	

SADF: 2.0U

Total Hit(s): 11

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: MW-1D

Lab Sample ID: T505394-2

Matrix: [soil/water] WATER

Lab File ID: >H0406

Sample wt/vol: 5.0 [g/mL] ML

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: NA

Date Analyzed : 05/30/95

GC Column : DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/L	Q
71-43-2	Benzene	1.3	
108-88-3	Toluene	.50	U
100-41-4	Ethylbenzene	3.8	
108-38-3	meta + para-Xylenes	4.7	
95-47-6	ortho-Xylene	1.3	
98-82-8	Isopropylbenzene	.93	
103-65-1	n-Propylbenzene	1.1	
99-87-6	p-Isopropyltoluene	.58	
108-67-8	1,3,5-Trimethylbenzene	2.9	
95-63-6	1,2,4-Trimethylbenzene	14	
1634-04-4	Methyl-tert-butyl ether	.50	U
135-98-8	sec-Butylbenzene	.50	U
104-51-8	n-Butylbenzene	1.8	
91-20-3	Naphthalene	27	

SADF: 1.00

Total Hit(s): 11

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: FB051895

Lab Sample ID: T505394-3

Matrix: [soil/water] WATER

Lab File ID: >H0403

Sample wt/vol: 5.0 [g/mL] ML

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: NA

Date Analyzed : 05/30/95

GC Column : DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/L	Q
71-43-2	Benzene	.50	U
108-88-3	Toluene	.50	U
100-41-4	Ethylbenzene	.50	U
108-38-3	meta + para-Xylenes	1.00	U
95-47-6	ortho-Xylene	.50	U
98-82-8	Isopropylbenzene	.50	U
103-65-1	n-Propylbenzene	.50	U
99-87-6	p-Isopropyltoluene	.50	U
108-67-8	1,3,5-Trimethylbenzene	.50	U
95-63-6	1,2,4-Trimethylbenzene	.50	U
1634-04-4	Methyl-tert-butyl ether	.50	U
135-98-8	sec-Butylbenzene	.50	U
104-51-8	n-Butylbenzene	.50	U
91-20-3	Naphthalene	.50	U

SADF: 1.00

Total Hit(s): 0

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G9

Lab Sample ID: T505394-4

Matrix: [soil/water] SOIL

Lab File ID: >H0431

Sample wt/vol: 0.1 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: 29.1

Date Analyzed : 05/31/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 50.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	160	
108-88-3	Toluene	250	
100-41-4	Ethylbenzene	400	
108-38-3	meta + para-Xylenes	770	
95-47-6	ortho-Xylene	35.001	U
98-82-8	Isopropylbenzene	35.001	U
103-65-1	n-Propylbenzene	35.001	U
99-87-6	p-Isopropyltoluene	35.001	U
108-67-8	1,3,5-Trimethylbenzene	35.001	U
95-63-6	1,2,4-Trimethylbenzene	35.001	U
1634-04-4	Methyl-tert-butyl ether	35.001	U
135-98-8	sec-Butylbenzene	35.001	U
104-51-8	n-Butylbenzene	35.001	U
91-20-3	Naphthalene	35.001	U

DF: 70.52

Total Hit(s): 4

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G10

Lab Sample ID: T505394-5

Matrix: [soil/water] SOIL

Lab File ID: >H0387

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: 25.1

Date Analyzed : 05/27/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	18	
108-88-3	Toluene	13	
100-41-4	Ethylbenzene	17	
108-38-3	meta + para-Xylenes	94	
95-47-6	ortho-Xylene	68	
98-82-8	Isopropylbenzene	9.1	
103-65-1	n-Propylbenzene	3.9	
99-87-6	p-Isopropyltoluene	1.6	
108-67-8	1,3,5-Trimethylbenzene	38	
95-63-6	1,2,4-Trimethylbenzene	32	
1634-04-4	Methyl-tert-butyl ether	.67	U
135-98-8	sec-Butylbenzene	3.0	
104-51-8	n-Butylbenzene	3.2	
91-20-3	Naphthalene	12	

ADF: 1.34

Total Hit(s): 13

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G11

Lab Sample ID: T505394-6

Matrix: [soil/water] SOIL

Lab File ID: >H0388

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: 26.9

Date Analyzed : 05/27/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.68	U
108-88-3	Toluene	1.2	
100-41-4	Ethylbenzene	9.9	
108-38-3	meta + para-Xylenes	34	
95-47-6	ortho-Xylene	19	
98-82-8	Isopropylbenzene	.68	U
103-65-1	n-Propylbenzene	.68	U
99-87-6	p-Isopropyltoluene	.68	U
108-67-8	1,3,5-Trimethylbenzene	.68	U
95-63-6	1,2,4-Trimethylbenzene	.68	U
1634-04-4	Methyl-tert-butyl ether	.68	U
135-98-8	sec-Butylbenzene	.68	U
104-51-8	n-Butylbenzene	.68	U
91-20-3	Naphthalene	.68	U

SADF: 1.37

Total Hit(s): 4

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G12

Lab Sample ID: T505394-7

Lab File ID: >H0389

Matrix: [soil/water] SOIL

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: 36.3

Date Analyzed : 05/27/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.78	U
108-88-3	Toluene	.78	U
100-41-4	Ethylbenzene	1.0	
108-38-3	meta + para-Xylenes	7.8	
95-47-6	ortho-Xylene	.78	U
98-82-8	Isopropylbenzene	.78	U
103-65-1	n-Propylbenzene	.78	U
99-87-6	p-Isopropyltoluene	.78	U
108-67-8	1,3,5-Trimethylbenzene	.78	U
95-63-6	1,2,4-Trimethylbenzene	.78	U
1634-04-4	Methyl-tert-butyl ether	.78	U
135-98-8	sec-Butylbenzene	.78	U
104-51-8	n-Butylbenzene	.78	U
91-20-3	Naphthalene	.78	U

ADF: 1.57

Total Hit(s): 2

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G13

Lab Sample ID: T505394-8

Matrix: [soil/water] SOIL

Lab File ID: >H0444

Sample wt/vol: 0.025 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: 21.8

Date Analyzed : 06/01/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 200.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	130.00	U
108-88-3	Toluene	520	
100-41-4	Ethylbenzene	2900	
108-38-3	meta + para-Xylenes	2500	
95-47-6	ortho-Xylene	130.00	U
98-82-8	Isopropylbenzene	130.00	U
103-65-1	n-Propylbenzene	130.00	U
99-87-6	p-Isopropyltoluene	130.00	U
108-67-8	1,3,5-Trimethylbenzene	130.00	U
95-63-6	1,2,4-Trimethylbenzene	130.00	U
1634-04-4	Methyl-tert-butyl ether	130.00	U
135-98-8	sec-Butylbenzene	130.00	U
104-51-8	n-Butylbenzene	130.00	U
91-20-3	Naphthalene	130.00	U

ADF: 255.75

Total Hit(s): 3

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G14

Lab Sample ID: T505394-9

Matrix: [soil/water] SOIL

Lab File ID: >H0429

Sample wt/vol: 0.05 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: 25.9

Date Analyzed : 05/31/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 100.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	67.00	U
108-88-3	Toluene	120	
100-41-4	Ethylbenzene	420	
108-38-3	meta + para-Xylenes	640	
95-47-6	ortho-Xylene	67.00	U
98-82-8	Isopropylbenzene	67.00	U
103-65-1	n-Propylbenzene	67.00	U
99-87-6	p-Isopropyltoluene	67.00	U
108-67-8	1,3,5-Trimethylbenzene	67.00	U
95-63-6	1,2,4-Trimethylbenzene	67.00	U
1634-04-4	Methyl-tert-butyl ether	67.00	U
135-98-8	sec-Butylbenzene	67.00	U
104-51-8	n-Butylbenzene	67.00	U
91-20-3	Naphthalene	67.00	U

ADF: 134.95

Total Hit(s): 3

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: IG15

Lab Sample ID: T505394-10

Matrix: [soil/water] SOIL

Lab File ID: >H0414

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: 16.6

Date Analyzed : 05/30/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.60	U
108-88-3	Toluene	.60	U
100-41-4	Ethylbenzene	.60	U
108-38-3	meta + para-Xylenes	1.8	
95-47-6	ortho-Xylene	.60	U
98-82-8	Isopropylbenzene	.60	U
103-65-1	n-Propylbenzene	.60	U
99-87-6	p-Isopropyltoluene	2.2	
108-67-8	1,3,5-Trimethylbenzene	1.2	
95-63-6	1,2,4-Trimethylbenzene	1.8	
1634-04-4	Methyl-tert-butyl ether	.60	U
135-98-8	sec-Butylbenzene	.60	U
104-51-8	n-Butylbenzene	5.3	
91-20-3	Naphthalene	4.4	

SADF: 1.20

Total Hit(s): 6

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: G16

Lab Sample ID: T505394-11

Matrix: [soil/water] SOIL

Lab File ID: >H0415

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: 30.5

Date Analyzed : 05/31/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.721	U
108-88-3	Toluene	.721	U
100-41-4	Ethylbenzene	.721	U
108-38-3	meta + para-Xylenes	1.40	U
95-47-6	ortho-Xylene	.721	U
98-82-8	Isopropylbenzene	.721	U
103-65-1	n-Propylbenzene	.721	U
99-87-6	p-Isopropyltoluene	.721	U
108-67-8	1,3,5-Trimethylbenzene	1.3	
95-63-6	1,2,4-Trimethylbenzene	.721	U
1634-04-4	Methyl-tert-butyl ether	.721	U
135-98-3	sec-Butylbenzene	.721	U
104-51-8	n-Butylbenzene	1.7	
91-20-3	Naphthalene	.721	U

>ADF: 1.44

Total Hit(s): 2

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: FB051895S

Lab Sample ID: T505394-12

Matrix: [soil/water] WATER

Lab File ID: >H0404

Sample wt/vol: 5.0 [g/mL] ML

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/19/95

% Moisture: NA

Date Analyzed : 05/30/95

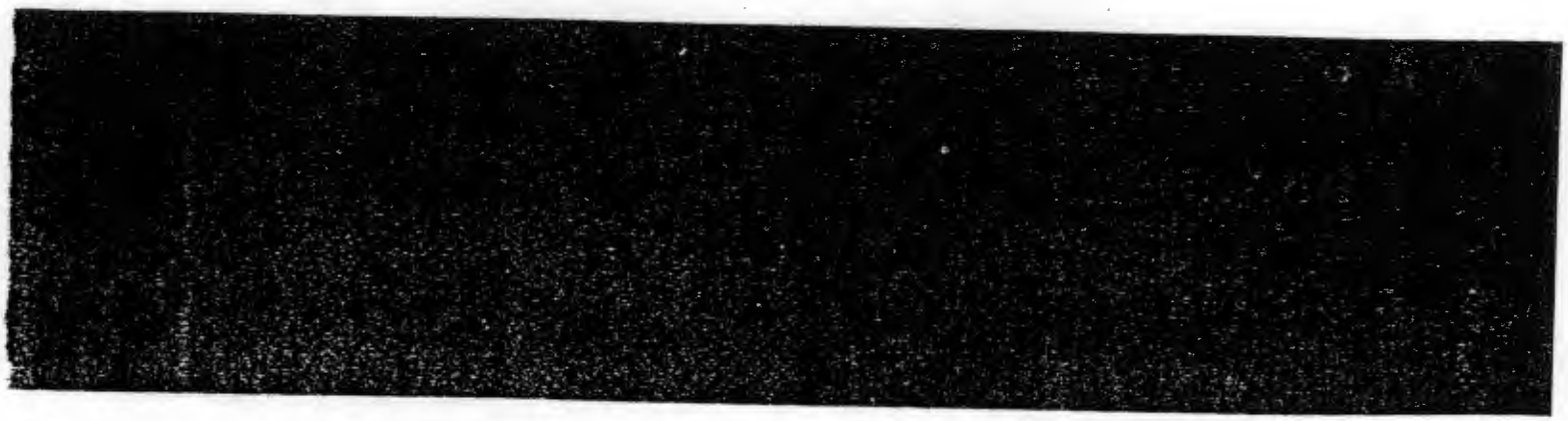
GC Column : DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/L	Q
71-43-2	Benzene	.50	U
108-88-3	Toluene	.50	U
100-41-4	Ethylbenzene	.50	U
108-38-3	meta + para-Xylenes	1.00	U
95-47-6	ortho-Xylene	.50	U
98-82-8	Isopropylbenzene	.50	U
103-65-1	n-Propylbenzene	.50	U
99-87-6	p-Isopropyltoluene	.50	U
108-67-8	1,3,5-Trimethylbenzene	.50	U
95-63-6	1,2,4-Trimethylbenzene	.50	U
1634-04-4	Methyl-tert-butyl ether	.50	U
135-98-8	sec-Butylbenzene	.50	U
104-51-8	n-Butylbenzene	.50	U
91-20-3	Naphthalene	.50	U

SADF: 1.00

Total Hit(s): 0



Laboratory Resources INC
Teterboro Division
[illegible]0 Hollister Road
[illegible]erboro, New Jersey 07608
[illegible]AX: 201-288-5311
[illegible]-288-3700

LABORATORY ANALYSIS REPORT

Client: Woodward Clyde Consultants
201 Willowbrook Blvd
Wayne NJ 07470

Project Manager: Mr Dan Stettner
Project: Silverstine

Laboratory Report: T505450

Date Received: 5/24/95

Date Reported: 7/3/95

Lab ID No.	Client Sample ID	Matrix	Collection Date & Time
T505450 - 1	W01	Soil	05/23/95 12:48 PM
T505450 - 2	W02	Soil	05/23/95 12:53 PM
T505450 - 3	W03	Soil	05/23/95 12:57 PM
T505450 - 4	W04	Soil	05/23/95 1:00 PM
T505450 - 5	FB052395	Water	05/23/95 1:15 PM
T505450 - 6	WC	Soil	05/24/95 8:30 AM

Moe R. Amirsoleymani
Quality Assurance Manager

N.J. Certification #02046
N.Y. Certification #11321
P.A. Certification #68-420

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LRI # T505450

ory Resources

CHAIN OF CUSTODY

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CUSTOMER INFORMATION

CUSTOMER: Dan Stettner

ADDRESS: Woodward-Clyde Consultants, 201 Willowbrook Blvd, Wayne, NJ 07470

TELEPHONE: 201-785-0700

FAX: 201-785-0875

PROJECT INFORMATION

PROJECT: Silverstein

PROJECT LOCATION: Manhattan STATE: NY

PROJECT MANAGER: Jody Ciampicis / Dan Stettner / John Savin

IN CASE WE HAVE ANY QUESTIONS WHEN SAMPLES ARRIVE WE SHOULD CALL:

NAME:

TELEPHONE: 201-785-0700

FAX: 201-785-0875

BILLING INFORMATION

BILL TO: Woodward-Clyde Consul

ADDRESS: 201 Willowbrook Blvd, Wayne NJ 07470

ATTENTION: Dan Stettner

TELEPHONE: 201-785-0700

PO #: 5E04530

LAB ID CODE	SAMPLE IDENTIFICATION	DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE MATRIX	# OF BOTTLES	8021	8270 waste class.	H2SO4	HCL	HNO3	NAOH
1	W01	5-23-95	1248		X	soil	2	↓	↓				
2	W02	↓	1253		↓	↓	2	↓	↓				
3	W03	↓	1257		↓	↓	2	↓	↓				
4	W04	↓	1300		↓	↓	2	↓	↓				
5	FB052395	↓	1315		↓	water	5	↓	↓				
6	WC	5-24-95	0830	X		soil	3		X				

TURNAROUND (INDICATE IN CALENDAR DAYS): ____ FAX ____ HARD COPY ____ DELIV. PKG.

NAME OF LAB PERSONNEL CONFIRMING:

DELIVERABLES (CIRCLE ONE): DATA DATA/QC RED/DELIV NJ/CLP I NJ/CLP II NJ/REGL NY/ASP CLP OTHER NYSDEC STARS Memo #1 Appendix B Table 2

☐ RETURN TO CLIENT FOR DISPOSAL ☒ LAB DISPOSAL

KNOWN HAZARD (FLAMMABLE, EXPLOSIVE, TOXIC) ☐ YES ☐ NO (IF YES EXPLAIN UNDER COMMENTS)

LAB USE CONDITIONS OF BOTTLES AND COOLER AT RECEIPT: ☐ COMPLIANT ☐ NOT COMPLIANT (IF NOT EXPLAIN UNDER COMMENTS)

SAMPLER / AFFILIATION:

RECEIVED / AFFILIATION: DATE: TIME:

RELINQUISHED / AFFILIATION: Dan Stettner, WCC

RECEIVED / AFFILIATION: DATE: TIME:

RELINQUISHED / AFFILIATION:

RECEIVED / AFFILIATION: AB LRI DATE: 5/24/95 TIME: 12:30

COMMENTS: Call for analytical requirements for waste classification sample

Laboratory Services INC.
A United Water Resources Company (NYSE)

"WORK TRAN. ... RECEIP

ESO-116 R

SENDING DIVISION: (Please Check)

☑ TETERBORO DIVISION
Teterboro, NJ
800-729-0852

☐ LEHIGH VALLEY ANALYTICS DIVISION
Bethlehem, PA
800-729-4268

☐ EASTERN SCIENTIFIC DIVISION
Brooklyn, CT
Inside CT 800-932-1150
Outside CT 800-334-0103

☐ INTECH BIOLABS DIVISION
East Brunswick, NJ
800-729-1397

RECEIVING DIVISION: Eastern

SENT TO:

PO #: T505450

JOB #:

QA/QC: Red. Del.

DATE: 5/24/95

NEED DAY: 6/10/95

LAB ID #	SAMPLE ID #	SAMPLE DATE	M	QTY	SZ	G	P	HNO_3	H_2SO_4	HCL	NaOH	NON	ANALYSIS
T505450-6	WC	5/24/95	S										TOX

G – GLASS
P – PLASTIC
M – MATRIX
H_2SO_4 – SULFURIC ACID
HCL – HYDROCHLORIC ACID
NaOH – SODIUM HYOROXIDE
NON – NONPRESERVED
HNO_3 – NITRIC ACID

COMMENTS: 0002

5/24/95

PREPARED BY: Date Time

METHOD OF SHIPMENT: VIA ADC

009979962 333

5/24/95 Date Time

RECEIVED BY: Date Time

RECEIVING DIVISION – ORIGINAL

Date: 5/24/95

LABORATORY RESOURCES INC.
CHANGE ORDER FORM

Date Notified by Client: 5/24/95

Work Order Number: T505450

Client Name: Woodward

Informed by: Dan Stetter

☑ Verbal ☐ Fax ☐ Written ☐ Per Chain of Custody

Departments Notified by: c

Changed in LIMS by: c Date: 5/24

Departments Notified:

☑ Extractions ☐ Metals ☐ Report Gen
☐ Volatiles ☑ Wet Chem ☑ Sample Mngmt.
☑ Semi-Volatiles

Original filed with chain of cutody / data file ☐

Sample Number(s)	Addition(s)	Deletion(s)
06- WC	-Full TCLP -RCRA Paint filter -TOX -PCB -PHC	

Comments:

Due Date: / /

Signature or Initials:

DEPE-077
Rev. 2.0, 2/92

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

INTERNAL CHAIN OF CUSTODY

INSTRUCTIONS: Use 1 form for each 20 samples or aliquot.

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample	Laboratory: Laboratory Resources Name: Krishna Daggumati	Location: Teterboro Title: Sample Management Supervisor
Field Sample Seal No:	Date Broken 5/24/95	Military Time Seal Broken:
CaseNo:	Analytical Parameter/Fraction	

SAMPLE NO.	ALIQUOT/EXTRACT NO.	SAMPLE NO.	ALIQUOT/EXTRACT NO.
TS05450-01			
-02			
-03			
-04			
-05			
-06			

Date	Time	RELINQUISHED BY	RECEIVED BY	PURPOSE OF CHANGE OF CUSTODY
5/24/95	12:30	PRINTED NAME Ahok SIGNATURE AP	PRINTED NAME R TURCA SIGNATURE [illegible]	06 FOR ZHE
5/24/95	16:30	PRINTED NAME R TURCA SIGNATURE [illegible]	PRINTED NAME Ahok SIGNATURE AP	Ref.
5/26/95	9:30 am	PRINTED NAME Ahok SIGNATURE AP	PRINTED NAME Antonio Gonzalez SIGNATURE Antonio Gonzalez	Regular BN soil # 1-4.
5/26/95	16:00	PRINTED NAME Antonio Gonzalez SIGNATURE Antonio Gonzalez	PRINTED NAME Ahok SIGNATURE AP	Returned.
5/26/95	15:00	PRINTED NAME JOSE SILVA SIGNATURE [illegible]	PRINTED NAME Ron LEZ SIGNATURE Ron [illegible]	Bn liq. ext. Depleted
~~5/26/95~~ 5/30	6:30	PRINTED NAME JOSE SILVA SIGNATURE [illegible]	PRINTED NAME Ron LEZ SIGNATURE Ron [illegible]	TCLP ~~[illegible]~~ soil ext. BNA
5/30	8:00	PRINTED NAME Ron LEZ SIGNATURE Ron [illegible]	PRINTED NAME JOSE SILVA SIGNATURE [illegible]	ret
5/30	11:00	PRINTED NAME Ahok SIGNATURE AP	PRINTED NAME CHOWKIN ZHE SIGNATURE [illegible]	1-5. GCVOA
5/30	16:00	PRINTED NAME CHOWKIN ZHE SIGNATURE [illegible]	PRINTED NAME Ahok SIGNATURE AP	Ret
5/30/95	3 pm	PRINTED NAME Ahok SIGNATURE AP	PRINTED NAME Antonio Gonzalez SIGNATURE Antonio Gonzalez	# 6. For PCB soil

0004

DEPE-077
Rev. 2.0, 2/92

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

Page ___ of ___

INTERNAL CHAIN OF CUSTODY

INSTRUCTIONS: Use 1 form for each 20 samples or aliquot.

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample	Laboratory: Laboratory Resources Name: Krishna Daggumati	Location: Teterboro Title: Sample Management Superviso
Field Sample Seal No:	Date Broken 5/24/95	Military Time Seal Broken:
CaseNo:	Analytical Parameter/Fraction	

SAMPLE NO.	ALIQUOT/EXTRACT NO.	SAMPLE NO.	ALIQUOT/EXTRACT NO.
750545 0-01			
-02			
-03			
-04			
-05			
-06			

Date	Time	RELINQUISHED BY	RECEIVED BY	PURPOSE OF CHANGE OF CUSTODY
5/30/95	12:00	PRINTED NAME Antonio Gonzalez SIGNATURE	PRINTED NAME Ahok SIGNATURE	Returned.
5/31/95	7:45	PRINTED NAME Ahok SIGNATURE	PRINTED NAME JEAN MEDASTIN SIGNATURE	6 ignitability
5/31/95	22:10	PRINTED NAME JEAN MEDASTIN SIGNATURE	PRINTED NAME Ahok SIGNATURE	fld
6/2	5:30	PRINTED NAME Ahok SIGNATURE	PRINTED NAME ANTONIO SIGNATURE	#6 for TCLP Herb 8150
6/2	7:00	PRINTED NAME ANTONIO SIGNATURE	PRINTED NAME Ahok SIGNATURE	Ref.
6/5/95	10:30	PRINTED NAME Ahok SIGNATURE	PRINTED NAME JEAN MEDASTIN SIGNATURE	6 reactivity
6/5/95	18:00	PRINTED NAME JEAN MEDASTIN SIGNATURE	PRINTED NAME Ahok SIGNATURE	Ref.
6/7	12:30	PRINTED NAME Ahok SIGNATURE	PRINTED NAME Robert Dasey SIGNATURE	Hg
6/7	16:00	PRINTED NAME Robert Dasey SIGNATURE	PRINTED NAME Ahok SIGNATURE	Ref
6/9	8:00	PRINTED NAME Ahok SIGNATURE	PRINTED NAME MARLENA G SIGNATURE	TCLP # 6

0005

6/9 Hexavalent

Ahok

Ref

INTERNAL CHAIN OF CUSTODY

INSTRUCTIONS: Use 1 form for each 20 samples or aliquot.

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting responsibility for Sample	Laboratory: Laboratory Resources Name: Miriam Mercedes	Location: Teterboro Title: Sample Extraction Sup
Field Sample Seal No: T505450	Date Broken ___/___/___	Military Time Seal Broken:
CaseNo:	Analytical Parameter/Fraction	

SAMPLE NO.	ALIQUOT/EXTRACT NO.	SAMPLE NO.	ALIQUOT/EXTRACT NO.
T505450-01	Regular BN Soils		
-02	↓		
-03			
-04			

Date	Time	RELINQUISHED BY	RECEIVED BY	PURPOSE OF CHANGE OF CUSTOD
5/26/95	9:00 AM	PRINTED NAME Alfredo SIGNATURE Alf	PRINTED NAME Antonio Gonzalez SIGNATURE Antonio Gonz	Regular BN So
5/26/95		PRINTED NAME Antonio Gonzalez SIGNATURE Antonio Gonz	PRINTED NAME Kenneth Vazquez SIGNATURE K-Vz	Delivered to GC/
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME	PRINTED NAME	

INSTRUCTIONS: Use 1 form for each 20 samples or aliquot.

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample	Laboratory: Laboratory Resources Name: Miriam Mercedes	Location: Teterboro Title: Sample Extraction Super
d Sample Seal No:	Date Broken ____/____/____	Military Time Seal Broken:
CaseNo:	Analytical Parameter/Fraction	

SAMPLE NO.	AUQUOT/EXTRACT NO.	SAMPLE NO.	AUQUOT/EXTRACT NO.
T505450-05	Reg. Bo Lig. ext.		

Date	Time	RELINQUISHED BY	RECEIVED BY	PURPOSE OF CHANGE OF CUSTODY
5/26/95	15:00	PRINTED NAME JOSE SILVA SIGNATURE	PRINTED NAME RIN LEE SIGNATURE	Reg. Bo Lig.
6/5	17:00	PRINTED NAME Ron Lee SIGNATURE	PRINTED NAME Yorktown VA 23691 SIGNATURE	Delivered to GC/MS.
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME	PRINTED NAME	

INTERNAL CHAIN OF CUSTODY

INSTRUCTIONS: Use 1 form for each 20 samples or aliquot.

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample	Laboratory: Laboratory Resources Name: Miriam Mercedes	Location: Teterboro Title: Sample Extraction Sup
Field Sample Seal No: T505450	Date Broken ___/___/___	Military Time Seal Broken:
CaseNo:	Analytical Parameter/Fraction	

SAMPLE NO.	ALIQUOT/EXTRACT NO.	SAMPLE NO.	ALIQUOT/EXTRACT NO.
T505450-06	Regular PCB Soil		

Date	Time	RELINQUISHED BY	RECEIVED BY	PURPOSE OF CHANGE OF CUSTODY
5/30/95	1000 AM	PRINTED NAME JOSE SILVA SIGNATURE [signature]	PRINTED NAME Antonio Gonzalez SIGNATURE [signature]	Regular PCB So
5/31/95	10:00 AM	PRINTED NAME Antonio Gonzalez SIGNATURE [signature]	PRINTED NAME William Jackson SIGNATURE [signature]	delivered to G
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME	PRINTED NAME	

INTERNAL CHAIN OF CUSTODY

INSTRUCTIONS: Use 1 form for each 20 samples or aliquot.

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample	Laboratory: Laboratory Resources Name: Miriam Mercedes	Location: Teterboro Title: Sample Extraction Supe
Field Sample Seal No:	Date Broken ___/___/___	Military Time Seal Broken:
CaseNo: T505L150	Analytical Parameter/Fraction	

SAMPLE NO. T505450 - 06	ALIQUOT/EXTRACT NO.	SAMPLE NO.	ALIQUOT/EXTRACT NO.
	TCLP P/PCB Soil		

Date	Time	RELINQUISHED BY	RECEIVED BY	PURPOSE OF CHANGE OF CUSTODY
5/26	12:00 PM	PRINTED NAME JOSE SILVA SIGNATURE [signature]	PRINTED NAME Sexture Watts SIGNATURE [signature]	TCLP P/PCB Soil
5/30	11:20	PRINTED NAME Sexture Watts SIGNATURE [signature]	PRINTED NAME William Jackson SIGNATURE [signature]	Delivered to GC
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	
		PRINTED NAME SIGNATURE	PRINTED NAME SIGNATURE	0009
		PRINTED NAME	PRINTED NAME	

VOLATILE ORGANICS METHODOLOGY

EXTRACTION AND ANALYSIS, AQUEOUS

Code of Federal Regulations, Title 40, Part 136, Office of the Federal Register, National Archives and Records Administration, EPA/CLP internal and surrogate standards.

SAMPLE EXTRACTION, NON-AQUEOUS

Test Methods for Evaluating Solid Waste (SW-846), USEPA Office of Solid Waste and Emergency Response, Washington, DC 20460, 3rd Edition, November 1986, Method 5030, "Purge-and-Trap."

ANALYSIS, NON-AQUEOUS

Test Methods for Evaluating Solid Waste (SW-846), USEPA Office of Solid Waste and Emergency Response, Washington, DC 20460, 3rd Edition, November 1986, Method 8240, "Gas Chromatography/Mass Spectrometry for Volatile Organics."

SEMIVOLATILE ORGANICS METHODOLOGY

Sample Extraction and Analysis, Aqueous

Code of Federal Regulations, Title 40, Part 136, Office of the Federal Register, National Archives and Records Administration, Washington, DC 20402, Method 625, "Base/Neutrals and Acids", modified using EPA/CLP internal and surrogate standards.

Sample Extraction, Solids

Test Methods for Evaluating Solid Waste (SW-846), USEPA Office of Solid Waste and Emergency Response, Washington, DC 20460, 3rd Edition, November 1986, Method 3550, "Sonication Extraction."

Sample Preparation, Organic Liquids

Test Methods for Evaluating Solid Waste (SW-846), USEPA Office of Solid Waste and Emergency Response, Washington, DC 20460, 3rd Edition, November 1986, Method 3580, "Waste Dilution."

Analysis, Nonaqueous

Test Methods for Evaluating Solid Waste (SW-846), USEPA Office of Solid Waste and Emergency Response, Washington, DC 20460, 3rd Edition, November 1986, Method 8270, "Gas Chromatography/Mass Spectrometry for Semivolatile Organics: Capillary Column Technique."

METHODS SUMMARY

PURGEABLE HALOCARBONS/AROMATICS BY METHODS 601-8010/602-8020

Methods 601/8010 and 602/8020 are based on the gas chromatographic analysis of five milliliters of aqueous sample or approximately 5 grams of solid waste for purgeable halocarbons and purgeable aromatics, respectively. The samples are purged, trapped and desorbed onto a column using a temperature ramping program. A Hall electrolytic conductivity detector in series with a photoionization detector (PID) is used for detection of these compounds.

METHODS SUMMARY

ORGANIC EXTRACTIONS

Routine aqueous samples are prepared using Method 3510 (separatory funnel extraction) or Method 3520 (continuous liquid-liquid extraction) cited in SW846. Soil samples are extracted using Method 3550 (sonication extraction) from SW846.

ALUMINA COLUMN CLEANUP

After the sample has been extracted for base/neutral semivolatiles using Method 3550, it then undergoes acid-base partition cleanup using SW846 Method 3650. The base neutral extract is then further separated using alumina column cleanup Method 3611 in SW846.

TCLP EXTRACTION SUMMARY

Sample requiring TCLP analyses are extracted according to Method 1311, cited in 40 CFR 261 et seq, June 29, 1990.

PESTICIDES/PCBs

Aqueous samples are analyzed for pesticides and PCBs via USEPA Method 608. Non-aqueous samples are analyzed using Method 8080 as cited in USEPA SW846.

HERBICIDES

The herbicide extraction and analysis is performed according to Method 509B, cited in the 16th edition of Standard Methods. Samples are extracted, derivitized, and then analyzed via a gas chromatograph utilizing an electron capture detector (ECD).

METHODS SUMMARY

TRACE METALS

Reference: EPA SW846 3rd Edition, 1986 Vol. 1 A

Non-aqueous samples are digested for ICAP and GFAA according to method 3050 and for CV according to method 7470. Extracts and aqueous samples (ECRA and RCRA projects) are digested for ICAP, GFAA, and CV according to methods 3010, 3020, and 7470 respectively.

ICAP analyses are conducted in accordance with Method 6010. GFAA analyses are conducted in accordance with methods 7060 for arsenic, 7421 for lead, 7740 for selenium and 7841 for thallium. CV analyses are conducted in accordance with method 7470.

Titanium and tin are analyzed for GFAA according to methods 282.2 and 283.3 respectively (EPA 600/4-79-020, 1983 revision).

TRACE METALS

Reference: EPA 600/4-79-020, 1983 revision.

Potable water, aqueous wastes, and surface water are digested according to EPA methods 4.1.4 for GFAA and FLAA, 200.7 for ICAP, and 245.1 for CV. GFAA analyses are conducted in accordance with methods 204.4 for antimony, 206.2 for arsenic, 239.2 for lead, 270.2 for selenium, 279.2 for thallium, 282.2 for tin, and 283.2 for titanium. ICAP analyses are conducted in accordance with method 200.7, CV analyses with method 245.1, and FLAA analyses with method 273.1 for sodium only.

GFAA = Graphite furnace atomic absorption.
ICAP = Inductively Coupled Argon Plasma.
FLAA = Flame atomic absorption.
CV = Cold vapor atomic absorption for Hg.

TCLP METALS

Samples are extracted and analyzed in accordance with method 1311 published in the Federal Register, 40 CFR 261, June 29, 1990.

LABORATORY RESOURCES, INC. - TETERBORO 1993
GENERAL CHEMISTRY METHODOLOGY
SOIL MATRIX

PARAMETER	METHOD 1
Acidity	305.1
Alkalinity	310.1
BOD, 5 day	507(4)
BOD, 20 day	507(4)
Chloride	9252
Chlorine, residual	330.5
COD	HACH
Conductivity	9050
Cyanide, Total	9010
Cyanide, Amenable	9010
Ignitability	1010
MBAS, Surfactants	5123(4)
Nitrogen, NH3	350.1(2)
Nitrogen, NO3	9200
Nitrogen, NO2	354.1
Nitrogen, TKN	351.2(2)
Odor	140.1
Petroleum Hydrocarbon, Soil	418.1(5)
pH	9045
Phenolics, Total	9065
Phosphorus, Total	365.2(2)
Solids, Fixed	2090(4)
Solids, Total	CLP
Solids, Volatiles	2090(4)
Sulfate	9038
Sulfide	9030
Sulfite	377.1(2)
TOC	415.1
Hexavalent Chromium	7196M
Turbidity	180.1

(1) = Solid and hazardous waste methods approved by NJDEP ECRA and RCRA and listed in EPA SW 846 3rd Edition, 1986.

(2) = Water and wastewater methods aprroved in the Federal Register in section 40 CFR 136 and listed in EPA 600/4 - 79 - 020.

(4) = Methods cited in Standard Methods 16th Edition, 1986.

(5) = NJDEP modification of EPA Method 418.1.

CLP = Contract Laboratory Program procedure for total solids determination, SO4 7/88, Part F, page 0 - 83.

HACH = Method 8000, Hach Handbook of water Analysis, 1979. Approved in the Federal Register, April 21, 1980, page 26811.

M= NJDEPE Modified

ORGANIC NON-CONFORMANCE SUMMARY

GC/MS SEMI-VOLATILE

1. The surrogate recovery of Nitrobenzene-d5 was outside of the required QC limits in sample T505333-05MSD.

2. The surrogate recovery of 2-Fluorobiphenyl was outside of the required QC limits in sample T505333-05MS.

3. The surrogate recovery of 2,4,6-Tribromophenol was outside of the required QC limits in sample T505151-01MS/MSD.

4. The quantitation limits are elevated due to the high concentration of analytes in sample T505450-04.

5. The internal standard areas are outside of the required QC limits in sample T505333-05MSD.

GC VOLATILE

1. The surrogate recovery of Fluorobenzene was outside of the QC limits in sample T505450-01. The sample was re-analyzed yielding similar results.

INORGANIC NON-CONFORMANCE SUMMARY

GENERAL CHEMISTRY

1. MS is outside of the control limit for reactive sulfide and reactive cyanide analysis of sample T505458-07.

Fax:
Report: 06/11/95
Received: 05/24/95
Client: Woodward Clyde Consultants
Deliverable: Reduced Deliverables Disk Due:
Regulation: NY-Spill Tech And Remediation Series
Special Requirements:

LRI Laboratory Chronicle
MS Volatiles

Report # T505450

QC Type	Lab	pH	Sample	mat	Test Type	Collected Date	Collected By	Analysis Date	Analysis By	Batch	Data File	Dil File	Calc	% Sol	#
V	X		6:WC	S	8240VOA-T/TCLP_VOA	05/24		6/6	.	-1	E1583			71.2	

extracted 5/25/95.

QC CHRONICLE

Blanks				Spikes			
	#	mat		sample	M file	MS file	MSD file
QE0606		L	E1576				
QE0607		L	E1598	TCLP BLK	E1600		
				6053-01	E1599	E1601	E1602

Calibration

	Date	File	MS
init	5/17		E
chk	6/6	E1571	
	6/7	E1596	
			0020

DL LIST: VVTCLP REVIEWED: 6-21-95 LAB TAT: CHECKED: 6-21-95

Fax:
Report: 06/11/95
Received: 05/24/95
Client: Woodward Clyde Consultants
Deliverable: Reduced Deliverables
Regulation: NY-Spill Tech And Remediation Series
Special Requirements:

LRI Laboratory Chronicle
MS Semivolatiles

Report # T505450

Page: 1
6/22/95
9:29:44 AM

Disk Due:

QT	Lb	pH	Sample	mat	Test Type	Extracted Date	Extracted By	Analysis Date	Analysis By	Batch	Data File	Dil File	Calc	% Sol	# F
✓	✓	✓	6 : WC	S	8270SVA-T/TCLP_SV	05/24 05/30	RL	6/12/95	✓	-1	A2083	✓	2.5	71.2	0
			1A: W01	S	8270SVA-/sys00047	05/23 05/26	AG			-1	J0279			83.9	
			2A: W02	S	8270SVA-/sys00047	05/23 05/26	AG			-1	J0283			82.1	
			3A: W03	S	8270SVA-/sys00047	05/23 05/26	AG			-1	J0278			80.1	
			4A: W04	S	8270SVA-/sys00047	05/23 05/26	AG			-1	J0291	J0343		88.5	
			5B: FB052395	W	8270SVA-/sys00047	05/23 05/26	RL			-1	D5722			N/A	

QC CHRONICLE

Blanks	#	mat		Spikes sample	M file	MS file	MSD file
QM9884	T1	S	J0277	TS05333-S	J0280	J0281	~~J0282~~
QM9885	T2	W	A2071	TS05151-1			J0282
QM9885	T1						
TCLPBLK							
QM9858	2	W	D5710				

6/1/95 D5361 - D5365

Calibration

	Date	File	MS
Init	6/8/95	A2001	S ✓
	~~6/8/95~~	~~D5181~~	~~BS~~
	6/19/95	D5701	DS
	5/28/95	D5181 -	D5185 -
chk	6/22/95	J0275	
	6/12/95	A2081	✓
	6/11/95	A2066	✓
	6/20/95	D5721	0021
	6/22/95	D5711	
	6/20/95	D5707	
	6/21/95	D5731	

DL LIST:
REVIEWED:
LAB TAT:
CHECKED:

Fax:
Report: 06/11/95
Received: 05/24/95
It: Woodward Clyde Consultants
Deliverable: Reduced Deliverables Disk Due:
Regulation: NY-Spill Tech And Remediation Series
Special Requirements:

LRI Laboratory Chronicle
GC Volatiles

Report # T505450

Page: 1
5/31/95
4:33:54 PM

QT	Lb	pH	Sample	mat	Test Type	Collected Date	Collected By	Analysis Date	Analysis By	Batch	Data File	Dil File	Calc	% Sol	#
			1B: W01	S	8021SVOA-/sys00004	05/23				QH0531	H0434	RE H0458	1.19	83.9	
			2B: W02	S	8021SVOA-/sys00004	05/23					H0437		1.22	82.1	
			3B: W03	S	8021SVOA-/sys00004	05/23					H0435		1.25	80.1	
			4B: W04	S	8021SVOA-/sys00004	05/23					H0436		1.13	88.5	
			5A: FB052395	W	8021WVOA-/sys00005	05/23				QH0526	H0375		1.0	N/A	

QC CHRONICLE

Blanks				Spikes			
	#	mat		sample	M file	MS file	MSD file
QH0530		~~W~~	H0401				
		S	H0402	T505499-4	H0411	H0412	H0413
QH0531		S	H0424				
QH0601		S	H0450				
QH0526		L	H0373				

Calibration

	Date	File	MS
init	5/22	H	
chk	5/30	H0400	✓
	5/31	H0422	
	6/1	H0448	
	5/26	H0372	

0022

DL LIST: QC8025 REVIEWED: C.Z LAB TAT: CHECKED: Andy P

6-12-95

Fax:
Report: 06/11/95
Received: 05/24/95
Client: Woodward Clyde Consultants
Deliverable: Reduced Deliverables
Regulation: NY-Spill Tech And Remediation Series
Special Requirements:

LRI Laboratory Chronicle
GC Semivolatiles

Disk Due:

Report # T505450

Page: 1
6/8/95
12:34:11 PM

QT	Lb	pH	Sample	mat	Test Type	Extracted Date	Extracted By	Analysis Date	Analysis By	Batch	Data File	Dil File	Calc	% Sol	#
			6:WC	S	8080PBA-T/TCLPPEST	05/24 05/26	SW			9879	00653			71.2	0
			6:WC	S	8150_A-T/HERBS	05/24 6/9	OS			9940	~~S00191~~	S0300		71.2	0
			6:WC	S	8080PBA-/PCB_STD	05/24 05/30	AG			9903	S0192			71.2	0

QC CHRONICLE

Blanks				Spikes			
	#	mat		sample	M file	MS file	MSD file
9903	01		S00191	TSC545S-1	S00193	S00194	S00195
9879	01	L	S0645	5432-1	00646	00647	00648
"TCLP			00644				
9940	01	L	S0290	5486-1	S0291	S0292	S0293
TCLP			S0289				

Calibration

	Date	File	MS
init			
chk			
			0023

DL LIST:

REVIEWED: BJ

LAB TAT:

CHECKED:

HOLDING TIMES, PRESERVATION TECHNIQUES, AND REQUIRED TECHNIQUES

Name	Container[1]	Preservation	Max. Holding Time
Bacterial Tests:			
Coliform, fecal & total	P,G	Cool,4°C,0.008% $Na_2S_2O_3$	6 hours
Fecal streptococci	P,G	Cool,4°C,0.008% $Na_2S_2O_3$	6 hours
Metals:			
Chromium VI	P,G	Cool,4°C	24 hours
Mercury	P,G	HNO_3 to pH<2	28 days
Metals, except chromium VI & mercury	P,G	HNO_3 to pH<2	6 months
Inorganic Tests:			
Acidity	P,G	Cool,4°C	14 days
Alkalinity	P,G	Cool,4°C	14 days
Ammonia	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Biochemical oxygen demand(5)	P,G	Cool,4°C	48 hours
Biochemical oxygen demand(20)	P,G	Cool,4°C	48 hours
Biochemical oxygen demand, carbonaceous	P,G	Cool,4°C	48 hours
Bromide	P,G	None required	28 days
Chemical oxygen demand	P,G	Cool,4°C, H_2SO_4 to pH<2	28 days
Chloride	P,G	None required	28 days
Chlorine, total residual	P,G	None required	Analyze immed.
Color	P,G	Cool,4°C	48 hours
Cyanide, total & amenable to chlorination	P,G	Cool,4°C, NaOH to pH>12, 0.6g ascorbic acid	14 days
Cyanide, reactive	P,G	None required	NA
Fluoride	P	None required	28 days
Hardness	P,G	HNO_3 to pH<2,H_2SO_4 to pH<2	6 months
Hydrogen ion (pH)	P,G	None required	Analyze immed.
Ignitability (flash points)	P,G	None required	NA
Kjeldahl & organic nitrogen	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Nitrate	P,G	Cool,4°C	48 hours
Nitrate-Nitrite	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Nitrite	P,G	Cool,4°C	48 hours
Odor	P,G	None required	Analyze immed.
Oil & Grease	G	Cool,4°C,H_2SO_4 to pH<2	28 days
Total Organic Carbon	P,G	Cool,4°C,HCl or H_2SO_4 to pH<2	28 days
Orthophosphate	P,G	Filter immediately,Cool,4°C	48 hours
Phosphate, total	P,G	H_2SO_4 to pH<2	28 days
Oxygen, Dissolved Probe	G Bottle & top	None required	Analyze immed.
Winkler	do	Fix in site & store in dark	8 hours
Phenols	G only	Cool,4°C,H_2SO_4 to pH<2	28 days
Phophorus (elemental)	G	Cool,4°C	48 hours
Phosphorus, total	P,G	Cool,4°C,H_2SO_4 to pH<2	28 days
Residue, Total	P,G	Cool,4°C	7 days
Residue, Filterable (TDS)	P,G	Cool,4°C	7 days
Residue, Nonfilterable(TSS)	P,G	Cool,4°C	7 days
Residue, Settleable	P,G	Cool,4°C	48 hours
Residue, volatile	P,G	Cool,4°C	7 days
Silica	P	Cool,4°C	28 days
Specific Conductance	P,G	Cool,4°C	28 days
Sulfate	P,G	Cool,4°C	28 days
Sulfide, reactive	P,G	Cool,4°C	NA
Sulfide, total	P,G	Cool,4°C, add zinc acetate plus sodium hydoxide to pH>9	7 days

Name	Container[1]	Preservation	Max. Holding Time
Sulfite	P,G	None Required	Analyze immed.
Surfactants (MBAS)	P,G	Cool, 4°C	48 hours
TPH (water)	G	H_2SO_4 to pH<2	7 days
TPH (soil)	G	H_2SO_4 to pH<2	28 days
Temperature	P,G	None Required	Analyze
Turbidity	P,G	Cool, 4°C	48 hours
Organic Tests:			
Purgeable halocarbons	G, Teflon-lined septum	Cool, 4°C, 0.008% $Na_2S_2O_3$	14 days
Purgeable aromatic hydrocarbons	G, Teflon-lined septum	Cool, 4°C, 0.008% $Na_2S_2O_3$ HCl to pH2	14 days
Acrolein & acrylonitrile	G, Teflon-lined septum	Cool, 4°C, 0.008% $Na_2S_2O_3$ adjust pH to 4-5	14 days
Phenols	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$	7 days til extraction 40 days after extract
Benzidines	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$	7 days til extraction
Phthalate esters	G, Teflon-lined cap	Cool, 4°C	7 days til extraction 40 days after extract
Nitrosamines	G, Teflon-lined cap	Cool, 4°C, store in dark 0.008% $Na_2S_2O_3$	40 days after extraction
PCBs, acrylonitrile	G, Teflon-lined cap	Cool, 4°C	40 days after extraction
Nitroaromatics & isophorone	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$, store in dark	40 days after extraction
Polynuclear aromatic hydrocarbons	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$, store in dark	40 days after extraction
Haloethers	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$,	40 days after extraction
Chlorinated hydrocarbons	G, Teflon-lined cap	Cool, 4°C	40 days after extraction
TCDD	G, Teflon-lined cap	Cool, 4°C, 0.008% $Na_2S_2O_3$,	40 days after extraction
Total organic halogens	G, Teflon-lined cap	Cool, 4°C, H_2SO_4 to pH <2	28 days
Pesticides Tests:			
Pesticides	G, Teflon-lined cap	Cool, 4°C, pH 5-9	40 days after extraction
Radiological Tests:			
Alpha, beta, & radium	P,G	HNO_3 to pH<2	6 months

[1] Polyethylene (P) or Glass (G).

Note: All holding times mentioned above are based upon the date of sample collection.

Test Method for Evaluating Solid Waste Physical/Chemical Methods SW 846 Final Update-I July 1992.

Standard Method for the Examination of Water and Waste Water 18th Edition 1992.

CASE NARRATIVE

Laboratory Resources, New Jersey Division, received five soil samples plus a field blank for Reduced Deliverables Format on May 24, 1995. The samples were analyzed for the parameters outlined in the chain of custody.

The samples were analyzed within the required holding time. Any parameters which were outside of their respective quality control ranges are noted in the non-conformance summaries.

It should be noted that TOX analysis was subcontracted to Eastern Scientific Division of Laboratory Resources.

All soil, sludge and sediment samples are reported in dry weight.

Please contact us if there are any questions regarding the enclosed results.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

W01

Lab Name: LRI Contract:

Project No.: Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: T505450-01

Sample wt/vol: 30.0 (g/mL G Lab File ID: J2079.D

Level: (low/med) LOW Date Received: 5/24/95

% Moisture: 16 decanted: (Y/N): N Date Extracted: 5/26/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/22/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	Naphthalene	400	U
83-32-9	Acenaphthene	400	U
86-73-7	Fluorene	400	U
85-01-8	Phenanthrene	250	J
120-12-7	Anthracene	78	J
206-44-0	Fluoranthene	610	
129-00-0	Pyrene	580	
56-55-3	Benzo[a]anthracene	370	J
218-01-9	Chrysene	370	J
205-99-2	Benzo[b]fluoranthene	410	
207-08-9	Benzo[k]fluoranthene	340	J
50-32-8	Benzo[a]pyrene	450	
193-39-5	Indeno[1,2,3-cd]pyrene	310	J
53-70-3	Dibenz[a,h]anthracene	400	U
191-24-2	Benzo[g,h,i]perylene	360	J

0057

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

W02

Lab Name: LRI Contract:

Project No.: Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: T505450-02

Sample wt/vol: 30.0 (g/mL G Lab File ID: J2083.D

Level: (low/med) LOW Date Received: 5/24/95

% Moisture: 18 decanted: (Y/N): N Date Extracted: 5/26/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/22/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	Naphthalene	720	
83-32-9	Acenaphthene	300	J
86-73-7	Fluorene	380	J
85-01-8	Phenanthrene	3800	
120-12-7	Anthracene	1200	
206-44-0	Fluoranthene	4800	
129-00-0	Pyrene	5500	
56-55-3	Benzo[a]anthracene	3800	
218-01-9	Chrysene	3600	
205-99-2	Benzo[b]fluoranthene	4800	
207-08-9	Benzo[k]fluoranthene	3000	
50-32-8	Benzo[a]pyrene	4100	
193-39-5	Indeno[1,2,3-cd]pyrene	2500	
53-70-3	Dibenz[a,h]anthracene	970	
191-24-2	Benzo[g,h,i]perylene	2600	

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

W03

Lab Name: LRI Contract:

Project No.: Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: T505450-03

Sample wt/vol: 30.0 (g/mL G Lab File ID: J2078.D

Level: (low/med) LOW Date Received: 5/24/95

% Moisture: 20 decanted: (Y/N): N Date Extracted: 5/26/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/22/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	Naphthalene	420	U
83-32-9	Acenaphthene	420	U
86-73-7	Fluorene	420	U
85-01-8	Phenanthrene	57	J
120-12-7	Anthracene	420	U
206-44-0	Fluoranthene	87	J
129-00-0	Pyrene	81	J
56-55-3	Benzo[a]anthracene	55	J
218-01-9	Chrysene	57	J
205-99-2	Benzo[b]fluoranthene	45	J
207-08-9	Benzo[k]fluoranthene	46	J
50-32-8	Benzo[a]pyrene	54	J
193-39-5	Indeno[1,2,3-cd]pyrene	420	U
53-70-3	Dibenz[a,h]anthracene	420	U
191-24-2	Benzo[g,h,i]perylene	420	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

W04

Lab Name: LRI Contract:

Project No.: Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: T505450-04

Sample wt/vol: 30.0 (g/mL G Lab File ID: J0291.D

Level: (low/med) LOW Date Received: 5/24/95

% Moisture: 11 decanted: (Y/N): N Date Extracted: 5/26/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/23/95

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	Naphthalene	2700	
83-32-9	Acenaphthene	4700	
86-73-7	Fluorene	4000	
85-01-8	Phenanthrene	13000	E
120-12-7	Anthracene	6100	
206-44-0	Fluoranthene	14000	E
129-00-0	Pyrene	15000	E
56-55-3	Benzo[a]anthracene	12000	E
218-01-9	Chrysene	10000	
205-99-2	Benzo[b]fluoranthene	10000	
207-08-9	Benzo[k]fluoranthene	3800	
50-32-8	Benzo[a]pyrene	9400	
193-39-5	Indeno[1,2,3-cd]pyrene	5500	
53-70-3	Dibenz[a,h]anthracene	2300	
191-24-2	Benzo[g,h,i]perylene	5200	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

W04DL

Lab Name: LRI Contract:

Project No.: Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: T505450-04DL

Sample wt/vol: 30.0 (g/mL G Lab File ID: J0343.D

Level: (low/med) LOW Date Received: 5/24/95

% Moisture: 11 decanted: (Y/N): N Date Extracted: 5/26/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/27/95

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	Naphthalene	3100	JD
83-32-9	Acenaphthene	6000	D
86-73-7	Fluorene	4800	D
85-01-8	Phenanthrene	25000	D
120-12-7	Anthracene	9200	D
206-44-0	Fluoranthene	27000	D
129-00-0	Pyrene	21000	D
56-55-3	Benzo[a]anthracene	13000	D
218-01-9	Chrysene	14000	D
205-99-2	Benzo[b]fluoranthene	9600	D
207-08-9	Benzo[k]fluoranthene	11000	D
50-32-8	Benzo[a]pyrene	13000	D
193-39-5	Indeno[1,2,3-cd]pyrene	7000	D
53-70-3	Dibenz[a,h]anthracene	3300	JD
191-24-2	Benzo[g,h,i]perylene	6400	D

ORGANICS ANALYSIS DATA SHEET-SEMIVOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: FB052395

Lab Sample ID: T505450-05

Lab File ID: >D5722

Matrix: [soil/water] WATER

Extract Vol: 1000 uL

Sample wt/vol: 1000 [g/mL] ML

Date Received: 05/24/95

Run Type: 8270SVA

Date Extracted: 05/26/95

% Moisture: NA

Date Analyzed: 06/20/95

Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/L	Q
91-20-3	Naphthalene	10	U
83-32-9	Acenaphthene	10	U
86-73-7	Fluorene	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

SADF: 1.00

Total Hit(s): 0

GC CONFORMANCE/NONCONFORMANCE SUMMARY

GCVO

TS05450

		No	Yes
1.	Chromatograms Labeled/Compounds Identified		✓
	Standards Summary Submitted		✓
3.	Calibration Frequency Initial calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis		✓
4.	Blank Contamination If yes, list compounds and concentrations in each blank:	✓	

a. Volatile Fraction __________
b. Pesticides/PCBs __________
c. Herbicide Fraction __________
d. Other __________

		No	Yes
5.	Surrogate Recoveries Meet Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range:	X	~~✓~~

a. Volatile Fraction Fluorobenzene 171% in 05450-01 and 189% in 01-RE
b. Pesticides/PCBs __________
c. Herbicide Fraction __________
d. Other __________

If not met, were the calculations checked and the results qualified as estimated? ___ ___

		No	Yes
6.	Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range:		✓

a. Volatile Fraction __________
b. Pesticides/PCBs __________
c. Herbicide Fraction __________
d. Other __________

		No	Yes
7.	Retention Time Shifts Meet Criteria If not, list those samples which fall outside the acceptable range:		✓

a. Volatile Fraction __________
b. Pesticides/PCBs __________
c. Herbicide Fraction __________
d. Other __________

		No	Yes
8.	Extraction Holding Time Met If not met, list analysis and number of days exceeded for each sample:		NA
9.	Analysis Holding Time Met If not met, list analysis and number of days exceeded for each sample:		✓

Laboratory Supervisor: Andy Panayiotou (signature) Date: 6-12-95

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: W01

Lab Sample ID: T505450-1B

Matrix: [soil/water] SOIL

Lab File ID: >H0434

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/24/95

% Moisture: 16.1

Date Analyzed : 05/31/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.60	U
108-88-3	Toluene	.83	
100-41-4	Ethylbenzene	.84	
108-38-3	meta + para-Xylenes	1.20	U
95-47-6	ortho-Xylene	.60	U
98-82-8	Isopropylbenzene	.60	U
103-65-1	n-Propylbenzene	.60	U
99-87-6	p-Isopropyltoluene	.60	U
108-67-8	1,3,5-Trimethylbenzene	.76	
95-63-6	1,2,4-Trimethylbenzene	.60	U
98-06-6	tert-Butylbenzene	.60	U
1634-04-4	Methyl-tert-butyl ether	.60	U
135-98-8	sec-Butylbenzene	.60	U
104-51-8	n-Butylbenzene	.60	U
91-20-3	Naphthalene	.60	U

SADF: 1.19

Total Hit(s): 3

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: IW01 RE

Lab Sample ID: T505450-1B

Lab File ID: >H0458

Matrix: [soil/water] SOIL

Run Type: 8021SVOA

Sample wt/vol: 5.0 [g/mL] G

Date Received: 05/24/95

Level: [low/med] LOW

Date Analyzed : 06/01/95

% Moisture: 16.1

Dilution Factor: 1.0

GC Column: DB-VRX ID: 0.45 (mm)

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.60	U
108-88-3	Toluene	.85	
100-41-4	Ethylbenzene	.71	
108-38-3	meta + para-Xylenes	1.20	U
95-47-6	ortho-Xylene	.60	U
98-82-8	Isopropylbenzene	.60	U
103-65-1	n-Propylbenzene	.60	U
99-87-6	p-Isopropyltoluene	.60	U
108-67-8	1,3,5-Trimethylbenzene	1.8	
95-63-6	1,2,4-Trimethylbenzene	.60	U
98-06-6	tert-Butylbenzene	.60	U
1634-04-4	Methyl-tert-butyl ether	.60	U
135-98-8	sec-Butylbenzene	1.2	
104-51-8	n-Butylbenzene	.60	U
91-20-3	Naphthalene	.60	U

SADF: 1.19

Total Hit(s): 4

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: W02

Lab Sample ID: T505450-2B

Matrix: [soil/water] SOIL

Lab File ID: >H0437

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/24/95

% Moisture: 17.9

Date Analyzed : 05/31/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.61	U
108-88-3	Toluene	.61	U
100-41-4	Ethylbenzene	.61	U
108-38-3	meta + para-Xylenes	1.20	U
95-47-6	ortho-Xylene	.61	U
98-82-8	Isopropylbenzene	.61	U
103-65-1	n-Propylbenzene	.61	U
99-87-6	p-Isopropyltoluene	.61	U
108-67-8	1,3,5-Trimethylbenzene	.61	U
95-63-6	1,2,4-Trimethylbenzene	.61	U
98-06-6	tert-Butylbenzene	.61	U
1634-04-4	Methyl-tert-butyl ether	.61	U
135-98-8	sec-Butylbenzene	.61	U
104-51-8	n-Butylbenzene	.61	U
91-20-3	Naphthalene	.61	U

SADF: 1.22

Total Hit(s): 0

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: IW03

Lab Sample ID: T505450-3B

Matrix: [soil/water] SOIL

Lab File ID: >H0435

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/24/95

% Moisture: 19.9

Date Analyzed : 05/31/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.62	U
108-88-3	Toluene	.62	U
100-41-4	Ethylbenzene	.62	U
108-38-3	meta + para-Xylenes	1.20	U
95-47-6	ortho-Xylene	.62	U
98-82-8	Isopropylbenzene	.62	U
103-65-1	n-Propylbenzene	.62	U
99-87-6	p-Isopropyltoluene	.62	U
108-67-8	1,3,5-Trimethylbenzene	.62	U
95-63-6	1,2,4-Trimethylbenzene	.62	U
98-06-6	tert-Butylbenzene	.62	U
1634-04-4	Methyl-tert-butyl ether	.62	U
135-98-8	sec-Butylbenzene	.62	U
104-51-8	n-Butylbenzene	.62	U
91-20-3	Naphthalene	.62	U

SADF: 1.25

Total Hit(s): 0

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: W04

Lab Sample ID: T505450-4B

Matrix: [soil/water] SOIL

Lab File ID: >H0436

Sample wt/vol: 5.0 [g/mL] G

Run Type: 8021SVOA

Level: [low/med] LOW

Date Received: 05/24/95

% Moisture: 11.5

Date Analyzed : 05/31/95

GC Column: DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/KG	Q
71-43-2	Benzene	.56	U
108-88-3	Toluene	.59	
100-41-4	Ethylbenzene	.56	U
108-38-3	meta + para-Xylenes	1.10	U
95-47-6	ortho-Xylene	.56	U
98-82-8	Isopropylbenzene	.56	U
103-65-1	n-Propylbenzene	.56	U
99-87-6	p-Isopropyltoluene	.56	U
108-67-8	1,3,5-Trimethylbenzene	.56	U
95-63-6	1,2,4-Trimethylbenzene	.56	U
98-06-6	tert-Butylbenzene	.56	U
1634-04-4	Methyl-tert-butyl ether	.56	U
135-98-8	sec-Butylbenzene	.56	U
104-51-8	n-Butylbenzene	.56	U
91-20-3	Naphthalene	.56	U

SADF: 1.13

Total Hit(s): 1

ORGANICS ANALYSIS DATA SHEET-VOLATILE COMPOUNDS

Lab Name: LRI

Client Sample ID No.: FB052395

Lab Sample ID: T505450-5A

Matrix: [soil/water] WATER

Lab File ID: >H0375

Sample wt/vol: 5.0 [g/mL] ML

Run Type: 8021WVOA

Level: [low/med] LOW

Date Received: 05/24/95

% Moisture: NA

Date Analyzed : 05/26/95

GC Column : DB-VRX ID: 0.45 (mm)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: UG/L	Q
71-43-2	Benzene	.501	U
108-88-3	Toluene	.501	U
100-41-4	Ethylbenzene	.501	U
108-38-3	meta + para-Xylenes	1.001	U
95-47-6	ortho-Xylene	.501	U
98-82-8	Isopropylbenzene	.501	U
103-65-1	n-Propylbenzene	.501	U
99-87-6	p-Isopropyltoluene	.501	U
108-67-8	1,3,5-Trimethylbenzene	.501	U
95-63-6	1,2,4-Trimethylbenzene	.501	U
98-06-6	tert-Butylbenzene	.501	U
1634-04-4	Methyl-tert-butyl ether	.501	U
135-98-8	sec-Butylbenzene	.501	U
104-51-8	n-Butylbenzene	.501	U
91-20-3	Naphthalene	.501	U

SADF: 1.00

Total Hit(s): 0

Appendix F

ROLL OFF DIVISION 26332
10-42 CU. YD. Containers

(516) 328-8400
(212) 425-8700
(718) 633-4200

Waste Control Service Inc.

6016 - 15th Avenue
Brooklyn, N.Y. 11219
D.C.A. Lic. # 483-188

Name American Hi-Tech Date 5/16/95
Address West 42 St + Block
Job Location NYC

Container Size	Time Lmt.	Charge	C.O.D.
10 YARD	2 Days		
15 YARD	4 Days		
(20 YARD)	4 Days		
30 YARD	4 Days		
40 YARD	4 Days		
COMPACTOR			
TRUCK # 89	TAX		
DRIVER Bead	TOTAL		
BOX # 202			

CUSTOMER SIGNATURE

Please Read Reverse Side Of Ticket Before Signing
White Office Copy - Yellow File Copy - Pink Customer Copy - Goldenrod Inventory

ROLL OFF DIVISION 26
10-42 CU. YD. Con

(516) 328-8400
(212) 425-8700
(718) 633-4200

Waste Control Service

6016 - 15th Avenue
Brooklyn, N.Y. 11219
D.C.A. Lic. # 483-188

Name American High Tech Date 5-- 9
Address 12 AV + W 42
Job Location NYC

Container Size	Time Lmt.	Charge	C.O
10 YARD	2 Days	[illegible]	
15 YARD	4 Days	[illegible]	
✓ 20 YARD	4 Days	✓	
30 YARD	4 Days		
40 YARD	4 Days	Chiff	
COMPACTOR			
TRUCK # 87	TAX		
DRIVER [illegible]	TOTAL		
BOX # 212			

CUSTOMER SIGNATURE X ok

Please Read Reverse Side Of Ticket Before Signing
White Office Copy - Yellow File Copy - Pink Customer Copy - Goldenrod Inv

ROLL OFF DIVISION 26592
10-42 CU. YD. Containers

(516) 328-8400
(212) 425-8700
(718) 633-4200

Waste Control Service Inc.

6016 - 15th Avenue
Brooklyn, N.Y. 11219
D.C.A. Lic. # 483-188

Name American High Tech Date 5-10-95
Address 12 AV + W 42 St
Job Location NYC

Container Size	Time Lmt.	Charge	C.O.D.
10 YARD	2 Days		
15 YARD	4 Days		
✓ 20 YARD	4 Days	[illegible]	
30 YARD	4 Days	[illegible]	
40 YARD	4 Days	[illegible]	
COMPACTOR			
TRUCK # 87	TAX		
DRIVER [illegible]	TOTAL	Chiff	
BOX # 221			

CUSTOMER SIGNATURE X ok

Please Read Reverse Side Of Ticket Before Signing
White Office Copy - Yellow File Copy - Pink Customer Copy - Goldenrod Inventory

ROLL OFF DIVISION 25368
10-42 CU. YD. Containers

(516) 328-8400
(212) 425-8700
(718) 633-4200

Waste Control Service Inc.

6016 - 15th Avenue
Brooklyn, N.Y. 11219
D.C.A. Lic. # 483-188

Name A. Hi-Tech Date 5/18/95
Address West 42nd + 12 Ave.
Job Location NYC

Container Size	Time Lmt.	Charge	C.O.D.
10 YARD	2 Days		
15 YARD	4 Days		
20 YARD	4 Days		
30 YARD	4 Days		
40 YARD	4 Days		
COMPACTOR			
TRUCK # 89	TAX		
DRIVER Brad	TOTAL		
BOX # 102			

CUSTOMER SIGNATURE _____
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ROLL OFF DIVISION 26
10-42 CU. YD. Con

(516) 328-8400
(212) 425-8700
(718) 633-4200

Phase I.

Waste Control Service

6016 - 15th Avenue
Brooklyn, N.Y. 11219
D.C.A. Lic. # 483-188

Name A. Hi-Tech Date 5/18
Address West 42nd + 12
Job Location NYC

Container Size	Time Lmt.	Charge	C.O
10 YARD	2 Days		
15 YARD	4 Days		
20 YARD	4 Days		
30 YARD	4 Days		
40 YARD	4 Days		
COMPACTOR			
TRUCK # 89	TAX		
DRIVER Brad	TOTAL		
BOX # 225			

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ROLL OFF DIVISION 26338
10-42 CU. YD. Containers

(516) 328-8400
(212) 425-8700
(718) 633-4200

Waste Control Service Inc.

6016 - 15th Avenue
Brooklyn, N.Y. 11219
D.C.A. Lic. # 483-188

Name A. Hi-Tech Date 5/16/95
Address
Job Location

Container Size	Time Lmt.	Charge	C.O.D.
10 YARD	2 Days		
15 YARD	4 Days		
20 YARD	4 Days		
30 YARD	4 Days		
40 YARD	4 Days		
COMPACTOR			
TRUCK # 89	TAX		
DRIVER Brad	TOTAL		
BOX # 221			

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ROLL OFF DIVISION 26643

10-42 CU. YD. Containers

(516) 328-8400
(212) 425-9700
(718) 633-4200

Phase 2.

Waste Control Service Inc.

6016 - 15th Avenue
Brooklyn, N.Y. 11219
D.C.A. Lic. # 483-168

Name Turner Hi Tech Date 5-23-95.

Address W 42 St + 12 Av.

Job Location N.Y.C. (Edison Parking)

	Container Size	Time Lmt.	Charge	C.O.D.
	10 YARD	2 Days		
	15 YARD	4 Days		
✓	20 YARD	4 Days	✓	
	30 YARD	4 Days	slee	Tanks
	40 YARD	4 Days	in	dumpster
	COMPACTOR			
TRUCK # 87		TAX		
DRIVER ml		TOTAL		
BOX # 222				

CUSTOMER SIGNATURE X ok

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Woodward-Clyde Consultants, Inc.

Engineering & sciences applied to the earth & its environment

PRIVILEGED AND CONFIDENTIAL –
PREPARED AT THE REQUEST OF COUNSEL

July 10, 1995
5E04530-I

Mr. Richard G. Leland
Rosenman & Colin
575 Madison Avenue
New York, NY 10022-2585

RE: Results of Environmental Investigation Field Activities
February and May 1995
Silverstein Properties Development
500-516 Twelfth Avenue, NY, NY

Dear Mr. Leland:

This letter has been prepared to summarize the results of field activities associated with the environmental evaluation of the above referenced property (hereinafter referred to as "the Site") conducted by Woodward-Clyde Consultants, Inc. (WCCI). A soil and groundwater investigation was originally proposed in WCCI's letter dated January 27, 1995 and was completed in February 1995 ("Phase I Investigation"). Phase I activities consisted of:

- The drilling of four environmental borings with one soil sample collected from each,
- The completion of the borings as monitoring wells (three shallow and one deep), and
- Groundwater sampling of the four Phase I wells.

The Phase I activities are discussed in further detail in Section 1.0.

Additional soil and groundwater investigative activities were proposed in WCCI's letter dated March 30, 1995. The additional field activities ("Phase II Investigation") were completed in May 1995 and consisted of:

- The drilling of ten environmental borings and collection of soil samples for waste classification and delineation,
- The completion of four of the borings as shallow monitoring wells and

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212-826-2878 • 212-594-2118 • Fax 212-629-3298

- Groundwater sampling of both the Phase I and Phase II monitoring wells.

The Phase II activities are discussed in further detail in Section 2.0.

1.0 PHASE I INVESTIGATION

The initial environmental investigation was conducted to address two groups of eight underground 550 gallon gasoline tanks located near the northwest corner of the Site. The first group of tanks, located closest to 12th Avenue, were reported to have been filled with sand and abandoned in place in 1960 (hereinafter "old tanks"). The second group of eight tanks, located approximately 15 feet east of the first group, were installed in 1960 and were thought to still contain some product at the time of the investigation (hereinafter "new tanks"). Both groups of tanks were later removed in May 1995 by American Hi-Tech, Inc., with oversight and reporting being conducted by WCCI. WCCI has prepared an Underground Storage Tank Closure Report that was submitted to Silverstein Properties under separate cover.

The purpose of the Phase I environmental investigation was to make a preliminary determination of the degree to which the gasoline tanks may have impacted soil and groundwater at the Site. Representative soil samples were collected from each boring and monitoring wells were installed to sample groundwater downgradient and upgradient of the tanks. All sampling and boring/well installation inspection was performed by a WCCI geologist. Figure 1 shows the Phase I sampling locations.

1.1 Soil

The geotechnical investigation of the Site, conducted by WCCI during February 1995, provided a general picture of the site stratigraphy. In general, the subsurface consists of three distinct strata overlying bedrock. The first stratum is a layer of miscellaneous fill with varying amounts of gray to black sands, gravel and silt with varying amounts of brick, concrete, wood and cinders. The fill varies in thickness from approximately 10 ft to 35 ft, with an average thickness of about 20 ft. Underlying the fill is a layer of gray to black organic silt. The silt layer varies in thickness considerably across the site; from approximately 10 ft near the northeast corner of the Site to over 30 ft near the western boundary of the Site. The silt generally thickens towards the west and to a lesser degree towards the south. Underlying the fill above bedrock is a relatively thin layer of dark gray coarse to fine sand with trace to some silt and gravel. This sand layer was found to occur mainly on the southern half of the Site, thickening westward from approximately 4 ft to 15 ft thick. The sand appears to pinch out to the east. Bedrock at the site is schist of the Manhattan Formation.

During the Phase I investigation in February 1995, a total of four soil samples were collected; one from each boring location. Samples were collected from the overburden fill material at locations MW-1S (8.5 to 9 feet), MW-2 (16.5 to 17 feet) and MW-3 (18.5 to 19 feet). A sample of the organic clay layer underlying the fill was collected from location MW-1D (30 to 30.5 feet).

Soil samples were collected using split spoon samplers. The split spoon samples were first screened with a photoionization detector (PID) and sampling was biased towards intervals of suspected contamination based on the PID readings, as well as on visual and olfactory observations. The soil sample was taken from a discrete six-inch interval and transferred to laboratory-supplied sample jars using laboratory-decontaminated stainless steel spoons. The split spoons were decontaminated after each use using the following sequence: 1) Detergent/tap water wash, 2) tap water wash, 3) deionized water, 4) acetone, 5) air dry, 6)deionized water.

All of the soil samples were analyzed for volatile organic compounds and polynuclear aromatic hydrocarbon (PAH) semi-volatile compounds listed in the August 1992 New York State Department of Environmental Conservation (NYSDEC) Spill Technology and Remediation Series (STARS) Memo #1: "Petroleum-Contaminated Soil Guidance Policy". The analyses were performed by Nytest Environmental, Inc. (NEI) of Port Washington, New York using EPA SW846 Methods 8021 and 8270. The results discussed in Section 3.1.

1.2 Groundwater

The four environmental soil borings were completed as 2-inch diameter PVC monitoring wells.

1.2.1 Monitoring Well Installation

Based on the proximity of the Hudson River to the western boundary of the Site and on information gathered during the geotechnical investigation, groundwater at the Site was assumed to flow to the west. Monitoring well MW-2 was installed downgradient of the old tanks, to a depth of 16 feet below ground surface (bgs) with a 10-foot screen. Monitoring wells MW-1S and MW-1D were installed as a shallow and deep pair just west of the new tanks, to monitor groundwater conditions downgradient of the new tanks and upgradient of the old tanks. MW-1S was installed to a depth of 16 ft bgs with a 10-foot screen. MW-1D was installed to a depth of 46 ft bgs with a 10-foot screen. Monitoring well MW-3 was installed in the eastern portion of the site, approximately 90 feet from 11th Avenue, to monitor upgradient groundwater conditions. MW-3 was completed at a depth of 20 ft bgs with a 15-foot screen.

The wells were installed using hollow stem augers, with the exception of MW-1D, which was installed using spin casing/water rotary method. Split spoon samples were collected from required intervals and the lithologies were recorded on boring log forms (Appendix A).

The monitoring wells were constructed of 2-inch diameter PVC casing and 0.10-inch slot screen. A filterpack of #1 Morie sand was installed around the screen in each borehole to a depth that extended two to three feet above the top of the screen. In each well, a seal of hydrated bentonite pellets approximately one foot thick was installed immediately above the filterpack. The remaining borehole annulus in each well was grouted with Portland type II cement. Each well was completed with a locking water-tight seal cap and a protective flushmount cover (cemented in place). As-built well construction diagrams are provided in Appendix B.

The wells were developed following installation using a centrifugal pump. The purpose of the development is to increase the hydraulic connection between the well and the formation in which it has been installed. Each well was pumped until the water was cleared of fine particles (approximately 25 gallons from each well). The wells were allowed to stabilize for two weeks before groundwater sampling was conducted.

1.2.2 Groundwater Sampling

On March 10, 1995, WCCI field personnel collected groundwater samples from MW-1S, MW-1D, MW-2 and MW-3. Sampling was conducted in accordance with procedures outlined in the NYSDEC Sampling Guidelines and Protocols Manual.

Prior to sampling, wells were purged of three casing volumes using an inertial pump with a foot check valve (MW-1S, MW-2 and MW-3) and a decontaminated submersible pump (MW-1D) with dedicated polyethylene tubing. The wells were sampled when fully recovered (shortly following purging). Field parameters (pH, temperature, specific conductivity) were measured during purging and sampling. Samples were collected using laboratory-decontaminated, stainless steel bailers. Samples were analyzed by NEI for volatile organics and PAHs from the STARS Memo #1 compound list. The analytical results are discussed in Section 3.2

2.0 PHASE II INVESTIGATION

Following the preliminary results of the Phase I sampling, WCCI was requested to perform additional environmental investigative activities to further evaluate the property with regard to its former use as a manufactured gas plant during the 1800s. The information gathered during the

Phase II investigation would also assist in the preparation of bid specifications for anticipated excavations associated with construction.

2.1 Soil

Ten additional soil borings were advanced during the Phase II investigation, four of which were completed as shallow monitoring wells. Four borings (SB-25, SB-26, SB-27 and SB-28) were advanced within the proposed footprint of the building. These borings were located close to existing geotechnical borings in order to make use of existing stratigraphic information. Three samples were collected from each of these four borings as follows:

- One shallow sample from just below the asphalt and concrete paving to be composited into two samples for waste classification analyses (TCLP complete, corrosivity, reactivity, ignitability). Samples from SB-25 and SB-26 were composited into sample "TOWER1". Samples from SB-27 and SB-28 were composited into sample "TOWER2".

- One sample from a depth corresponding to the proposed finished grade of the property (approximately 1.5 to 3.5 feet below current grade). These samples were to assist in site characterization and were analyzed for volatile organic compounds plus the next ten tentatively identified compounds (VO+10), base neutral compounds plus the next ten tentatively identified compounds (BN+10), and Target Analyte List metals (TAL metals).

- One characterization sample from the six-inch interval just above the groundwater table to be analyzed for VO+10, BN+10 and TAL metals.

Two borings (SB-29 and SB-30) were advanced at the locations of the two proposed elevator pits to characterize soil which may be exposed due to deeper excavations (4 to 6 feet below grade). Two samples were collected from each of these borings as follows:

- One shallow sample (approximately 2 to 4 feet deep) from each boring. These were composited to form sample "ELEV1" for waste classification analyses (TCLP complete, corrosivity, reactivity, ignitability)

- A deeper characterization sample from the six-inch interval just above the groundwater table to be analyzed for VO+10, BN+10 and TAL metals.

Four borings (SB-31, SB-32, SB-33, SB-34) were advanced in the proposed area of the Site to be left undeveloped ("open space"). Two characterization samples were collected from each of these borings as follows:

- One sample from just below the asphalt and concrete paving (approximately 1 foot below grade) to correspond with the proposed finished grade of the area. These samples were analyzed for VO+10, BN+10 and TAL metals.

- One deeper sample from the six-inch interval just above the groundwater table to be analyzed for VO+10, BN+10 and TAL metals.

Laboratory analytical protocol was NYSDEC Analytical Services Protocol (ASP) SW-846. This protocol is typically followed by NYSDEC's Hazardous Waste Division. This differs from the analytical protocol used for the Phase I sampling, which used the NYS Bureau of Spill Prevention and Response Protocol which is standard for investigation of underground storage tanks.

All proper sampling and decontamination procedures were followed as was described in Section 1.1. A summary of samples collected, including depth and analyses, is included in Table 2. Soil boring logs are included in Appendix A. The analytical results are discussed in Section 3.1.

2.2 Groundwater

Four of the Phase II soil borings were completed as 2-inch monitoring wells to further delineate groundwater contamination levels at the Site. Well locations are shown on Figure 1.

2.2.1 Monitoring Well Installation

Soil borings SB-26, SB-29, SB-33 and SB-34 were completed as monitoring wells MW-4, MW-5, MW-6 and MW-7, respectively. The wells were drilled using hollow stem augers. Split spoon samples were collected from required intervals and the lithologies were recorded on boring log forms (Appendix A).

The monitoring wells were constructed of 2-inch diameter PVC casing and 0.10-inch slot screen. A filterpack of #1 Morie sand was installed around the screen in each borehole to a depth that extended a minimum of 1 foot above the top of the screen. In each well a seal of hydrated bentonite pellets, 6 to 8 inches thick, was installed immediately above the filterpack. The remaining borehole annulus in each well was grouted with Portland type II cement. Each well was completed with a locking water-tight seal cap and a protective flushmount cover (cemented in place). As-built well construction diagrams are provided in Appendix B.

The wells were developed following installation using an airline combined with a centrifugal pump and/or hand bailer when necessary. Wells MW-4, MW-5 and MW-6 were sucessfully developed until the purge water was cleared significantly of fine particles, with total approximate yields of 18 gallons, 33 gallons and 22 gallons, respectively. MW-7 contained very little water and had to be hand bailed, yielding only a few gallons. The wells were allowed to stabilize for two weeks before groundwater sampling was conducted.

2.2.2 Groundwater Sampling

On May 17 and 18, 1995, WCCI field personnel collected groundwater samples from both the Phase I monitoring wells (MW-1D, MW-2, MW-3) and the Phase II wells (MW-4, MW-5, MW-6, MW-7). MW-1S had been destroyed during the removal of the abandoned underground gasoline tanks and was therefore not sampled. Sampling was conducted in accordance with procedures outlined in the NYSDEC Sampling Guidelines and Protocols Manual.

Prior to sampling, wells MW-1D to MW-6 were purged of at least three casing volumes using an inertial pump with a foot check valve and dedicated polyethylene tubing. MW-7 was purged of three volumes using a hand bailer. The wells were sampled when fully recovered (shortly following purging). Field parameters (pH, temperature, specific conductivity) were measured during purging and sampling. Samples were collected using disposable polyethylene bailers. Samples were analyzed by NEI for VO+10, BN+10 and TAL metals (unfiltered). A summary of sampling activity is presented on Table 3. Analytical results are discussed in Section 3.2.

3.0 ANALYTICAL RESULTS

3.1 Soil Results

3.1.1 Waste Classification Results

Leachate extracted from composite soil samples TOWER1, TOWER2 and ELEV1 was analyzed using the EPA Toxicity Characteristic Leaching Procedure (TCLP). The samples were analyzed

for TCLP Volatiles, Semivolatiles, Metals, Herbicides and Pesticides as well as pH, corrosivity, reactivity and ignitability to determine waste classification. The results, shown on Table 4, were compared to NYSDEC's Hazardous Waste Regulatory Levels for Toxicity Characteristic. The three samples met all of the regulatory levels, and would therefore be classified as *non-hazardous waste* for disposal purposes.

It is important to note that these samples are only representative of the locations (SB-25, SB-26, SB-27, SB-28, SB-29 and SB-30) and depths (0 to 4 ft bgs) from which they were collected. Waste classification results from soil at other locations and depths on the Site may vary. It should also be noted that under New York State regulation 6NYCRR Part 360, in order for contaminated soil to be reused on a site, the soil must meet a maximum individual soil (not leachate) contaminant concentration of 10,000 ppb as well as exhibit no discernible odors ("nuisance protection"). None of the samples collected for waste classification analysis exhibited visible petroleum contamination or discernible odors. In general, soil samples observed in the 0 to 4 ft interval did not exhibit visual or olfactory contamination while many deeper soil samples, particularly those from near or below the water table (6 to 20 ft bgs) did exhibit nuisance characteristics.

3.1.2 Volatile Organics Results

The results from Phase I and Phase II soil sampling indicate that volatile organic contamination is not prevalent at the locations sampled, with the notable exception of location MW-3. The results are shown on Table 5 (Phase I samples) and Table 6 (Phase II samples). The Phase I samples were analyzed for STARS Memo #1 VOC compounds and therefore have been compared to the STARS Memo #1 Guidance Values. The Phase II samples were analyzed for NYSDEC ASP volatile organics list and have been compared to NYSDEC Soil Cleanup Objectives listed in HWR-94-4046.

In general, most soil samples had moderate to high levels of acetone. The acetone is most likely an artifact of field decontamination procedures, which involved an acetone rinse followed by air drying as a final step. Low levels (below Cleanup Objectives and Guidance Values) of benzene were also detected in most samples. SB32B (7.5 to 8 ft. bgs) was the only sample with an exceedance of the Cleanup Objectives, with a benzene concentration of 730 ug/kg (Cleanup Objective = 60 ug/kg). The Phase I sample from location MW-3, at a depth of 18.5 to 19 ft bgs, was the only Phase I sample with concentrations exceeding the STARS Memo Guidance Values. MW-3 had levels of toluene, xylenes, benzene and various benzene compounds in the thousands of parts per billion.

3.1.3 Semi-Volatile Organic Results

The Phase I and Phase II soil sampling indicates that semi-volatile contamination, specifically of the less soluble PAH compounds, is pervasive in the fill layer at the site. Two of the Phase II samples, SB28B (7.5 to 8 ft bgs) and SB31B (7.5 to 8 ft bgs) had the highest levels of PAHs. Both of these samples exceeded the Total Semi-Volatiles Cleanup Objective of 500,000 ug/kg with totals of 531,000 and 901,800 ug/kg respectively. In addition to SB28B and SB31B, samples SB26A (2.5 to 3 ft bgs) and SB32B (7.5 to 8 ft bgs) both had individual PAH compound concentrations in excess of the individual compound Cleanup Objective of 50,000 ug/kg. In general, the most prevalent PAH compounds with the highest concentrations are phenanthrene, fluoranthene, pyrene, benzo(a) pyrene, benzo(b) fluoranthene, benzo(k)fluoranthene, benzo(a)anthracene, chrysene, indeno(1,2,3-cd) pyrene and naphthalene. Results are presented on Table 5 (Phase I) and Table 7 (Phase II).

3.1.4 Inorganic Results

The inorganic results of the Phase II soil sampling are presented on Table 8. The results indicate that most samples have concentrations that slightly exceed, but are still of the same order of magnitude, as the NYSDEC Soil Cleanup Objectives. The Cleanup Objectives for heavy metals list values or "SB" for site background levels. Certain sample concentrations of a given metal may exceed the listed value but may still be below the average background levels in the vicinity of the Site. In order to determine if NYSDEC considers the metals concentrations at the Site to be unacceptable, information must first be gathered on the background concentrations of metals in the area.

3.2 Groundwater Results

3.2.1 Volatile Organic Results

The groundwater samples collected during Phase I (March 1995) were analyzed for the STARS Memo VOC compound list. The results are shown on Table 9. The Phase I results for the shallow overburden wells (MW-1S, MW-2 and MW-3) indicate levels of benzenes, toluene, ethylbenzene and xylenes (BTEX) exceeding the STARS groundwater Guidance Values. MW-3, the upgradient well, has the highest concentrations. The deep overburden well, MW-1D, had concentrations of three compounds that only slightly exceeded the STARS Guidance Values. The STARS Guidance Values are equal to the more stringent of the NYSDEC groundwater quality Guidance Values or the New York State Department of Health (NYSDOH) drinking water quality Guidance Values.

The groundwater samples collected during Phase II (May 1995) were analyzed for NYSDEC ASP volatiles. The results are shown on Table 10. The Phase II results indicate levels of BTEX exceeding NYSDEC Guidance Values. Benzene was most prevalent, being detected in all of the wells at concentrations ranging from 1 ug/L (MW-1D) to 58 ug/L (MW-3) (Guidance Value = 0.7 ug/L). The highest concentrations were again found in MW-3.

3.2.2 Semi-Volatile Organic Results

The Phase I groundwater sampling results are shown on Table 9. The results show high levels of naphthalene in shallow wells MW-1S, MW-2 and MW-3 with concentrations of 94 ug/L, 66 ug/L and 2100 ug/L, respectively. The Guidance Value for naphthalene is 10 ug/L. There were no other exceedances of semi-volatile Guidance Values in the samples.

The Phase II sampling again showed a prevalence of naphthalene, with concentrations exceeding 10 ug/L in all of the wells sampled, including MW-1D. The highest concentration was again found in MW-3 (1100 ug/L). Levels of acenaphthene exceeding the Guidance Value of 20 ug/L were detected in wells MW-2, MW-4, MW-5 and MW-6. MW-6 and MW-4 also had levels of benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and indeno(1,2,3-cd)pyrene exceeding the Guidance Values of 0.002 ug/L by three orders of magnitude. Phase II semi-volatile groundwater results are shown on Table 11.

3.2.3 Inorganic Results

The Phase II groundwater sampling inorganic results are shown on Table 12. The samples were analyzed for TAL metal (unfiltered samples). The results show elevated levels of a number of metals, notably lead, cobalt and vanadium in all wells but MW-1D. Other metals with high concentrations, but which could be naturally occurring in the subsurface, are iron, magnesium, manganese and zinc.

4.0 SUMMARY

Analytical results of Phase I and II soil and groundwater sampling suggest that soils beneath the Site contain petroleum-related compounds (primarily PAHs) and metals in concentrations that exceed NYS Cleanup Objectives and STARS Memo Guidance Values. Waste classification results indicate that the shallow (0 to 4 ft bgs) soil in the western half of the Site would likely be classified as non-hazardous for disposal purposes.

Analytical results suggest that groundwater in the fill overburden the Site contains petroleum-related compounds (e.g. benzene, toluene, ethylbenzene, xylenes and PAHs) and metals in concentrations that exceed NYS Ambient Water Quality Standards and Guidance Values and STARS Memo Guidance Values.

WCCI appreciates the opportunity to be of service to this project and would be delighted to assist in future activities. If you have any questions regarding this letter or require any additional information, please do not hesitate to call.

Sincerely,

Kirsten N. Smith
Senior Staff Geologist

Marion Craig FOR
Gordon R. Jamieson
Chief Hydrogeologist

Attachments

TABLES

TABLE 1

GROUNDWATER SAMPLING SUMMARY
MARCH 10, 1995
SILVERSTEIN PROPERTIES
42nd St, NY, NY

PURGING INFORMATION										PRE-PURGE DATA			POST-PURGE DATA			SAMPLING DATA				
Well I.D.	Date of Purging and Sampling	DTW Static	Depth Of Well (feet)	Height Of Water Column (feet)	Three Casing Volumes (gals)	Purge Method*	Purged Volume and Times	DTW After Purging	REMARKS	pH	Temp. (deg. C)	Specific Conductivity (mS/cm)	pH	Temp. (C)	Specific Conductivity (mS/cm)	Time	DTW Prior to Sample	pH	Temp. (C)	Specific Conductivity (mS/cm)
MW-1S	3/10/95	6.87	15.18	8.31	4.1	H	4 gal 1023 - 1033	7.44	water black, cloudy, slight fuel odor	7.35	6.6	1.290	7.29	7.8	1.540	1130	6.99	7.44	7.1	1.380
MW-1D	3/10/95	7.02	45.93	38.91	20.0	SUB	22 gal 1002 - 1012	11.02	water gray, cloudy, slight organic odor	7.39	10.0	1.730	7.40	9.7	1.700	1143	6.99	7.41	7.8	1.670
MW-2	3/10/95	7.94	15.98	8.04	4.0	H	5 gal 0907 - 0917	7.99	water black, very cloudy, strong sulfur odor	7.31	8.2	2.600	7.34	8.2	2.720	1118	7.94	7.72	9.1	2.500
MW-3	3/10/95	6.90	20.00	14.10	7.0	H	7 gal 1211 - 1221	7.26	water dark gray to black, cloudy fuel odor	7.38	11.2	3.060	7.56	10.3	2.880	1231	6.81	7.55	8.9	3.000

Notes:

DTW - Depth To Water, in feet, all measurements taken from Top Of Riser (TOR).
* - Purge Methods: CP- Centrifugal Pump, SUB- Submersible Pump, H- Hydrolift
All wells are 2 inches in diameter.

Prepared by: KNS

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TABLE 2
Summary of Soil Sampling, Phase II
Silverstein Properties, 500-516 42nd St.

Boring	Sample ID	Depth(ft)	Analyses	Comments
Building Footprint Borings				
SB-25	SB25comp	1-1.5'	TCLP grab	Composite w/ SB26A
	SB25A	2-2.5	VOC/BN/Met	"finished grade"
	SB25B	6-6.5	VOC/BN/Met	6" above groundwater
SB-26 (MW-4)	SB26comp	1-1.5	TCLP grab	Composite w/ SB25A
	SB26A	2.5-3	VOC/BN/Met	"finished grade"
	SB26B	8.5-9	VOC/BN/Met	6" above groundwater
SB-27	SB27comp	1-1.5	TCLP grab	Composite w/ SB28A
	SB27A	3-3.5	VOC/BN/Met	"finished grade"
	SB27B	7-7.5	VOC/BN/Met	6" above groundwater
SB-28	SB28comp	0.5-1	TCLP grab	Composite w/ SB27A
	SB28A	3.5-4	VOC/BN/Met	"finished grade"
	SB28B	7.5-8	VOC/BN/Met	6" above groundwater
Elevator Pits				
SB-29 (MW-5)	SB29comp	3.5-4	TCLP grab	Composite w/ SB30A
	SB29A	7.5-8	VOC/BN/Met	6" above groundwater
SB-30	SB30comp	2.5-3	TCLP grab	Composite w/ SB29A
	SB30A	8.5-9	VOC/BN/Met	6" above groundwater
Open Space				
SB-31	SB31A	1-1.5	VOC/BN/Met	"finished grade"
	SB31B	7.5-8	VOC/BN/Met	6" above groundwater
SB-32	SB32A	0.5-1	VOC/BN/Met	"finished grade"
	SB32B	7.5-8	VOC/BN/Met	6" above groundwater
SB-33 (MW-7)	SB33A	1.5-2	VOC/BN/Met	"finished grade"
	SB33B	6.5-7	VOC/BN/Met	6" above groundwater
SB-34 (MW-6)	SB34A	1-1.5	VOC/BN/Met	"finished grade"
	SB34B	8.5-9	VOC/BN/Met	6" above groundwater

TABLE 3

GROUNDWATER SAMPLING SUMMARY
MAY 17 & 18, 1995
SILVERSTEIN PROPERTIES
42nd St, NY, NY

PURGING INFORMATION										PRE-PURGE DATA			POST-PURGE DATA			SAMPLING DATA				
Well I.D.	Date of Purging and Sampling	DTW Static	Depth Of Well (feet)	Height Of Water Column (feet)	Three Casing Volumes (gals)	Purge Method*	Purged Volume and Times	DTW After Purging	REMARKS	pH	Temp. (deg. C)	Specific Conductivity (mS/cm)	pH	Temp. (C)	Specific Conductivity (mS/cm)	Time	DTW Prior to Sample	pH	Temp. (C)	Specific Conductivity (mS/cm)
MW-1D	5/18/95	6.70	45.20	38.50	18.6	H	20 gal 0953 - 0957 1003 - 1006	10.4	water clear, then black, silty. slight sheen	6.79	18.1	2.160	6.75	16.3	2.150	1030	7.09	6.79	16.3	2.120
MW-2	5/18/95	7.64	16.00	8.36	4.1	H	6.5 gal 0642 - 0645	7.7	black, silty, strong organic odor	7.02	16.0	4.240	6.97	15.2	4.240	920	7.64	6.96	16.1	4.070
MW-3	5/17/95	6.75	19.90	13.15	6.4	H	10 gal 1148 - 1157	14.35	water gray-black, silty, fuel odor, clearing somewhat	6.77	15.8	2.730	6.62	15.1	2.570	1215	6.80	6.70	15.1	2.640
MW-4	5/17/95	7.13	11.13	4.00	2.0	H	7.5 gal 0630 - 0637	9.2	water black, silty, organic odor, clears slightly, fl. sheen	7.27	13.2	1.700	7.00	13.0	1.720	0900	7.15	7.06	13.3	1.700
MW-5	5/17/95	8.46	11.90	3.42	1.7	H	4 gal 1311 - 1320	8.8	water black, silty slight organic odor	6.67	16.0	3.480	6.64	15.4	2.760	1340	8.45	6.64	15.7	2.730
MW-6	5/17/95	9.85	14.56	4.73	2.3	H	3 gal 1007 - 1015	dry	clear, then gray, silty, clearing some strong sulfur odor	7.32	15.2	3.550	7.14	14.6	3.560	1045	9.90	7.10	14.6	3.550
MW-7	5/17/95	10.65	12.69	1.84	0.9	B	1 gal 0926 - 0939 1056 - 1110	dry	clear, slightly silty	8.16	14.1	1.300	--	--	--	1230	10.67	--	--	--

Notes:

DTW - Depth To Water, in feet, all measurements taken from Top Of Riser (TOR).
* - Purge Methods: CP- Centrifugal Pump, SUB- Submersible Pump, H- Hydrolift, B- Hand Bailed
All wells are 2 inches in diameter.
MW-1S was destroyed during tank removal.
-- = Insufficient water for parameter measurement

Prepared by: KNS

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TABLE 4

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS– WASTE CLASSIFICATION
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation Lab Sample Designation Sample Date Sample Type Composite Point Depths Dilution Factor	Hazardous Waste Regulatory Levels for Toxicity Characteristic *	TOWER1 2377801 8/3/95 COMPOSITE SB25: 1-1.5' SB26: 1-1.5' 1	TOWER2 2378801 8/4/95 COMPOSITE SB27: 1-1.5' SB28: 0.5-1' 1	ELEV1 2378802 8/5/95 COMPOSITE SB29: 2.5-4' SB30: 2.5-3' 1
TCLP Volatiles (mg/L)				
vinyl chloride	0.2			
1,1- dichloroethene	0.7			
chloroform	6			
1,2- dichloroethane	0.5			
2- butanone	200			
carbon tetrachloride	0.5			
trichloroethene	0.5			
benzene	0.5			
tetrachloroethene	0.7			
chlorobenzene	100			
TCLP Semivolatiles (mg/L)				
2- methylphenol	200			
3+4- methylphenol	200			
2,4- dinitrotoluene	0.13			
hexachlorobenzene	0.13			
hexachlorobutadiene	0.5			
hexachloroethane	3			
nitrobenzene	2			
pentachlorophenol	100			
pyridine	5			
2,4,5- trichlorophenol	400			
2,4,6- trichlorophenol	2			
1,4- dichlorobenzene	7.5			
TCLP Metals (mg/L)				
arsenic	5			
barium	100	0.52829	1.08975	0.62907
cadmium	1		0.00866	
chromium	5			
lead	5		0.89052	0.09535
mercury	0.2	0.000789		
selenium	1			
silver	5			
TCLP Herbicides (mg/L)				
2,4- D	10			
2,4,5- TP (Silvex)	1			
TCLP Pesticides (mg/L)				
chlordane	0.03			
endrin	0.02			
heptachlor & heptachlor epoxide	0.008			
gamma- BHC (Lindane)	0.4			
methoxychlor	10			
toxaphene	0.5			
Water Chemistry				
pH	pH < 2 or pH > 12.5	9.59	3.64	6.16
Corrosivity (in/yr)	0.25 in/yr			
Cyanide, Reactive (ppm)				
Ignitability (degrees Farenheit)	< 140 deg. F	212	212	212
Sulfide, Reactive (ppm)				

* EPA Toxicity Characteristic Rule– If the Toxicity Characteristic Leaching Procedure (TCLP) extract from a representative sample of the waste contains any of the listed contaminants at concentrations greater than or equal to the values listed then it is classified as a hazardous waste.
Blank cells represent non-detected values (not detected above MDL)

TABLE 5

PHASE I SOIL ANALYTICAL RESULTS
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation Lab Sample Designation Matrix Sample Date Sample Depth Sample Type	TCLP Alternative Guidance Values (ug/kg)	*MW-1S* *2318602* *SOIL* *2/23/95* *8 - 8.5'*	*MW-1D* *2319702* *SOIL* *2/24/95* *30 - 30.5'*	*MW-2* *2320701* *SOIL* *2/27/95* *16.5 - 17'*	*MW-3* *2319701* *SOIL* *2/24/95* *18.5 - 19'*	*FB0223* *2318601* *LAB WATER* *2/23/95* *FIELD BLANK*
Volatile Organics		(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/L)
benzene	14					
ethylbenzene	100	1.5			*4000*	
toluene	100				*1900*	
o-xylene	100				*2700*	
m + p xylene	100	7.1			*4800*	
isopropylbenzene	100	2.3			*390*	
n-propylbenzene	100	4.5			*490*	
p-isopropyltoluene	100	2.4			*3100*	
1,2,4 - trimethylbenzene	100	28			*5900*	
1,3,5 - trimethylbenzene	100	17			*2800*	
n-butylbenzene	100	12			*880*	
sec-butylbenzene	100					2.2
tert-butylbenzene	100				*920*	
methyl tertiary butyl ether	1000					
Semi Volatile Organics (PAHs)		(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/L)
acenaphthene	400			*720*	400 J	
fluorene	1000				440	
phenanthrene	1000	68 J	92 J	770 J	910	
anthracene	1000			380 J	140 J	
naphthalene	200	4.4			*47000* D	
fluoranthene	1000	180 J		*1400*	610	
pyrene	1000	190 J		*1100*	440	
benzo(a)anthracene	0.04	*90* J		*450* J	*150* J	
chrysene	0.04	*97* J		*570* J	*170* J	
benzo(b)fluoranthene	0.04	*98* J		*340* J	*130* J	
benzo(k)fluoranthene	0.04	*100* J		*300* J	*120* J	
benzo(a)pyrene	0.04	*130* J		*410* J	*120* J	
indeno(1,2,3 - cd) pyrene	0.04	*79* J		*210* J	*56*	
dibenz(a,h) anthracene	1000					
benzo(g,h,i) perylene	0.04	*100* J		*240* J	*60* J	

Notes:

* Guidance Values from August 1992 NYSDEC STARS Memo #1, "Petroleum-Contaminated Soil Guidance Policy".

1) Volatiles were analyzed using EPA Method 8021. Semivolatiles were analyzed using EPA Method 8270.
2) J = The result is qualified as an estimated value.
   D = The reported concentration is from a sample reanalyzed at a dilution factor of 100.
   NA = Sample was not analyzed for the compounds listed.
   Bold & Italic Numbers = exceeding Guidance Values

TABLE 6

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS-- VOLATILE ORGANICS
SILVERSTEIN PROPERTIES -- 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designati Lab Sample Designatio Matrix Sample Date Sample Depth Sample Type Dilution Factor	NYSDEC SOIL CLEANUP OBJECTIVES* (ug/kg)	SB25A 2377602 SOIL 5/3/95 2-2.5'	SB25B 2377603 SOIL 5/3/95 6-6.5'	SB26A 2377604 SOIL 5/3/95 2.5-3'	SB26B 2377605 SOIL 5/3/95 8.5-9'
Volatile Organics		(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
chloromethane	--				
bromomethane	--				
vinyl chloride	200				
chloroethane	1900				
methylene chloride	100	4 JB	4 JB	10 JB	6 JB
acetone	200	84	180		160
carbon disulfide	2700				
1,1- dichloroethene	400				
1,1- dichloroethane	200				
1,2- dichloroethene (tota	300 (trans only)				
chloroform	300				
1,2- dichloroethane	100				
2- butanone	300		30		
1,1,1- trichloroethane	800				
carbon tetrachloride	600				
bromodichloromethane	--				
1,2- dichloropropane	--				
cis- 1,3- dichloropropene	--				
trichloroethene	700				
dibromochloromethane	--				
1,1,2- trichloroethane	--				
benzene	60				
trans- 1,3- dichloroprope	--				
bromoform	--				
4-methyl-2-pentanone	1000				
2-hexanone	--				
tetrachloroethene	1400				
1,1,2,2,-tetrachloroethan	600				
toluene	1500			2 J	
chlorobenzene	1700				
ethylbenzene	5500				
styrene	--				
xylene (total)	1200				
vinyl acetate	--				
TOTAL VOCs	10,000	88	214	12	166

* NYSDEC Division of Hazardous Waste Remediation, Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, revised 1/24/94

* -- * = no soil cleanup objective listed for this compound

Bold Italic = exceeds objective.

J = Result is qualified as an estimated value.

D = Reported value is from sample dilution.

B = Indicates probable laboratory blank contamination.

TABLE 6

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS-- VOLATILE ORGANICS
SILVERSTEIN PROPERTIES -- 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designati	NYSDEC	SB27A	SB27B	SB28A	SB28B	SB29A	SB30A
Lab Sample Designatio	SOIL CLEANUP	2378803	2378804	2378805	2378806	2378811	2378812
Matrix	OBJECTIVES*	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date		5/4/95	5/4/95	5/4/95	5/4/95	5/5/95	5/5/95
Sample Depth	(ug/kg)	3-3.5'	7-7.5'	3.5-4'	7.5-8'	7.5-8'	8.5-9'
Sample Type							
Dilution Factor							
Volatile Organics		(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
chloromethane	–						
bromomethane	–						
vinyl chloride	200						
chloroethane	1900						
methylene chloride	100	15 B	7 JB	4 JB	5 JB	4 JB	4 JB
acetone	200	*15000* D	*570* J	13	*220*	*10000* D	*4200* D
carbon disulfide	2700						
1,1- dichloroethene	400						
1,1- dichloroethane	200						
1,2- dichloroethene (tota	300 (trans only)						
chloroform	300						
1,2- dichloroethane	100						
2- butanone	300						
1,1,1- trichloroethane	800						
carbon tetrachloride	600						
bromodichloromethane	–						
1,2- dichloropropane	–						
cis- 1,3- dichloropropene	–						
trichloroethene	700						
dibromochloromethane	–						
1,1,2- trichloroethane	–						
benzene	60				2 J		
trans- 1,3- dichloroprope	–						
bromoform	–						
4-methyl-2-pentanone	1000						
2-hexanone	–						
tetrachloroethene	1400						
1,1,2,2,-tetrachloroethan	600						
toluene	1500						
chlorobenzene	1700				2 J		
ethylbenzene	5500						
styrene	–						
xylene (total)	1200						
vinyl acetate	–						
TOTAL VOCs	10,000	*15015*	577	17	229	*10004*	4204

* NYSDEC Division of Hazardous Waste Remedi
Technical and Administrative Guidance Memoran
(TAGM) HWR-94-4046, revised 1/24/94
* – * = no soil cleanup objective listed for this com
Bold Italic = exceeds objective.
J = Result is qualified as an estimated value.
D = Reported value is from sample dilution.
B = Indicates probable laboratory blank contamin

TABLE 6

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS-- VOLATILE ORGANICS
SILVERSTEIN PROPERTIES -- 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designati	NYSDEC	SB31A	SB31B	SB32A	SB32B	SB33A	SB33B
Lab Sample Designatio	SOIL CLEANUP	2378807	2378808	2378813	2378814	2381301	2381302
Matrix	OBJECTIVES*	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date		5/4/95	5/4/95	5/5/95	5/5/95	5/8/95	5/8/95
Sample Depth	(ug/kg)	1-1.5'	7.5-8'	0.5-1'	7.5-8'	1.5-2'	6.5-7'
Sample Type							
Dilution Factor							
Volatile Organics		(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
chloromethane	--						
bromomethane	--						
vinyl chloride	200						
chloroethane	1900						
methylene chloride	100	4 JB	20 B	7 JB	42 JB	11 JB	7 JB
acetone	200		*27000* D	54	*530*		51
carbon disulfide	2700						
1,1- dichloroethene	400						
1,1- dichloroethane	200						
1,2- dichloroethene (tota	300 (trans only)						
chloroform	300						
1,2- dichloroethane	100						
2- butanone	300						
1,1,1- trichloroethane	800						
carbon tetrachloride	600						
bromodichloromethane	--						
1,2- dichloropropane	--						
cis- 1,3- dichloropropene	--						
trichloroethene	700						
dibromochloromethane	--						
1,1,2- trichloroethane	--						
benzene	60		5 J	2 J	*730*		
trans- 1,3- dichloroprope	--						
bromoform	--						
4-methyl-2-pentanone	1000						
2-hexanone	--						
tetrachloroethene	1400						
1,1,2,2,-tetrachloroethan	600						
toluene	1500		8 J	2 J	1100		
chlorobenzene	1700						
ethylbenzene	5500				100		
styrene	--				340		
xylene (total)	1200		4 J		640		
vinyl acetate	--						
TOTAL VOCs	10,000	4	*27037*	65	3482	11	58

* NYSDEC Division of Hazardous Waste Remedi
Technical and Administrative Guidance Memoran
(TAGM) HWR-94-4046, revised 1/24/94
* -- * = no soil cleanup objective listed for this com
Bold Italic = exceeds objective.
J = Result is qualified as an estimated value.
D = Reported value is from sample dilution.
B = Indicates probable laboratory blank contamin

TABLE 6

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS-- VOLATILE ORGANICS
SILVERSTEIN PROPERTIES -- 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designati	NYSDEC	SB34A	SB34B	FB0503
Lab Sample Designatio	SOIL CLEANUP	2378809	2378810	2377606
Matrix	OBJECTIVES*	SOIL	SOIL	LAB WATER
Sample Date		5/4/95	5/4/95	5/4/95
Sample Depth	(ug/kg)	1-1.5'	8.5-9'	FIELD
Sample Type				BLANK
Dilution Factor				
Volatile Organics		(ug/kg)	(ug/kg)	(ug/kg)
chloromethane	--			
bromomethane	--			
vinyl chloride	200			
chloroethane	1900			
methylene chloride	100	17 B	6 JB	3 JB
acetone	200	420 D	55	25
carbon disulfide	2700			
1,1- dichloroethene	400			
1,1- dichloroethane	200			
1,2- dichloroethene (tota	300 (trans only)			
chloroform	300			
1,2- dichloroethane	100			
2- butanone	300			
1,1,1- trichloroethane	800			
carbon tetrachloride	600			
bromodichloromethane	--			
1,2- dichloropropane	--			
cis- 1,3- dichloropropene	--			
trichloroethene	700			
dibromochloromethane	--			
1,1,2- trichloroethane	--			
benzene	60		2 J	
trans- 1,3- dichloroprope	--			
bromoform	--			
4-methyl-2-pentanone	1000			
2-hexanone	--			
tetrachloroethene	1400			
1,1,2,2,-tetrachloroethan	600			
toluene	1500		2 J	
chlorobenzene	1700			
ethylbenzene	5500			
styrene	--			
xylene (total)	1200			
vinyl acetate	--			
TOTAL VOCs	10,000	437	65	28

* NYSDEC Division of Hazardous Waste Remedi
Technical and Administrative Guidance Memoran
(TAGM) HWR-94-4046, revised 1/24/94
* -- * = no soil cleanup objective listed for this com
Bold italic = exceeds objective.
J = Result is qualified as an estimated value.
D = Reported value is from sample dilution.
B = Indicates probable laboratory blank contamin

TABLE 7

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS– BASE NEUTRALS
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation Lab Sample Designation Matrix Sample Date Sample Depth Sample Type Dilution Factor	NYSDEC SOIL CLEANUP OBJECTIVES* (ug/kg)	SB25A 2377602 SOIL 6/3/95 2-2.5'	SB25B 2377603 SOIL 6/3/95 6-6.5'	SB26A 2377604 SOIL 6/3/95 2.5-3'	SB26B 2377605 SOIL 6/3/95 8.5-9'	SB27A 2378803 SOIL 6/4/95 3-3.5'
Semi-Volatile Organics		(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
bis(2-chloroethyl) ether	–					
1,3- dichlorobenzene	1600					
1,4- dichlorobenzene	8500					
1,2- dichlorobenzene	7900					
2,2'- oxybis(1-chloropropane)	–					
n-nitroso-di-n-propylamine	–					
hexachloroethane	–					
nitrobenzene	200 or MDL					
isophorone	4400					
1,2,4- trichlorobenzene	3400					
naphthalene	13000	570 J		620 J		
4-chloroaniline	220 or MDL					
hexachlorobutadiene	–					
bis(2-chloroethoxy) methane	–					
2- methylnaphthalene	36400	210 J		470 J		
hexachlorocyclopentadiene	–					
2- chloronaphthalene	–					
2- nitroaniline	430 or MDL					
dimethylphthalate	2000					
acenaphthylene	41000	340 J	65 J	4400		
2,6- dinitrotoluene	1000					
3- nitroaniline	500 or MDL					
acenaphthene	50000	260 J	330 J	2900 J		
dibenzofuran	6200	260 J	260 J	1600 J		
2,4- dinitrotoluene	–					
diethylphthalate	7100					
4-chlorophenyl-phenylether	–					
fluorene	50000	360 J	430 J	3700		
4- nitroaniline	–					
n- nitrosodiphenylamine	–					
4- bromophenyl-phenylether	–					
hexachlorobenzene	410					
phenanthrene	50000	3500	2200	34000 D	81 J	200 J
anthracene	50000	1200	820	12000		69 J
carbazole	–	540 J	360 J	2600 J		
di-n-butylphthalate	8100					
fluoranthene	50000	5900	2000	***66000*** D	74 J	580
pyrene	50000	6600 J	1900	***52000*** D	81 J	580
butylbenzylphthalate	50000					49 J
3,3'- dichlorobenzidine	–					
benzo(a)anthracene	224 or MDL	***5000***	***840***	***37000*** D		***380*** J
chrysene	400	***5400***	***840***	***33000*** D	43 J	380 J
bis (2-ethylhexyl)phthalate	50000			670 J	440	2300
di-n-octylphthalate	50000					
benzo(b) fluoranthene	1100	***7700*** J	540	***33000*** D		280 J
benzo(k) fluoranthene	1100	***3400***	760	***35000*** D		220 J
benzo(a) pyrene	61 or MDL	***6100***	***700***	***35000*** D		***280*** J
indeno (1,2,3-cd) pyrene	3200	2400	200 J	***11000***		160 J
dibenz(a,h) anthracene	14 or MDL	***260*** J		1300 J		
benzo(g,h,i) perylene	50000	2100	180 J	9800		
TOTAL SEMI-VOCs	500,000	52100	12425	376060	719	5478

* NYSDEC Division of Hazardous Waste Remediation,
Technical and Administrative Guidance Memorandum (TAGM)
HWR-94-4046, revised 1/24/94
"–" = no soil cleanup objective listed for this compound
J = Result is qualified as an estimated value.
D = Reported value is from sample dilution.
B = Indicates probable laboratory blank contamination.
Bold Italic= exceeds Objectives.
Larger font = exceeds individ compound objective of 50,000 ug/kg.
MDL = Method detection limit

TABLE 7

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS-- BASE NEUTRALS
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
6E04530

WCC Sample Designation Lab Sample Designation Matrix Sample Date Sample Depth Sample Type Dilution Factor	NYSDEC SOIL CLEANUP OBJECTIVES* (ug/kg)	SB27B 2378804 SOIL 5/4/95 7-7.5' (ug/kg)	SB28A 2378805 SOIL 5/4/95 3.5-4' (ug/kg)	SB28B 2378806 SOIL 5/4/95 7.5-8' (ug/kg)	SB29A 2378811 SOIL 5/5/95 7.5-8' (ug/kg)	SB30A 2378812 SOIL 5/5/95 8.5-9' (ug/kg)
Semi-Volatile Organics						
bis(2-chloroethyl) ether	–					
1,3- dichlorobenzene	1600					
1,4- dichlorobenzene	8500					
1,2- dichlorobenzene	7900					
2,2'- oxybis(1-chloropropane)	–					
n-nitroso-di-n-propylamine	–					
hexachloroethane	–					
nitrobenzene	200 or MDL					
isophorone	4400					
1,2,4- trichlorobenzene	3400					
naphthalene	13000					
4-chloroaniline	220 or MDL			6300 J	1300 J	
hexachlorobutadiene	–					
bis(2-chloroethoxy) methane	–					
2- methylnaphthalene	36400					
hexachlorocyclopentadiene	–					
2- chloronaphthalene	–					
2- nitroaniline	430 or MDL					
dimethylphthalate	2000					
acenaphthylene	41000					
2,6- dinitrotoluene	1000					
3- nitroaniline	500 or MDL					
acenaphthene	50000					
dibenzofuran	6200			11000	940 J	
2,4- dinitrotoluene	–				870 J	
diethylphthalate	7100					
4-chlorophenyl-phenylether	–					
fluorene	50000					
4- nitroaniline	–			12000		
n- nitrosodiphenylamine	–					
4- bromophenyl-phenylether	–					
hexachlorobenzene	410					
phenanthrene	50000	980 J	240 J	73000 D	15000	140 J
anthracene	50000	300 J	54 J	26000	5200 J	58 J
carbazole	–				2100 J	
di-n-butylphthalate	8100					
fluoranthene	50000	2100	280 J	76000 D	25000	390 J
pyrene	50000	1900	240 J	61000	20000	370 J
butylbenzylphthalate	50000					
3,3'- dichlorobenzidine	–					
benzo(a)anthracene	224 or MDL	1300 J	150 J	52000	23000	810
chrysene	400	1300 J	140 J	46000	20000	820
bis (2-ethylhexyl)phthalate	50000	690 J	79 J			720
di-n-octylphthalate	50000					
benzo(b) fluoranthene	1100	1100 J	110 J	47000	28000	840
benzo(k) fluoranthene	1100	820 J	100 J	25000	14000	820
benzo(a) pyrene	61 or MDL	1200 J	130 J	51000	31000	750
indeno (1,2,3-cd) pyrene	3200	760 J		30000	20000	690
dibenz(a,h) anthracene	14 or MDL			2700 J	7100 J	240 J
benzo(g,h,i) perylene	50000	200 J		12000	7900 J	100 J
TOTAL SEMI-VOCs	500,000	12650	1523	531000	221410	6148

* NYSDEC Division of Hazardous Waste Remediation,
Technical and Administrative Guidance Memorandum (TAGM)
HWR-94-4046, revised 1/24/94
"– " = no soil cleanup objective listed for this compound
J = Result is qualified as an estimated value.
D = Reported value is from sample dilution.
B = Indicates probable laboratory blank contamination.
Bold Italic= exceeds Objectives.
Larger font = exceeds individ compound objective of 50,000 ug/kg.
MDL = Method detection limit

TABLE 7

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS– BASE NEUTRALS
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation	NYSDEC	SB31A	SB31B	SB32A	SB32B	SB33A
Lab Sample Designation	SOIL CLEANUP	2378807	2378808	2378813	2378814	2381301
Matrix	OBJECTIVES*	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Date		6/4/95	6/4/95	6/5/95	6/5/95	6/8/95
Sample Depth	(ug/kg)	1-1.5'	7.5-8'	8.5-1'	7.5-8'	1.5-2'
Sample Type						
Dilution Factor						
Semi-Volatile Organics		(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
bis(2-chloroethyl) ether	–					
1,3- dichlorobenzene	1600					
1,4- dichlorobenzene	8500					
1,2- dichlorobenzene	7900					
2,2'- oxybis(1-chloropropane)	–					
n-nitroso-di-n-propylamine	–					
hexachloroethane	–					
nitrobenzene	200 or MDL					
isophorone	4400					
1,2,4- trichlorobenzene	3400					
naphthalene	13000		2000 J	230 J	***68000*** D	160 J
4-chloroaniline	220 or MDL					
hexachlorobutadiene	–					
bis(2-chloroethoxy) methane	–					
2- methylnaphthalene	36400				30000 D	240 J
hexachlorocyclopentadiene	–					
2- chloronaphthalene	–					
2- nitroaniline	430 or MDL					
dimethylphthalate	2000					
acenaphthylene	41000		20000		20000	140 J
2,6- dinitrotoluene	1000					
3- nitroaniline	500 or MDL					
acenaphthene	50000		4800 J	130 J	7900	180 J
dibenzofuran	6200		***14000***		***16000***	200 J
2,4- dinitrotoluene	–					
diethylphthalate	7100					
4-chlorophenyl-phenylether	–					
fluorene	50000		25000	140 J	22000	210 J
4- nitroaniline	–					
n- nitrosodiphenylamine	–					
4- bromophenyl-phenylether	–					
hexachlorobenzene	410					
phenanthrene	50000	570 J	***160000*** D	1700	***78000*** D	3000
anthracene	50000	180 J	***56000***	560 J	22000	680 J
carbazole	–					230 J
di-n-butylphthalate	8100					
fluoranthene	50000	1800	***180000*** D	4400	***62000*** D	5700
pyrene	50000	2100	***140000*** D	2600	41000 D	5600
butylbenzylphthalate	50000					
3,3'- dichlorobenzidine	–					
benzo(a)anthracene	224 or MDL	***1300*** J	***64000*** D	***2300***	***27000***	***3000***
chrysene	400	***1300*** J	***58000***	***2100***	***22000***	***3300***
bis (2-ethylhexyl)phthalate	50000					100 J
di-n-octylphthalate	50000					
benzo(b) fluoranthene	1100	***1100*** J	***56000***	***2400***	***22000***	***3400***
benzo(k) fluoranthene	1100	810 J	***23000***	***1300***	***11000***	***2400***
benzo(a) pyrene	61 or MDL	***1400*** J	***54000***	***2200***	***21000***	***3200***
indeno (1,2,3-cd) pyrene	3200	990 J	***31000***	810	***11000***	1200
dibenz(a,h) anthracene	14 or MDL		***3000*** J	***370*** J	***850*** J	***120*** J
benzo(g,h,i) perylene	50000	1300 J	11000	750	4400	1200
TOTAL SEMI-VOCs	500,000	12830	***901800***	21990	486150	34260

* NYSDEC Division of Hazardous Waste Remediation,
Technical and Administrative Guidance Memorandum (TAGM)
HWR-94-4046, revised 1/24/94
"–" = no soil cleanup objective listed for this compound
J = Result is qualified as an estimated value.
D = Reported value is from sample dilution.
B = Indicates probable laboratory blank contamination.
Bold Italic= exceeds Objectives.
Larger font = exceeds individ compound objective of 50,000 ug/kg.
MDL = Method detection limit

TABLE 7

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS-- BASE NEUTRALS
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
6E04530

WCC Sample Designation	NYSDEC	SB33B	SB34A	SB34B	FB0503
Lab Sample Designation	SOIL CLEANUP	2381302	2378809	2378810	2377606
Matrix	OBJECTIVES*	SOIL	SOIL	SOIL	LAB WATER
Sample Date		6/3/95	6/4/95	6/4/95	6/4/95
Sample Depth	(ug/kg)	6.5-7'	1-1.5'	2.5-3'	FIELD
Sample Type					BLANK
Dilution Factor					
Semi-Volatile Organics		(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
bis(2-chloroethyl) ether	-				
1,3- dichlorobenzene	1600				
1,4- dichlorobenzene	8500				
1,2- dichlorobenzene	7900				
2,2'- oxybis(1-chloropropane)	-				
n-nitroso-di-n-propylamine	-				
hexachloroethane	-				
nitrobenzene	200 or MDL				
isophorone	4400				
1,2,4- trichlorobenzene	3400				
naphthalene	13000				
4-chloroaniline	220 or MDL		1400 J	82 J	
hexachlorobutadiene	-				
bis(2-chloroethoxy) methane	-				
2- methylnaphthalene	36400				
hexachlorocyclopentadiene	-				
2- chloronaphthalene	-				
2- nitroaniline	430 or MDL				
dimethylphthalate	2000				
acenaphthylene	41000				
2,6- dinitrotoluene	1000		620 J		
3- nitroaniline	500 or MDL				
acenaphthene	50000				
dibenzofuran	6200				
2,4- dinitrotoluene	-				
diethylphthalate	7100				
4-chlorophenyl-phenylether	-				
fluorene	50000				
4- nitroaniline	-			82 J	
n- nitrosodiphenylamine	-				
4- bromophenyl-phenylether	-				
hexachlorobenzene	410				
phenanthrene	50000	180 J	1600 J	2000	
anthracene	50000		530 J	310 J	
carbazole	-				
di-n-butylphthalate	8100				
fluoranthene	50000	260 J	2800	2800	
pyrene	50000	280 J	2000	2000	
butylbenzylphthalate	50000				
3,3'- dichlorobenzidine	-				
benzo(a)anthracene	224 or MDL	140 J	*1700* J	*1200*	
chrysene	400	140 J	*1700* J	*1200*	
bis (2-ethylhexyl)phthalate	50000	77 J		560 J	
di-n-octylphthalate	50000				
benzo(b) fluoranthene	1100	130 J	*1900* J	1000	
benzo(k) fluoranthene	1100	100 J	*1300* J	850	
benzo(a) pyrene	61 or MDL	*140* J	*2200*	*1200*	
indeno (1,2,3-cd) pyrene	3200	61 J	2000	980	
dibenz(a,h) anthracene	14 or MDL		*220* J	78 J	
benzo(g,h,i) perylene	50000	70 J	2200	1100	
TOTAL SEMI-VOCs	500,000	1578	22170	15482	

* NYSDEC Division of Hazardous Waste Remediation, Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, revised 1/24/94
"–" = no soil cleanup objective listed for this compound
J = Result is qualified as an estimated value.
D = Reported value is from sample dilution.
B = Indicates probable laboratory blank contamination.
Bold Italic= exceeds Objectives.
Larger font = exceeds individ compound objective of 50,000 ug/kg.
MDL = Method detection limit

TABLE 8

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS– INORGANICS
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation Lab Sample Designation Matrix Sampl.. Date Sample Depth Sample Type Dilution Factor	NYSDEC SOIL CLEANUP OBJECTIVES * (mg/kg)	SB25A 2377902 SOIL 5/3/95 2-2.5'	SB25B 2377903 SOIL 5/3/95 6-6.5'	SB26A 2377904 SOIL 5/3/95 2.5-3'	SB26B 2377905 SOIL 5/3/95 6.5-9'	SB27A 2378903 SOIL 5/4/95 3-3.5'	SB27B 2378904 SOIL 5/4/95 7-7.5'	SB28A 2378905 SOIL 5/4/95 3.5-4'	SB28B 2378906 SOIL 5/4/95 7.5-9'	SB29A 2378911 SOIL 5/5/95 7.5-9'	SB30A 2378912 SOIL 5/5/95 8.5-9'	SB31A 2378907 SOIL 5/4/95 1-1.5'
Inorganics		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
aluminum	SB	5970 J	10900 J	2930 J	4790 J	6900	11400	8110	2910	4440	7990	5550
antimony	SB						9.6 J					11.6 J
arsenic	7.5 or SB	*12.4*	5	2.1 J	2.5	3.8	4.1	2	*26.3*	4.7	4.6	*14.9*
barium	300 or SB	*392*	111	42.8	36.6 J	94	242	107	115	46 J	40.5 J	79.6
beryllium	0.16 or SB	*0.69* J	*0.79* J	*0.39* J	*0.36* J	*0.44* J	*0.37* J	*0.21* J	*0.28* J	*0.6* J	*0.47* J	*0.54* J
cadmium	1 or SB	*1.8*		*1.3*								
calcium	SB	7120	19600	15600	3650	53200	24600	9490	3160	3770	23700	118000
chromium	10 or SB	*30.7*	*18.8*	7.4	*11.2*	*11.2*	*24.6*	*12.8*	8.1	7.9	*11.1*	*12.6*
cobalt	30 or SB	10.6 J	12 J	4.2 J	6.3 J	6.6 J	13.2	7.6 J	6.5 J	6.2 J	3.7 J	8.8 J
copper	25 or SB	*79.6*	27.4	14.1	18.6	18.2	*40.4*	24.4	*29.7*	14.5	6.5	*74.4*
iron	2000 or SB	*29700*	*22100*	*6350*	*9800*	*9350*	*23700*	*12500*	*24300*	*18400*	*9770*	*23300*
lead	SB	779 J	170 J	88 J	388 J	56.7	635	567	159	37	11.8	156
magnesium	SB	2510	3200	1240	2910	3940	9450	3540	705 J	981 J	6570	6320
manganese	SB	105	175	156	98.8	123	402	448	170	260	466	219
mercury	0.1	*0.65* J	*0.89* J	*0.18* J	*1.1* J	*0.32*	*0.74*	*0.18*	*0.65*	*0.28*		*0.46*
nickel	13 or SB	*16.6*	*15.6*		*16.3*	12.6	*18.6*	*15.6*	*13.2*	*15.2*	8 J	*15.9*
potassium	SB	2360	1940	976 J	1190	1580	5920	902 J		493 J	1010 J	855 J
selenium	2 or SB	1.2 J										
silver	SB											
sodium	SB	323 J	399 J	253 J	201 J	942 J	377 J	181 J	167 J	179 J	1180	584 J
thallium	SB											
vanadium	150 or SB	36.6	32	14.1	14.4	29	58.3	16.4	21	17	15.3	40.7
zinc	20 or SB	*165*	*105*	*83.6*	*31.7*	*39.6*	*264*	*129*	*68.2*	*173*	15.3	*190*

* NYSDEC Division of Hazardous Waste Remediation,
Technical and Administrative Guidance Memorandum (TAGM)
HWR-94-4046, revised 1/24/94
SB = Site Background
J = Result is qualified as an estimated value.
D = Reported value is from sample dilution.

TABLE #

SUMMARY OF PHASE II SOIL ANALYTICAL RESULTS– INORGANICS
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation	NYSDEC	SB31B	SB32A	SB32B	SB33A	SB33B	SB34A	SB34B	FB0503
Lab Sample Designation	SOIL CLEANUP	2378808	2378813	2378814	2381301	2381302	2378809	2378810	2377806
Matrix	OBJECTIVES *	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	LAB WATER
Sample Date		5/4/95	5/5/95	5/5/95	5/8/95	5/8/95	5/4/95	5/4/95	5/4/95
Sample Depth	(mg/kg)	7.5-8'	0.5-1'	7.5-8'	1.5-2'	6.5-7'	1-1.5'	0.5-2'	FIELD
Sample Type									BLANK
Dilution Factor									
Inorganics		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)
aluminum	SB	9230	8390	3270	4590	13900	4090	6790	
antimony	SB	10.3 J	12.5		3.4 J	1.5 J			
arsenic	7.5 or SB	7.2	3.3	3.3	8.6	2.1	9.3	5.6	
barium	300 or SB	35.5 J	86.3	36.8 J	62.7	173	79.6	76.5	
beryllium	0.16 or SB	0.27 J	0.46 J	0.38 J	0.16 J		0.39 J	0.48 J	
cadmium	1 or SB				0.1 J		1.6		
calcium	SB	20200	8440	5660	16300	5650	4220	7770	
chromium	10 or SB	9.3	16.3	12	11.3	22.8	9.9	15.3	
cobalt	30 or SB	3.1 J	6.5 J	26.1	5.5 J	16.3	7.5 J	10.2 J	
copper	25 or SB	31.5	26.2	9.6	77.1	36.7	48.8	19.6	
iron	2000 or SB	5100	15700	61600	19000	26100	19000	25800	49.1 J
lead	SB	36.7	142	44.7	115	46.1	193	84.6	
magnesium	SB	3000	4780	2560	6800	7720	1620	5540	
manganese	SB	106	263	287	133	443	136	353	8.9 J
mercury	0.1	0.28	0.36	0.22	0.47	0.21	0.57	0.4	
nickel	13 or SB		16.6	31.7	20.1	25.6	16.1	17.6	
potassium	SB	553 J	1470	610 J	588 J	5940	467 J	2900	
selenium	2 or SB				1.5	1.1			
silver	SB				1.2 J	0.17 J			
sodium	SB	614 J	607 J	226 J	256 J	140 J	955 J	376 J	
thallium	SB				1.2 J	4.1			
vanadium	150 or SB	19.7	31	51.1	15.5	38.5	32	27.4	
zinc	20 or SB	27.5	147	21.9	86.2	92.6	182	87	

* NYSDEC Division of Hazardous Waste Remedi
Technical and Administrative Guidance Memoran
HWR-94-4046, revised 1/24/94
SB = Site Background
J = Result is qualified as an estimated value.
D = Reported value is from sample dilution.

TABLE 9

PHASE I GROUNDWATER ANALYTICAL RESULTS
SILVERSTEIN PROPERTIES -- 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation Lab Sample Designation Matrix Sample Date Sample Type	*TCLP Extraction Guidance Values (ug/L)	*MW-1S* *2328802* *WATER* *3/10/95*	*MW-1D* *2328803* *WATER* *3/10/95*	*MW-2* *2328801* *WATER* *3/10/95*	*MW-3* *2328804* *WATER* *3/10/95*	*FB0310* *2328805* *LAB WATER* *3/10/95* *FIELD BLANK*	*TB0310* *2328806* *LAB WATER* *3/10/95* *TRIP BLANK*
Volatile Organics (ug/L)							
benzene	0.7	***8.2***		***32***	***12***		
ethylbenzene	5	***24***	1.5	***7.7***	***200***		
toluene	5	2.1		1.4	***170***		
o-xylene	5	***17***		1.7	***160***		
m + p xylene	5	***130***	***5.3***	3	***320***		
isopropylbenzene	5	3.9		3.3	***13***		
n-propylbenzene	5						
p-isopropyltoluene	5	***8.4***	2.3		2.7		
1,2,4 - trimethylbenzene	5	***180***	***6.5***	2	***190 D***		
1,3,5 - trimethylbenzene	5	***120***	***6.8***	1	***120***		
n-butylbenzene	5	***66***	4.5		***39***		
sec-butylbenzene	5	0.9 J			1.7		
tert-butylbenzene	5						
methyl tertiary butyl ether	50			1.4 J			
Semi Volatile Organics (PAHs) (ug/L)							
acenaphthene	20			14	1 J		NA
fluorene	50			1 J-	2 J		NA
phenanthrene	50			1 J	3 J		NA
anthracene	50						NA
naphthalene	10	***94***	2.8	***66***	***2100 D***		
fluoranthene	50						NA
pyrene	50						NA
benzo(a)anthracene	0.002						NA
chrysene	0.002						NA
benzo(b)fluoranthene	0.002						NA
benzo(k)fluoranthene	0.002						NA
benzo(a)pyrene	0.002						NA
indeno(1,2,3 - cd) pyrene	0.002						NA
dibenz(a,h) anthracene	50						NA
benzo(g,h,i) perylene	0.002						NA

Notes:

* These Guidance Values are equal to the NYSDEC groundwater quality Guidance Values or . the NYSDOH drinking water quality Guidance Values, whichever is more stringent. (August 1992 STARS Memo #1)

1) Water = Groundwater
2) J = The result is qualified as an estimated value.
   D = The reported concentration is from a sample reanalyzed at a dilution factor of 100.
   NA = Sample was not analyzed for the compounds listed.
   Bold & Italic Numbers = exceeding Guidance Values

TABLE 10

SUMMARY OF PHASE II GROUNDWATER ANALYTICAL RESULTS-- VOLATILE ORGANICS
SILVERSTEIN PROPERTIES -- 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation Lab Sample Designation Matrix Sample Date Sample Type	NYSDEC Ambient Water Quality Standards and Guidance Values [1] (ug/L)	MW-1D 2366008 WATER 6/16/98	MW-2 2366009 WATER 6/16/98	MW-3 2366001 WATER 6/17/98	MW-4 2366002 WATER 6/17/98	MW-5 2366003 WATER 6/17/98	MW-6 2366004 WATER 6/17/98	MW-7 2366005 WATER 6/17/98	DUP-1 (MW-4) 2366007 WATER 6/17/98 DUPLICATE	FB0617 2366006 WATER 6/17/98 FIELD BLANK	FB0618 2366010 WATER 6/18/98 FIELD BLANK	TB0617 2366011 WATER 6/17/98 TRIP BLANK	TB0618 2366012 WATER 6/18/98 TRIP BLANK
Volatile Organics (ug/L)													
chloromethane	--												
bromomethane	5												
vinyl chloride	0.3												
chloroethane	5												
methylene chloride	5	2 JB	2 JB	3 JB	2 JB	2 JB	2 JB	2 JB	2 JB	2 JB	4 JB	4 JB	4 JB	4 JB	4 JB
acetone	50			11					25		12				
carbon disulfide	--	3 J	3 J						5 J						
1,1- dichloroethene	0.07														
1,1- dichloroethane	5														
1,2- dichloroethene (total)	--														
chloroform	7 *														
1,2- dichloroethane	0.6 *														
2- butanone	50														
1,1,1- trichloroethane	5														
carbon tetrachloride	0.4														
bromodichloromethane	50														
1,2- dichloropropane	0.5														
cis- 1,3- dichloropropene	5														
trichloroethene	3														
dibromochloromethane	50														
1,1,2- trichloroethane	0.6 *														
benzene	0.7 *	1 J	50	9 J	9 J	18	19	3 J	19						
trans- 1,3- dichloropropene	--														
bromoform	50														
4-methyl-2-pentanone	--														
2-hexanone	50														
tetrachloroethene	0.7														
1,1,2,2,-tetrachloroethane	0.2														
toluene	5		2 J	69		1 J	1 J	1 J	1 J						
chlorobenzene	20 *	2 J	12	62		56									
ethylbenzene	5				5 J	4 J	2 J	2 J							
styrene	50 *	6 J	7 J	299	1 J	22	3 J		4 J						
xylene (total)	5														
vinyl acetate	--														

(1) NYSDEC Memorandum, October 22, 1993, Div. of Water Technical and Operational Guidance Series (TOGS) (1.1.1). Values listed are for water classes A, A-S, AA and AA-S; Type H(WS).

* = value is a promulgated Standard.

* -- * = no Standard or Guidance Value established for this compound.

D = Reported value is from sample dilution.

J = The result is qualified as an estimated value.

B = Indicates probable laboratory blank contamination.

TABLE 11

SUMMARY OF PHASE II GROUNDWATER ANALYTICAL RESULTS-- BASE NEUTRALS
SILVERSTEIN PROPERTIES -- 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation Lab Sample Designation Matrix Sample Date Sample Type	NYSDEC Ambient Water Quality Standards and Guidance Values [1] (ug/L)	MW-1D 2368008 WATER 5/18/95	MW-2 2368009 WATER 5/18/95	MW-3 2368001 WATER 5/17/95	MW-4 2368002 WATER 5/17/95	MW-5 2368003 WATER 5/17/95	MW-6 2368004 WATER 5/17/95	DUP-1 (MW-6) 2368007 WATER 5/17/95 DUPLICATE
Semivolatile Organics (ug/L)								
bis(2-chloroethyl) ether	0.03							
1,3- dichlorobenzene	20 *							
1,4- dichlorobenzene	30 *							
1,2- dichlorobenzene	-							
2,2'- oxybis(1-chloropropane)	-							
n-nitroso-di-n-propylamine	-							
hexachloroethane	-							
nitrobenzene	30 *							
isophorone	50							
1,2,4- trichlorobenzene	10 *							
naphthalene	10 *	19	72	1100 D	21	360 D	180 D	120 D
4-chloroaniline	-							
hexachlorobutadiene	0.5 *							
bis(2-chloroethoxy) methane	-							
2- methylnaphthalene	-							
hexachlorocyclopentadiene	1.0 *			56	4 J	34	43	32
2- chloronaphthalene	10 *							
2- nitroaniline	-							
dimethylphthalate	50							
acenaphthylene	-		1 J		3 J	3 J	17	15
2,6- dinitrotoluene	0.07							
3- nitroaniline	-							
acenaphthene	20 *		41		65	39	82	46
dibenzofuran	-		14	2 J	33	10	36	31
2,4- dinitrotoluene	-							
diethylphthalate	50							
4-chlorophenyl-phenylether	-							
fluorene	50		6 J		26	10	33	28
4- nitroaniline	-							
n- nitrosodiphenylamine	50							
4- bromophenyl-phenylether	-							
hexachlorobenzene	0.02							
phenanthrene	50		7 J	2 J	47	15	61	43
anthracene	50		4 J		25	3 J	11	10
carbazole	-		20		12	4 J	14	10
di-n-butylphthalate	50							
fluoranthene	50		4 J		42	6 J	17	16
pyrene	50		4 J		36	5 J	13	14
butylbenzylphthalate	50							
3,3'- dichlorobenzidine	-							
benzo(a)anthracene	0.002				15		3 J	3 J
chrysene	0.002				17		3 J	4 J
bis (2-ethylhexyl)phthalate	4	2 J						
di-n-octylphthalate	50							
benzo(b) fluoranthene	0.002				10		2 J	2 J
benzo(k) fluoranthene	0.002				6 J		1 J	2 J
benzo(a) pyrene	0.002				12		2 J	2 J
indeno (1,2,3-cd) pyrene	0.002				6 J		1 J	2 J
dibenz(a,h) anthracene	-				2 J			
benzo(g,h,i) perylene	-				7 J		2 J	2 J

(1) NYSDEC Memorandum, October 22, 1993, Div. of Water Technical and Operational Guidance Series (TOGS) (1.1.1). Values listed are for water classes A, A-S, AA and AA-S; Type H(WS).

* = value is a promulgated Standard.

"-" = no Standard or Guidance Value established for this compound.

D = Reported value is from sample dilution.

J = The result is qualified as an estimated value.

B = Indicates probable laboratory blank contamination.

TABLE 11

SUMMARY OF PHASE II GROUNDWATER ANALYTICAL RESULTS– BASE NEUTRALS
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation Lab Sample Designation Matrix Sample Date Sample Type	NYSDEC Ambient Water Quality Standards and Guidance Values [1] (ug/L)	MW-7 2388005 WATER 5/17/95	FB0517 2388006 WATER 5/17/95 FIELD BLANK	FB0518 2388010 WATER 5/18/95 FIELD BLANK
Semivolatile Organics (ug/L)				
bis(2-chloroethyl) ether	0.03			
1,3- dichlorobenzene	20 *			
1,4- dichlorobenzene	30 *			
1,2- dichlorobenzene	–			
2,2'- oxybis(1-chloropropane)	–			
n-nitroso-di-n-propylamine	–			
hexachloroethane	–			
nitrobenzene	30 *			
isophorone	50			
1,2,4- trichlorobenzene	10 *			
naphthalene	10 *			
4-chloroaniline	–			
hexachlorobutadiene	0.5 *			
bis(2-chloroethoxy) methane	–			
2- methylnaphthalene	–			
hexachlorocyclopentadiene	1.0 *			
2- chloronaphthalene	10 *			
2- nitroaniline	–			
dimethylphthalate	50			
acenaphthylene	–			
2,6- dinitrotoluene	0.07			
3- nitroaniline	–			
acenaphthene	20 *	18		
dibenzofuran	–	1 J		
2,4- dinitrotoluene	–			
diethylphthalate	50			
4-chlorophenyl-phenylether	–			
fluorene	50	3 J		
4- nitroaniline	–			
n- nitrosodiphenylamine	50			
4- bromophenyl-phenylether	–			
hexachlorobenzene	0.02			
phenanthrene	50	6 J		
anthracene	50	2 J		
carbazole	–	2 J		
di-n-butylphthalate	50			
fluoranthene	50	2 J		
pyrene	50	2 J		
butylbenzylphthalate	50			
3,3'- dichlorobenzidine	–			
benzo(a)anthracene	0.002			
chrysene	0.002			
bis (2-ethylhexyl)phthalate	4			
di-n-octylphthalate	50			
benzo(b) fluoranthene	0.002			
benzo(k) fluoranthene	0.002			
benzo(a) pyrene	0.002			
indeno (1,2,3-cd) pyrene	0.002			
dibenz(a,h) anthracene	–			
benzo(g,h,i) perylene	–			

(1) NYSDEC Memorandum, October 22, 1993, Div. of Water Technical and Operational Guidance Series (TOGS) (1.1.1). Values listed are for water classes A, A-S, AA and AA-S; Type H(WS).

* = value is a promulgated Standard.

"–" = no Standard or Guidance Value established for this compound.

D = Reported value is from sample dilution.

J = The result is qualified as an estimated value.

B = Indicates probable laboratory blank contamination.

TABLE 12

SUMMARY OF PHASE II GROUNDWATER ANALYTICAL RESULTS– INORGANICS
SILVERSTEIN PROPERTIES – 42nd ST, NEW YORK, NY
5E04530

WCC Sample Designation Lab Sample Designation Matrix Sample Date Sample Type	NYSDEC Ambient Water Quality Standards and Guidance Values (1) (ug/L)	MW-1D 236008 WATER 5/16/95	MW-2 2366009 WATER 5/16/95	MW-3 2366001 WATER 5/17/95	MW-4 2366002 WATER 5/17/95	MW-5 2366003 WATER 5/17/95	MW-6 2366004 WATER 5/17/95	DUP-1 (MW-6) 2366007 WATER 5/17/95 DUPLICATE	MW-7 2366005 WATER 5/17/95	FB0517 2366006 WATER 5/17/95 FIELD BLANK	FB0518 2366010 WATER 5/18/95 FIELD BLANK
Inorganics (ug/L)											
aluminum	–	939 J	9540 J	74100 J	7830 J	45000 J	18800 J	25400 J	24800 J	98.6 J	108 J
antimony	3			3.9 J		5.2 J					
arsenic	50 *		8.1 J	12.6	6.1 J	77	12.3	14.1	19.3		
barium	1000 *	251	251	1200	184 J	553	433	418	399		
beryllium	3			1.8 J		4.7 J					
cadmium	10 *	0.6 J	0.49 J	2.7 J		1.1 J			0.38 J		
calcium	–	197000	223000	259000	103000	205000	200000	353000	353000		
chromium	50 *		24	170	17.7	59.1	30.7	33.8	33.1		
cobalt	5 *		11 J	102	7.2 J	33.1 J	16.9 J	19.9 J	18.1 J		
copper	200 *	17.8 J	72.6	344	51.4	102	64.5	60.3	51.9		
iron	300	23000	26800	177000	17200	183000	32400	43100	39000		
lead	50 *	32.4	226	824	260	381	698	564	512		
magnesium	35000 *	38500	91300	111000	31200	87800	83400	113000	116000		
manganese	300	573	586	5790	636	1390	838	2220	2250		
mercury	2 *	0.25	0.97	8.6	2	8.9	2.7	2.4	3.4		
nickel	–		29.9 J	205	21.8 J	65	29.6 J	32.1 J	29.8 J		
potassium	–	28400 J	54000 J	73200 J	18400 J	38800 J	30000 J	67900 J	66900 J		
selenium	10 *										
silver	50 *										
sodium	–	179000	505000	204000	190000	247000	298000	298000	63900		
thallium	4										
vanadium	14 *	3.3 J	23.4 J	241	21.1 J	94	57.7	50.6	47.8 J		
zinc	300 *	97.2 J	150 J	1160 J	76.3 J	517 J	326 J	154 J	150 J	11.3 J	28.1 J

(1) NYSDEC Memorandum, October 22, 1993, Div. of Water Technical and Operational Guidance Series (TOGS) (1.1.1). Values listed are for water classes A, A-S, AA and AA-S; Type H(WS).

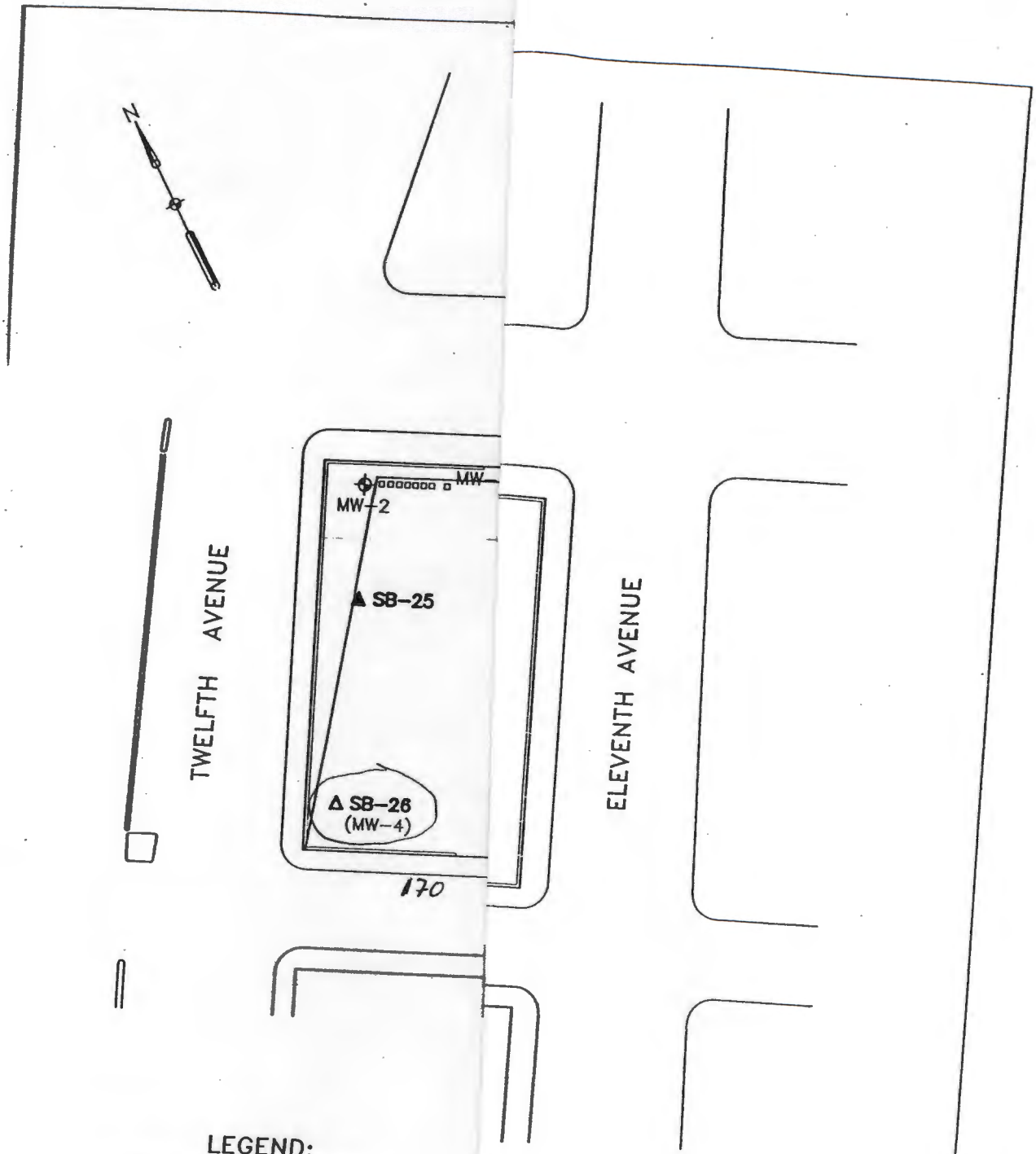
* = value is a promulgated Standard.

* – * = no Standard or Guidance Value established for this compound.

D = Reported value is from sample dilution.

J = The result is qualified as an estimated value.

FIGURES



LEGEND:

- MW-1D MONITORING WELL (INSTALLED
- SB-32 SOIL BORING LOCATION (5/95
- SB-26 (MW-4) SOIL BORING COMPLETED AS MONITORING WELL (5/95)
- PROPOSED BUILDING FOOTPRIN
- PROPOSED LOCATION OF ELEV
- Excavation Requi

0 40 80 160

SCALE (FEET)

SOIL BORINGS/WELL LOCATIONS
ASE I AND PHASE II INVESTIGATION
RSTEIN 42nd. STREET DEVELOPMENT
NEW YORK, NEW YORK

WARD-CLYDE CONSULTANTS

ING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
WAYNE, NEW JERSEY

SCALE AS SHOWN	DWG. NO. 54530005	PROJ. NO. 5E04530
DATE JULY 6, 1995	FIG. NO. 1	

APPENDIX A

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **MW-1S**

PROJECT NAME	Silverstein Properties				SHEET 1 C
LOCATION	42nd St. between 11th and 12th, New York, NY		GROUND ELEVATION (FT)	PROJECT NUMBER	5E04530
DRILLING CONTRACTOR	Warren George, Inc.	FOREMAN Sal D'Amico	DATE STARTED	February 23, 1995	DATE COMPLETED February 23, 1995
DRILLING EQUIPMENT	Mobile Drill B-61		COMPLETION DEPTH (FT)	18.0	ROCK DEPTH (FT) NA
TYPE BIT	NA	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES	DIST.	UNDIST. – CORE NA
CASING	NA		WATER LEVEL	FIRST 8	COMPL – 24HR –
CASING HAMMER	NA	DROP NA	BORING LOCATION	between old tanks and new tanks	
SAMPLER	3-inch & 2-inch Split Spoons		INSPECTOR	K. Smith	
SAMPLER HAMMER	WEIGHT 300 lb. / 140lb	DROP 30"			

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
FILL- Brown sand, silt, gravel, concrete and rubble.			1		0.3		1144				
			2								
No Recovery			3		0.0	14 10 2 2		-			
			4								Augering to 4 ft.
No Recovery- inside of spoon wet, with oily sheen, strong petroleum odor.			5		0.1	2 2 1 2					
wet, same sheen and odor as above.			6								
			7		0.1	3 2 1 2					
	▽		8								Auger to 8 ft.
SM- Gray fine silty SAND, moist (FILL).			9		2.0	2 3 3 6	1244	2- 15.0	1.2		Sample MW-1 for STARS VOCs/BNAs, 8-8.5 ft.
FILL- Gray medium SAND, gravel, wood.			10								

- Not Recorded

LOG OF BORING MW-1S

SHEET 2 O

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
FILL- Coarse to fine sand, silt, trace clay, some gravel, cinders, wood, glass, wet.			-			3					
			11		2.0	5 2	1250	1 - 2.8	1.5		
			-			3					Auger to 12 ft.
			12	----	----	----	----	----	----	----	----
No Recovery- large chunk of wood stuck in spoon tip. Wood is oily and dry.			-			6					
			13		0.0	6 3					
			-			4					
			14	----	----	----	----	----	----	----	----
No Recovery- wet, black silt and wood stuck in spoon tip.			-			4					
			15		0.0	7 15					
			-			7					Auger to 16 ft.
			16	----	----	----	----	----	----	----	----
OH- Black organic SILT, some clay, soft, dry to damp, cohesive. Visible mica, shells, wood.			-			1					
			17		2.0	1 1	1331	0.9 - 1.3	0.8		
			-			2		-			
End of boring- 18 ft.			18	----	----	----	----	----	----	----	----
			-								Complete MW-1S at 16 ft, 10 ft. screen, 2-inch PVC
			19								
			-								
			20								
			-								
			21								
			-								
			22								
			-								
			23								
			-								
			24								
			-								
			25								

- Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **MW-1D**

PROJECT NAME	Silverstein Properties	GROUND ELEVATION (FT)	PROJECT NUMBER 5E04530
LOCATION	42nd St. between 11th and 12th, New York, NY		
DRILLING CONTRACTOR	Warren George, Inc.	FOREMAN Sal D'Amico	DATE STARTED February 24, 1995 / DATE COMPLETED February 24, 1995
DRILLING EQUIPMENT	Mobile Drill B-61	COMPLETION DEPTH (FT) 47.5	ROCK DEPTH (FT) 48
TYPE BIT	NA	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES — DIST. — UNDIST. — CORE NA
CASING	4-inch spin casing		WATER LEVEL FIRST — COMPL — 24HR —
CASING HAMMER	NA	DROP NA	BORING LOCATION between old tanks and new tanks
SAMPLER	2-inch Split Spoons		
SAMPLER HAMMER	WEIGHT 140lb	DROP 30"	INSPECTOR K. Smith

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Drilling to 25 ft. See log of MW-1S for stratigraphy.			- - 1 - - 2 - - 3 - - 4 - - 5 - - 6 - - 7 - - 8 - - 9 - - 10 -								

- Not Recorded

LOG OF BORING MW-1D

SHEET 2 O

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	SAMPLES Recov. (ft)	SAMPLES Penetr. Resist. Blc/6in	SAMPLES Time	HNU / PID READINGS (PPM) Sample	HNU / PID READINGS (PPM) Ambient Air	HNU / PID READINGS (PPM) Time	REMARKS
Drilled to 25 ft. See log of MW-1S for stratigraphy.			- 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20 - 21 - 22 - 23 - 24 - 25 -								

- Not Recorded

LOG OF BORING MW-1D

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
OH- Black organic SILT, soft, dry, micaceous, plastic, cohesive, homogeneous.			26		2.0		1132	8.1	1.0		Sheen, petroleum odor inside two leafy partings.
			27								
			28								
			29								
OH- Dark gray organic clayey SILT, soft, plastic, micaceous, with shell frags, damp.			30								
			31		2.0		1200	0.9	0.8		Collected sample MW-1D for STARS VOCs, BNAs, 30-30.5 ft.
			32								
			33								
			34								
			35								
OH- Same as above, abundant shell material, organic odor.			36		2.0		1216	2 - 15.0	0.8		No visible sheen, organic odor only.
			37								
			38								
			39								
			40								

- Not Recorded

LOG OF BORING MW-1D

DESCRIPTION	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist. BL/ft	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
OH- Same as above- Gray organic SILT, organic odor.	41		2.0			0.9	1 - 2.2		
	42								
	43								
	44								
Same as above with trace to some fine sand.	45								
PT- Woody peat material, hard, mottled with some black streaks (no odor), some fine sand.	46		1.5		1333				organic odor.
	47								
End of boring- 47.5 ft-- Bedrock.	48								Bedrock encountered at 47.5 ft. MW-1D installed at 46 ft, 10 ft of screen, 2-inch diam PVC.
	49								
	50								
	51								
	52								
	53								
	54								
	55								

- Not Recorded

Woodward-Clyde Consultants
Consulting Engineers, Geologists, and Environmental Scientists

LOG OF BORING **MW-2**

PROJECT NAME	Silverstein Properties				SHEET 1 OF
LOCATION	42nd St. between 11th and 12th, New York, NY		GROUND ELEVATION (FT)	PROJECT NUMBER	5E04530
DRILLING CONTRACTOR	Warren George, Inc.	FOREMAN Sal D'Amico	DATE STARTED February 24, 1995	DATE COMPLETED	February 27, 1995
DRILLING EQUIPMENT	Mobile Drill B-61		COMPLETION DEPTH (FT) 19.0	ROCK DEPTH (FT)	NA
TYPE BIT	4-inch tricone rollerbit	SIZE AND TYPE CORE BARREL NA	NO. SAMPLES DIST. –	UNDIST. –	CORE NA
CASING	4-inch spin casing		WATER LEVEL FIRST –	COMPL –	24HR –
CASING HAMMER	NA	DROP NA	BORING LOCATION downgradient (west) of tanks		
SAMPLER	3-inch & 2-inch Split Spoons		INSPECTOR K. Smith		
SAMPLER HAMMER	WEIGHT 300 lb. / 140lb	DROP 30"			

DESCRIPTION	Water Table	Sample Interval	Depth (ft)	SAMPLES Number	Recov. (ft)	Penetr. Resist BL/6in	Time	HNU / PID READINGS (PPM) Sample	Ambient Air	Time	REMARKS
Concrete- drill with tricone rollerbit to 3 ft.			0								
			1								
			2								
			3								
FILL- Gray coarse-med. sand with gravel, some silt, brick frags, damp.			4		0.5	12 6 3	0945	-			
			5			9					
FILL- same as above, moist.			6		0.2	5 2 1	0955				
			7			3					Augering to 7 ft.- hard.
No Recovery, spoon is wet, concrete stuck in spoon tip.	▽		8		0.0	2 3 10	1020				Spoon bouncing at 9 ft. Try augering through. Auger refusal. Drilling with rollerbit to 10 ft.
Drilling through obstruction.			9			75/1"					
			10								

- Not Recorded

Woodward-Clyde
Engineering & sciences applied to the earth & its environment

September 19, 1995
5E04530-I

Mr. Richard Gardineer
NYSDEC
Region 2 - Office of Metropolitan Environmental Enforcement
and Legal Affairs
47-40 21 Street
Long Island City, NY 11101

RE: Results of Environmental Investigations
and Plan for Additional Investigations
Silverstein 42nd Associates, L.P.
500-516 Twelfth Avenue, NY, NY

Dear Mr. Gardineer:

As a followup to our meeting of September 11, 1995, this letter presents Silverstein 42nd Associates, L.P. (Silverstein's) plan for additional investigations. In the meeting, you requested that additional investigations be conducted to fill data gaps remaining after the Phase I and Phase II investigations:

1) verify the oil content of the two former underground oil storage tanks

2) analyze samples for Polychlorinated biphenyls (PCBs)

3) characterize the quality of the unsaturated soil in the area of the former gas holders (east end of Site)

4) analyze additional soil samples for TCLP on the east and west sides of the Site.

5) calculate the flux of groundwater beneath the site entering the Hudson River.

Proposed sampling and analyses to address each of these gaps is described in the following sections.

1) Oil Tank Contents

The field inspector who oversaw the removal of the oil tanks observed a fill pipe on one of the two tanks which was labeled "Fuel Oil"; a second fill pipe was not found. The tanks were filled with water and contained tank bottoms (black sludge) that could not be identified specifically as to the type of oil. However, a sample from this area was analyzed for TCLP parameters and found to be non-hazardous. Therefore, it appears that the tanks have not significantly impacted the site, and the orginal contents of the tanks is not a concern.

2) PCBs

Based on Site usage history, there is no reason to suspect that Site soils may be contaminated with PCBs. However, because the site contains fill from undetermined sources, three soil samples will be collected for PCB analysis. Two of the samples (SS-1 and SS-2) will be collected in an area of the Site where soil is scheduled to be excavated and removed for future foundation construction. An additional sample will be taken in the former gas holder area. Proposed sampling locations are shown on Figure 1. The samples will be collected from 0.5 to 1 ft below ground surface, or just below the existing asphalt base material.

3) Gas Holder Area

Based on our discussions at our meeting of September 11, 1995, we propose to install ten soil borings in the area of the former gas holders. The locations of the holders have been estimated using Sanborn Fire Insurance Maps. Four of the borings will be located at the approximate centers of the former holders (Figure 1, SB-36, -37, -41, and -42). The remaining borings will be located in areas surrounding and adjacent to the former holders (SB-35, -38, -39, -40, -43, and -44). Continuous split-spoon samples will be collected to the top of the water table which is expected to be 6 ft to 8 ft below ground surface. The most contaminated sample (based on field evidence) from each boring will be subjected to laboratory analysis. Field evidence will include visually obvious contamination, odors, or above-background organic vapors based on photoionization measurements. Each of these samples will be analyzed for VOs plus a library search, and BNs plus a library search. Four of these samples will also be subjected to analysis for cyanide and sulfur compounds.

Soil borings will be advaced using hollow stem augers. Rotary methods will be used only if obstructions are encountered. Three-inch split spoons will be used to collect samples. All drill cuttings will be contained in 55-gallon steel drums and will remain on site until properly disposed.

4) Hazardous Characteristics

In addition to the analyses described above for the ten boring samples, each will undergo extraction for possible TCLP analysis. The results of the VO and BN analyses will be used to select the two most contaminated samples. Extracts for these two samples will then be subjected to TCLP analysis for volatiles, semi-volatiles, metals, herbicides and pesticides, as well as pH, corrosivity, reactivity (sulphur and cyanide) and ignitability.

Surficial soils from the west end of the Site have been determined to be non-hazardous. In order to determine if subsurface soils are hazardous, a sample from the most contaminated previous subsurface sampling location will be subjected to TCLP analysis. Based on previous results, a new boring will be drilled adjacent to former boring SB-31, and a sample will be

collected from 7.5 ft to 8 ft below ground surface for analysis. This location (SB-31A) is shown on Figure 1.

5) Impact of Groundwater On The Hudson River

The potential impact of groundwater discharging from the Site to the Hudson River will be investigated. The concentrations of contaminants along the west side of the Site will be analyzed to determine if any constituents are at concentrations greater than 10 times the current surface water quality standards. Pursuant to our conversation of September 15, 1995, if the groundwater concentrations are below 10 times the surface water standards, this will illustrate that there is no impact to the River. If any constituent concentrations are more than 10 times the surface water standards, calculations will be performed to determine the flux of contaminants from the Site to the Hudson River, and determine the impact using the 10 year, 7 day low flow of the Hudson River. To accomodate the calculations, slug tests will be performed on monitoring wells MW-2 and MW-4 to estimate the hydraulic conductivity of the water bearing zone beneath the Site.

It is anticipated that the caluclations will illustrate that groundwater discharge from the Site is not affecting the water quality of the Hudson River.

Sampling and Analytical Protocols

Samples will be collected in accordance with NYSDECs Sampling Guidelines and Protocols dated March 1991. Samples will be analyzed by a New York State certified laboratory. Laboratory analytical method protocol will be NYSDEC ASP SW-846.

Quality Assurance/Quality Control

Sampling equipment (split-spoons and trowels) will be decontaminated between sampling locations in accordance with NYSDECs Sampling Guidelines and Protocols. Drilling augers, if used, will be steam cleaned between sampling locations.

One trip blank to be analyzed for VOs will accompany each shipment of samples to the laboratory. One field blank will be collected each day of sampling by pouring laboratory distilled/deionized water over sampling devices (split spoons or trowels). Field blanks will be analyzed for VOs, BNs, cyanide, sulfur compounds, and PCBs.

Health and Safety

The Health and Safety Plan previously developed for this Site will be updated prior to this phase of work. The orginal Health and Safety Plan was prepared in conformance with OSHA regulation 1910.120. All site activities will be conducted in accordance with the Health and Safety Plan.

Woodward-Clyde

We look forward to your comments with respect to the proposed additional work. If you have any questions, please do not hesitate to call Andy Ciancia (201-812-6857), Marion Craig (201-812-6879) or Gordon Jamieson (201-812-6834).

Sincerely,

Marion Craig for

Gordon R. Jamieson
Chief Hydrogeologist

Andrew J. Ciancia, P.E.
Vice President

Attachments

cc: Hari Agrawal, NYSDEC
Richard Leland, Roseman & Colin
Daniel Lavoie, Roseman & Colin
Mike Mulqueen, NYSDEC
Allen Waller, Silverstein 42nd Assoc.

Sampling Summary and Rationale
Phase III Investgation
Silverstein Properties - 42nd St, NYC

Sample Location	Depth (ft)	Analytical Parameter	Rationale
SS-1	0.5-1	PCBs	Evaluate if fill contains PCBs
SS-2	0.5-1	PCBs	Evaluate if fill contains PCBs
SB-31A	7.5-8	TCLP	Evaluate if contaminated soil (worst case) is hazardous
SB-35	tbd	VOs, BNs	Evaluate quality of unsaturated soil in area of former gas holders
SB-36	tbd	VOs, BNs, cyanide, sulfur	Evaluate quality of unsaturated soil in area of former gas holders
SB-37	tbd	VOs, BNs, cyanide, sulfur	Evaluate quality of unsaturated soil in area of former gas holders
SB-38	tbd	VOs, BNs	Evaluate quality of unsaturated soil in area of former gas holders
SB-39	tbd	VOs, BNs	Evaluate quality of unsaturated soil in area of former gas holders
SB-40	tbd	VOs, BNs	Evaluate quality of unsaturated soil in area of former gas holders
SB-41	tbd	VOs, BNs, cyanide, sulfur	Evaluate quality of unsaturated soil in area of former gas holders
SB-42	tbd	VOs, BNs, cyanide, sulfur	Evaluate quality of unsaturated soil in area of former gas holders
SB-43	tbd	VOs, BNs	Evaluate quality of unsaturated soil in area of former gas holders
SB-44	tbd	VOs, BNs	Evaluate quality of unsaturated soil in area of former gas holders
tbd	tbd	PCBs	Evaluate if fill may contain PCBs
tbd	tbd	TCLP	Evaluate if most contaminated unsaturated soil in area of former gas holders is hazardous.
tbd	tbd	TCLP	Evaluate if most contaminated unsaturated soil in area of former gas holders is hazardous.

Note:

tbd = to be determined based on field evidence of contamination
VOs = Target Compound List Volatile Organics plus a library search
BNs = Target Compound List Base/Neutral Organics plus a library search
TCLP = Toxic Characteristics Leaching Procedure

Woodward-Clyde, Inc.
Engineering & sciences applied to the earth & its environment

January 30, 1996

Richard G. Leland, Esq.
Rosenman & Colin LLP
575 Madison Avenue
New York, New York 10022-2585

Re: Phase III Environmental Sampling Results
Silverstein 42nd Associates, L.P.
500-516 Twelfth Avenue, New York, New York

Dear Mr. Leland:

On September 11, 1995, representatives of Silverstein 42nd Associates, L.P. (Silverstein) and Woodward-Clyde Consultants, Inc. (WCCI), met with the New York State Department of Environmental Conservation (NYSDEC or the Department) to discuss the results of the environmental sampling conducted at the above referenced Site. The Department directed Silverstein to conduct additional environmental investigations at the Site to determine if the unsaturated soil at the Site would be classified as "RCRA" New York State Administrative Code 6NYCRR, Part 371 Characteristics Waste.

Based on the discussions with the Department at the September 11, 1995 meeting, WCCI prepared and submitted a Work Plan For Additional Environmental Investigations (Work Plan) to the NYSDEC dated September 19, 1995. NYSDEC provided comments on the Work Plan to WCCI in a letter dated October 3, 1995. WCCI responded to these comments in a letter to NYSDEC dated October 13, 1995.

EXECUTIVE SUMMARY

Twenty-five soil borings were advanced to collect soil samples for chemical analyses. Seventeen near surface soil samples were analyzed for PCBs. Eighteen unsaturated soil samples were analyzed for coal gas wastes. The five most contaminated unsaturated soil samples were also analyzed for waste characterization. All PCB analyses were reported as Not Detected. The waste characterization analyses indicate that the unsaturated soils at the Site contain no "RCRA" New York State Administrative Code 6NYCRR, Part 371 Characteristics Wastes. Therefore soil remediation is not required at the Site and building construction can proceed.

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BACKGROUND

The initial environmental investigation (Phase I) was conducted to investigate and remediate two groups of underground storage tanks located in the northwestern corner of the Site. This remediation was documented in a UST Closure Report submitted to the Department in July 1995. Four soil boring were advanced and subsurface soil samples were submitted for chemical analyses. Three of these soil borings were completed as shallow monitoring wells and one as a deep monitoring well. Groundwater samples were collected and submitted for chemical analyses.

Following the preliminary results of the Phase I investigation, WCCI conducted additional environmental investigations (Phase II) to assess the impact of former manufactured gas operations at the Site in the 1800's. Ten additional soil borings were advanced during the Phase II investigation to collect subsurface soil samples for chemical analyses. Three soil samples were also analyzed for waste characterization. Four of these borings were completed as shallow monitoring wells. Groundwater samples were collected from both the Phase I and Phase II monitoring wells.

The following conclusions were made based upon the information collected during these investigations. Chemical analyses from soil samples indicated the presence of volatile organics, base neutrals and metals above NYS Cleanup Objectives and STARS Memo Guidance Values. However, waste classification analyses indicated that the soil from the western portion of the Site would be classified as non-hazardous waste for disposal purposes.

Chemical analyses from groundwater samples collected during the Phase I and II investigations reported petroleum related compounds (e.g. benzene, ethylbenzene, xylenes and PAHs) and metals at concentrations above NYS Ambient Water Quality Standards and Guidance Values and STARS Memo Guidance Values.

FIELD INVESTIGATION

The field program for the Phase III environmental investigation was implemented on November 9 through 16, 1995. A total of twenty-five soil borings (SB-35 through SB-59) were drilled. These locations are illustrated on Figure 1. Eighteen soil borings were sampled for coal gas wastes (SB-35 through SB-52). These borings were terminated at the encountered groundwater table. Nine of these locations (SB-36, SB-38, SB-40, SB-41, SB-44, SB-45, SB-46, and SB-48) were also samples for PCBs. Seven soil borings (SB-53 through SB-59) were sampled for PCBs only and were terminated 2 ft below the pavement. Soil boring logs are presented in Appendix A. The drilling subcontractor was Warren-George, Inc. of Jersey City, New Jersey. All soil borings were installed in accordance with the approved Work Plan. However, the location of seven PCB samples were revised in the

field and seven additional soil borings were installed at the instruction of Mr. Hari Agrawal, NYSDEC. These additional soil borings are SB-53 through SB-59.

All soil samples were collected from three-inch outside diameter split spoons. Soil samples were collected continuously from immediately below the existing pavement (concrete or macadam) to the top of the groundwater table as observed in split spoon soil samples, except at soil borings SB-53 through SB-59 which were terminated 2 ft below the pavement. An HNu photoionization unit equipped with a 10.2 eV probe was utilized throughout the field effort. The HNu was calibrated at the start of each days field work using calibration gas supplied by the manufacturer.

As each split spoon was retrieved from the borehole it was opened and its contents examined. A description of the material was made by the WCCI geologist using the Unified Soil Classification soil system. Visual observations of staining and free product were made as well as noting any olfactory evidence of contamination. An HNu was used to scan each split spoon immediately upon opening to check for the presence of volatile organics.

In accordance with the Work Plan, after these observations were made, the split spoon was closed and set aside. After all split spoons were collected, the WCCI geologist compared the visual, olfactory and instrumental evidence of contamination for each split spoon. A determination as to which six-inch split spoon interval represented the most contaminated soil was made and this interval was then transferred to laboratory supplied jars using dedicated stainless steel spoons. In the absence of any indication of contamination, the laboratory soil sample was collected from the six-inch interval immediately above the encountered groundwater table. The remaining soil was drummed for future disposal.

Seven soil borings were sampled for PCBs only. Soil samples for PCB analysis were collected from those soil borings located at the center of each of the sixteen grid blocks. The laboratory sample for PCBs was collected from the most contaminated six-inch interval in the first split spoon based on visual, olfactory and instrumental readings. In the absence of any indication of contamination, the WCCI geologist arbitrarily selected a six-inch interval for sampling.

All drilling equipment was decontaminated prior to the start of field work using a high pressure steam cleaner. Potable water was obtained from a hydrant located along Eleventh Avenue. All split spoons were decontaminated between each use using the following eight step process:

- Alconox and potable water wash
- potable water rinse
- distilled/deionized water rinse
- nitric acid wash
- distilled/deionized water rinse

- pesticide grade acetone wash
- distilled/deionized water rinse
- air dry

QUALITY ASSURANCE/QUALITY CONTROL

All analytical work was performed by Nytest Environmental, Inc. of Port Washington, New York, a New York State certified laboratory. All samples were analyzed using NYSDEC ASP SW-846 methodology. Eighteen soil samples were analyzed for volatile organics plus a library search for ten tentatively identified compounds (VOC+10), base neutral compounds plus a library search for ten tentatively identified compounds (BN+10), target analyte list metals (metals), cyanide (CN), sulfate/sulfide, phenols, ammonia, nitrate, and thiocynates. These eighteen soil samples were also extracted for toxicity characteristic leaching procedure (TCLP) and held for possible analysis. The five soil samples exhibiting the highest contamination levels were then analyzed for TCLP parameters. Eighteen soil samples were analyzed for PCBs.

A field blank was collected for each day of sampling and analyzed for the parameters collected during that days sampling. A trip blank also accompanied each sample shipment and was analyzed for VOC+10, except the final shipment which contained samples to be analyzed for PCB only. Duplicate soil samples were collected at a rate of 1 per 20 samples or 1 duplicate sample. The duplicate soil sample was collected at soil boring SB-48 for both PCBs and coal gas wastes.

Results of the chemical analyses are presented in Tables 1 and 2. WCCI selected soil samples SB35, SB40, SB41, SB45, and SB52 for TCLP analyses based on the results presented in Table 1. These samples were selected because of their high concentrations of volatile organic compounds, base neutral compounds and their locations, which cover the entire Site. SB-52 is located adjacent to the Twelfth Avenue property line (Figure 1). SB-35 is located in the western portion of the Site. Soil borings SB-40 and SB-41 are located in the area which was formerly occupied by the gas manufacturing buildings. Soil boring SB-45 is located inside a former gas holder.

The results of the TCLP samples are presented on Table 3.

CONCLUSIONS AND RECOMMENDATIONS

The results of the coal gas waste analyses are presented in Table 1. These chemical analyses reported the presence of organic compounds that are typically associated with the gas manufacturing process. Several metals were also reported that are typical of former industrial facilities.

The results of the PCB analyses did not report the presence of any PCB compound above the method detection limits (Table 2).

The results of the TCLP analyses are presented in Table 3. All parameters were reported below the NYSDEC Hazardous Waste Regulatory Levels for Toxicity Characteristics.

These results indicate that there are no "RCRA" New York State Administrative Code 6NYCRR, Part 371 Characteristics Wastes present at the Site. Therefore, soil remediation is not required at the Site and building construction can proceed.

If you have any questions concerning the information presented in this letter, please contact either Paul Kareth at (201) 812-6884 or Andrew Ciancia at (201) 812-6857. If requested, WCCI will provide copies of the laboratory data reports under separate cover.

Very truly yours,

Paul Kareth

Paul Kareth
Project Geologist

Andrew J. Ciancia, P.E.
Vice President

AJC:PK:ler

Soil Boring Data Table 1
Phase III Remedial Investigation
Silverstein 500-516 Twelfth Avenue
New York, New York
SE04530

Sample Location	SB-36		SB-36		SB-37		SB-38		SB-38		SB-39		SB-40		SB-41		SB-42	
WCC Sample ID	SB36		SB36		SB37		SB39		SB38Re		SB39		SB40		SB41		SB42	
Laboratory Sample ID	2570720		2570719		2565111		2570717		2570717		256101		2570713		2570716		2565104	
Sample Collection Date	11/15/95		11/15/95		11/9/95		11/15/95		11/15/95		11/10/95		11/15/95		11/15/95		11/10/95	
Laboratory Receipt Date	11/17/95		11/17/95		11/10/95		11/17/95		11/17/95		11/10/95		11/17/95		11/17/95		11/10/95	
Depth	8.0-8.5		6.6-6.5		7.5-8.0		4.5-5.0		4.5-5.0		5.5-6.0		6.0-6.5		6.5-8.0		11.0-11.5	
Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
ORGANIC COMPOUNDS (ug/kg)																		
Volatile Organic Compounds																		
Acetone	ND		54	B	40	B	760	B	870	B	7	JB	51	B	170	B	750	D
Benzene	1800	JD	ND		ND		6	J	6	J	ND		ND		180		ND	
Bromodichloromethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bromoform	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bromomethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
2-Butanone	94	B	6	JB	ND		16	JB	ND		4	JB	6	JB	51	B	6	JB
Carbon disulfide	9	J	ND		ND		ND		ND		ND		ND		3	J	ND	
Carbon tetrachloride	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chlorobenzene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloroethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloroform	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloromethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibromochloromethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1-Dichloroethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloroethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1-Dichloroethene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloroethene (total)	ND		ND		ND		ND		ND		ND		ND		ND		ND	
trans-1,2-Dichloroethene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloropropane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
cis-1,3-Dichloropropene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
trans-1,3-Dichloropropene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Ethylbenzene	14000	D	ND		2	J	ND		ND		ND		ND		210		ND	
2-Hexanone	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methylene chloride	16	B	14	B	19	B	62	B	150	B	8	JB	8	JB	10	JB	11	JB
4-Methyl-2-Pentanone	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Styrene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1,2,2-Tetrachloroethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethene	ND		ND		1	J	ND		ND		ND		ND		ND		ND	
Toluene	8600	D	15		3	J	6	J	ND		ND		ND		62		ND	
1,1,1-Trichloroethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1,2-Trichloroethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Trichloroethene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vinyl chloride	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Xylenes (total)	32000	D	39		8	J	ND		ND		ND		ND		1900	D	ND	
Vinyl acetate	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Tentatively Identified Compounds	54700	J	133		224	J	830	J	32	J	ND		22	J	4320	J	7	J
Total Volatile Organic Contaminants	109219	J	261		295	J	1682	J	1064	J	19	J	80	J	6916	J	776	J
Base Neutral Compounds																		
Acenaphthene	50000	D	85	J	170	J	ND		NA		ND		840	J	12000		7400	J
Acenaphthylene	7300		280	J	160	J	1500	J	NA		ND		4800		8800		870	J
Anthracene	40000	D	600		890	J	2400		NA		91	J	14000		20000	D	6900	J
Benzo(a)anthracene	26000	D	1100		2000		11000		NA		220	J	28000	D	28000	D	22000	
Benzo(a)pyrene	16000		1100		1700		11000		NA		260	J	21000	D	27000	D	19000	
Benzo(b)fluoranthene	12000		800		1200	J	10000		NA		230	J	20000	D	20000	D	14000	
Benzo(g,h,i)perylene	5000		880		2300		6400		NA		160	J	9800		8800		21000	
Benzo(k)fluoranthene	9600		830		1200	J	8000		NA		280	J	10000		12000		15000	
bis(2-chloroethoxy)methane	ND		ND		ND		ND		NA		ND		ND		ND		ND	
bis(2-chloroethyl)ether	ND		ND		ND		ND		NA		ND		ND		ND		ND	
bis(2-ethylhexyl)phthalate	ND		130	J	190	J	ND		NA		150	J	ND		ND		ND	
4-Bromophenyl-phenylether	ND		ND		ND		ND		NA		ND		ND		ND		ND	
Butylbenzylphthalate	ND		ND		ND		ND		NA		ND		ND		ND		ND	
Carbazole	16000		98	J	ND		800	J	NA		ND		ND		ND		ND	
4-Chloroaniline	ND		ND		ND		ND		NA		ND		2700		4100		4200	J
2-Chloronaphthalene	ND		ND		ND		ND		NA		ND		ND		ND		ND	
4-Chlorophenyl-phenylether	ND		ND		ND		ND		NA		ND		ND		ND		ND	
Chrysene	23000	JD	1100		2100		11000		NA		230	J	28000	D	25000	D	20000	
Dibenz(a,h)anthracene	850	J	61	J	160	J	800	J	NA		380	J	830	J	770	J	1400	J
Dibenzofuran	37000	D	150	J	ND		500	J	NA		ND		4100		9400		4900	J
1,2-Dichlorobenzene	ND		ND		ND		ND		NA		ND		ND		ND		ND	
1,3-Dichlorobenzene	ND		ND		ND		ND		NA		ND		ND		ND		ND	
1,4-Dichlorobenzene	ND		ND		ND		ND		NA		ND		ND		ND		ND	
3,3'-Dichlorobenzidine	ND		ND		ND		ND		NA		ND		ND		ND		ND	
Diethyl phthalate	ND		ND		ND		ND		NA		ND		ND		ND		ND	
Dimethyl phthalate	ND		ND		ND		ND		NA		ND		ND		ND		ND	
Di-n-butyl phthalate	ND		ND		ND		ND		NA		ND		ND		ND		ND	
2,4-Dinitrotoluene	350	J	ND		ND		ND		NA		ND		ND		ND		ND	
2,6-Dinitrotoluene	ND		ND		ND		ND		NA		ND		ND		ND		ND	
Di-n-octyl phthalate	ND		ND		ND		ND		NA		ND		ND		ND		ND	
Fluoranthene	68000	D	2400		2900		18000	D	NA		45	J	ND		ND		ND	
Fluorene	42000	D	270	J	210	J	340	J	NA		460		70000	D	69000	D	61000	
											ND		4900		11000		5300	J

Soil Boring Data Table 1
Phase III Remedial Investigation
Silverstein 500-516 Twelfth Avenue
New York, New York
5E04530

Sample Location	SB-35	SB-36	SB-37	SB-38	SB-38	SB-39	SB-40	SB-41	SB-42
WCC Sample ID	SB35	SB36	SB37	SB38	SB38Re	SB39	SB40	SB41	SB42
Laboratory Sample ID	2570720	2570718	2565111	2570717	2570717	256101	2570713	2570716	2565104
Sample Collection Date	11/15/95	11/15/95	11/9/95	11/15/95	11/15/95	11/10/95	11/15/95	11/15/95	11/10/95
Laboratory Receipt Date	11/17/95	11/17/95	11/10/95	11/17/95	11/17/95	11/10/95	11/17/95	11/17/95	11/10/95
Depth	8.0-8.5	6.6-6.5	7.5-8.0	4.5-5.0	4.5-5.0	5.5-6.0	6.0-6.5	8.5-9.0	11.0-11.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q
Base Neutral Compounds (continued)									
Hexachlorobenzene	ND	ND	ND	ND	NA	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	NA	ND	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND	ND	NA	ND	ND	ND	ND
Hexachloroethane	ND	ND	ND	ND	NA	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	5900	770	1700	6200	NA	130 J	7500	9600	17000
Isophorone	ND	ND	ND	ND	NA	ND	ND	ND	ND
2-Methylnaphthalene	33000 D	84 J	ND	420 J	NA	46 J	1300 J	8400	2600 J
Naphthalene	180000 D	81 J	ND	640 J	NA	ND	3300	89000 D	8600
2-Nitroaniline	ND	ND	ND	ND	NA	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	NA	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	NA	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	NA	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	NA	ND	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND	ND	NA	ND	ND	ND	ND
2-2'-oxybis(1-Chloropropane)	ND	ND	ND	ND	NA	ND	ND	ND	ND
Phenanthrene	130000 D	1900	2300	7700	NA	220 J	51000 D	55000 D	53000
Pyrene	59000 D	2200	3100	13000	NA	320 J	62000 D	59000 D	48000
1,2,4-Trichlorobenzene	ND	ND	ND	ND	NA	ND	ND	ND	ND
Total Base Neutral Compounds	761000 J	15019 J	22080 J	109600 J	NA	3222 J	338470 J	473070 J	332370 J
BNA Tentatively Identified Compounds	80500 J	22690 J	2160 J	35900 J	NA	398 J	36200 J	46200 J	32700 J
Total Phenol	510	700	720	1340	NA	380	2150	2000	250
TOTAL ORGANIC CONTAMINANTS	1005929 J	38803 J	25479 J	149352 J	NA	4019 J	378932 J	534506 J	366103 J
INORGANICS (mg/kg)									
Metals									
Aluminum	8570	2940	6720	5150	NA	7690	6210	6490	7810
Antimony	ND	ND	ND	1.5 J	NA	ND	8.2 J	3.2 J	ND
Arsenic	8.3 J	5.1 J	26.8 J	20.8 J	NA	2.4 J	20.7 J	15.8 J	3.1 J
Barium	36.0 J	25.5 J	62.0	42.7	NA	89.1	58.3	79.3	78.3
Beryllium	0.23 J	0.08 J	0.07 J	0.14 J	NA	ND	0.11 J	ND	0.05 J
Cadmium	1.5 J	0.31 J	ND	ND	NA	ND	ND	ND	0.24 J
Calcium	6270	15100	14300	37800	NA	4800	1040	13100	18700
Chromium	15.2	1.6 J	13.4	11.5	NA	19.4	8.2	9.8	35.9
Cobalt	8.5 J	1.2 J	6.1 J	7.3 J	NA	8.8 J	8.5 J	7.3 J	10.3
Copper	21.1 J	7.6 J	16.0 J	33.8 J	NA	29.0 J	30.7 J	35.8 J	18.1 J
Iron	24000 J	2890 J	17800	33200 J	NA	15700	53000 J	89100 J	14100
Lead	60.7	22.8	73.6	205	NA	37.2	164	252	435
Magnesium	3750	1510	3270	1730	NA	4340	2020	4240	12400
Manganese	415	82.6	204	228	NA	271	125	521	225
Mercury	ND	ND	0.37	0.56	NA	0.17	0.33	0.29	0.37
Nickel	17.3	ND	13.8	11.4	NA	17.4	17.3	15.8	98.4
Potassium	642 J	105 J	1600 J	156 J	NA	4660 J	381 J	1390	2870 J
Selenium	2.9	ND	2.4	3.7	NA	1.0	6.1	9.1	ND
Silver	ND	ND	ND	ND	NA	ND	0.54 J	0.36 J	ND
Sodium	ND	405	ND	306 J	NA	ND	162 J	ND	466 J
Thallium	3.3	ND	2.6	3.9	NA	3.6	5.9	8.0	ND
Vanadium	21.3	9.6 J	148 J	24.2	NA	22.1 J	15.7	20.1	20.2 J
Zinc	225	39.0	72.1	25.5	NA	88.7	80.6	99.8	167
Other Inorganic Parameters									
Total Cyanide	ND	0.81	ND	5.5	NA	ND	57.9	716	ND
Thiocyanide	ND	ND	ND	ND	NA	ND	ND	ND	ND
Ammonia, Nitrogen	290	ND	ND	27	NA	ND	140	43.3	ND
Nitrate	ND	4.07	7.55	0.88	NA	4.04	10.2	ND	3.80
Sulfide	13.7	54.1	ND	19.4	NA	73.8	25.7	19.8	42.6
Sulfate	270	346	ND	101	NA	82.4	380	105	147

Notes

All organic compounds are reported in µg/kg
All metals and other inorganic parameters are reported in mg/kg
CONC Concentration
Q Qualifier
ND Not Detected
NA Not Analyzed
J Indicates an estimated value
D Dilution

Soil Boring Data Table 1
Phase III Remedial Investigation
Silverstein 500-516 Twelfth Avenue
New York, New York
5E04530

Sample Location	SB-43		SB-44		SB-45		SB-46		SB-46		SB-47		SB-48		SB-48		SB-49		SB-50	
WCC Sample ID	SB43		SB44		SB45		SB46		SB46		SB47		SB48		DUPSB		SB49		SB50	
Laboratory Sample ID	2565105		2566907		2565108		2565105		2565105		2566905		2566906		2566908		2565107		2570719	
Sample Collection Date	11/10/95		11/13/95		11/10/95		11/10/95		11/10/95		11/13/95		11/13/95		11/13/95		11/10/95		11/15/95	
Laboratory Receipt Date	11/10/95		11/14/95		11/10/95		11/10/95		11/10/95		11/14/95		11/14/95		11/14/95		11/10/95		11/17/95	
Depth	7.0-7.5		5.0-5.5		6.5-7.0		7.5-8.0		7.5-8.0		3.0-3.5		5.5-6.5		5.5-6.5		5.5-6.0		6.5-7.0	
Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
ORGANIC COMPOUNDS (µg/kg)																				
Volatile Organic Compounds																				
Acetone	78	B	190		120	B	360	D			120		45		56		16	B	11	JB
Benzene	ND		ND		210		6	J			ND		ND		ND		2	J	ND	
Bromodichloromethane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Bromoform	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Bromomethane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
2-Butanone	11	JB	36	B	23	B	20	B			ND		12	B	12	JB	6	JB	ND	
Carbon disulfide	ND		ND		2	J	ND				2	J	ND		ND		ND		ND	
Carbon tetrachloride	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Chlorobenzene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Chloroethane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Chloroform	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Chloromethane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Dibromochloromethane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
1,1-Dichloroethane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
1,2-Dichloroethane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
1,1-Dichloroethene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
1,2-Dichloroethene (total)	ND		ND		ND		ND				ND		ND		ND		ND		ND	
trans-1,2-Dichloroethene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
1,2-Dichloropropane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
cis-1,3-Dichloropropene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
trans-1,3-Dichloropropene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Ethylbenzene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
2-Hexanone	ND		ND		180		ND				320	D	ND		ND		ND		ND	
Methylene chloride	12	B	11	JB	16	B	ND				ND		ND		ND		ND		ND	
4-Methyl-2-Pentanone	ND		ND		ND		16	B			10	JB	9	JB	11	JB	12	JB	16	B
Styrene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
1,1,2,2-Tetrachloroethane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Tetrachloroethene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Toluene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
1,1,1-Trichloroethane	ND		ND		15		1	J			ND		ND		ND		ND		ND	
1,1,2-Trichloroethane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Trichloroethene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Vinyl chloride	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Xylenes (total)	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Vinyl acetate	ND		ND		250		ND				ND		ND		ND		ND		ND	
Tentatively Identified Compounds	33	J	47	J	ND		ND				ND		ND		ND		ND		ND	
Total Volatile Organic Contaminants	134	J	284		3330	J	19	J			5830	J	433	J	156	J	ND		33	J
					4146	J	422	J			7282		466	J	235		36	J	60	J
Base Neutral Compounds																				
Acenaphthene	ND		ND		1400		ND				70		ND		ND		60	J	ND	
Acenaphthylene	ND		ND		180	J	ND				ND		ND		ND		ND		ND	
Anthracene	ND		ND		1200		ND				48	J	ND		ND		110	J	ND	
Benzo(a)anthracene	ND		48	J	1800		ND				82	J	ND		ND		440		ND	
Benzo(a)pyrene	ND		51	J	1200		ND				45	J	ND		ND		370	J	ND	
Benzo(b)fluoranthene	ND		43	J	940		ND				41	J	ND		ND		310	J	ND	
Benzo(g,h,i)perylene	ND		ND		1000		ND				ND		ND		ND		430	J	ND	
Benzo(k)fluoranthene	ND		ND		890	J	ND				ND		ND		ND		300	J	ND	
bis(2-chloroethoxy)methane	ND		ND		ND		ND				ND		ND		ND		ND		ND	
bis(2-chloroethyl)ether	ND		ND		ND		ND				ND		ND		ND		ND		ND	
bis(2-ethylhexyl)phthalate	ND		56	J	280	J	ND				50	J	47	J	ND		ND		46	J
4-Bromophenyl-phenylether	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Butylbenzylphthalate	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Carbazole	ND		ND		ND		ND				ND		ND		ND		ND		ND	
4-Chloroaniline	ND		ND		ND		ND				ND		ND		ND		ND		ND	
2-Chloronaphthalene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
4-Chlorophenyl-phenylether	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Chrysene	ND		51	J	1600		ND				55	J	ND		ND		380	J	ND	
Dibenz(a,h)anthracene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Dibenzofuran	ND		ND		1000		ND				ND		ND		ND		ND		ND	
1,2-Dichlorobenzene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
1,3-Dichlorobenzene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
1,4-Dichlorobenzene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
3,3'-Dichlorobenzidine	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Diethyl phthalate	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Dimethyl phthalate	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Di-n-butyl phthalate	ND		ND		ND		ND				ND		ND		ND		ND		ND	
2,4-Dinitrotoluene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
2,6-Dinitrotoluene	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Di-n-octyl phthalate	ND		ND		ND		ND				ND		ND		ND		ND		ND	
Fluoranthene	ND		82	J	4900		68	J			180	J	ND		ND		880		ND	
Fluorene	ND		ND		1500		ND				62	J	ND		ND		50	J	ND	

Soil Boring Data Table 1
Phase III Remedial Investigation
Silverstein 500-516 Twelfth Avenue
New York, New York
5E04530

Sample Location	SB-43		SB-44		SB-45		SB-46		SB-47		SB-48		SB-48		SB-49		SB-50	
WCC Sample ID	SB43		SB44		SB45		SB46		SB47		SB48		DUPSB		SB49		SB50	
Laboratory Sample ID	2565105		2566807		2565106		2565106		2566905		2566906		2566908		2565107		2570719	
Sample Collection Date	11/10/95		11/13/95		11/10/95		11/10/95		11/13/95		11/13/95		11/13/95		11/10/95		11/15/95	
Laboratory Receipt Date	11/10/95		11/14/95		11/10/95		11/10/95		11/14/95		11/14/95		11/14/95		11/10/95		11/17/95	
Depth	7.0-7.5		5.0-5.5		6.5-7.0		7.5-8.0		3.0-3.5		5.5-6.5		5.5-6.5		5.5-6.0		6.5-7.0	
Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
Base Neutral Compounds (continued)																		
Hexachlorobenzene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Hexachlorobutadiene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Hexachlorocyclopentadiene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Hexachloroethane	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno(1,2,3-cd)pyrene	ND		ND		870	J	ND		ND		ND		ND		370	J	ND	
Isophorone	ND		ND		ND		ND		ND		ND		ND		ND		ND	
2-Methylnaphthalene	ND		ND		3300	J	ND		1000		ND		ND		ND		ND	
Naphthalene	ND		ND		24000	D	83	J	1800		ND		ND		80	J	ND	
2-Nitroaniline	ND		ND		ND		ND		ND		ND		ND		ND		ND	
3-Nitroaniline	ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Nitroaniline	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Nitrobenzene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
N-Nitroso-di-n-propylamine	ND		ND		ND		ND		ND		ND		ND		ND		ND	
N-Nitrosodiphenylamine	ND		ND		ND		ND		ND		ND		ND		ND		ND	
2-2'-oxybis(1-Chloropropane)	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	ND		ND		6400		ND		190	J	ND		ND		520		ND	
Pyrene	ND		90	J	3400		64	J	150	J	ND		ND		700		ND	
1,2,4-Trichlorobenzene	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Total Base Neutral Compounds	0	J	421	J	55660	J	215	J	3753	J	47	J	0		4980	J	48	J
BNA Tentatively Identified Compounds	1160	J	4780	J	14080		622		9060	J	3960	J	7030	J	1448	J	2290	J
Total Phenol	ND		201		2600		ND		204		166		136		ND		570	
TOTAL ORGANIC CONTAMINANTS	1327	J	5733	J	79816	J	1278	J	27129	J	5105	J	7557	J	6464	J	3001	J
INORGANICS (mg/kg)																		
Metals																		
Aluminum	8070		7260		6210		8550		3820		4290		5840		4810		8630	
Antimony	1.5	J	ND		3.0	J	1.8	J	ND		ND		ND		ND		ND	
Arsenic	0.86	J	5.3	J	29.6	J	2.9	J	1.7	J	1.5	J	1.9	J	7.3	J	2.6	J
Barium	87.5		50.1		100		102		33.5	J	27.3	J	40.2	J	186		28.9	J
Beryllium	ND		0.22	J	0.27	J	ND		0.03	J	0.10	J	0.12	J	0.10	J	0.06	J
Cadmium	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Calcium	982	J	5830		18300		4400		2630		2480		3400		10800		1480	
Chromium	13.3		13.0		22.7		17.2		9.7		8.9		12.9		8.9		8.8	
Cobalt	8.5	J	5.7	J	24.1		9.6	J	5.4	J	5.3	J	6.3	J	5.2	J	3.6	J
Copper	20.6	J	18.6	J	217	J	39.7	J	12.1	J	8.3	J	11.5	J	89.5	J	7.7	J
Iron	15500		13300		60600		16900		8830		9650		11200		10100		11900	J
Lead	7.7		59.0		1880		331		9.3		10.3		8.6		341		6.9	
Magnesium	3800		3960		5530		3630		2910		2580		3580		1980		3070	
Manganese	200		140		491		243		141		87.4		140		202		91.7	
Mercury	ND		2.4		0.50		0.14		ND		ND		ND		1.9		ND	
Nickel	14.6		14.9		33.5		16.2		11.5		12.9		15.2		13.9		11.3	
Potassium	4230	J	1130	J	1430	J	2570	J	1760	J	1260	J	1680	J	1400	J	352	J
Selenium	0.95	J	1.7		8.4		2.0		1.2		1.0		2.0		ND		ND	
Silver	0.41	J	ND		0.46	J	ND		ND		ND		ND		0.40	J	ND	
Sodium	ND		205	J	567	J	ND		ND		ND		ND		301	J	ND	
Thallium	2.0	J	2.1		3.8		2.4		ND		1.0	J	1.4	J	ND		1.9	J
Vanadium	27.3	J	19.0	J	22.5	J	24.1	J	13.0	J	13.5	J	16.8	J	14.9	J	11.8	J
Zinc	39.3		59.9		344		86.8		23.9		25.6		29.7		121		29.9	
Other Inorganic Parameters																		
Total Cyanide	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Thiocyanide	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Ammonia, Nitrogen	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Nitrate	2.08		3.58		2.19		1.89		1.84		2.32		2.80		6.02		2.42	
Sulfide	80.4		84.23		732		594		50.3		86.84		67.53		43.0		2.91	
Sulfate	ND		84.1		118		67.0		ND		169		151		158		ND	

Notes

All organic compounds are reported in µg/kg
All metals and other inorganic parameters are rep
CONC Concentration
Q Qualifier
ND Not Detected
NA Not Analyzed
J Indicates an estimated value
D Dilution

Soil Boring Data Table 1
Phase III Remedial Investigation
Silverstein 500-516 Twelfth Avenue
New York, New York
5E04530

Sample Location	SB-51		SB-51RE		SB-52	
WCC Sample ID	SB51		SB51RE		SB52	
Laboratory Sample ID	2565110		2565110		2565109	
Sample Collection Date	11/9/95		11/9/95		11/9/95	
Laboratory Receipt Date	11/10/95		11/10/95		11/10/95	
Depth	7.5-8.0		7.5-8.0		10.5-11.0	
Matrix	Soil		Soil		Soil	
	CONC	Q	CONC	Q	CONC	Q
ORGANIC COMPOUNDS (µg/kg)						
Volatile Organic Compounds						
Acetone	31		22	B	1700	JD
Benzene	2	J	2	J	840	JD
Bromodichloromethane	ND		ND		ND	
Bromoform	ND		ND		ND	
Bromomethane	ND		ND		ND	
2-Butanone	8	JB	4	JB	ND	
Carbon disulfide	ND		ND		ND	
Carbon tetrachloride	ND		ND		ND	
Chlorobenzene	ND		ND		ND	
Chloroethane	ND		ND		ND	
Chloroform	1	J	ND		ND	
Chloromethane	ND		ND		3	J
Dibromochloromethane	ND		ND		ND	
1,1-Dichloroethane	ND		ND		ND	
1,2-Dichloroethane	ND		ND		ND	
1,1-Dichloroethene	ND		ND		ND	
1,2-Dichloroethene (total)	ND		ND		ND	
trans-1,2-Dichloroethene	ND		ND		ND	
1,2-Dichloropropane	ND		ND		ND	
cis-1,3-Dichloropropene	ND		ND		ND	
trans-1,3-Dichloropropene	ND		ND		ND	
Ethylbenzene	ND		ND		23000	D
2-Hexanone	ND		ND		ND	
Methylene chloride	56	B	27	B	17	B
4-Methyl-2-Pentanone	ND		ND		ND	
Styrene	ND		ND		ND	
1,1,2,2-Tetrachloroethane	ND		ND		ND	
Tetrachloroethene	3	J	2	J	ND	
Toluene	5	J	3	J	3000	D
1,1,1-Trichloroethane	4	J	2	J	ND	
1,1,2-Trichloroethane	ND		ND		ND	
Trichloroethene	ND		ND		ND	
Vinyl chloride	ND		ND		ND	
Xylenes (total)	7	J	2	J	62000	D
Vinyl acetate	ND		ND		ND	
Tentatively Identified Compounds	135	J	218	J	2680	J
Total Volatile Organic Contaminants	252	J	282	J	93240	J
Base Neutral Compounds						
Acenaphthene	ND		NA		110000	JD
Acenaphthylene	ND		NA		25000	
Anthracene	1700	J	NA		85000	JD
Benzo(a)anthracene	9600		NA		68000	JD
Benzo(a)pyrene	12000		NA		63000	JD
Benzo(b)fluoranthene	6700	J	NA		45000	
Benzo(g,h,i)perylene	ND		NA		46000	
Benzo(k)fluoranthene	7900	J	NA		49000	
bis(2-chloroethoxy)methane	ND		NA		ND	
bis(2-chloroethyl)ether	ND		NA		ND	
bis(2-ethylhexyl)phthalate	ND		NA		ND	
4-Bromophenyl-phenylether	ND		NA		ND	
Butylbenzylphthalate	ND		NA		ND	
Carbazole	ND		NA		ND	
4-Chloroaniline	ND		NA		ND	
2-Chloronaphthalene	ND		NA		ND	
4-Chlorophenyl-phenylether	ND		NA		ND	
Chrysene	8300	J	NA		55000	JD
Dibenz(a,h)anthracene	970	J	NA		3300	J
Dibenzofuran	ND		NA		73000	JD
1,2-Dichlorobenzene	ND		NA		ND	
1,3-Dichlorobenzene	ND		NA		ND	
1,4-Dichlorobenzene	ND		NA		ND	
3,3'-Dichlorobenzidine	ND		NA		ND	
Diethyl phthalate	ND		NA		ND	
Dimethyl phthalate	ND		NA		ND	
Di-n-butyl phthalate	ND		NA		ND	
2,4-Dinitrotoluene	ND		NA		ND	
2,6-Dinitrotoluene	ND		NA		ND	
Di-n-octyl phthalate	ND		NA		ND	
Fluoranthene	12000		NA		230000	D
Fluorene	ND		NA		99000	JD

Soil Boring Data Table 1
Phase III Remedial Investigation
Silverstein 500-516 Twelfth Avenue
New York, New York
5E04530

Sample Location	SB-81		SB-81RE		SB-82	
WCC Sample ID	SB81		SB81RE		SB82	
Laboratory Sample ID	2565110		2565110		2565109	
Sample Collection Date	11/9/95		11/9/95		11/9/95	
Laboratory Receipt Date	11/10/95		11/10/95		11/10/95	
Depth	7.5-8.0		7.5-8.0		10.5-11.0	
Matrix	Soil		Soil		Soil	
	CONC	Q	CONC	Q	CONC	Q
Base Neutral Compounds (continued)						
Hexachlorobenzene	ND		NA		ND	
Hexachlorobutadiene	ND		NA		ND	
Hexachlorocyclopentadiene	ND		NA		ND	
Hexachloroethane	ND		NA		ND	
Indeno(1,2,3-cd)pyrene	11000		NA		45000	
Isophorone	ND		NA		ND	
2-Methylnaphthalene	1100	J	NA		130000	JD
Naphthalene	830	J	NA		900000	D
2-Nitroaniline	ND		NA		ND	
3-Nitroaniline	ND		NA		ND	
4-Nitroaniline	ND		NA		ND	
Nitrobenzene	ND		NA		ND	
N-Nitroso-di-n-propylamine	ND		NA		ND	
N-Nitrosodiphenylamine	ND		NA		ND	
2-2'-oxybis(1-Chloropropane)	ND		NA		ND	
Phenanthrene	6600	J	NA		360000	D
Pyrene	11000		NA		180000	D
1,2,4-Trichlorobenzene	ND		NA		ND	
Total Base Neutral Compounds	89600	J	NA		2557300	J
BNA Tentatively Identified Compounds	44100		NA		296000	
Total Phenol	850		NA		2300	
TOTAL ORGANIC CONTAMINANTS	135137	J	NA		2951520	J
INORGANICS (mg/kg)						
Metals						
Aluminum	3680		NA		9750	
Antimony	ND		NA		ND	
Arsenic	7.0	J	NA		3.4	J
Barium	80.0		NA		134	
Beryllium	0.38	J	NA		ND	
Cadmium	0.42	J	NA		ND	
Calcium	3200		NA		4220	
Chromium	5.3		NA		20.1	
Cobalt	7.5	J	NA		11.2	
Copper	27.3	J	NA		50.4	
Iron	14800		NA		20200	
Lead	84.6		NA		94.9	
Magnesium	992	J	NA		5530	
Manganese	207		NA		220	
Mercury	0.34		NA		1.5	
Nickel	13.9		NA		21.6	
Potassium	775	J	NA		6670	J
Selenium	1.3		NA		3.5	
Silver	ND		NA		0.40	J
Sodium	258	J	NA		ND	
Thallium	ND		NA		2.2	
Vanadium	10.7	J	NA		33.7	J
Zinc	112		NA		73.7	
Other Inorganic Parameters						
Total Cyanide	ND		NA		ND	
Thiocyanide	ND		NA		ND	
Ammonia, Nitrogen	ND		NA		ND	
Nitrate	2.70		NA		2.15	
Sulfide	176		NA		174	
Sulfate	ND		NA		68	

Notes:

All organic compounds are reported in µg/kg
All metals and other inorganic parameters are rep
CONC Concentration
Q Qualifier
ND Not Detected
NA Not Analyzed
J Indicates an estimated value
D Dilution

Soil Boring Data Table 2
Phase III Remedial Investigation
Silverstein 500-516 Twelfth Avenue
New York, New York
5E04530

Sample Location	SB-36	SB-37	SB-38	SB-40	SB-41	SB-44	SB-45
WCC Sample ID	SB36P	SB37P	SB38P	SB40P	SB41P	SB44P	SB45P
Laboratory Sample ID	2570711	2565112	2570710	2570708	2570709	2566904	2565113
Sample Collection Date	11/15/95	11/9/95	11/15/95	11/16/95	11/15/95	11/13/95	11/10/95
Laboratory Receipt Date	11/17/95	11/10/95	11/17/95	11/17/95	11/17/95	11/14/95	11/10/95
Depth	1.5-2.0	1.5-2.0	1.5-2.0	1.5-2.0	2.0-2.5	1.5-2.0	1.5-2.0
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q
TCL PCB Organics							
Aroclor - 1016	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1221	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1232	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1242	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1248	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1254	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1260	ND	ND	ND	ND	ND	ND	ND

Sample Location	SB-47	SB-48	SB-48	SB-50	SB-53	SB-54	SB-55
WCC Sample ID	SB47P	SB48P	DUP-P	SB50P	SB53P	SB54P	SB55P
Laboratory Sample ID	2566901	2566902	2566903	2570712	2570707	2570701	2570706
Sample Collection Date	11/13/95	11/13/95	11/13/95	11/15/95	11/16/95	11/16/95	11/16/95
Laboratory Receipt Date	11/14/95	11/14/95	11/14/95	11/17/95	11/17/95	11/17/95	11/17/95
Depth	1.5-2.0	1.5-2.0	1.5-2.0	1.5-2.0	1.5-2.0	1.5-2.0	1.5-2.0
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q	CONC Q
TCL PCB Organics							
Aroclor - 1016	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1221	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1232	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1242	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1248	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1254	ND	ND	ND	ND	ND	ND	ND
Aroclor - 1260	ND	ND	ND	ND	ND	ND	ND

Sample Location	SB-56	SB-57	SB-58	SB-59
WCC Sample ID	SB56P	SB57P	SB58P	SB59P
Laboratory Sample ID	2570702	2570703	2570705	2570704
Sample Collection Date	11/16/95	11/16/95	11/16/95	11/16/95
Laboratory Receipt Date	11/17/95	11/17/95	11/17/95	11/17/95
Depth	1.5-2.0	2.0-2.5	1.5-2.0	2.5-3.0
Matrix	Soil	Soil	Soil	Soil
	CONC Q	CONC Q	CONC Q	CONC Q
TCL PCB Organics				
Aroclor - 1016	ND	ND	ND	ND
Aroclor - 1221	ND	ND	ND	ND
Aroclor - 1232	ND	ND	ND	ND
Aroclor - 1242	ND	ND	ND	ND
Aroclor - 1248	ND	ND	ND	ND
Aroclor - 1254	ND	ND	ND	ND
Aroclor - 1260	ND	ND	ND	ND

Notes:
PCB concentrations are in µg/kg

CONC	Concentration
Q	Qualifier
ND	Not Detected

Waste Characterization Data Table 3
Phase III Remedial Investigation
Silverstein 500 - 516 Twelfth Avenue
New York, New York
5ED4530

EPA Hazardous Waste Number	Sample Location / WCC Sample ID / Lab Sample ID / Sample Collection Date / Laboratory Receipt Date / Depth / Matrix / Units	NYSDEC Hazardous Waste Regulatory Levels for Toxicity Characteristic mg/l	SB-38 SB38 2570720 11/15/95 11/17/95 8.0-8.5 Soil mg/l		SB-40 SB40 2570713 11/15/95 11/17/95 6.0-6.5 Soil mg/l		SB-41 SB41 2570716 11/15/95 11/17/95 8.5-9.0 Soil mg/l		SB-48 SB48 2565108 11/10/95 11/10/95 6.5-7.0 Soil mg/l		SB-52 SB52 2565109 11/9/95 11/10/95 10.5-11.0 Soil mg/l	
			CONC	Q	CONC	Q	CONC	Q	CONC	Q	CONC	Q
	TCLP ORGANIC COMPOUNDS											
	Volatile Organic Compounds											
DO18	Benzene	0.5	0.02	J	ND		ND		0.01	J	0.01	J
	2-Butanone	200	0.01	J	ND		ND		ND		ND	
DO19	Carbon tetrachloride	0.5	ND		ND		ND		ND		ND	
DO21	Chlorobenzene	100	ND		ND		ND		ND		ND	
DO22	Chloroform	6	ND		ND		ND		ND		ND	
DO28	1,2-Dichloroethane	0.5	ND		ND		ND		ND		ND	
DO29	1,1-Dichloroethene	0.7	ND		ND		ND		ND		ND	
DO39	Tetrachloroethene	0.7	ND		ND		ND		ND		ND	
DO40	Trichloroethene	0.5	ND		ND		ND		ND		ND	
DO43	Vinyl chloride	0.2	ND		ND		ND		ND		ND	
	Semi-Volatile Organic Compounds											
	2-Methylphenol	200	ND		ND		ND		ND		ND	
	3+4-Methylphenol	200	ND		ND		ND		ND		ND	
DO30	2,4-Dinitrotoluene	0.13	ND		ND		ND		ND		ND	
DO32	Hexachlorobenzene	0.13	ND		ND		ND		ND		ND	
DO33	Hexachlorobutadiene	0.5	ND		ND		ND		ND		ND	
DO34	Hexachloroethane	3	ND		ND		ND		ND		ND	
DO36	Nitrobenzene	2	ND		ND		ND		ND		ND	
DO37	Pentachlorophenol	100	ND		ND		ND		ND		ND	
DO38	Pyridine	5	ND		ND		ND		ND		ND	
DO41	2,4,5-Trichlorophenol	400	ND		ND		ND		ND		ND	
DO42	2,4,6-Trichlorophenol	2	ND		ND		ND		ND		ND	
DO27	1,4-Dichlorobenzene	7.5	ND		ND		ND		ND		ND	
	Herbicides											
	2,4-D	10	ND		ND		ND		ND		ND	
	2,4,5-TP (Silvex)	1	ND		ND		ND		ND		ND	
	Pesticides											
	Chlordane	0.03	ND		ND		ND		ND		ND	
	Endrin	0.02	ND		ND		ND		ND		ND	
	Heptachlor & Heptachlor epoxide	0.008	ND		ND		ND		ND		ND	
	gamma-BHC (Lindane)	0.4	ND		ND		ND		ND		ND	
	Methoxychlor	10	ND		ND		ND		ND		ND	
	Toxaphene	0.5	ND		ND		ND		ND		ND	
	TCLP INORGANIC COMPOUNDS											
	Metals											
DO04	Arsenic	5	0.010		0.0068	J	0.011		0.052		0.027	
DO05	Barium	100	0.29		0.36		0.86		1.2		1.4	
DO06	Cadmium	1	ND		0.0011	J	ND		ND		0.00084	J
DO07	Chromium	5	ND		ND		ND		ND		ND	
DO08	Lead	5	0.0034		0.040		ND		0.13		3.5	
DO09	Mercury	0.2	ND		ND		ND		0.00020		ND	
DO10	Selenium	1	0.010		0.0080		0.017		0.047		0.013	
DO11	Silver	5	0.0046	J	0.0029	J	0.0034	J	0.0036	J	0.0020	J
	RCRA CHARACTERISTICS											
	pH (Standard Units)	<2 or >12	6.85		5.15		6.16		7.85		7.75	
	corrosivity, inch/Year	0.25 in/yr	ND		ND		ND		ND		ND	
	Ignitability, Degrees F	<140 °F	212	E	212	E	212	E	212	E	212	E
	Reactive Cyanide		ND		ND		ND		ND		ND	
	Reactive Sulfide		ND		ND		ND		ND		ND	

Notes:

MDL	Method Detection Limit
CONC	Concentration
Q	Qualifier
TCLP	Toxicity Characteristic Leaching Procedure
RCRA	Resource Conservation and Recovery Act
ND	Not Detected
J	Indicates an estimated value
E	Ignition temperature is above 212°F

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June 6, 1996
5E04530

Mr. Mike Mulqueen
NYSDEC
47-40 21st Street
Long Island City, New York 11101

Re: Results of 5/14/96 Groundwater Sampling and Completion of Project at Silverstein 42nd Associates L.P. 500-516 Twelfth Avenue, NY, NY

Dear Mr. Mulqueen:

Thank you for speaking to us recently with respect to the Silverstein 42nd Associates, L.P. property at 500-516 Twelfth Avenue in New York City. During our conversation, you requested that monitoring wells MW-2 and MW-4, which are located on the west side of the property (Figure 1 attached), be resampled for volatile organics. The objective was to determine if the elevated benzene concentrations, particularly at MW-2 associated with the tank removals, had decreased over the last 12 months.

We sampled monitoring wells MW-2 and MW-4 on May 14, 1996 and had the samples analyzed for the 14 volatile organic compounds as required in the August 1992 STARS Memo #1. The samples were analyzed by Nytest Environmental, Inc. of Port Washington, New York. A copy of the laboratory report is submitted with this letter as Attachment 1.

The results of the analysis are very positive. The attached table summarizes exceedances of the NYSDEC water quality regulations found in this and previous sampling events for MW-2 and MW-4. The table illustrates that there were no exceedances in the May 14, 1996 MW-2 sample and minor exceedances for benzene and naphthalene in MW-4 that are similar to the previous sampling event.

The results from MW-2 illustrate that the former exceedances of benzene, ethylbenzene, naphthalene and xylene associated with the former tanks has decreased to non-detectable levels. Based on our previously submitted reports to the NYSDEC and the last round of sampling, we believe a no further action letter is appropriate for this site. Therefore, we are requesting that your office issue Silverstein 42nd Associates L.P. a no further action letter and close this site accordingly. The timing of this no further action letter is critical. Silverstein is in the last stage of obtaining financing for this project and it is imperative that we receive the no further action letter immediately so that construction may begin.

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As requested, a Health and Safety Plan will be developed prior to the startup of construction at the site.

Thank you in advance for your cooperation with respect to this matter. If you have any questions, or would like to meet with us, please call Andy Ciancia (201) 812-6857 or Gordon Jamieson at (201) 812-6834. We look forward to your positive response to our request.

Sincerely,

Gordon R. Jamieson
Chief Hydrogeologist

Andrew J. Ciancia
Vice President

cc: Joe Ritorto, Silverstein
Allan Waller, Silverstein
Richard Leland, Rosenman & Colin
Daniel Lavoie, Rosenman & Colin

Groundwater Sampling Summary, Compounds Exceeding NYSDEC Groundwater Quality Criteria
Silverstein Properties, Inc.
500-516 Twelfth Avenue
New York, New York 10036
Project No. 5E04530

SAMPLE NO. SAMPLE ID SAMPLE COLLECTION DATE MATRIX UNITS	NYSDEC Water Quality Regulations Title 6, Chapter X Parts 700 - 705* ppb	MW-2 2328801 3/10/95 Water ppb CONC Q	MW-2 2388009 5/18/95 Water ppb CONC Q	MW-2 2755701 5/14/96 Water ppb CONC Q	MW-4 3/10/95 Water ppb CONC Q	MW-4 2388002 5/17/95 Water ppb CONC Q	MW-4 2755702 5/14/96 Water ppb CONC Q
ORGANIC COMPOUNDS							
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.7	32	58	NE	NI	8 J	15
Ethylbenzene	5	7.7	12	NE	NI	NE	NE
Naphthalene	10	66	72	NE	NI	NE	7
Xylene (Total)	5	NE	7 J	NE	NI	NE	NE

Notes:
NE = No exceedence of NYSDEC Water Quality Regulations
NI = Not installed during this sampling event
conc = concentration
Q = Qualifier
J = Indicates an estimated value
ppb = parts per billion

Methodologies: Volatile organic compounds by EPA method 8021

* NYSDEC Water Quality Regulations Title 6, Chapter X Parts 700 - 705 were obtained from STARS Memo #1.

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June 21, 1996

Mr. Mike Mulqueen
NYSDEC
47-40 21st Street
Long Island City, New York 11101

Re: Fate and Transport Calculations to Determine Benzene Concentrations in Groundwater as it Enters the Hudson River
Silverstein 42nd Street Development Site

Dear Mr. Mulqueen:

Thank you for speaking to me last week. During our conversation, you indicated that before the NYSDEC could give final closure approval for the Silverstein 42nd Street Associates L.P. Site that a mini risk assessment (receptor analysis) needed to be performed. You indicated that if the assessment showed that there was no impact on the Hudson River that you would give verbal approval followed by a closure approval letter. We have performed the assessment and the results are included in this letter report. The assessment illustrates that the groundwater from the site is not impacting the Hudson River. We look forward to your verbal and written closure approval for the Site.

Background

At the request of NYSDEC, an additional round of groundwater sampling was performed on May 14, 1996 for volatile organics at monitoring wells MW-2 and MW-4 located at the Silverstein 42nd Street Associates L.P. Site. The results showed that the only exceedance of NYSDEC Water Quality Regulations (Title 6, Chapter X, Parts 700-705) was benzene (15 ppb) in MW-4. The NYSDEC requested that an assessment be performed to illustrate the impact of the benzene, if any, on the Hudson River. The Hudson River is regarded as Class I saline surface water in the area of interest (6NYCRR Part 864), and as such has a NYS Ambient Water Quality Standard and Guidance Value of 6.0 ppb for benzene (Rev. 10/93). An analytical multidimensional fate and transport model (Domenico, 1987) was utilized to model the potential impact of the benzene on the Hudson River.

Model Assumptions

The conservative assumptions made to run the model include:

- continuous contaminant source
- one-dimensional advection

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- three-dimensional dispersion (longitudinal, transverse and vertical)
- the vertical dispersion is constrained to one direction (downward) because of the water table
- first-order decay of the benzene
- the benzene plume at the east edge of the site is considered to be 160 ft wide (the approximate width of the site) and 50 ft in vertical extent (saturated thickness of overburden)

Model Parameters

The model input parameters and the source of the parameter data is as follows:

- hydraulic conductivity (K) 1 x 10^{-3} cm/sec calculated from grain size analysis information, boring logs and field observations
- porosity (n) 30% from Freeze and Cherry 1979
- gradient $\left(\frac{dh}{dl}\right)$ 0.006 from site water level measurements
- first order decay coefficient for benzene (λ) 9.63E-04 from Howard et al. 1991
- travel distance (x) 260 feet from New York City map
- longitudinal dispersion coefficient (α_x) 26 feet (1/10 of travel distance) from Gelhar 1992
- transverse dispersivity coefficients (α_y and (α_z) 2.6 feet (1/100 of travel distance) and 0.26 feet (1/1000 of travel distance) respectively from Gelhar 1992

Model Results

The model parameters were input into the analytical solution which is illustrated in Table 1 as equation 1. This is the analytical solution for the advection dispersion equation which is illustrated in Table 1 as equation 2.
Equation 1 was solved for y=z=0 which represents the plume centerline which is the maximum concentration of the benzene at any distance x from the source i.e., highest possible concentration to reach the Hudson River. The input parameters and the resulting concentration of benzene entering the Hudson River for the next 50 years are represented in Table 2. The concentration of benzene entering the Hudson River over time is also depicted in Figure 1. The table and figure illustrate that under the conservative case modeled that the maximum concentration of benzene reaching the Hudson River is approximately 0.5 ppb which is well below the surface water quality standard of 6.0 ppb. Therefore, the benzene at the site will not impact the quality of the Hudson River.

Based on this information, no further action is needed at the site and we are requesting that your office issue a verbal no further action and issue Silverstein 42nd Associates L.P. a no further action letter and close this site accordingly.

Thank you in advance for your cooperation with respect to his matter. If you have any questions, or would like to meet with us, please call Gordon Jamieson at (201) 812-6834. We look forward to your positive response to our request.

Sincerely,

Gordon R. Jamieson
Chief Hydrogeologist

Andrew L. Ciancia
Vice President

cc: Joe Ritorto, Silverstein
Allan Waller, Silverstein
Richard Leland, Rosenman and Colin
Daniel Lavoie, Rosenman and Colin

REFERENCES

Domenico, P.A. 1987. An analytical model for multidimensional transport of a decaying contaminant species: Journal of Hydrology, no. 91. pp49-58.

Freeze, R.A. and Cherry, J.A. 1979. Groundwater: Prentice Hall, Englewood, Clifts, New Jersey, 604pp.

Howard, P.H., Boethling, R.S., Jarvis, W.F., Meylan, W.M., and Michalenko, W.M. 1991. Handbook of Environmental Degradation Rates: Lewis Publishers, Chelsea, Michigan. 725pp.

Gelhar, L.W., Welty, C., and Rehfeldt, K.R. 1992. A critical review of data on field-scale dispersion in aquifers: Water Resources Research, vol. 28, no. 7, pp1955-1974.

Table 1
Advection-Dispersion with First-Order Decay Equation and Solution
Silverstein 42nd Street Development
New York, New York

Equation 1
Analytical solution for mutidimensional transport of a decaying dissolved contaminant (Domenico, 1987):

$$C(x,y,z,t) = \frac{C}{8}\exp\left\{\frac{x}{2\alpha_x}\left[1-\left(\frac{4\lambda\alpha_x}{v}\right)^{0.5}\right]\right\} erfc\left\{\frac{\left[x-vt\left(1+\frac{4\lambda\alpha_x}{v}\right)^{0.5}\right]}{2(\alpha_x vt)^{0.5}}\right\}\left\{erf\left[\frac{\left(y+\frac{Y}{2}\right)}{2(\alpha_y)^{0.5}}\right]-erf\left[\frac{\left(y-\frac{Y}{2}\right)}{2(\alpha_y)^{0.5}}\right]\right\}\left\{erf\left[\frac{\left(z+\frac{Z}{2}\right)}{2(\alpha_z)^{0.5}}\right]-erf\left[\frac{\left(z-\frac{Z}{2}\right)}{2(\alpha_z)^{0.5}}\right]\right\}$$

Equation 2
The advection-dispersion equation may be represented by:

$$\frac{\partial C}{\partial t}+v\frac{\partial C}{\partial x}-D_x\frac{\partial^2 C}{\partial x^2}-D_y\frac{\partial^2 C}{\partial y^2}-D_z\frac{\partial^2 C}{\partial z^2}+\lambda C=0$$

Notes
Equation 1 is solved for y = z = 0 and represents the plume centerline which is the maximum concentration of the contaminant.
The solution assumes:
- a continuous source
- first-order decay
- dispersion along the x-axis constrained to a single direction (water-table scenario)

References

Domenico, P.A. 1987. An analytical model for multidimensional transport of a decaying contaminant species: Journal of Hydrology, no. 91. pp49-58.
Howard, P.H., Boethling, R.S., Jarvis, W.F., Meylan, W.M., and Michalenko, W.M. 1991. Handbook of Environmental Degradation Rates: Lewis Publishers, Chelsea, Michigan. 725pp.
Gelhar, L.W., Welty, C., and Rehfeldt, K.R. 1992. A critical review of data on field-scale dispersion in aquifers: Water Resources Research, vol. 28, no. 7, pp1955-1974.

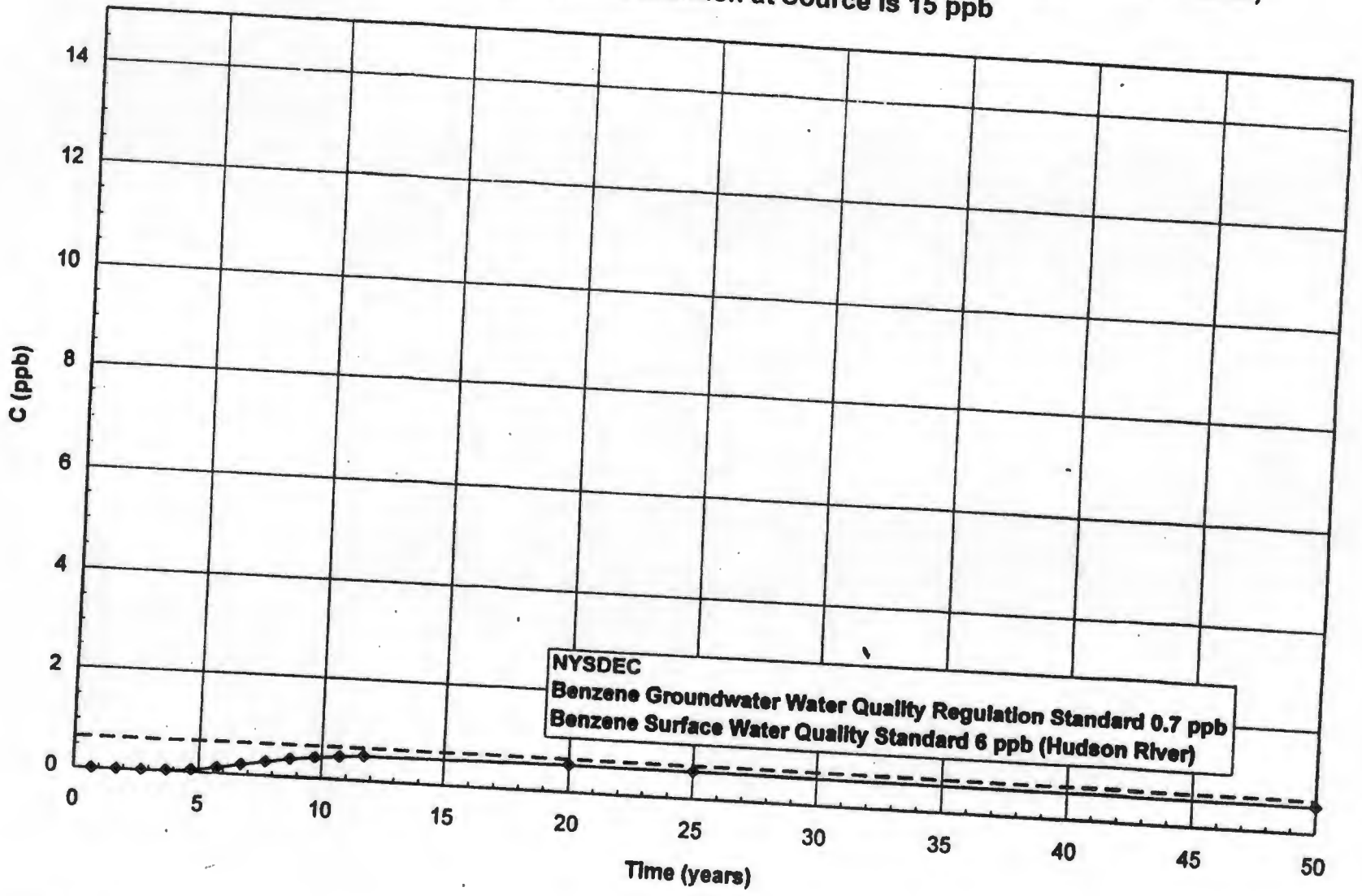
Table 2
Contaminant Concentration in Groundwater Discharging to Hudson River
Silverstein 42nd Street Development
New York, New York

One-dimensional Advection Along Plume Centerline with Multi-dimensional Hydrodynamic Dispersion and First-Order Decay

C	C_o	x	V	t	λ	a	exp(a)	b	erfc(b)	c	erf(c)	d	erf(d)	α_x	α_y	α_z	Y	Z
0	15.0	260	5.70E-02	255.68	9.63E-04	-3.30081	0.036853	6.057	0.00E+00	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
7.29E-07	15.0	260	5.70E-02	620.93	9.63E-04	-3.30081	0.036853	3.317	2.72E-06	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.00055	15.0	260	5.70E-02	986.18	9.63E-04	-3.30081	0.036853	2.160	2.05E-03	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.009883	15.0	260	5.70E-02	1351.43	9.63E-04	-3.30081	0.036853	1.476	3.68E-02	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.045984	15.0	260	5.70E-02	1716.68	9.63E-04	-3.30081	0.036853	0.967	1.71E-01	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.11336	15.0	260	5.70E-02	2081.93	9.63E-04	-3.30081	0.036853	0.567	4.23E-01	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.198096	15.0	260	5.70E-02	2447.18	9.63E-04	-3.30081	0.036853	0.236	7.39E-01	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.282595	15.0	260	5.70E-02	2812.43	9.63E-04	-3.30081	0.036853	-0.046	1.05E+00	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.355408	15.0	260	5.70E-02	3177.68	9.63E-04	-3.30081	0.036853	-0.297	1.33E+00	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.412342	15.0	260	5.70E-02	3542.93	9.63E-04	-3.30081	0.036853	-0.519	1.54E+00	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.453955	15.0	260	5.70E-02	3908.18	9.63E-04	-3.30081	0.036853	-0.722	1.69E+00	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.482927	15.0	260	5.70E-02	4273.43	9.63E-04	-3.30081	0.036853	-0.907	1.80E+00	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.535532	15.0	260	5.70E-02	7305.00	9.63E-04	-3.30081	0.036853	-2.072	2.00E+00	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.536374	15.0	260	5.70E-02	9131.25	9.63E-04	-3.30081	0.036853	-2.596	2.00E+00	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50
0.536438	15.0	260	5.70E-02	18262.50	9.63E-04	-3.30081	0.036853	-4.462	2.00E+00	1.538	9.70E-01	3.041	1.00E+00	26	2.6	0.26	160	50

C Final concentration; function of time and distance from source along plume centerline
C_o Initial concentration
x Distance from source
V Average linear groundwater velocity ($V = K/n_e \, dh/dl$) ($K = 1x10^{-3}$ cm/s, $n_e = 0.3$, $dh/dl = 0.006$)
t Time
λ First-order decay coefficient (ln 2/ half-life)(Howard et al., 1991)
α_x Dispersion coefficient, longitudinal (1/10 of travel distance (from Gelhar, 1992)
α_y Dispersion coefficient, transverse (1/100 of travel distance (from Gelhar, 1992)
α_z Dispersion coefficient, transverse (1/1000 of travel distance (from Gelhar, 1992)
Y Width of plume
Z Height of plume

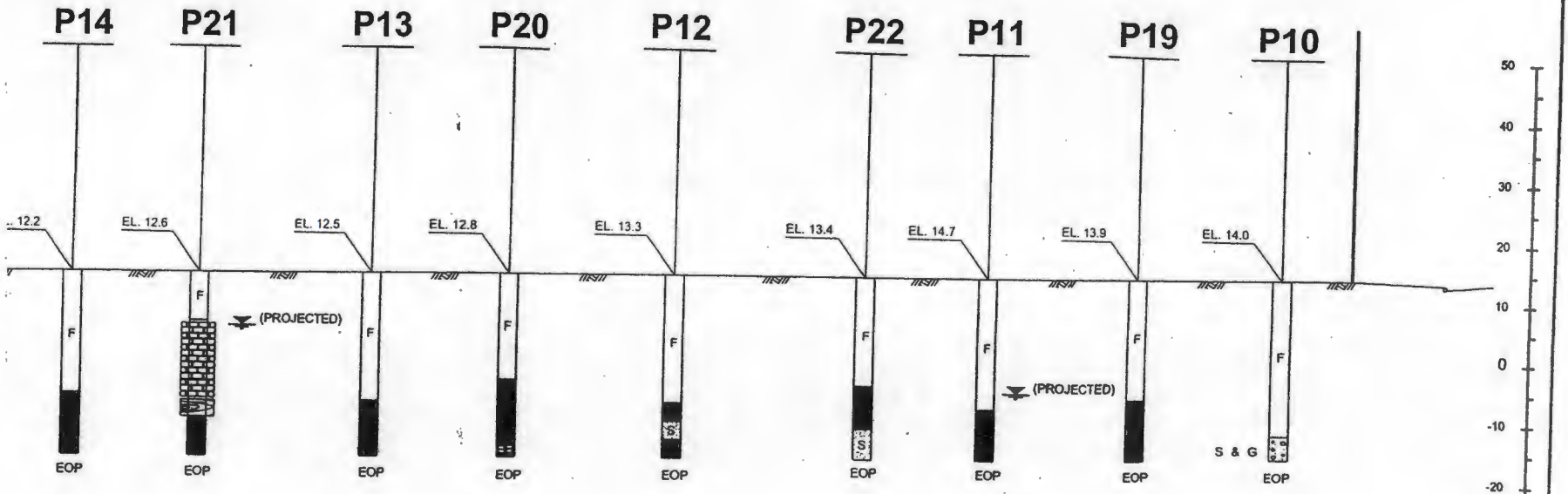
Concentration Along Plume Centerline at 260 feet from Site (Bank of Hudson River)
Initial Concentration at Source is 15 ppb



6/20/9611:57 AM
I:\projects\5e04530\hydro\C_F&T0.XLS plot-C v time

APPROXIMATE BUILDING LIMITS

11TH AVE.



F UNCONTROLLED FILL

CLAY

SILT

ORGANIC MATERIALS

BRICK

WOOD

BUILDING LIMITS

NOTE: FOR BORING LOG KEY SEE LS-1

Langan
Engineering and Environmental Services

New York, NY Elmwood Park, NJ New Haven, CT Doylestown, PA Miami, FL

RIVER PLACE II

SECTION E

NEW YORK NEW YORK

PROJ. NO:	SCALE	DATE	FIG.
1568902	1" = 20'	7/25/2000	9

REPORT

HUMAN HEALTH AND ENVIRONMENTAL RISK EVALUATION

Prepared for
Silverstein 42nd Associates, L.P.
500-516 Twelfth Avenue
New York, NY 10036

August 19, 1996

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1.0 RECEPTOR AND EXPOSURE PATHWAY ANALYSIS

1.1 INTRODUCTION

This report summarizes the results of a human health and environmental risk evaluation for the Silverstein 42nd Associates, L.P. site at 500-516 Twelfth Avenue in New York, New York (42nd Street Site). This study was performed to evaluate the risk to human health and the environment associated with soil and groundwater contaminants at the site. The study examines current risks and future risks, if any, after development of the site.

This report presents an evaluation of potential pathways for exposure to contaminants of concern from the 42nd Street Site to identify those pathways which could contribute to significant risks to human health or the environment. Exposure pathways are considered in the context of a site conceptual exposure model (SCEM) which describes potential links between contaminant sources and receptors. This analysis considers potential exposures to contamination on the site, and potential transport of chemicals from the site to the off-site environment.

Four elements must be present in order for a contaminated site to pose a threat to human health (or the environment in general):

- a source of contamination and release mechanism,
- contaminant transport from the source, through any environmental medium,
- a person, or group of people, who may be exposed to contamination (termed receptors),
- a point of contact, or exposure route, for contaminants to be taken in by the receptor (e.g., through ingestion or inhalation).

The attached figure presents the SCEM of these potential "pathways" which could result in human exposure. The purpose of this conceptual model is to consider all potentially significant exposure pathways, which can be used to guide the development alternatives for

eliminating or reducing potential exposures to acceptable levels. Section 1.2 briefly summarizes potential exposure pathways for contamination at the 42nd Street Site. Section 2.0 presents a qualitative evaluation of the effectiveness of planned redevelopment of the site in reducing or eliminating exposures.

1.2 EXPOSURE PATHWAYS

1.2.1 Contaminant Sources

Sources of contamination at the 42nd Street site include:

- Contaminated soils, surface and subsurface, present over portions of the site, resulting from past storage of fuel oils for underground storage tanks (USTs), and former manufactured gas plant (MGP) operations.
- Residual contamination of groundwater from the same sources

Additional details concerning the distribution of contamination at the site can be found in previous reports on site conditions, including:

- Underground Storage Tank Closure Report - July 1995
- Phase I and Phase II Environmental Investigation Report - July 1995
- Analytical Results of Soil Delineation Sampling - August 1995
- Phase III Environmental Investigation Report - January 1996
- Analytical Results of May 1996 Groundwater Sampling - June 1996
- Fate and Transport Calculations of Benzene Concentrations Entering Hudson River - June 1996

1.2.2 Receptors

Populations at or near the site have the potential to become exposed to site contaminates, and thus were considered as potential receptors. These populations include:

- Current (or future) site workers, who are (or will be) present at the site on a routine basis.
- Construction workers at the site, who could encounter contaminants on a short-term basis during construction activities such as excavation of soil.
- Local residents (current or future), who could be exposed to contaminants on-site or via off-site contaminant migration in air, surface water, or groundwater.
- Site visitors or trespassers.
- Recreational users of the Hudson River.

Figure 1 illustrates the potential site specific exposure pathways which could link contaminant sources, receptors, and exposure routes. Potential pathways and routes of exposure of these receptors are considered below.

1.2.3 Exposure Pathways - Surface Soils

Exposure to contaminants during current or future conditions in surface soil theoretically may occur through three primary pathways: direct contact, airborne transport, or surface water transport. Potential exposures during construction or maintenance activities are considered in Section 1.2.4 below (subsurface soil).

1.2.3.1 Direct Contact

In general, the most significant exposures to surface soil occur via direct contact with soils, whereby contaminants may enter the body directly through the skin (dermal contact), or through the mouth (oral ingestion).

Current Conditions

Under current conditions, no significant exposures to surface soils are expected via direct contact, since the Site is completely paved and used as a parking lot.

Future Conditions

No significant exposures to surface soils via direct contact are expected after redevelopment of the Site. Redevelopment plans call for coverage of the majority of the property by buildings, which will preclude soil contact. In landscaped areas which will not be covered by buildings, the upper two feet of surficial soils will be removed, and replaced with two feet of clean soil, removing any potential contaminated surficial materials, and providing a buffer to prevent contact with underlying materials.

1.2.3.2 Airborne Transport

Theoretically, site workers and local off-site residents could become exposed to contamination in surface soils via airborne dispersion of fugitive dust (airborne soil particles) or volatile organic vapors volatilized from the soil. However, the current pavement cap effectively eliminates the potential for substantial dust generation or volatilization, and the proposed redevelopment has been designed to maintain an effective cover. In addition, available site characterization data indicate that contamination is primarily observed at 5 feet or greater below grade, further reducing the potential for airborne release.

1.2.3.3 Surface Water Transport

Contaminants in surface soils theoretically could migrate off-site via surface water runoff, either dissolved or as suspended particulate matter. Surface water runoff drains to the Hudson River. Any low levels of contamination in runoff would enter the river system, contributing to the general loading in the river due to urban runoff. The current pavement cap, and future building/soil cover on the site effectively eliminate the potential for substantial contaminant migration via runoff.

1.2.3.4 Summary - Surface Soils

Potential exposure pathways for surface soil at the site are not significant for current conditions, or after the site is redeveloped. As discussed below, exposures to soil could occur

for site workers or construction workers engaged in maintenance work or other activities which may result in direct contact with surface and subsurface soils.

1.2.4 Exposure Pathways - Subsurface Soils

Because the site is currently capped by asphalt pavement, and will be covered by buildings or clean soil in the future, no routine exposure to contaminants in subsurface soil is expected. The primary potential pathways for exposure to subsurface soils could occur through potential future construction or maintenance activities which would disturb subsurface (and surface) soils, or via leaching to groundwater and subsequent transport of dissolved contaminants.

1.2.4.1 Direct Contact

Direct contact exposure (ingestion and dermal contact) could occur to future construction or maintenance workers, if appropriate protection is not in place. No other populations are expected to have significant exposure to subsurface soil.

1.2.4.2 Airborne Transport

Construction workers could be exposed to airborne contamination (volatile organics or fugitive dust) during construction activities, if proper protection is not employed. Depending on the scope of construction activities, it is also possible that other site workers or local residents could be exposed to airborne vapors or dust, if proper precautions are not employed.

1.2.4.3 Leaching

Rain water infiltrating and percolating through subsurface (and surface) soil may dissolve contaminants present in the soil, carrying contaminants to groundwater. Groundwater transport and potential exposure pathways are discussed further in Section 1.2.5.

1.2.4.4 Summary - Subsurface Soils

Potential exposure to contaminants in subsurface soil would generally be limited to future construction or maintenance workers who may disturb soils during excavation. Airborne transport of contaminants during uncontrolled construction activities could also result in airborne exposure to site workers or local residents. Leaching through subsurface soils could contribute to contaminant loading in groundwater.

Disturbance of soils during construction is expected to be quite limited, since buildings will be constructed on grade. Limited areas will be excavated for placement of elevator shafts. Soils in these areas were characterized during site investigations, and no hazardous wastes were found. In addition, shallow soils (2 foot depth) will be excavated in future landscaped areas outside of the building footprint. It is also possible that future maintenance activities (e.g., for utility maintenance or landscaping) will result in localized, short-term soil excavations. Proper controls, as specified in site-specific health and safety guidelines, should be implemented during construction and maintenance activities which may disturb potentially contaminated soils, to reduce exposure to workers. In addition, routine dust control procedures should be implemented during construction to limit generation of fugitive dust.

1.2.5 Groundwater Related Pathways

The primary potential exposure route of concern for groundwater contamination is through use of groundwater as a potable water supply. Humans who use groundwater could be exposed by drinking water (ingestion) or bathing and showering (direct contact or inhalation of volatile chemicals). These potential exposure pathways are not significant for the 42nd Street site because there are no know users of groundwater in the vicinity of the site. Manhattan is served by a public water supply and no future use of groundwater as a potable water supply is anticipated.

Due to the shallow groundwater table at the site, some incidental exposure to groundwater could occur to construction or maintenance workers if they excavate soils into the water

table. If this occurs, exposure could occur via dermal contact or inhalation of volatile chemicals. As is the case for surface and subsurface soils, provision of proper controls during construction activities may be required to prevent exposure to site contaminants in groundwater during construction and maintenance activities.

Leaching of contaminants from unsaturated soils to the groundwater may occur in areas which are not paved or covered with buildings, thus allowing infiltration of rainfall into soils. In addition, leaching could occur in areas where leaking sewers or water lines exfiltrate into unsaturated soils. Residual contaminants adsorbed to soils in the saturated zone may also leach into groundwater. Groundwater at the site discharges to the Hudson River. The potential impact of this discharge is minimal as discussed in Section 1.2.6 below.

1.2.5.1 Summary - Groundwater

No substantial exposures to contaminated groundwater are expected because there are no receptors; the site vicinity is supplied with public water and no potable water supply wells are located in the area. Contaminated groundwater represents a potential source of contamination to the Hudson River. As discussed below, this impact on the river is not significant.

1.2.6 Surface Water Pathways

As discussed above, contaminants from the site may enter the Hudson River through discharge of groundwater to the river. The Hudson River in the vicinity of the site is classified as a Class I saline surface water, and as such, is not considered a potential source of potable water supply.

Therefore, potential exposures to humans would likely be limited to recreational use of the river, primarily for boating in this reach of the Hudson. Thus the potential for substantial human exposure to contaminants from the site via surface water is extremely limited.

At the request of NYSDEC, WCC evaluated the potential impacts of the site on water quality in the Hudson River. This analysis considered the potential for the site to result in exceedances of water quality standards developed for the protection of human health and aquatic resources. This evaluation, documented in a June 21, 1996 letter report from G. R. Jamieson and A. J. Ciancia of WCC to M. Mulqueen of NYSDEC, demonstrated that the 42nd Street site will not have a significant impact on water quality in the Hudson River. Only one contaminant found in groundwater at the site (benzene) was found near the site boundary in concentrations that indicated potential impact to water quality. Extremely conservative modeling was conducted to estimate the flux of benzene from the site to the river. The results of the modeling showed that benzene concentrations in groundwater discharging from the site to the river are expected to be less than one-tenth of the surface water quality standard. Thus, no adverse impact from the site on aquatic biota or human health via surface water exposure is expected.

1.2.6.1 Summary - Surface Water

No substantial exposure to humans or aquatic resources is expected to result from discharges from the site to surface water (the Hudson River).

2.0 CONCLUSIONS

2.1 ROUTINE EXPOSURES

2.1.1 Soil

No significant routine exposures to residual contamination are expected after redevelopment of the 42nd Street Site. After redevelopment, most of the Site will be covered with buildings constructed at grade. The buildings will provide an effective cap on these portions of the Site. For portions of the site outside of the building footprint, the upper two feet of soil will be removed, and replaced with two feet of clean soil. These measures will prevent routine exposures to site workers or residents to residual contaminants in underlying soils.

2.1.2 Groundwater

Groundwater in the vicinity of the Site is not used as a potable water supply, and is not expected to be used in the future, since all of Manhattan is served by a public water supply. Therefore, no exposures to residual groundwater contamination is expected.

2.1.3 Surface Water

Cleanup activities already completed at the Site (removal of USTs and fuel oil residuals) have greatly reduced the potential for the Site to impact surface water (the Hudson River). The proposed redevelopment of the Site will effectively cap/cover the Site, preventing residual contamination of surface water runoff. Based on contaminant transport modeling, migration of groundwater from the site to the Hudson River will not adversely impact water quality in the river.

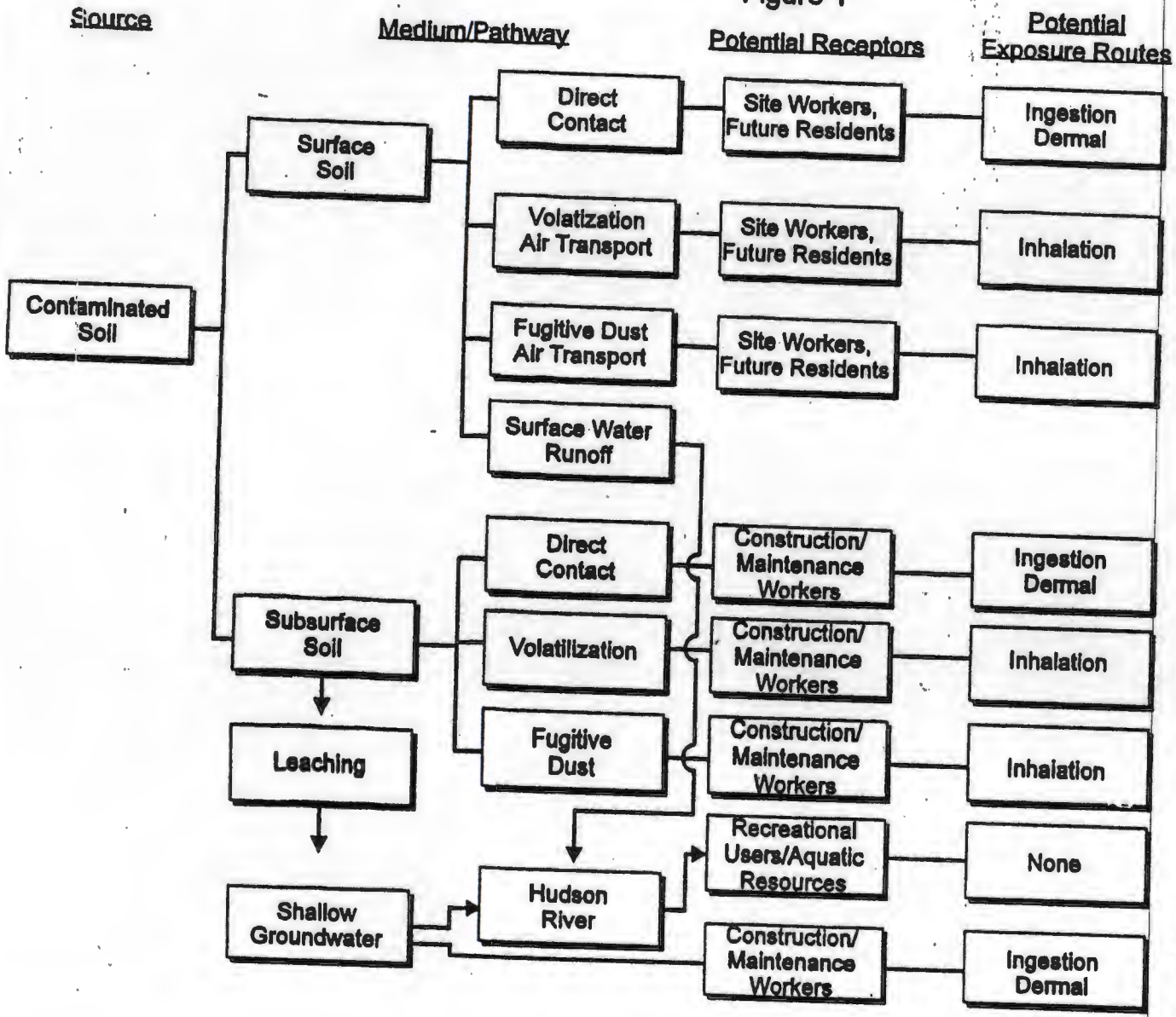
2.1.4 Air

The proposed redevelopment of the Site will provide an effective cap/cover which will eliminate the potential for fugitive dust generation. Because the buildings will be constructed at grade, there is no potential for accumulation of volatile organic vapors in basements.

2.2 CONSTRUCTION/MAINTENANCE ACTIVITIES

Occasional exposure to subsurface contamination could occur during construction activities, and during occasional future maintenance activities, such as utility repair, which could require subsurface excavation. These activities could result in exposure of workers to soil via direct contact or ingestion, inhalation of fugitive dust or vapors, or dermal contact with groundwater. Compliance with site-specific health and safety guidelines during activities which may disturb contaminated subsurface soils will prevent significant worker exposure during these activities. Generation of fugitive dust during construction could result in airborne transport of contaminated soil particles to the areas downwind of the Site. Routine dust control procedures during construction will minimize any potential for exposure via this pathway.

SILVERSTEIN 42ND ASSOCIATES, L.P.
42ND STREET SITE
POTENTIAL RECEPTORS/EXPOSURE PATHWAYS
Figure 1



Woodward-Clyde

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

EDISION PARKING LOT
500-516 12TH AVENUE
NEW YORK, NEW YORK

Prepared For:

THE BANK OF NEW YORK

OCTOBER 6, 1998

Job Number - 23581-030-152

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FIGURES

Figure:

APPENDICES

Appendix:

EXECUTIVE SUMMARY

This report provides the results of Dames & Moore's Phase I Environmental Site Assessment (ESA) conducted for the Edison Parking Lot at 500-516 12th Avenue in New York, New York. The subject property consists of an approximate 3.5 acre paved parking lot with an approximate 400 square-foot building located on the northern portion of the site. Of these 3.5 acres, almost all of the property is covered by asphalt pavement.

The property is currently owned by Silversteen 42nd Associates. The property is currently used as a guarded parking lot. Prior uses of the property included a coal gasification plant and a railroad freight depot. A review of aerial photographs and Sanborn fire insurance maps indicate that the subject site has been developed since at least 1890. Previous environmental investigations identified soil and groundwater contamination at the site. Some contaminated soil was removed during removal of USTs near the northwest corner. However the property still has known soil and groundwater contamination.

The soil was analyzed for PCBs and RCRA Characteristics Waste because of the site's past use as a Manufactured Gas Plant. These results did not show any evidence of PCBs or characteristics of hazardous waste. However, the remaining soil and groundwater is contaminated with several volatile and semi-volatile organic compounds indicative of petroleum contamination. According to the NYSDEC divisions of Hazardous Waste Remediation and Spills Management, the case was closed and neither division required further remedial action in 1996. However, the NYSDEC stated that additional actions would be required for any future disturbance, excavation, or removal of soil from the site. Materials removed from the site must be considered a non-hazardous industrial waste and a Part 364 permit must be obtained for transportation and disposal. In addition, a site specific health and safety plan and health risk evaluation must be prepared and the NYC Department of Health will need to be involved in the project.

The subject site lies within the Atlantic Coast Lowland physiographic province and is approximately 10 feet above mean sea level. Bedrock geology in the area consists of the

Manhattan Formation of the Trenton Group. The age of this bedrock is Paleozoic. The depth to bedrock is approximately 47.5 feet below grade. The overburden is classified as glacial till and the thickness ranges from one to fifty meters near the site. The closest surface water to the subject property is the Hudson River, which is less than one-eighth mile west of the subject property and flows to the south. Based on the topographic gradient and previous investigations, groundwater is expected to flow west toward the Hudson River.

Drinking water and sanitary sewer services available to the subject property are provided the City of New York. Electricity is supplied by the Consolidated-Edison Power Company.

There were no hazardous substances or hazardous wastes stored, used, or generated at the subject property at the time of the site visit. No electrical components were observed during the site visit which were suspected of containing PCBs.

No pits, ponds, or lagoons were observed on the subject property at the time of the site reconnaissance.

A review of environmental databases was conducted and six active upgradient LUST sites were identified within one-half mile of the subject site. The subject property was identified as a large quantity generator of hazardous waste, although current operations do not involve generating hazardous waste.

Dames & Moore believes that there is an identified environmental risk for the property because of the contamination of the soil and groundwater at the site. However, the soil has been determined through TCLP analysis to be non-hazardous. The NYSDEC stated that any future disturbance, excavation, or removal of soil from the site must be considered a non-hazardous industrial waste and a Part 364 permit must be obtained for transportation and disposal. In addition, the NYC Department of Health will need to be involved in the project. We further recommend completing the health and safety guidelines for the foundation construction and developing health and safety guidelines for future property maintenance as recommended in the risk evaluation conducted on the site.

PHASE I ENVIRONMENTAL SITE ASSESSMENT

EDISON PARKING LOT
510-516 TWELFTH AVENUE
NEW YORK, NEW YORK

1.0 INTRODUCTION

This report provides the results of Dames & Moore's Phase I Environmental Site Assessment (ESA) conducted for the Edison Parking Lot property at 500-516 12th Avenue in New York, New York. The subject property consists of an approximate 3.5-acre parcel, which is currently being used as a parking lot.

The property is currently owned by Silversteen 42nd Associates. The objective of this ESA was to identify potential environmental conditions associated with former and present activities at the site. Dames & Moore's work was performed in accordance with our proposal to Mr. Chris Gregg, Vice President of the Bank of New York, dated August 27, 1998. Dames & Moore understands that the Bank of New York may finance the property.

This report is presented in six sections. The remainder of Section 1.0 outlines the scope of services performed in conducting this ESA and the limitations of the assessment. Section 2.0 provides a description of the site and Section 3.0 summarizes the physical environmental setting of the site. Section 4.0 discusses environmental considerations and Section 5.0 presents information obtained from government agencies. Section 6.0 provides the conclusions of the assessment and Dames & Moore's recommendations. Sources of information and figures referenced in the text are provided at the end of the report.

Photographs taken during the site visit are provided in Appendix A. The results of a government database search are in Appendix B. Closure letters from the New York State Department of Conservation (NYSDEC) and United States Environmental Protection Agency (USEPA) are in Appendix C.

1.1 SCOPE OF SERVICES

The scope of work conducted for this evaluation was outlined in Dames & Moore's August 27, 1998 proposal to Mr. Chris Gregg of the Bank of New York to perform a Phase I Environmental Site Assessment. The services were performed in general accordance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments* (Standard Designation E 1527-97) and the Bank of New York's *Phase I Environmental Site Assessment Guidance Document*, dated October 27, 1993. Dames & Moore's scope of services consisted of these five tasks:

Task 1 Historic Activities Review

Dames & Moore searched for readily available historic information regarding past users, owners or activities that have been conducted on, or adjacent to, the site and may have resulted in adverse environmental impact. This task included a review of topographic maps, aerial photographs, federal wetland maps, Sanborn fire insurance maps, and interviews with the subject site owner.

Task 2 Environmental Incident and Regulatory Agency Review

This task involved identification of known or suspected environmental incidents or regulatory and compliance enforcement actions at or near the property. Dames & Moore searched for readily available environmental incident and regulatory information through a government agency database search provided by VISTA Information Solutions, Inc., and through correspondence with state and local officials.

Task 3 Review of Environmental Setting

Information on topography, soils, geology, surface water, and groundwater was reviewed to characterize the physical environmental setting of the site. Information sources included maps, information provided by the United States Geologic Survey (USGS), and other publicly accessible documentation.

Task 4 Site Reconnaissance

In this task, Dames & Moore conducted a reconnaissance of readily accessible areas of the property to view current conditions at the site and evaluate potential sources of contamination identified in Tasks 1 and 2. Dames & Moore visited the site on September 9, 1998. In addition, Dames & Moore's site visit included observation of areas of adjacent properties visible from the site, to identify those activities that may have potential to impact the subject property.

Task 5 Report Preparation

The information collected in the previous four tasks was evaluated and summarized in this report.

1.2 LIMITATIONS

This report is based on information from field reconnaissance and visual observations of the site and vicinity, and interpretation of the available information and documentation reviewed, as described in this report. This report is intended exclusively for the purpose outlined herein at the site location and project indicated.

This report is intended for the sole use of the Bank of New York in connection with financial considerations concerning the property. The scope of services performed in this assessment may not be appropriate to satisfy the needs of other users and any other use or re-use of this document or the findings, conclusions, or recommendations presented, is at the sole risk of the user.

This study was undertaken and completed in accordance with the professional standards and generally accepted practices of environmental consultants at the time of preparation of this study. The scope of services for this assessment was limited and should not be construed as a guarantee that no currently unrecognized environmental concerns exist at the site. The study was not intended to be a definitive investigation of potential environmental concerns

at the subject property. Dames & Moore did not collect any soil or groundwater samples. Therefore, we cannot comment on the soil or groundwater quality beneath the site.

The opinions and recommendations presented in this report apply to the site conditions at the time of the assessment and those reasonably foreseeable. They cannot necessarily apply to site changes of which Dames & Moore is not aware and has not had the opportunity to evaluate.

2.0 SITE DESCRIPTION

This section describes the site location, vicinity, history, and conditions. Refer to Figure 1 for the site location map and Figure 2 for the site plan.

2.1 LOCATION

As shown in Figure 1, the site is located at 500-516 Twelfth Avenue in New York, New York. Twelfth Avenue borders the site to the west, 42nd Street borders the site to the north, Eleventh Avenue borders the site to the east, and 41st Street borders the site to the south. The subject site is less than one-eighth mile east of the Hudson River and the New York City Harbor. As shown in Figure 2, the subject property consists of an approximate 3.5 acre paved parking area with a small one-story structure that is used as a guard shock.

2.2 SITE VICINITY

The site is in an urban area, which is composed of a mixture of commercial, industrial, and residential properties, in Manhattan, New York. The site is zoned for commercial use according to the NYC finance department. More specifically, the properties adjacent to the site are:

North

North of the subject site is 42nd Street. Further to the north is the office of the Consulate General for the People's Republic of China, Aztec Contractors, New York City Mounted Troop B, a building occupied by Bell-Atlantic Corporation, and a Mobil Gas station.

East

East of the subject site is 11th Avenue, and further to the east is a building occupied by Federal Express Corporation and a Mercedes-Benz automobile dealership.

South

South of the subject site is 41st Street and further to the south is the West side bus depot operated by the New York City Transit Authority.

West

West of the subject site is 12th Avenue. Further to the west is the New York City Harbor and the Hudson River.

2.3 SITE HISTORY

The subject property is currently owned by Silversteen 42nd Associates, Inc. Silversteen 42nd Associates purchased the property from Ivory 42nd Realty Corporation in 1984 according to the Finance Department of New York City. The Finance Department also recorded the sale of the property from Joseph D. Keenan and Roger Peed to Chrysler Realty Corporation in 1969. No other information was available about ownership of the property prior to 1969.

Dames and Moore also reviewed aerial photographs, Sanborn fire insurance maps, and previous environmental reports.

2.3.1 Aerial Photograph Review

Dames & Moore reviewed historical aerial photographs of the subject property and surrounding area at the New York Public Library. Photographs were available for the years 1927 and 1969. A summary of the observations made while reviewing these photographs is as follows.

1927: The 1927 aerial photograph shows the subject site as being developed with three industrial structures. Two structures are shown on the northern portion of the site and the third structure is shown on the southern portion of the site. The photograph also shows stockpiles of material on the western and eastern portion of the site. To the west of the site is the New York Harbor and the Hudson River. North of the site are commercial, industrial, and residential properties. There are also several

large aboveground storage tanks shown to the north of the site. East of the site numerous commercial and residential properties are shown. South of the site several industrial buildings are shown and there is also a rail yard shown further to the south.

1969: The 1969 aerial photograph shows the subject site to be developed with two structures. To the west of the site is the New York Harbor and the Hudson River. North of the site are commercial, industrial, and residential properties. The aboveground storage tanks shown to the north of the subject site in the 1927 photograph are not shown in the 1969 photograph. Numerous commercial and residential properties are shown to the south and east of the site.

2.3.2 Historical Maps

To further assess the historical use of the property, Dames & Moore performed a search for historical fire insurance maps for the subject site. Historical fire insurance maps are often available for developed areas and can provide information pertaining to historical site usage, hazardous material storage, and building construction materials. VISTA Information Solutions, Inc. provided historical fire insurance maps for the site for the years 1890, 1899, 1911, 1930, 1950, 1968, 1982, 1987, 1990, and 1994.

1890: The subject site is shown to be occupied by the Consolidated Gas Company in the 1890 map. The site appears to be used as a coal gasification facility. The northern portion of the site has a retort house and office. Four aboveground storage tanks are shown are shown on the eastern portion of the site, and more retort houses are shown on the southern portion of the site. The western portion of the site is shown as coal storage.

North of the subject site another Consolidated Gas Company facility is shown with seven aboveground storage tanks. A Standard Oil storage facility, E.S. Higgins and Company Carpet Manufacturing, a dock for the Ferry to Weehawken, and coal yards are also shown north of the site. The Sanborn maps for the area east of the site were not available. South of the site are the Western Stockyards, a slaughter house, a coal yard, the Provision Canning Company, and the Broadway Cable Construction Company. Ten USTs are shown west of

the site and the pier owned by the Consolidated Gas Company is also shown.

1899- The 1899 map also shows the subject site as occupied by the Consolidated Gas Company, and structures shown in the 1890 map are also shown in the 1899 map.

The area north of the subject site appears as shown in the 1890 map. East of the subject site storehouses for the Consolidated Gas Company are shown. The area south of the site appears to be similar to the 1890 map with the exception of a Pennsylvania Railroad freight yard shown on 37th street. The area west of the subject site is shown to be the same as the 1890 map.

1911- The 1911 map also shows the subject site as occupied by the Consolidated Gas Company, and structures shown in the 1899 map are also shown in the 1911 map.

North of the subject site are the National Coke & Coal Company, Export and Domestic Can Company, Knickerbocker Ice Company, and the Metropolitan Street Railway Company. Maps for the area to the east of the site were not available. The area south of the site has not changed since the 1899 map. The area to the west of the site has several ASTs used to store oil and ammonia, and a freight and passenger shed for the Hudson River Day Line. Northwest of the site is the New York Central- Hudson River Rail Road freight shed and the Ferry to Weehawken.

1930- The subject site is shown in this map as a rail yard for the New York Central Railroad, with the exception of the northeast corner, which is occupied by a filling station. Five USTs are also shown near the filling station.

North of the subject site Strauss and Company and a New York Railway Company facility are shown. Maps for the area east of the site were not available. Northwest of the site is the New York Central Railroad Freight Pier and the United American & Hamburg-American Line freight and passenger pier. South of the site are the New York Stock Yards (formerly Western Stock Yards), the Adolf Gabel Pork Packing Plant, the New York Butchers Dressed Meat Company, the J M & P Scanlan sheep processing plant, and the Fidge-Hutweller Company Meat Packing plant. Southwest of the site is the Central Railroad of

New Jersey freight pier and the Hudson River Day Line Pier.

1950- There are two structures shown on the subject site in the 1950 map. The larger structure is shown in the center of the site between 42nd street and 41st street. The structure is used as a freight depot by the Railway Express Agency and is constructed of concrete. There is also a private garage shown on the western portion of the site, which is also constructed, of concrete.

North of the subject site is the Sanitary Automatic Candy Corporation, the Manhattan News Company storage facility, and a service station with six USTs shown. Northwest is the American Export Lines pier and the Atlantic Freight and Passenger pier. Maps for the area east of the site were not available. South of the site are the New York Stock Yards, the Greater New York Packaging Company, the New York Wool Company, and the Fidge-Hutwelker Company Meat Packing plant. Southwest of the site is the City Line pier and the Hudson River Day Line pier. West of the site is the New York-Ontario & Western Railroad-West Shore Railroad pier.

1968- The 1968 map also shows the subject site as occupied by the Railway Express Agency, and structures shown in the 1950 map are also shown in the 1968 map.

North of the site is a Mack Truck Service facility, a Manhattan News Company storage facility, a Sheraton Motor Inn, a film studio, and a filling station. Maps for the area east of the site were not available. The area south of the site is obscured on the 1968 map. The area west of the site appears to be the same as the 1950 map. Southwest of the site is the Circle Line Sightseeing Tours pier.

1982- The 1982 map also shows the subject site as occupied by the Railway Express Agency, and the western portion of the site is used by Greyhound Bus lines for parking.

North of the site is a motel, a New York Telephone building, and a filling station. Maps for the area east of the site were not available. The area shown to the northwest of the site has not change since the 1968 map. A Greyhound Garage and Service Station is shown south of the subject site. Areas west of the site appear as shown in the 1968 map. Southwest of

the site the Hudson River Dayline Sightseeing tours pier.

1987- The 1987 map also shows the subject site as occupied by the Railway Express Agency, and the western portion of the site is used by Greyhound Bus lines for parking.

The surrounding properties appear to be similar to the 1982 map with the exception of the Consulate General of the Peoples Republic of China, which occupies the site formerly, used as a hotel.

1990- This map shows the subject site as vacant. There were also no notations or structures shown on the map.

North of the site is a police station, the Consulate General of the People's Republic of China, a New York Telephone building, and a filling station. The remaining surrounding properties appear as they did in the 1987 map.

1994- The 1994 map shows the subject site as a parking lot. No structures are shown on the subject site on this map.

The surrounding properties appear to be the same as in the 1990 map.

2.3.3 Previous Environmental Investigations

Dames & Moore reviewed several previous site investigations and reports conducted at the property. The property was formerly used by Railway Express Agency and eighteen underground storage tanks were previously on-site. These tanks are believed to have contained petroleum products used in the vehicle refueling and maintenance operations at the site. In May 1995, Woodward-Clyde was involved in the oversight during the tank removals. The tank removal was contracted to American Hi-Tech, Inc. (AHT).
The following is a list of reports on that were conducted on the subject site.

- *Final Environmental Impact Statement* for the 42nd Street Light Rail Line, March 1994.
- *Phase I Environmental Assessment Report* prepared by GCI in October 1994.

- An *Underground Storage Tanks Closure Report* prepared by Woodward-Clyde Consultants, Inc. May 1995.
- An *Underground Storage Tanks Closure Report* prepared by Woodward-Clyde Consultants, Inc. in July 1995
- *Phase I and Phase II Report* prepared by Woodward-Clyde Consultants, Inc. in July 10, 1995
- *Analytical Results Soil Delineation Sampling – August 1995*
- *Work Plan for Phase III Investigation* prepared by Woodward-Clyde Consultants, Inc. in *September 19, 1995*
- NYSDEC Response Letter to *Phase II Work Plan* in October 3, 1995
- *Revised Work Plan for Phase III* prepared by Woodward-Clyde Consultants, Inc. in October 17, 1995.
- *Phase III Environmental Sampling Letter Report* prepared by Woodward-Clyde Consultants, Inc. in January 30, 1996.
- NYSDEC Response Letter to Phase III Report in April 25, 1996
- Woodward-Clyde Consultants, Inc. Letter to NYSDEC regarding Groundwater Sampling on May 14, 1996 and Completion of Project, June 6, 1996
- Woodward-Clyde Consultants, Inc. Letter to NYSDEC regarding Fate and Transport Calculations to Determine Benzene Concentrations in Groundwater as it Enters the Hudson River – June 21, 1996.
- *Health and Safety Guidelines for Foundation Construction*, prepared by Woodward-Clyde Consultants, Inc., July 16, 1996.
- *Human Health and Environmental Risk Evaluation Report*, prepared by Woodward-Clyde Consultants, Inc., August 19, 1996

Dames & Moore reviewed eleven of the fifteen documents listed above. The majority of the previous investigations were related to the removal of the former USTs and evaluation of whether chemicals previously used at the site have contaminated the subsurface soils.

The *Final Environmental Impact Statement* for the 42nd Street Light Rail Line in March 1994, *Phase I Environmental Assessment Report* conducted by GCI in October 1994, *Underground Storage Tanks Closure Report* in May 1995, and Analytical Results Soil Delineation Sampling in August 1995, were not provided for Dames & Moore's review. A brief summary of each of the other reports is presorted below.

July 1995 - Underground Storage Tanks Closure Report

The July 1995 *Underground Storage Tanks Closure Report* provides information about the May 1995 tank closures. Woodward-Clyde, Inc. prepared the closure report for Silverstein 42nd Street Associates, Inc. Three areas at the site contained USTs. These areas are identified in the report as 'A', 'B', and 'C' respectively and are shown on Figure 2.

Area of Concern A – Eight 550-gallon gasoline USTs installed in 1960;
Area of Concern B – Eight 550 gallon gasoline USTs closed in-place in 1960, and;
Area of Concern C – Two 550 gallon oil USTs.

Both areas A and B are along West 42nd Street. During tank removal, evidence of impacted soils was observed. Groundwater was encountered at 7.5 feet below ground surface. Soil and groundwater samples were collected and analyzed for petroleum compounds using the Toxicity Characteristic Leaching Procedure (TCLP).

Eight confirmatory soil samples were collected from areas A and B. In excavation A, three samples contained gasoline compounds above the TCLP standards. In excavation B, four samples contained gasoline compounds above the TCLP standards. Additionally, the two groundwater samples collected from this area contained gasoline compounds above TCLP limits. In area C, only four confirmatory samples were collected. Three of the samples detected fuel oil compounds in excess of the TCLP limits.

Approximately 50 cubic yards of impacted soil was removed from site. The excavations

were backfilled with stone to above the water table, a plastic sheet was laid, and the remainder of the excavations were filled with non-impacted soils and fill materials. The report recommended further investigation at the site to evaluate the potential areal and vertical extent of contamination.

July 10, 1995-Phase I and Phase II Report

The Phase I and II investigations were conducted based upon the recommendations in the *UST Closure Report*. In May 1995, Woodward-Clyde, Inc. advanced ten borings (Phase I) at the site to collect soil and groundwater samples.

Four of the ten borings were completed as monitoring wells. Monitoring well MW-2 was installed downgradient of the Area B and wells MW-1S and MW-1D were installed as a shallow and deep pair west of the Area A, downgradient of the Area B and upgradient of the Area A. MW-3 was installed in the eastern portion of the site to monitor upgradient conditions. Soil and water samples were collected for analysis by EPA Methods 8021 and 8270.

The Phase I analytical results indicated elevated levels of PAHs in the soil samples and benzenes and metals in the groundwater samples. The levels detected exceeded NYS Cleanup Objectives and STARS Memo Guidance Values.

Following the preliminary results of the Phase I sampling, Woodward-Clyde, Inc. was requested by the NYSDEC to further investigate the property in regards to the former use as a manufactured gas plant during the 1800s. Ten additional soil borings (Phase II) were advanced in May 1995. Four of the borings were completed as shallow monitoring wells.

Soil and groundwater samples were collected and analyzed for waste characteristics (NYSDEC Analytical Service Protocol SW-846), VOCs plus ten tentatively identified compounds, base-neutral compounds plus the next ten tentatively identified compounds,

and Target Analyte List metals.

Analytical results of the soil and groundwater sampling suggested that soils beneath the site contain petroleum-related compounds (primarily PAHs) and metals in concentrations that exceed NYS Cleanup Objectives and STARS Memo Guidance Values. Waste classification results indicated that the shallow (0-4 ft bgs) soil in the western half of the site would likely be classified as a non-hazardous waste if the soil was removed for off-site disposes. Results suggested that groundwater in the fill overburden contain petroleum-related compounds (benzene, toluene, ethylbenzene, xylenes, and PAHs) and metals in concentrations that exceed the NYS Ambient Water Quality Standards and Guidance Values.

September 19, October 3, and October 13, 1995- Letters Regarding Scope of Additional Investigation

Letters to and from Woodward-Clyde, Inc. and the NYSDEC discussing the scope of the Phase III investigation.

November 1995 -Phase III Environmental Sampling Results

As requested by the NYSDEC, on November 1995, Woodward-Clyde, Inc. advanced 25 soil borings at the site. Seventeen soil samples, which were collected near the surface, were analyzed for PCBs and eighteen unsaturated soil samples were analyzed for coal gas wastes. The five most contaminated unsaturated samples were also analyzed for waste characterization. No PCBs were detected in the 17 samples analyzed. The 18 unsaturated soil samples did contain organic compounds typically associated with the gas manufacturing process. The five most contaminated samples contained no RCRA characteristic wastes. As a result, remediation was not recommended.

January 30, 1996 –Letter regarding Phase III Sampling Results

The Woodward-Clyde, Inc letter to Richard G. Leland summarized the additional investigation and results that was conducted to determine if the unsaturated soil at the site would be classified as RCRA, 6NYCRR, Part 371 Characteristics Wastes. The letter stated that the samples analyzed contained typical coal gas waste organic compounds. However, no PCBs were detected and that no RCRA Part 371 Characteristics Wastes were identified. The letter states that based on the soil results and Woodward-Clyde, Inc.'s discussions with the NYSDEC, no soil remediation is required at the site and that building construction can proceed.

April 25, 1996-Letter from NYSDEC, Division of Hazardous Waste Remediation

The NYSDEC reviewed the *Phase III Environmental Sampling Report* prepared by Woodward-Clyde Consultants, Inc. in January 30, 1996. The Division of Hazardous Waste Remediation (DHWR) reported that the soil results did not show any evidence of PCBs or a hazardous waste. However, the sampling did reveal that the soil and groundwater at the site is contaminated with several volatile and semi-volatile organic compounds indicative of petroleum contamination. The DHWR stated that they have no plans to pursue this site any further and referred the case back to the Oil Spill Program, but indicated that any future disturbance, excavation, or removal of soil from the site must be considered a non-hazardous industrial waste and a Part 364 permit must be obtained for transportation and disposal. In addition, a health and safety plan will be required to perform the work. A copy of the NYSDEC letter is provided in Appendix C.

June 21, 1996 -Fate and Transport Calculations to Determine Benzene Concentrations

An analytical multi-dimensional fate and transport model was used to model the potential impact of benzene on the Hudson River. Several assumptions had to be made to create the model. The limited risk assessment performed at the site indicates that groundwater from the site is not impacting the Hudson River. A request for a "no further action ruling and site closure was submitted to NYSDEC.

July 16, 1996 – Health and Safety Guidelines for Foundation Construction

Woodward-Clyde Inc. prepared site-specific health and safety guidelines for the construction of the building foundation. This report establishes requirements for safety of personnel during field activities associated with the foundation construction activities. During Dames & Moore's review of the guidelines, we noted that sections 3.0 (scope of work) and 4.6 (task by task hazard analysis) of the report had not yet been completed.

August 2, 1996-Letter from NYSDEC, Division of Spills Management

The NYSDEC reviewed the underground storage tank removal and investigation for the site. The Division of Spills Management stated that the source of the petroleum release was most likely from the previous abandonment of the USTs and was addressed by the excavation of soils from around the tanks. The NYSDEC believed that the subsequent groundwater wells showed that the petroleum release had a minimal impact to the groundwater. They further agreed that the fate and transport modeling for the volatile organic hydrocarbons indicated that there would be no impact to offsite receptors.

The NYSDEC stated that the site does contain high concentrations of Poly Nuclear Hydrocarbons (PAHs) that are bound to the soils. The state indicated that they do not regulate PAHs since they failed to meet the criteria of a Listed or Characteristic Hazardous Waste.

The NYSDEC closed the case for the site with no further action required. However they stated that the site owner had agreed to address the presence of the PAHs with a site specific health and safety plan and a health risk evaluation with oversight from the NYC Department of Health. A copy of the NYSDEC letter is provided in Appendix C.

August 19, 1996 –Human Health and Environmental Risk Evaluation Report

Woodward-Clyde Inc. performed a risk evalutation on the 12th Avenue property. The report

concluded that there was no significant exposure to residual contamination expected after re-development of the site. In addition, based upon contaminant transport modeling, the migration of groundwater from the site to the Hudson River will not adversely impact water quality in the river. However, occasional exposure to subsurface contamination could occur during construction activities and during occasional future maintenance activities (such as subsurface utility work). Compliance with site-specific health and safety guidelines during activities that involve a potential to disturb subsurface soil would prevent significant worker exposure via direct contact, ingestion, or inhalation of soil, groundwater, fugitive dust or vapors.

2.4 SITE CONDITIONS

On September 9, 1998, Dames & Moore conducted a site reconnaissance of the subject property. The purpose of this site visit was to observe the present site conditions and to observe conditions on adjacent properties. The following description of the site is based on our field observations and is supplemented by information from other sources. Selected photographs of the site are included as Appendix A.

2.4.1 Building

Currently, an approximate 400 square-foot, single-story building is located on the northern portion of the subject property (Figure 2). The building is rectangular, is constructed of steel, and is built on a concrete slab-on-grade. The building has electric heat, and window mounted air conditioning units. This structure is used to collect parking fees and for security personnel. Floors in the building have carpeting and floor tile over the concrete slab.

2.4.2 Grounds

The subject property consists of an approximate 3.5 acre parcel. The majority of this area is covered with asphalt paving. The parking lot is also surrounded by a chain link fence with barbed wire installed at the top of the fencing to prevent trespassing.

Parts of the asphalt near the northeast corner have been removed and replaced with gravel. A previous ESA reported that a number of USTs had been removed from this area and testing of the soil in this area was also performed. Several monitoring wells were observed on the subject site during our visit. The well locations noted by Dames & Moore are shown in Figure 2.

3.0 ENVIRONMENTAL SETTING

This section contains information on the physiography, soils, geology, surface water, and groundwater near the site.

3.1 PHYSIOGRAPHY

The United States Geological *Survey's Central Park, New York and Weehawken, New York*–New Jersey, Quadrangles, 7.5 minute topographic map were reviewed to assess conditions near the subject property. The map indicates that the elevation of the subject property is approximately 10 feet above mean sea level. In general, the subject property slopes to the west towards the Hudson River. The Hudson River is less than one-eighth of a mile west of the subject property and flows to the south.

The subject site lies within the Atlantic Coast Lowlands physiographic province.

3.2 GEOLOGY AND SOILS

The United States Department of Agriculture has not published a soil survey covering Manhattan Island. Representatives from the USDA stated that a survey has not been completed because of the early development of the land.

The United States Geologic Society (USGS) classifies the overburden in the subject site are as glacial till. This soil is composed of clay, silt-clay, and boulder clay, and the thickness for this material ranges from one to fifty meters.

Bedrock geology in the area consists of the Manhattan Formation of the Trenton Group. This bedrock can have one or more of these elements: amphibolite, sillimanite, garnet, muscovite, biotite, plagioclase, and quartz. The age of this bedrock is Paleozoic and it was formed in the Middle Ordovician era. The depth to top of bedrock was measured in a previous subsurface investigation at 47.5 feet below grade.

3.3 SURFACE WATER AND GROUNDWATER

There is no surface water on-site. The closest surface water to the subject property is the Hudson River, which is less than one-eighth mile west of the subject property and flows to the south.

There are seven groundwater monitoring wells (six wells were visible to Dames & Moore) on the property. The well locations noted by Dames & Moore are shown on Figure 2. Depth to groundwater was measured in previous subsurface investigations at approximately 5 to 10 feet below grade. Based on the topographic gradient, groundwater is likely to flow west toward the Hudson River.

Dames & Moore did not observe signs of hydrophilic (wetland) vegetation on the subject property.

4.0 ENVIRONMENTAL CONSIDERATIONS

This section describes environmental conditions and considerations at the site.

4.1 SITE OPERATIONS

The subject site is presently being used as a guarded parking lot. The perimeter of the site has a chain link fence with barbed wire at the top to prevent trespassing. A small steel building located on the northern portion of the site is used to collect parking fees and is also used by security personnel.

Mr. Steve Oberman of the Silversteen 42nd Associates (current property owner) was also interviewed for information about the subject property. Mr. Oberman stated that the property will be developed into two forty story apartment buildings and there are also plans for restaurants and retail buildings between the buildings.

4.2 UTILITIES

Electricity is supplied to the subject property by Consolidated-Edison Power Company. Sanitary Sewer service and drinking water will be provided to the subject site by the City of New York.

4.3 STORAGE TANKS

4.3.1 Underground Storage Tanks

There are currently no registered underground storage tanks. Eighteen underground storage tanks were removed from the northwest portion of the subject site in 1995. These tanks included sixteen 550-gallon gasoline tanks and two 550-gallon waste oil tanks. These tanks were owned by Railway Express and had been filled with water and abandoned in place. The tanks were later removed in 1995. Analysis of samples from the excavations indicated that both soil and groundwater were contaminated by petroleum products.

4.3.2 Aboveground Storage Tanks

There are currently no registered aboveground storage tanks (ASTs) on the subject property, and no ASTs were observed during our site visit.

4.4 HAZARDOUS MATERIALS

This section reviews information regarding hazardous substances and hazardous wastes associated with site operations.

4.4.1 Hazardous Substances

Currently, there are no reportable quantities of hazardous substances stored at the subject property, and there were no hazardous substances observed on the subject property during our site visit.

4.4.2 Hazardous Waste

There were no signs of hazardous waste stored or generated at the subject property at the time of the site reconnaissance. The site is listed, however, as a large quantity generator of hazardous waste under RCRA. Based on observations made during the site visit and inquiries made to the Environmental Protection Agency, this designation as a large quantity generator is not considered to create a recognized environmental condition.

4.5 POLYCHLORINATED BIPHENYLS

There were no electrical equipment components observed during our site visit that were suspected of containing PCBs.

4.6 ASBESTOS

There were no suspect asbestos containing building components (ACBMs) observed during our site visit.

4.7 SOLID WASTE

There are currently no operations at the subject site which produce solid waste.

4.8 PITS, PONDS, AND LAGOONS

No pits, ponds, or lagoons are reported to exist on the subject property, nor were any observed during our site visit.

4.9 DRAINS, SUMPS, AND LEACH FIELDS

No active drains, sumps, or leach fields are reported to exist on the subject property, nor were any observed during our site visit.

4.10 WELLS

There are presently seven monitoring wells on the subject property. Six wells were visible to Dames & Moore and their locations are shown on Figure 2. These wells were installed in 1995 to monitor groundwater after petroleum contamination was discovered during removal of USTs from the northwest corner of the site.

4.11 AIR EMISSIONS

There were no site operations observed that might require an air emission permits.

5.0 AGENCY LIST REVIEW

A review of readily available government agency lists was conducted for information regarding hazardous releases, landfills, or other hazardous waste facilities or investigations at or near the subject property. A copy of the government database search is provided in Appendix B. This section summarizes the results of the review.

5.1 FEDERAL LISTS

The United States Environmental Protection Agency (USEPA) maintains lists of uncontrolled or abandoned hazardous waste sites selected for priority remedial action, hazardous waste sites that have been investigated or are currently being investigated, RCRA facilities, oil and hazardous materials spills, and RCRA Compliance Orders and Orders of Consent. This section summarizes the results of this review.

5.1.1 National Priority List

The National Priority List (NPL) is the USEPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial action. One NPL site was listed within a one-mile radius of the subject site.

Hudson River PCB Sediments
Hudson River Between Ft. Edward and Glens Falls
Glens Falls, New York 12801
Distance: < one-eighth mile west (downgradient)

This NPL site is a forty-mile stretch of the Hudson River between Fort Edward and Troy, New York. The General Electric Company discharged an estimated one million pounds of PCBs into the Hudson River from two capacitor plants located in Fort Edward, New York, and Hudson Falls, New York. The NYSDEC has identified forty hot spots, which are defined as sediments contain high concentrations of PCBs in the river. However, the Hudson River near the subject site is not part of the NPL site.

5.1.2 Comprehensive Environmental Response, Compensation and Liability Investigatory Sites List

The USEPA maintains a computerized listing of hazardous waste sites that have been investigated or are currently being investigated for a release or threatened release of hazardous substances pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). One CERCLIS site was reported within one-half mile of the subject property.

Hudson River PCB Sediments
Hudson River between Fort Edward and Glens Falls
Glens Falls, New York 12801
Distance: < one-eighth mile west (downgradient)

This site was described in Section 5.1.1.

5.1.3 Resource Conservation and Recovery Act

USEPA maintains records of hazardous waste generators, transporters, and treatment, storage, and disposal (TSD) facilities. A search for RCRA-regulated TSD facilities was conducted for a one-mile radius centered on the site and for RCRA CORRACTS sites within one-mile of the site. No TSD facilities or CORRACTS sites were identified within the search radii.

A search of RCRA small and large quantity generators was conducted for a one-quarter mile radius. Small quantity generators are facilities that generate between 100 and 1,000 kilograms of non-acutely hazardous waste per month. Eight large quantity generators (one of which is the subject site) and four small quantity generators were identified within a one-eighth mile radius of the subject site.

Large Quantity Generators:

Edison Parking Lot
500-516 Twelfth Avenue
New York, New York 10036
Distance: Target Property

Mobil Oil Corporation
42nd Street, 11th Avenue
New York, New York 10036
Distance: north, adjoining property

Port Authority of New York-New Jersey
39th Street, Twelfth Avenue
New York, New York 10018
Distance: 0.06 miles southwest (crossgradient)

United Parcel Service
643 West 43rd Street
New York, New York 10036
Distance: 0.05 miles east (upgradient)

Trans Bay Images
Circle Line Plaza Pier 83
New York, New York 10019
Distance: 0.04 miles north (crossgradient)

Port Authority of New York-New Jersey
200 East of 12th Avenue, 38th Street
New York, New York 10018
Distance: 0.10 miles southwest (crossgradient)

United Parcel Service
525 Eleventh Avenue
New York, New York 10018
Distance: 0.10 miles southeast (crossgradient)

New York City Transit Authority Bus Terminal
525 Eleventh Avenue
New York, New York 10018
Distance: 0.10 miles southeast (crossgradient)

Small Quantity Generators

New York City Transit Authority
Eleventh Avenue Bus Depot
525 Eleventh Avenue
New York, New York 10018
Distance: adjoining property, south (crossgradient)

Circle Line
Pier 83, 43rd Street
New York, New York
Distance: 0.04 miles north (crossgradient)

New York Telephone
605 West 42nd Street
New York, New York 10036
Distance: 0.09 miles east (upgradient)

New York Telephone Company
604 West 43rd Street
New York, New York 10036
Distance: 0.10 miles east (upgradient)

Large quantity generators are facilities that generate at least 1,000 kilograms (kg) of non-acutely hazardous waste or 1 kg of acutely hazardous waste per month. Small quantity generator facilities generate less than 1,000 kg of non-acutely hazardous waste. Although three of these facilities are upgradient to the subject site, no environmental incidents have been reported in connection with these sites, and potential environmental impact from these sites is low. The subject property is listed as a large quantity generator, but current site operations do not generate hazardous waste.

5.1.4 Emergency Response Notification System List

The Emergency Response Notification System (ERNS) database is used to collect information on reported releases of oil and hazardous substances. The database contains information from spill reports made to federal authorities including the EPA, US Coast Guard, National Response Center and Department of Transportation. There are three sites within a one-eighth mile that are included on the ERNS database.

40th Street and Twelfth Avenue
New York, New York
Distance: 0.01 miles southwest (crossgradient)
Substance: Dielectric Fluid
Quantity: 400 gallons
Date: March 8, 1993
Status: Material was spilled onto asphalt surface. The spill was contained and did not leave the site.

United Parcel Service
643 West 43rd Street
New York, New York
Distance: 0.05 miles north (crossgradient)
Substance: Ethylene Glycol
Quantity: 5,000 pounds
Date: Unknown
Status: Material was spilled into storm drain.

Greyhound Bus Lines
525 Eleventh Avenue
New York, New York
Distance: 0.10 miles southeast (crossgradient)
Substance: Diesel Fuel
Quantity: 700 gallons
Date: February 23, 1992
Status: Material was spilled onto a concrete surface. Spill was contained and material did not leave the site.

These sites are not considered to create a recognized environmental condition at the subject site because the material that was spilled was either contained at the site or was carried away from the subject site.

5.2 STATE LISTS

The New York State Department of Environmental Conservation (NYSDEC) maintains lists of hazardous waste disposal sites regulated under their cleanup program, solid waste disposal facilities and transfer stations, underground and aboveground storage tanks, and leaking underground storage tanks. This section summarizes the results of a review of these lists.

5.2.1 Hazardous Sites Cleanup Program List

The NYSDEC maintains a listing of hazardous waste disposal sites currently under investigation. A review of this list indicates that one hazardous waste disposal site is within a one-mile radius of the site.

Hudson River PCB Sediments
Hudson River between Fort Edward and Glens Falls
Glens Falls, New York 12801
Distance: < one-eighth mile west (downgradient)

This site was described in Section 5.1.1.

5.2.2 Solid Waste Management Facilities and Transfer Stations

Listings of solid waste facilities and transfer stations are maintained by the NYSDEC. No solid waste facilities or transfer stations were identified within one-mile of the subject site.

5.2.3 Underground and Aboveground Storage Tank Facilities

Underground storage tanks (USTs) are regulated by the USEPA under RCRA and Title 49 CFR Part 280. These regulation require notifications to be filed on existing USTs, abandoned USTs that remain in-place (unless taken out of operation on or before January 1, 1974), and new USTs. The NYSDEC maintains a database of registered underground and aboveground storage tanks. A review of the list indicated that there were thirty-eight registered aboveground or underground storage tanks within one-quarter mile of the subject site. Eighteen of these sites were within one-eighth of a mile of the subject site.

Underground Storage Tanks

Edison Parking Lot
500-516 Twelfth Avenue
New York, New York 10036
Distance: target property
Number of active tanks: 0
Substance(s) stored: N/A

Consulate General of the Peoples Republic of China
520 Twelfth Avenue
New York, New York 10036
Distance: adjoining property, north (crossgradient)
Number of active tanks: 2
Substance(s) stored: Fuel Oil

Silverstein Properties: Yale Building
460 Twelfth Avenue
New York, New York 10018
Distance: 0.06 miles southwest (crossgradient)
Number of active tanks: 0
Substance(s) stored: N/A

Myron Garfinkel
627 West 42nd Street
New York, New York 10036
Distance: 0.05 miles east (upgradient)
Number of active tanks: 1
Substance(s) stored: Fuel Oil

NYNEX
615 West 42nd Street
New York, New York
Distance: 0.07 miles east (upgradient)
Number of active tanks: 0
Substance(s) stored: N/A

NYNEX
604-628 West 43rd Street
New York, New York 10036
Distance: 0.10 miles east (upgradient)
Number of active tanks:

New York Telephone
563 Eleventh Avenue
New York, New York 10036
Distance: 0.10 miles east (upgradient)
Number of active tanks: 1
Substance(s) stored: Fuel Oil

Travel Inn Hotel
515 West 42nd Street
New York, New York 10036
Distance: 0.12 miles east (upgradient)
Number of active tanks: 1
Substance(s) stored: Fuel Oil

Pier 79 Corporation
Pier 79 North River
New York, New York 10018
Distance: 0.09 miles southwest (crossgradient)
Number of active tanks: 1
Substance(s) stored: diesel

Pier 76 Tow Pound
Twelfth Avenue @ West 38th Street
New York, New York 10018
Distance: 0.10 miles southwest (crossgradient)
Number of active tanks: 2
Substance (s) stored: gasoline

Aboveground Storage Tanks

J. Lowensfenjoc, Inc.
610 West 40th Street
New York, New York 10018
Distance: 0.02 miles southwest (crossgradient)
Number of active tanks: 1
Substance(s) stored: Fuel Oil

Yale Building
460 Twelfth Avenue
New York, New York 10048
Distance: 0.05 miles southwest (crossgradient)
Number of active tanks: 1
Substance(s) stored: Fuel Oil

United Parcel Service
643 West 43rd Street
New York, New York 10036
Distance: 0.05 miles north (crossgradient)
Number of active tanks: 3
Substance(s) stored: Gasoline, other, unknown

New York Telephone
624 West 43rd Street
New York, New York 10036
Distance: 0.06 miles northeast (crossgradient)
Number of active tanks: 1
Substance(s) stored: Fuel Oil

Travel Inn Hotel
515 West 42nd Street
New York, New York 10036
Distance: 0.12 miles east (upgradient)
Number of active tanks: 1
Substance(s) stored: Fuel Oil

The Port Authority of NY-NJ
Lincoln Tunnel, Between 39th and 40th
New York, New York 10036
Distance: 0.07 miles south (crossgradient)
Number of active tanks: 3
Substance(s) stored: Other

West Side Depot
525 Eleventh Avenue
New York, New York 10018
Distance: 0.02 miles southeast (crossgradient)
Number of active tanks: 3
Substance(s) stored: Lube Oil, Other

Koch Realty Company
645 West 44th Street
New York, New York 10036
Distance: 0.10 miles east (crossgradient)
Number of active tanks: 1
Substance(s) stored: Fuel Oil

These sites were not listed as leaking underground storage tanks (LUSTs) and were also not listed as spill sites. Therefore, their possible impact on the subject site is considered low.

5.2.4 Leaking Underground Storage Tanks List

The regulations for registering USTs also provide requirements for the design, construction, installation, response, and corrective action of leaking USTs (LUSTs), and for

abandonment, closure, and change-in-service of UST systems. A listing of leaking underground storage tank (LUST) sites is maintained by the NYSDEC. Twelve LUST sites were identified within one-half mile of the subject property [15]

United Parcel Service
643 West 43rd Street
New York, New York
Direction: 0.05 miles northeast (crossgradient)
Substance: diesel
Status: case closed on August 7, 1995

Mobil Oil Corporation
561 Eleventh Avenue @ 42nd Street
New York, New York 10036
Direction: adjoining property, north (crossgradient)
Substance: gasoline
Status: case closed on October 19, 1994

Pier 79/ Twelfth Avenue
New York, New York
Direction: 0.08 miles west (downgradient)
Substance: diesel
Status: case open

New York City Transit Authority Bus Terminal
526 Eleventh Avenue
New York, New York
Direction: adjoining property, south (crossgradient)
Substance: diesel
Status: case closed on March 26, 1992

Fire Department of New York- Rescue Company 1
530 West 43rd Street
New York, New York 10036
Direction: 0.22 miles northeast (crossgradient)
Substance: diesel
Status: case open

609-611 Eleventh Avenue
New York, New York
Direction: 0.18 miles east (upgradient)
Substance: waste oil
Status: case open

Metropolitan Lumber Company
617 Eleventh Avenue
New York, New York 10036
Direction: 0.19 miles east (upgradient)
Substance: gasoline
Status: case closed on January 8, 1998

639 Eleventh Avenue
New York, New York 10036
Direction: 0.24 miles northeast (crossgradient)
Substance: diesel
Status: case closed on July 31, 1997

Four additional upgradient LUST sites were identified and details on these sites are in Appendix B. The four active LUST sites are between one-quarter and one-half mile of the subject site. Environmental impacts on the subject site from the open upgradient LUST sites are possible.

5.2.5 State Spills List

The NYSDEC database of emergency response actions and spill releases was reviewed for the areas near the subject property. The database search identified three sites within one-eighth of a mile of the subject property.

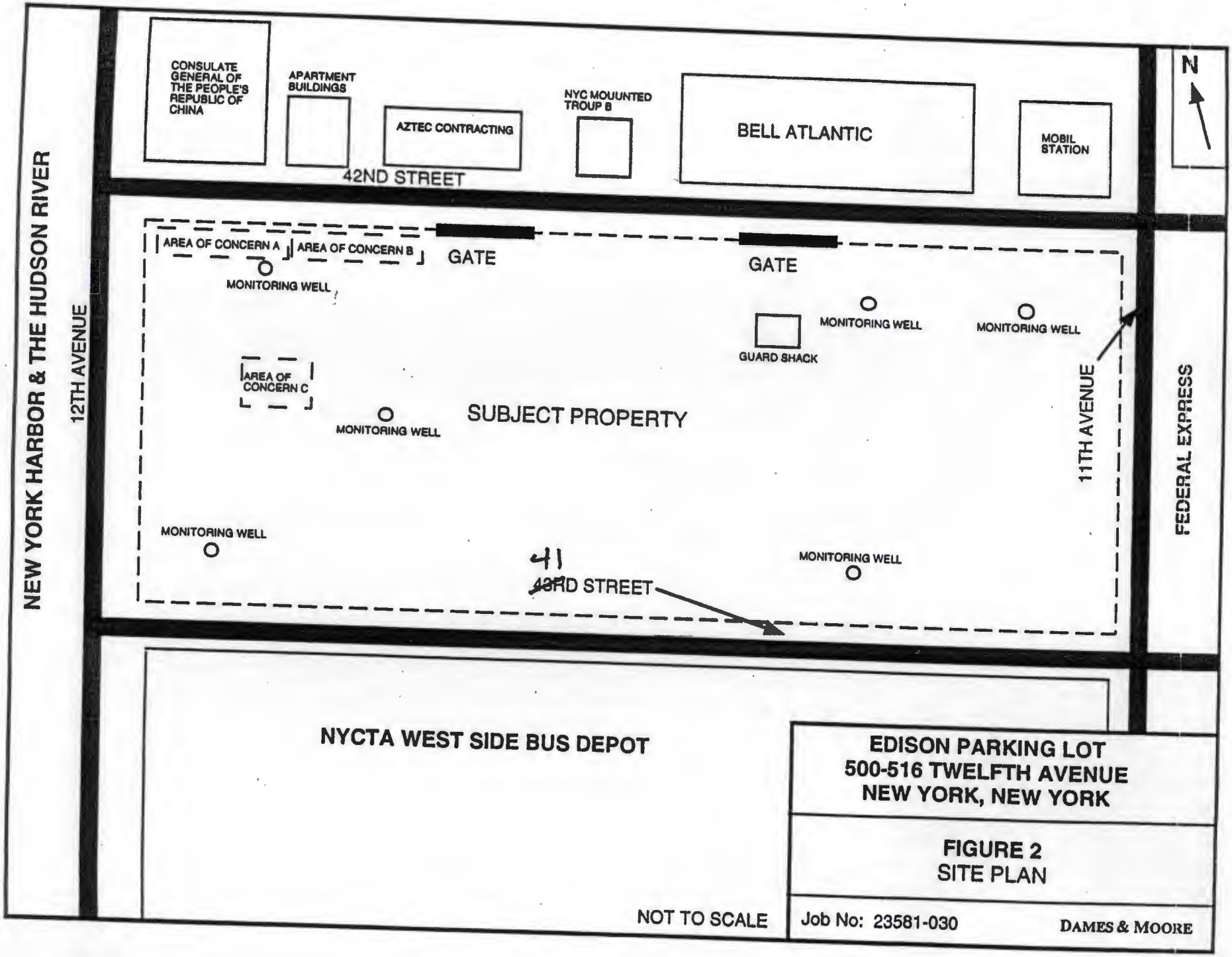
Silversteen 42nd Associates
500-516 Twelfth Avenue
Manhattan, New York
Distance: Target Property
Substance: Gasoline
Status: Case Closed on July 3, 1996

608 West 40th Street
Manhattan, New York
Distance: 0.02 miles southwest (crossgradient)
Substance: No. 4 Fuel Oil
Status: Case Closed on October 16, 1997

Consulate General of the People's Republic of China
Twelfth Avenue @ 43rd Street
Manhattan, New York
Distance: adjoining property, north
Substance: No. 6 Fuel Oil
Status: Case Closed on January 12, 1998

The spills for 608 West 40th street and for the Consulate General are not considered to create a recognized environmental condition at the subject site because of their "case closed" status.

The spill that occurred at the subject site was discovered when underground storage tanks were removed in 1995. Tests on soil in the excavations and additional tests on soil and groundwater at the site indicated that there was contamination by petroleum products. This impact on the soil and groundwater is considered to be a recognized environmental condition at the subject site.


CONSULATE GENERAL OF THE PEOPLE'S REPUBLIC OF CHINA
APARTMENT BUILDINGS
AZTEC CONTRACTING
NYC MOUUNTED TROUP B
BELL ATLANTIC
MOBIL STATION
N
42ND STREET
NEW YORK HARBOR & THE HUDSON RIVER
12TH AVENUE
AREA OF CONCERN A
AREA OF CONCERN B
GATE
GATE
MONITORING WELL
MONITORING WELL
MONITORING WELL
GUARD SHACK
AREA OF CONCERN C
MONITORING WELL
SUBJECT PROPERTY
11TH AVENUE
FEDERAL EXPRESS
MONITORING WELL
MONITORING WELL
41
42RD STREET
NYCTA WEST SIDE BUS DEPOT
EDISON PARKING LOT
500-516 TWELFTH AVENUE
NEW YORK, NEW YORK
FIGURE 2
SITE PLAN
NOT TO SCALE
Job No: 23581-030
DAMES & MOORE

LEGEND:

0 2000 4000 FT

GRAPHIC SCALE

SCALE: 1 : 24,000

BASE MAP SOURCE:
USGS 7 1/2 Minute Series Topographic Map,
Central Park, NY-NJ and Weehawken, NY-NJ

Edison Parking Lot
500-516 Twelfth Avenue
New York, New York

FIGURE 1

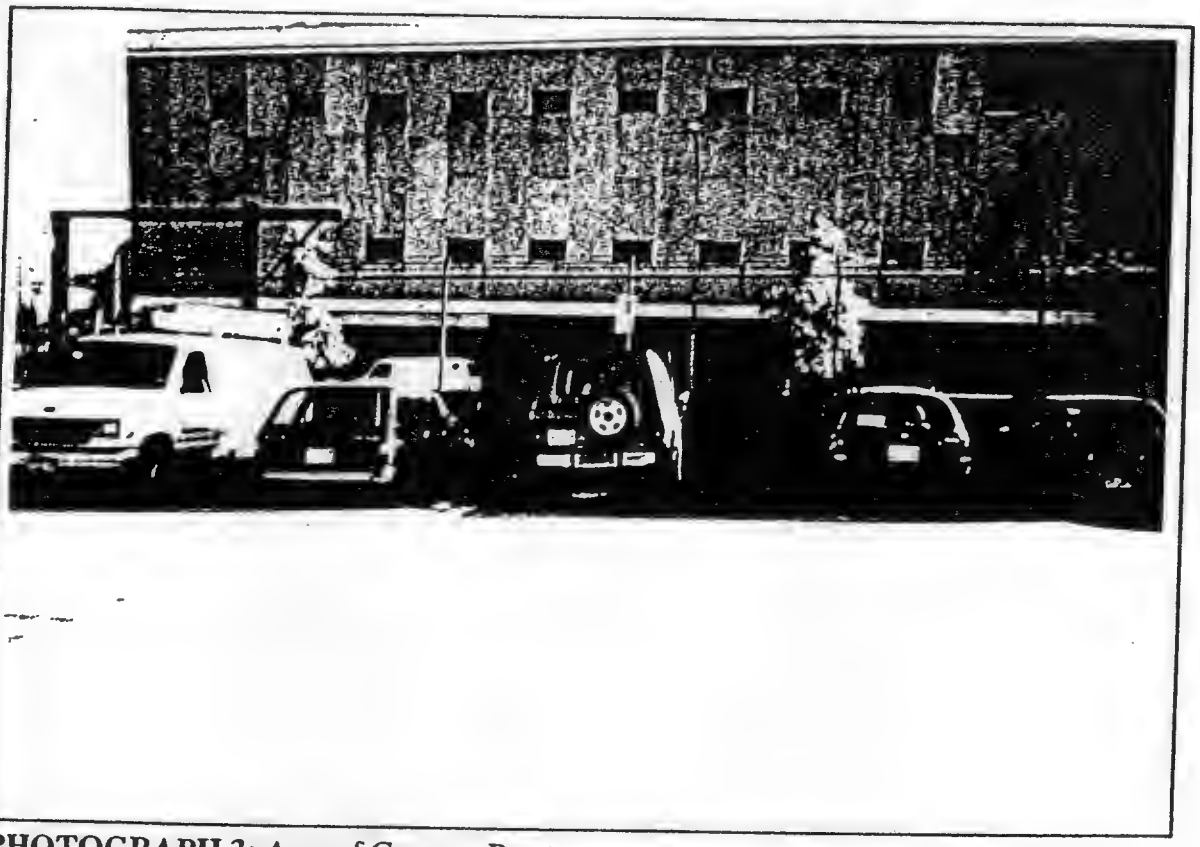
SITE LOCATION

Job No: 23581-030

DAMES & MOORE

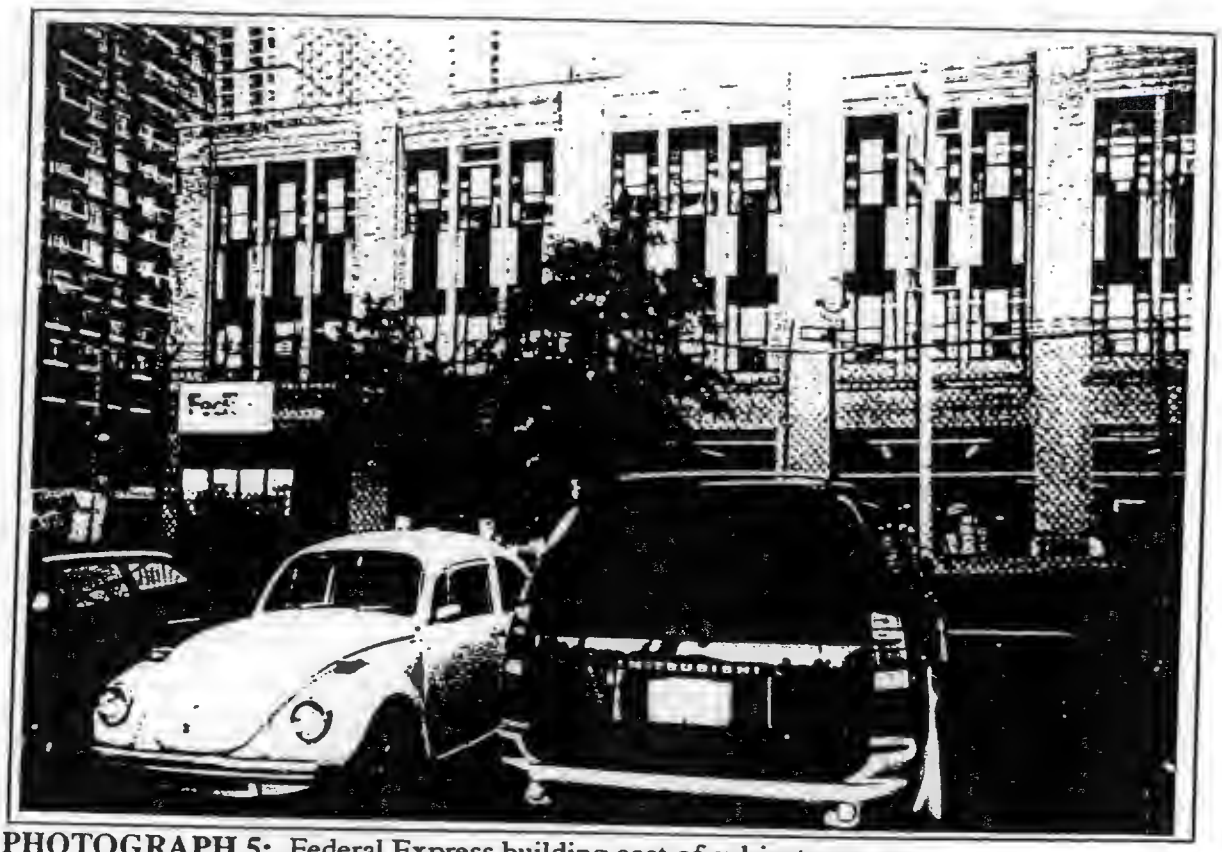
PHOTOGRAPH 1: View of subject site from east side looking west.

PHOTOGRAPH 2: Area of Concern A.



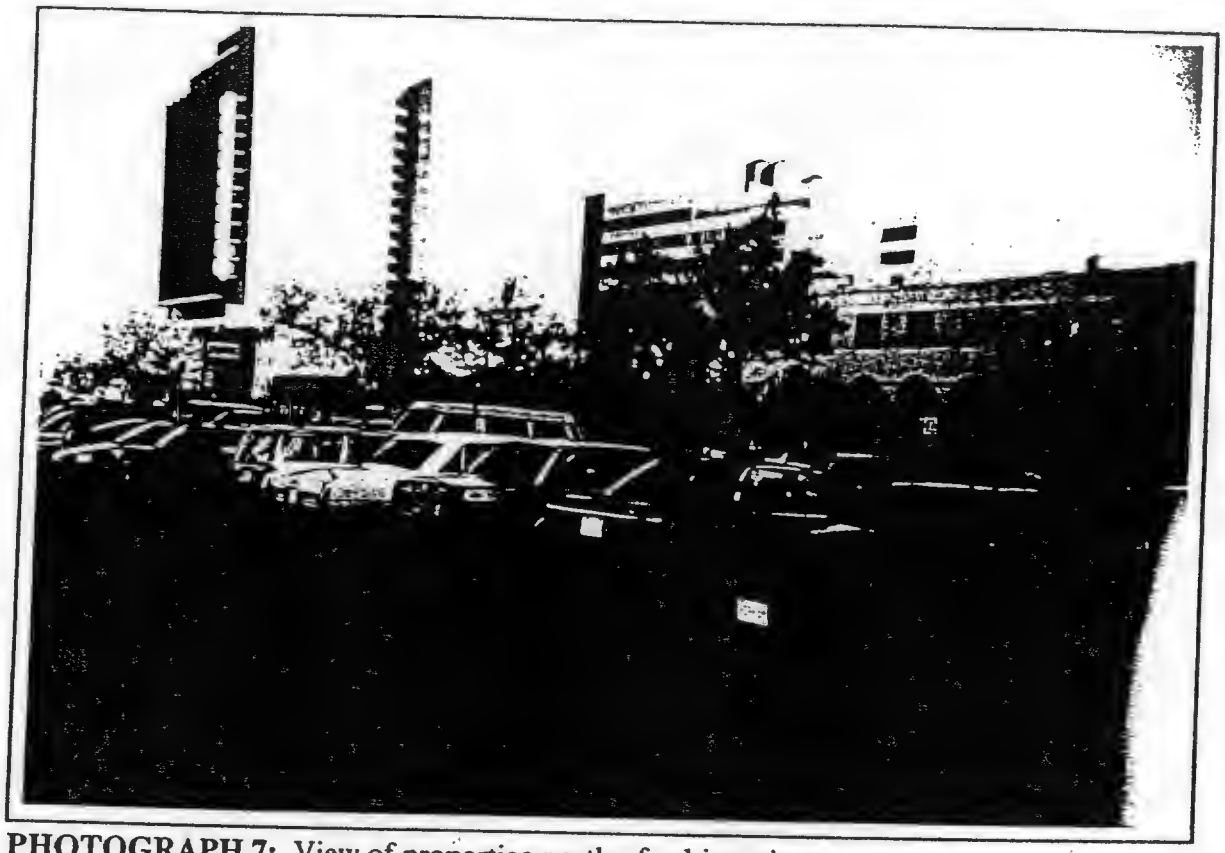
PHOTOGRAPH 3: Area of Concern B.

PHOTOGRAPH 4: Area of Concern C.

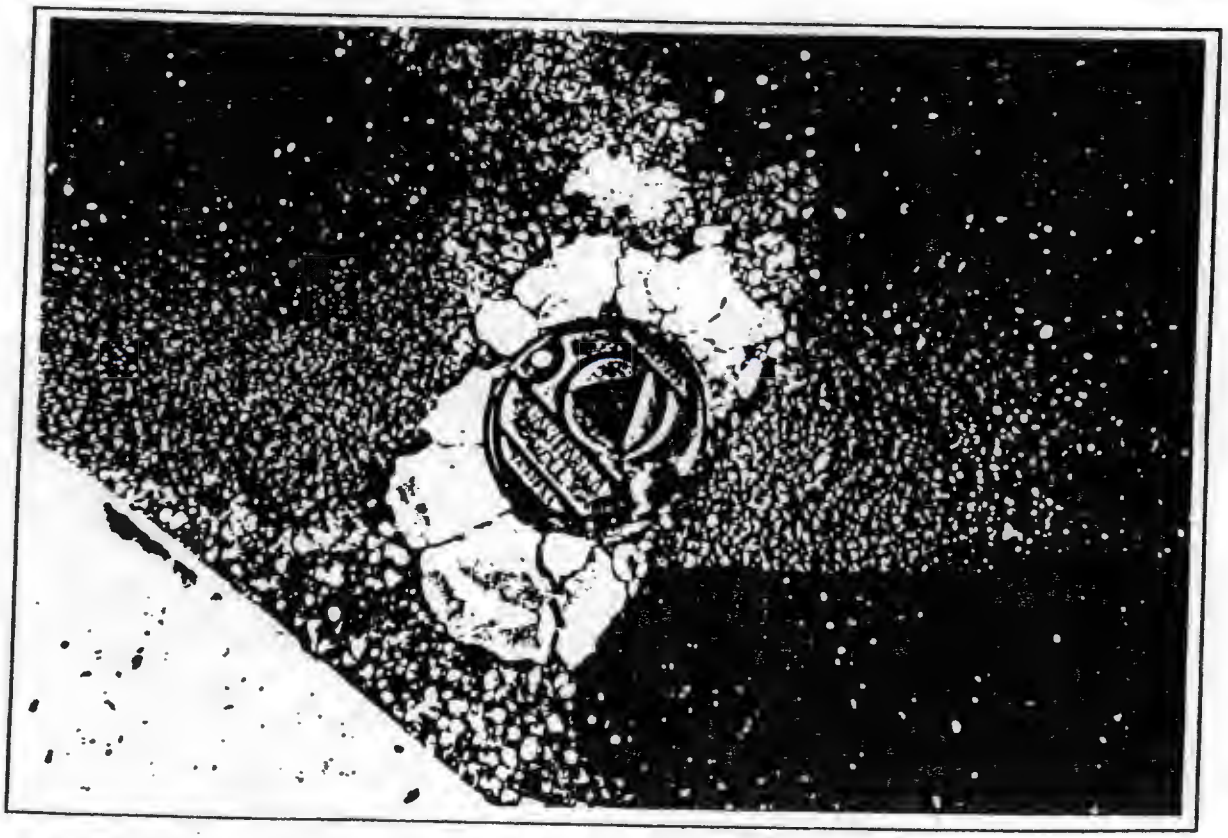


PHOTOGRAPH 5: Federal Express building east of subject property.

PHOTOGRAPH 6: West Side bus depot south of subject site.



PHOTOGRAPH 7: View of properties north of subject site.



PHOTOGRAPH 8: Monitoring well on subject site.

SITE ASSESSMENT REPORT

PROPERTY INFORMATION	CLIENT INFORMATION
Project Name/Ref #: Not Provided PARKING LOT 500-516 TWELFTH AVE NEW YORK, NY 10036 Latitude/Longitude: (40.761164, 74.001368)	PAM COX DAMES MOORE-LIVERPOOL 200 SALINA ST STE 107 LIVERPOOL, NY 13088

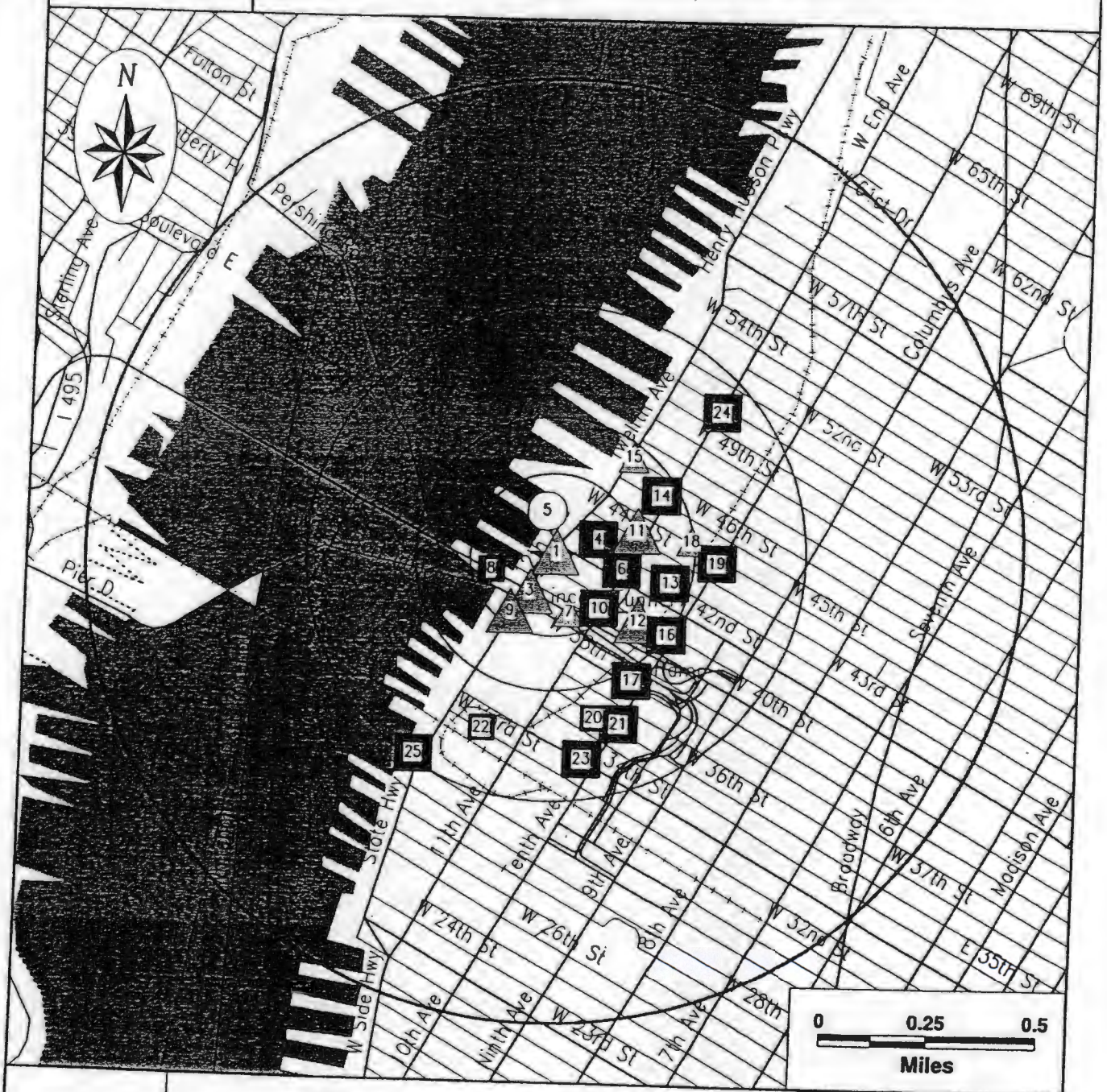
Site Distribution Summary Agency / Database - Type of Records			within 1/8 mile	1/8 to 1/4 mile	1/4 to 1/2 mile	1/2 to 1 mile
A) Databases searched to 1 mile:						
US EPA	NPL	National Priority List	1	0	0	0
US EPA	CORRACTS (TSD)	RCRA Corrective Actions and associated TSD	0	0	0	0
STATE	SPL	State equivalent priority list	1	0	0	0
B) Databases searched to 1/2 mile:						
STATE	SCL	State equivalent CERCLIS list	0	0	0	-
US EPA	CERCLIS / NFRAP	Sites currently or formerly under review by US EPA	1	0	0	-
US EPA	TSD	RCRA permitted treatment, storage, disposal facilities	0	0	0	-
STATE	LUST	Leaking Underground Storage Tanks	5	4	16	-
STATE	SWLF	Permitted as solid waste landfills, incinerators, or transfer stations	0	0	0	-
C) Databases searched to 1/4 mile:						
STATE	UST	Registered underground storage tanks	10	10	-	-
STATE	AST	Registered aboveground storage tanks	8	10	-	-
D) Databases searched to 1/8 mile:						
US EPA	ERNS	Emergency Response Notification System of spills	25	-	-	-
US EPA	LG GEN	RCRA registered large generators of hazardous waste	8	-	-	-
US EPA	SM GEN	RCRA registered small generators of hazardous waste	4	-	-	-
STATE	SPILLS	State spills list	13	-	-	-

This report meets the ASTM standard E-1527 for standard federal and state government database research in a Phase I environmental site assessment. A (-) indicates a distance not searched because it exceeds these ASTM search parameters.

NOTES

SITE ASSESSMENT REPORT

Map of Sites within 1 Mile



Subject Site	Category:	A	B	C	D
★	Databases Searched to:	1 mi.	1/2 mi.	1/4 mi.	1/8 mi.
	Single Sites	◆	■	△	○
	Multiple Sites	◆	■	△	○
		NPL, SPL, CORRACTS (TSD)	CERCLIS\ NFRAP, TSD, LUST, SWLF, SCL	UST	ERNS, GENERATORS

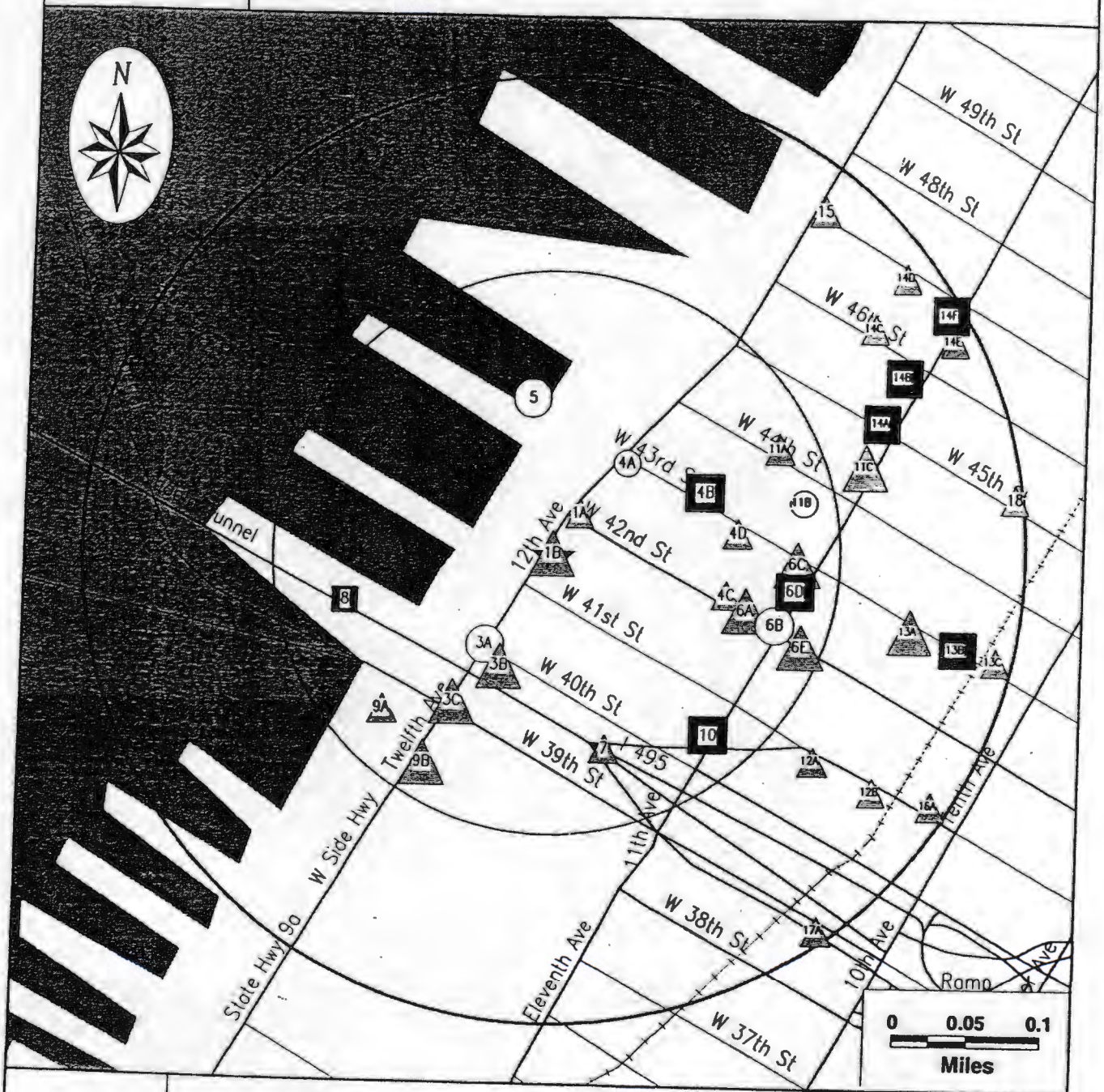
Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

For More Information Call VISTA Information Solutions, Inc. at **1 - 800 - 767 - 0403**
Report ID: **219718001**

Date of Report: **September 1, 1998**

SITE ASSESSMENT REPORT

Map of Sites within 1/4 Mile



Subject Site	Category:	A	B	C	D
★	Databases Searched to:	1 mi.	1/2 mi.	1/4 mi.	1/8 mi.
	Single Sites	◆	■	△	○
	Multiple Sites	◆	■	△	○
		NPL, SPL, CORRACTS (TSD)	CERCLIS\ NFRAP, TSD, LUST, SWLF, SCL	UST	ERNS, GENERATORS

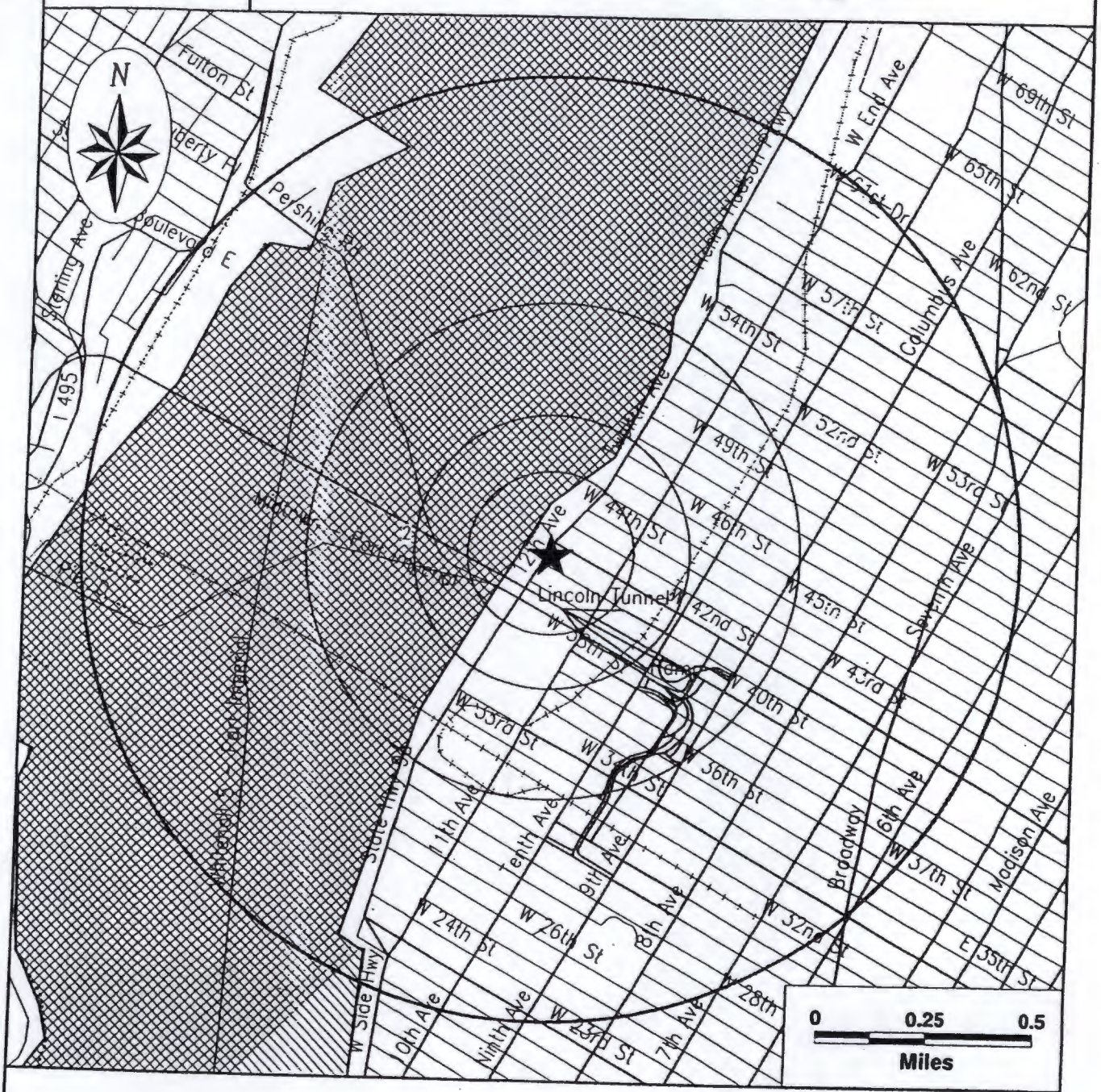
Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

For More Information Call VISTA Information Solutions, Inc. at **1 - 800 - 767 - 0403**
Report ID: **219718001**

Date of Report: **September 1, 1998**

SITE ASSESSMENT REPORT

Sites Represented as Polygons



These boundaries are approximated from agency records or other sources such as published maps. They may represent property boundaries, impact zones, or study areas. For more information contact the agency referenced by source number in the site listing.

★ Subject Site

Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

SITE ASSESSMENT REPORT

Street Map