Empire State Development

August 20, 1999

Mr. Richard Gardineer
Regional Remediation Engineer
NYS Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21st Street
Long Island City, NY 11101

RECEIVED
AUG 2 [illegible] 1999
NYS DEC REGION 2
ENVIRONMENTAL REMEDIATION

Re: Queens West Parcel 9 Sampling Plan

Dear Mr. Gardineer:

Enclosed for your review and approval is a work plan for additional soil and groundwater testing on Parcel 9 of the Queens West Development site. This work is proposed pursuant to the condition provided in the remediation plan for Parcel 9 dated August 1998. I have enclosed additional copies so that you may forward the work plan to the Department of Health, if necessary.

Please feel free to call with any questions or comments (212.803-3252) regarding this work plan.

Sincerely,

Rachel Shatz
Director, Planning & Environmental Review

Cc: Vadim Brevdo (3 copies)
Maria Buscarello
Mark Chertok
Andy Rudko

Empire State Development Corporation
633 Third Avenue New York, New York 10017-6754 Tel 212 803 3100

SAMPLING WORK PLAN
(INTERIOR OF ON-SITE BUILDINGS)
PARCEL 9 - QUEENS WEST DEVELOPMENT SITE
QUEENS, NEW YORK

Prepared For:

Queens West Development Corporation

Prepared By:

AKRF, Inc.
117 East 29th Street
New York, New York 10017
(212) 696-0670

August 1999

I. INTRODUCTION

The Queens West Development Corporation (QWDC) is implementing the development plan for the waterfront of the Hunters Point section of Queens, New York. QWDC is a subsidiary of the New York State Urban Development Corporation(UDC) dba as the Empire State Development Corporation (ESDC). The General Project Plan creates 19 development parcels on 74.5 upland acres along the shore of the East River to be developed for residential, commercial, and ancillary uses. The plan was approved by the New York City Board of Estimate and the New York State Urban Development Corporation in 1990 after an environmental review under the State Environmental Quality Review Act (SEQRA) and an Uniform Land Use Review Procedure (ULURP) review by the City of New York. An Environmental Impact Statement (EIS) was prepared for the project with a Final Environmental Impact Statement (FEIS) published in June of 1990. Findings were adopted by UDC in 1991.

A Voluntary Cleanup Agreement Work Plan for Parcel 9 of the Queens West Development Site has been reviewed and approved by the New York State Department of Environmental Conservation (DEC). As shown on the attached Figure 1, parcel 9 will occupy the city block between the proposed Center Boulevard to the west, 5th Street to the east, 47th Road to the north, and 48th Avenue to the south. In response to DEC's comments, the finalized plan, dated August 1998, specifies that additional soil sampling be performed to characterize the soil underneath previously inaccessible on-site buildings. These buildings correspond to the present warehouses located at 4-75 48th Avenue, 4-85 48th Avenue, and 4-62 47th Road.

This sampling work plan establishes the appropriate scope and methodologies for characterizing the soil underneath the aforementioned buildings and re-sampling of groundwater monitoring well MW-7A.

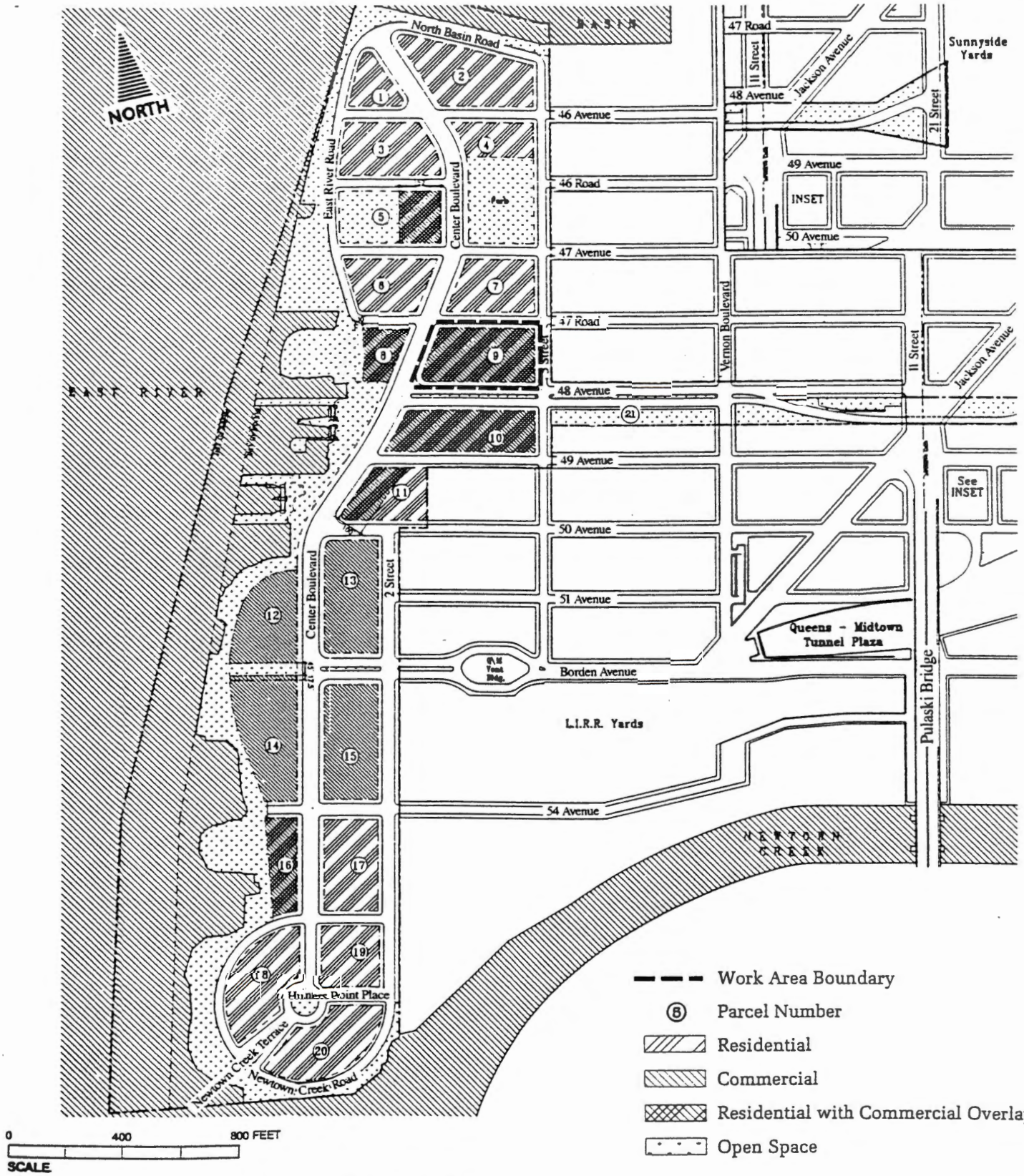
II. SUMMARY OF PREVIOUS SAMPLING DATA

Soil and groundwater sampling in or adjacent to Parcel 9 occurred in 1985-86, 1989, 1994, and 1998. The first two rounds of sampling were performed as part of an overall assessment of the subsurface conditions throughout the development site. The 1994 sampling program focused upon subsurface conditions along the route of proposed underground utilities on south-adjacent parcels and the west-adjacent waterfront park. The final round of sampling in January and February of 1998 was requested by DEC in order to address issues raised by the previous testing programs and the proposed development of Parcels 8 and 9.

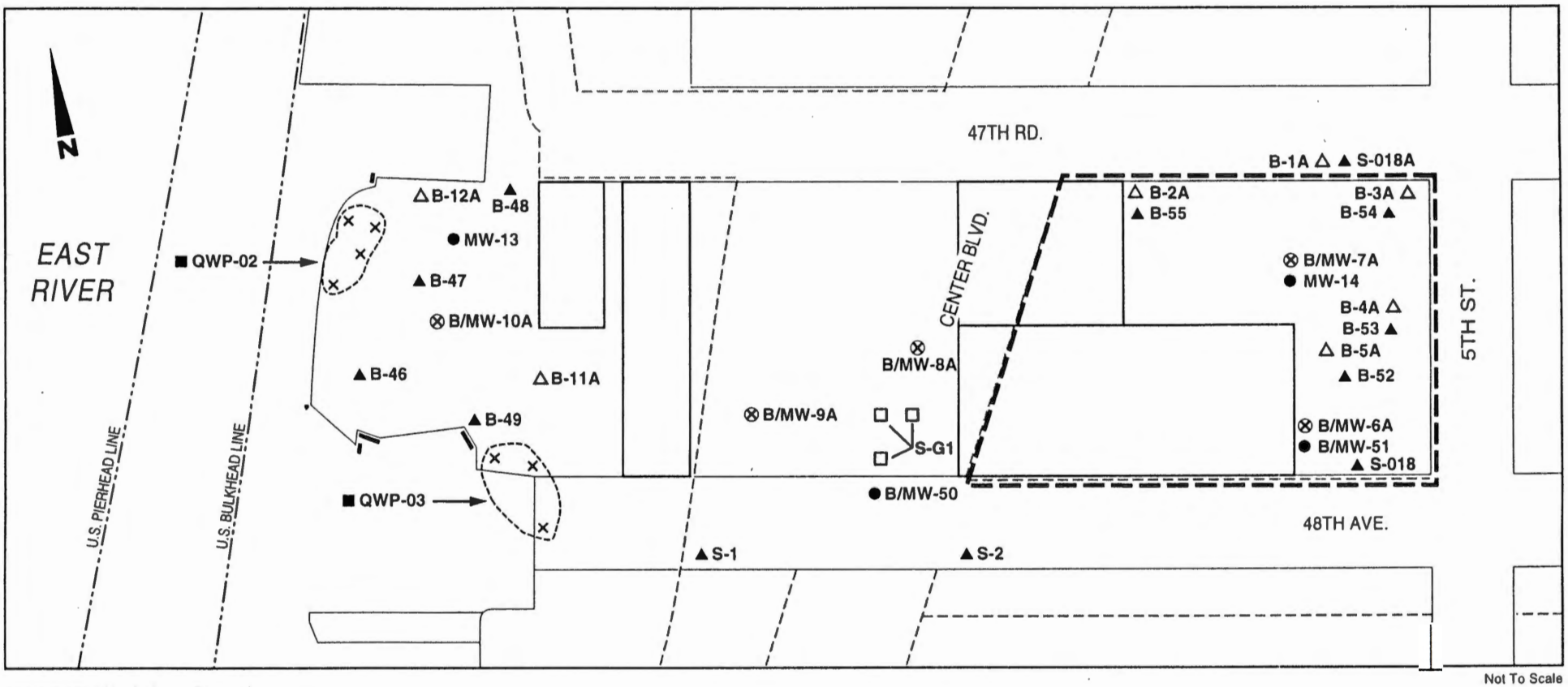
The sampling locations for the prior testing programs are shown in Figure 2. Analytical results are tabulated in Appendix A. The following subsections briefly describe the previous testing programs.

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ENVIRONMENTAL REMEDIATION

Parcelization and Land Use Plan



Source: Gruzen Samton Steinglass/Beyer Blinder Belle
Associated Planners and Architects



Work Area Boundary
Proposed Street
1998 Soil/Groundwater Sampling Location
1998 Soil Sampling Location
1998 Soil Gas Location
Previous Soil/Groundwater Sampling Location (1989 Testing Program)
Previous Soil Sampling Location (1984-85, 1989 Testing Program)
Composite Sampling (1994 Testing Program)
Discrete Sampling Location (1994 Testing Program)
Area of Composite Sampling (1994 Testing Program)

Figure 2

Prior Sampling Locations

1985 Sampling Program

Roy F. Weston Inc. performed the initial testing of the area containing the project site in 1985-86 on behalf of the Port Authority. As shown on Figure 2, sample S-018A was collected on the sidewalk on 47th Road, near the northeast corner of the block containing the project site. This sample was reported to have a level of leachable mercury (0.56 parts per million) above the EP Toxicity Standard of 0.2 ppm. The results were reported in a memo in which no information on sampling depth or quality assurance/quality control (QA/QC) was presented. No leachable mercury was detected from the sample collected at location S-18 on the south side of the site. No mercury (total rather than leachable) was detected in the groundwater sample collected from MW-14. Based upon S-018A's exceedance of the EP Toxicity standard for mercury, the NYS DEC identified the site as a potential inactive hazardous waste site.

1989 Sampling Program

This testing program consisted of collecting soil samples at various depths from seven locations on the project block and installing two groundwater monitoring wells (Refer to B/MW-50, B/MW 51 and B-52 through B-55 on Figure 2). Soil samples were analyzed for Target Compound List volatile organic compounds, Target Compound List semivolatile organic compounds, polychlorinated biphenyls (PCBs), Target Analyte List Metals, and EP Toxicity metals. Unfiltered groundwater samples were analyzed for Target Compound List volatile organic compounds, Target Compound List semivolatile organic compounds, PCBs, and Target Analyte List metals. Filtered groundwater samples were also collected and analyzed for Target Analyte List metals.

Results of the retesting in 1989 found no soil samples exceeding the EP-Toxicity Standard for mercury, and suggested that the mercury level found in the earlier sample S-018A was likely anomalous.

1994 Sampling Program

In 1994, limited additional testing was performed of surface soil located immediately to the west of Parcel 8, along the area to be occupied by the waterfront park. The sampling program consisted of collecting discrete surficial soil samples (0-2 feet) along the area that would become the waterfront park. Soil samples were subsequently composited into two samples and analyzed for Target Compound List semivolatile organic compounds, PCBs, and full RCRA waste characterization parameters (toxic characteristic leaching procedure (TCLP), reactivity, ignitability, and corrosivity). Analytical results showed that surficial soil had none of the hazardous waste characteristics and contained no PCBs. However, the laboratory analysis identified elevated levels of polycyclic aromatic hydrocarbons (PAHs) in the soil. In accordance with the NYSDEC-approved Remediation Plan for the entire Stage I area of the Queens West Development site, the soil in areas of the waterfront park which will not be covered by pavement or at least two feet of clean fill have been excavated and disposed of off-site at an appropriate off-site waste disposal facility.

1998 Sampling Program

Testing on the project block was performed in accordance with a work plan, titled Additional Sampling Work Plan, Parcels 8 and 9 -Queens West Development Site, Queens, New York, approved by the DEC and the New York State Department of Health (NYSDOH). The primary objectives of the 1998 study were to confirm the absence of hazardous levels of mercury on the project site, determine the nature and extent of any solvent contamination, delineate the extent of petroleum and PAH contamination, and establish current groundwater conditions on the project site. Borings/monitoring wells B/MW-6A and B/MW-7A, and borings B-2A, B-3A, B-4A, and B-5A were on Parcel 9. Boring/monitoring well B/MW-50 and boring B-1A were on the sidewalk adjacent to Parcel 9. Boring/monitoring well B/MW-8A was near the boundary between Parcel 9 and Center Boulevard.

The conclusions of this study, as described in the Site Assessment Report submitted to the DEC, were as follows:

- Levels of leachable mercury in the soil were nonhazardous. Levels of leachable lead exceeded the maximum concentration for the characteristic of Toxicity at the following three locations: B-1A (0-2"), B-MW-7A (2-4'), and B-MW-9A (3-5').

- Levels of PAHs in the shallow and subsurface soil were consistent with those found on other parcels of the Queens West Development Site. The highest level of total PAHs was 1,743 ppm in sample B/MW-9A (3-5'); similarly, prior sampling in 1994 on the south-adjacent parcel 10 indicated total PAH levels in the subsurface and shallow soils ranging from 7.6 to 4,348 ppm.

- Only trace amounts of pesticides, Target Compound List volatile organic compounds and PCBs were found in the soil.

- Levels of total and dissolved Target Analyte List metals were representative of groundwater in urban areas. Although elevated levels of total metals, leachable lead, and Target Compound List semivolatile organic compounds were detected in the soil at some locations, no significant impact to groundwater conditions was noted in the downgradient monitoring well, MW-10A.

III. SAMPLING PLAN

To characterize the soil underneath the on-site warehouse on Parcel 9, AKRF proposes five (5) soil borings at the locations shown in Figure 3. Proposed sampling locations 02, 04, and 05 were selected based upon their proximity to floor drains and sumps identified by AKRF's inspection of the building interiors. The remaining sampling locations, 01 and 03, were selected to provide full coverage of the soil beneath the on-site warehouse buildings. Below is a brief description of the proposed sampling plan.

1. A motorized drill rig will be utilized to install the five soil borings inside the on-site warehouses. From each boring, soil samples will be collected every two feet until the groundwater table.
2. From each of these boring locations, a shallow soil sample immediately below the floor slab (0-2 feet) and a subsurface soil sample (2-4 feet or deeper) will be collected for laboratory analysis.
3. All samples will be analyzed for target compound list volatile organic compounds (TCL-VOCs), target compound list semivolatile organic compounds (TCL-SVOCs), target analyte list metals (TAL), and toxic characteristic leaching procedure (TCLP) metals.
4. The existing groundwater monitoring well MW-7A will be re-developed and re-sampled to confirm lead and mercury levels.

IV. SAMPLING METHODOLOGY

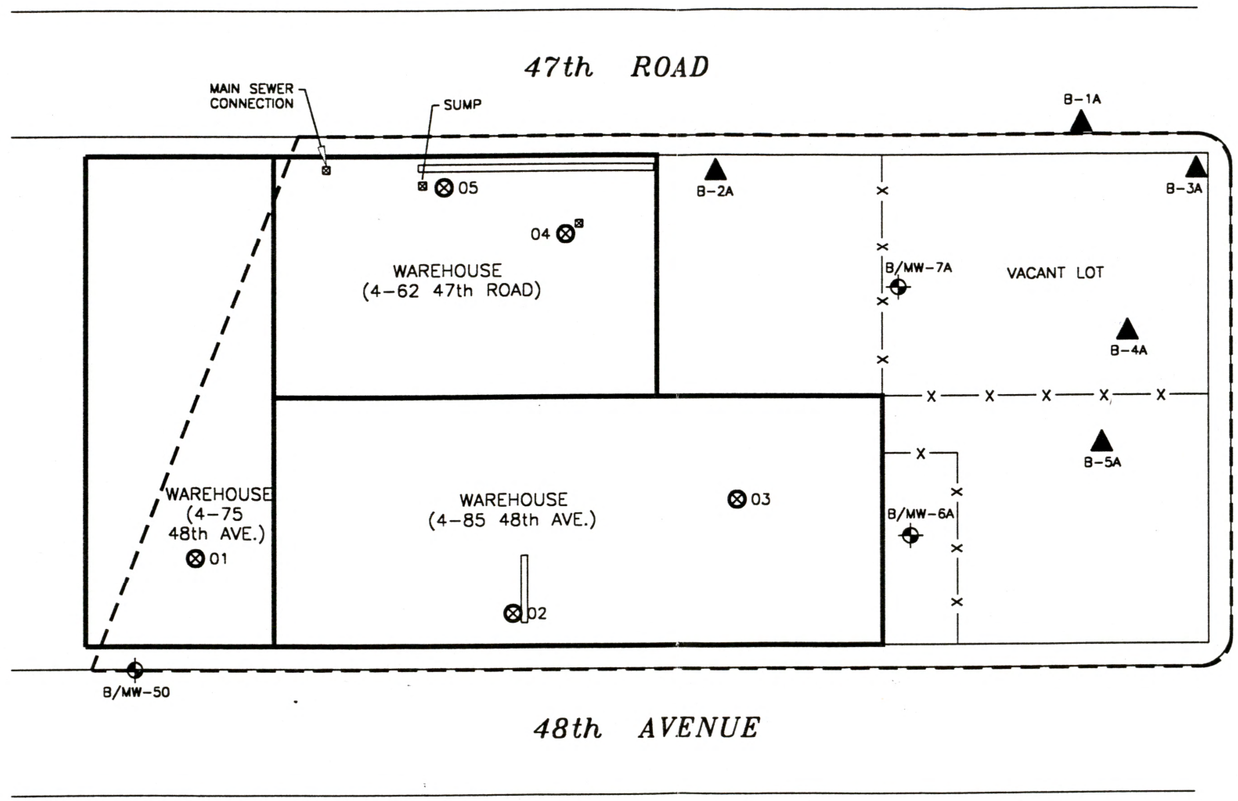
Soil Sampling

Soil sampling will be performed in accordance with NYSDEC sampling protocols, as described in Technical and Administrative Guidance Memorandum #4007: Phase II Investigation Generic Work Plan; DEC Division of Hazardous Waste Remediation, 1988. At each soil sampling location, soil samples will be obtained by a steel, 24-inch long, 2-inch in diameter split-spoon sampler that will be driven through the subsurface soils ahead of a hollow-stem (6-inch diameter) auger that bores into the soil to just above the desired sampling depth.

All samples will be containerized and stored in accordance with NYSDEC sampling protocols. Soil samples will be field screened for organic vapors by head-space analysis using a photoionization detector (PID). Each container will be properly sealed, labeled, and placed in a refrigeration unit for transport to the laboratory. A record of each sample, including notation of any odors, color, or sample matrix, will be kept in the sampler's field log book. A chain of custody will be maintained throughout the field sampling, transport of samples to the laboratory, and during lab analysis.

Groundwater Sampling

Groundwater monitoring well MW-7A will be redeveloped until the turbidity of the water sample, as measured by a nephelometer, becomes less than 50 Nephelometric Turbidity Units (NTU) or at least 15 well volumes of groundwater have been pumped out. The well will not be sampled for at least seven days after development.



Legend:

— X — X — X —	CHAIN LINK FENCE
B/MW-8A	PREVIOUS BORING/MONITORING WELL LOCATION
B-2A	PREVIOUS BORING LOCATION
01	PROPOSED SOIL BORING LOCATION
	FLOOR DRAIN
	TRENCH DRAIN
- - - - - -	APPROXIMATE WORK AREA BOUNDARY

0' 30' 60' 120'

SCALE: 1"=60'

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AKRF, Inc.
Environmental Consultants
117 East 29 Street New York, N.Y. 10016

PARCEL 9

PROPOSED SOIL BORING LOCATIONS

DATE 7/30/99

SCALE 1"=60'

PROJECT No. 03653-0008

FIGURE No. 3

Before resampling MW-7A, water levels will be measured using an electronic water level indicator. A dedicated bailer or a submersible sample pump will be used for sample collection. A minimum of three well volumes will be purged from the well before sampling. Samples will not be collected until the water is visually free of suspended materials and the pH, temperature, and conductivity readings have stabilized.

All water samples will be containerized and stored in accordance with applicable EPA or NYSDEC analytical protocols. After collection, each container will be properly labeled, sealed, and refrigerated for shipment to the laboratory. All sampling equipment will be decontaminated before its use.

The well locations and their elevations will be surveyed. Using these data and the measured water levels, a hydraulic gradient map will be prepared to confirm the direction of groundwater flow on the site.

V. ANALYTICAL METHODOLOGY

All soil samples and groundwater samples will be analyzed at a New York State certified laboratory for the parameters of concern. Soil samples will be analyzed for TCL-VOCs by NYSDEC ASP Category 95-1, TCL-SVOCs by NYSDEC ASP Category 95-2, TAL-metals by NYSDEC ASP Category 6010A and 7451A for mercury and Toxic Characteristic Leaching Procedure (TCLP) by US EPA method 1311.

Unfiltered and filtered groundwater samples will be analyzed for lead by NYSDEC ASP Category 6010A and for mercury by 7451A.

VI. HEALTH AND SAFETY PLAN

All field sampling and related operations will be conducted in accordance with the previous site-specific Health and Safety Plan developed for the previous sampling event that was reviewed and approved by the New York State Department of Health. A copy of this Health and Safety Plan is included in Appendix B. All personnel involved in the sampling program will have appropriate training as specified in the OSHA regulations.

VII. QUALITY ASSURANCE/ QUALITY CONTROL

A. Equipment Decontamination

To avoid contamination and cross-contamination of samples, all sampling equipment will be cleaned before collection of each sample. The procedure to be used is derived from that of the United States Environmental Protection Agency (EPA) Region II, as published by the New Jersey Department of Environmental Protection *Field Sampling Procedures Manual,* February 1988. (It differs from this reference in allowing alternatives to acetone and in the use of HCl for stainless steel.) The following procedure will be followed for all samples except the soil gas sampling equipment discussed above:

Step 1: Steam clean or pressure wash equipment.

Step 2: Scrub equipment with a bristle brush using non-phosphate detergent in hot tap water.

Step 3: Rinse with hot tap water.

Step 4: Rinse with 0.1N nitric acid (HNO3). For stainless steel equipment, rinse with 0.1N hydrochloric acid (HCL).

Step 5: Rinse twice with deionized water.

Step 6: Rinse with spectrographic-grade acetone or methanol.

Step 7: Air dry.

Step 8: Double rinse with deionized, distilled water.

Step 9: Air dry the equipment.

Step 10: Package in clean unused aluminum foil.

B. Chain of Custody

To ensure the integrity of samples taken, a strict chain of custody record must be maintained on each sample. This begins after sampling with the entry in the sampler's field log book of the sampling details:

a) Date and time of sampling;

b) Sample location (as specific as possible);

c) The unique sample number, size, and container(s) used;

d) Sample description;

e) Weather conditions (if applicable); and

f) Any additional comments.

In addition, a record must be kept of the sample's progress from the sample site to the laboratory where it will be analyzed. This is the chain-of-custody form. The form must include:

a) The sample number;

b) The sampler's name;

c) Date and time of sampling;

d) Location at which the sample was taken, including the address, if possible;

e) A description of the sample, as best known;

f) Signatures of people involved in the chain of possession; and

g) Inclusive dates of possession of each person in the chain.

The chain-of-custody form must accompany the sample throughout its trip to the laboratory. If the sample (s) must be shipped to a laboratory, most shipping agents will refuse to sign or separately

carry the chain-of-custody form. In this one case, it is permissible to put the chain-of-custody form into the box with the sample and then seal the box. The recipient of the box, the laboratory's sample custodian, can then attest to the box's arrival still sealed and unopened.

Accompanying the chain-of-custody record, or included in it, must be a request to the laboratory for sample analyses. Information required includes:

a) Name of person receiving the sample;

b) Laboratory sample number;

c) Date of sample receipt;

d) Sample allocation; and

e) Analyses to be performed.

Finally, on arrival at the laboratory, the sample custodian must enter the sample in the laboratory's sample log book. The chain-of-custody should be kept on file at the laboratory.

C. Laboratory Testing

New York State-certified laboratories will be used for all laboratory analyses. The laboratory will operate a Quality Assurance/Quality Control (QA/QC) program that will consist of proper laboratory practices (including the required chain-of-custody), an internal quality control program, and external quality control audits by New York State.

A field and trip blank will be included in each batch of samples, or 1 for each 20 samples, whichever is greater in frequency. Field blanks will be analyzed for metals and VOCs to check for contamination during transport and sampling procedures. Trip blanks will be analyzed for VOCs for contamination during transportation.

APPENDIX A

PREVIOUS SAMPLING RESULTS
(1985-86, 1989, 1994, and 1998 Testing Programs)

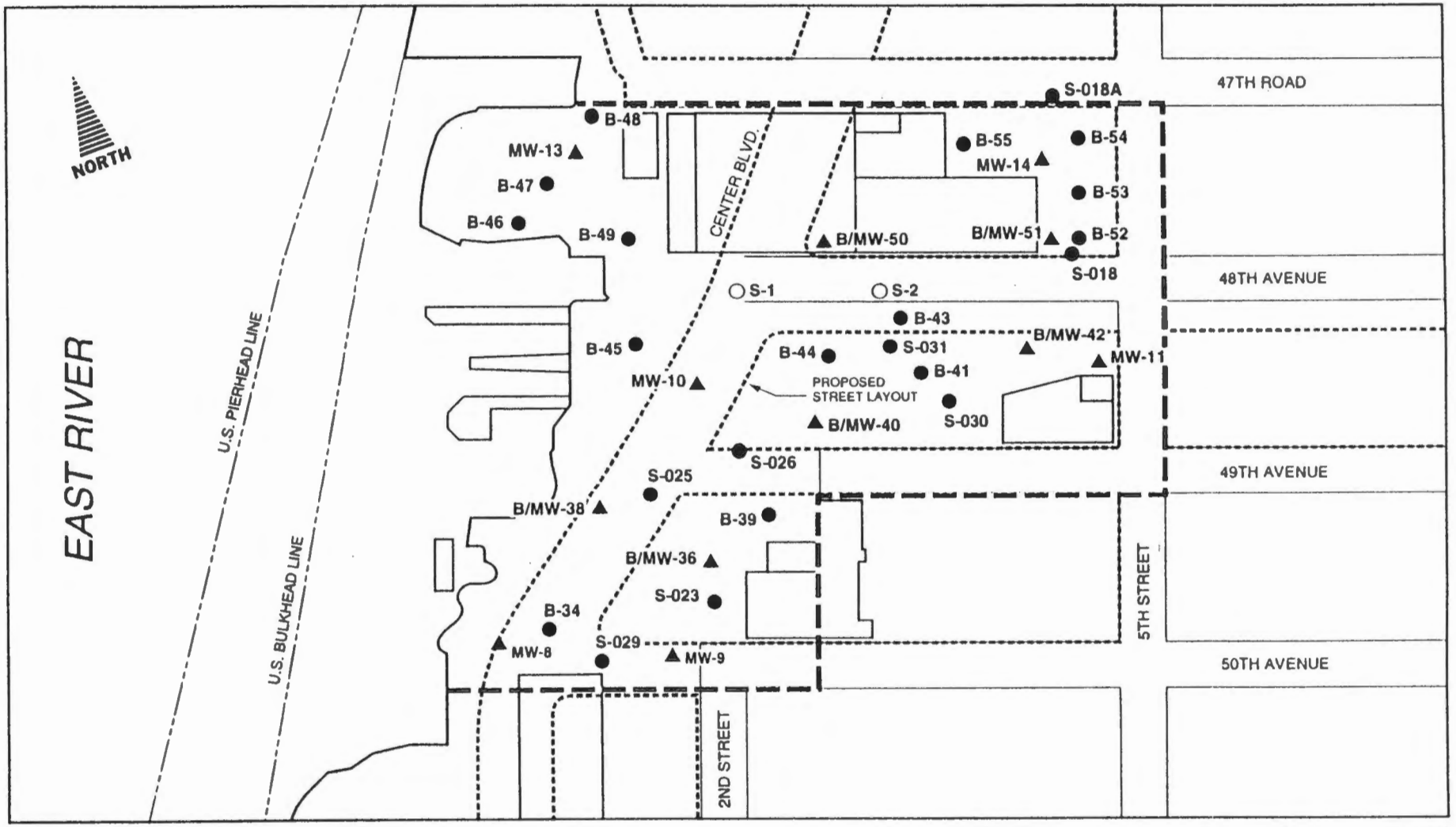


Figure 3

Previous Work Area Sampling Locations

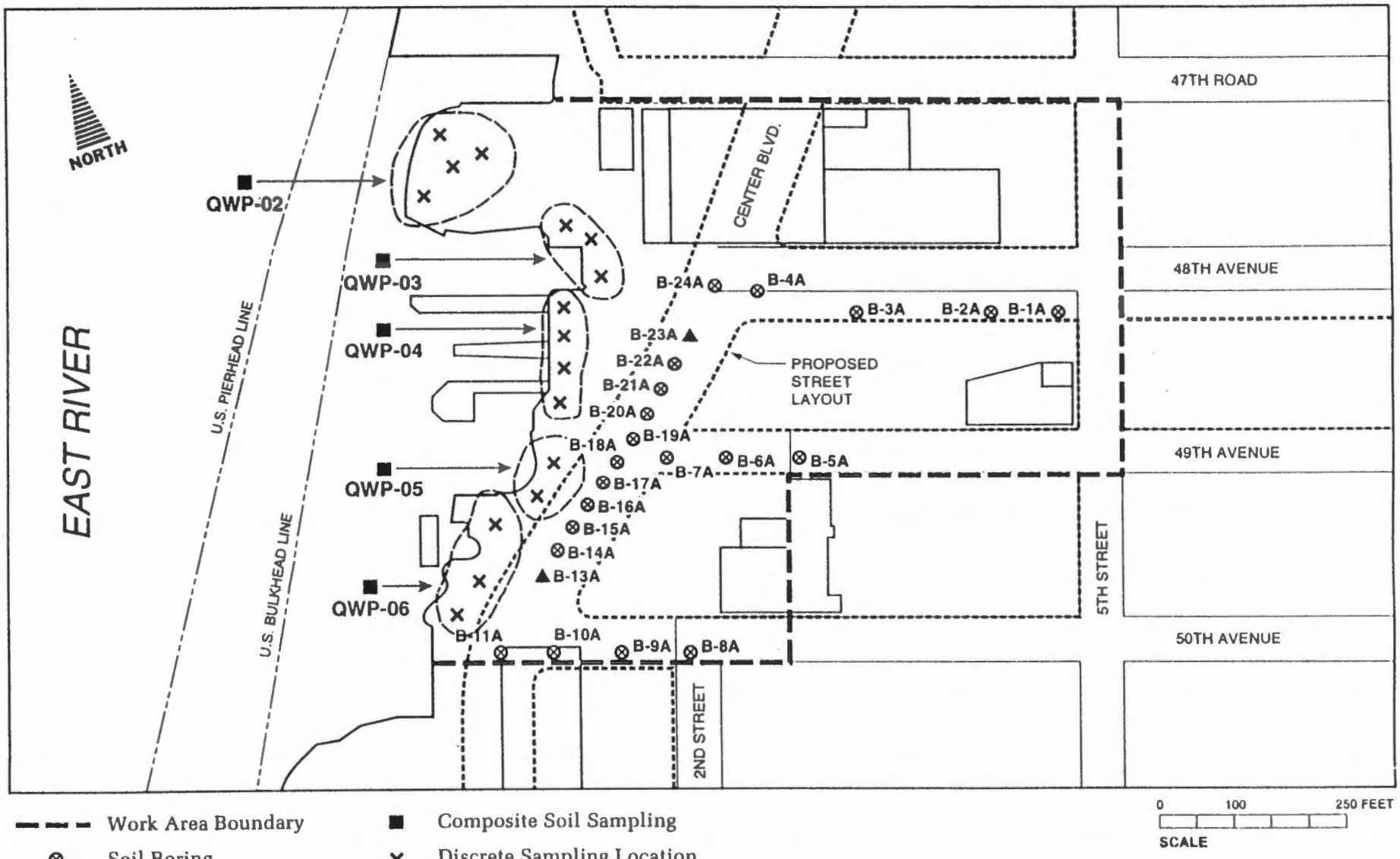


Figure 4

Sampling Areas — March/April 1994 Sampling Program

SOIL ANALYSIS DATA -1985 SAMPLING PROGRAM

(Parts per Million)

EP-Toxicity Metals

	Regulatory Levels	S-018	S-018A	S-023	S-025	S-026	S-029	S-030	S-031
Arsenic	5	U	U	U	U	U	U	U	U
Barium	100	1	8.1	1.5	U	U	1.4	U	1.4
Cadmium	1	0.01	U	0.01	U	U	U	U	U
Chromium	5	U	U	U	0.26	U	U	U	U
Lead	5	0.51	U	0.08	0.05	U	0.07	0.04	0.04
Mercury	0.2	U	0.56	U	U	U	U	U	U
Selenium	1	U	U	U	U	0.01	0.01	U	U
Silver	5	U	U	U	U	U	U	U	U
Total PCBs	50	U	U	0.06	0.09	U	U	0.04	0.17
Total Petroleum Hydrocarbons		5092	6659.5	4418.4	4399.4	8457.7	1758.4	4486.1	3186.9

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

Volatile Organics

(parts per million; ppm)

	B-34 (0-2)	B-34 (4-6)	B/MW-36 (0-2)	B/MW-36 (2-4)	B/MW-36 (Grab)	B/MW-38 (0-2)	B/MW-38 (2-4)	B-39 (0-2)	B-39 (2-4)	B/MW-40 (0-2)	B/MW-40 (2-4)
Chloromethane	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	U	U	U	U	U	U	U	U	U	U	U
Vinyl Chloride	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	U	U	U	U	U	U	U	U	U	U	U
Methylene Chloride	U	U	U	11	.022	U	.0095	.120	.044	.035	.029
Acetone	U	U	U	U	.750	U	U	.130	U	U	U
Carbon Disulfide	U	U	U	U	U	U	U	.030	U	.0072	.011
1,1-Dichloroethene	U	U	U	U	U	U	U	.021	U	U	.0086
1,1-Dichloroethane	U	U	U	U	U	U	U	U	U	U	U
Trans-1,2-dichloroethene	U	U	U	U	U	U	U	.019	U	U	.0077
Chloroform	U	U	U	U	U	U	U	.011	U	U	.074
1,2-Dichloroethene (total)	U	U	U	U	U	U	U	U	U	U	U
2-Butanone	U	U	U	U	.071	U	U	U	U	U	U
1,1,1-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U
Carbon Tetrachloride	U	U	U	U	U	U	U	.020	.012	.065	.018
Vinyl Acetate	U	U	U	U	U	U	U	U	U	U	U
Bromodichloromethane	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropene	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-dichloropropene	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	U	U	U	U	U	U	U	U	U	U	U
Benzene	U	U	U	U	.470	U	U	.010	U	U	.0064
Dibromochloromethane	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U
Bromoform	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone	U	U	U	U	.061	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	U	U	U	U	U	U	U	U	U	U	U
Toluene	U	U	U	U	1.20	U	U	.0083	U	U	U
Chlorobenzene	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	U	U	U	U	1.30	U	U	U	U	U	U
Styrene	U	U	U	U	U	U	U	U	U	U	U
m-Xylene	U	U	U	U	1.90	U	U	U	U	U	U
o,p-Xylene	U	U	U	U	1.70	U	U	U	U	U	U
Total dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U

U = Not Detected

GROUNDWATER ANALYSIS DATA -1985 SAMPLING PROGRAM

(Parts per Billion)

	NYS DEC STANDARD	NYS DEC GUIDANCE VALUES	MW-8	MW-9	MW-10	MW11	MW13	MW14
Acenaphthene	20		U	<0.001	U	U	23	0.013
Acenaphthylene			U	U	U	U	U	<0.001
Bis (2-ethylhexyl) Phthalate	50		460	110	U	U	U	U
Di-n-octyl Phthalate	50		20	40	U	U	U	<0.001
Napthalene		10	U	<0.001	U	U	U	U
Phenanthrene		50	U	<0.001	U	U	30	U
Flourene		50	U	U	U	U	18	U
Phenols	1.0		U	U	U	U	40	U
Phenols, Total	1.0		470	460	648	816	224	11
Pyrene		50	U	U	U	U	16	U
2,4 Dimethylphenol			U	U	U	U	85	U
Benzene	0.7		U	U	U	U	176	569
Ethylbenzene	5		U	U	U	U	48	U
Toluene	5		U	U	U	U	146	<0.001
Arsenic	25		510	390	189	134	163	3
Beryllium		3	20	21	U	U	U	U
Cadmium	10		65	20	20	U	7	U
Chromium	50		1,675	415	147	361	78	U
Copper	200		2,283	1,270	646	1,310	833	34
Lead	25		10,760	9,830	1,129	660	1,885	90
Mercury	2		36	29	3	1	20	U
Nickel			2,229	482	141	330	66	U
Selenium	10		255	137	U	U	96	5
Silver	50		56	26	113	110	U	U
Zinc	300		6,700	3,900	1,459	1,843	3,304	U
Petroleum Hydrocarbons			8,500	2,500	5,700	9,000	U	1,300

U = Unidentified

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

(Parts per Million)

EP-Toxicity Metals

	Regulatory Levels	B-34 (0-2)	B-34 (4-6)	B/MW -36 (0-2)	B/MW -36 (2-4)	B/MW -36 (Grab)	B/MW -38 (0-2)	B/MW -38 (2-4)	B-39 (0-2)	B-39 (2-4)
Arsenic	5	U	U	U	U	U	U	U	U	U
Barium	100	.304	U	U	U	U	U	U	U	U
Cadmium	1	U	U	U	U	U	U	U	U	U
Chromium	5	U	U	0.010	U	U	U	U	U	U
Lead	5	0.134	.008	0.0149	0.009	0.160	0.025	0.045	U	0.018
Mercury	0.2	U	U	U	U	U	U	U	U	U
Selenium	1	U	U	U	U	U	U	U	U	U
Silver	5	.011	U	U	U	U	U	U	U	U

	Regulatory Levels	B/MW -40 (0-2)	B/MW -40 (2-4)	B-41 (0-2)	B-41 (2-4)	B/MW -42 (0-2)	B/MW -42 (2-4)	B-43 (0-2)	B-43 (2-4)	B-44 (0-2)
Arsenic	5	U	U	U	U	U	U	U	U	U
Barium	100	U	U	U	U	U	U	U	U	1.4
Cadmium	1	U	U	U	U	U	U	U	U	U
Chromium	5	U	0.011	U	U	U	U	0.012	U	U
Lead	5	0.008	0.280	0.013	0.062	U	U	0.015	0.0051	0.015
Mercury	0.2	U	U	U	U	U	U	U	U	U
Selenium	1	U	U	U	U	U	U	U	U	U
Silver	5	U	U	U	U	U	U	U	U	U

U=Unidentified

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

(Parts per Million)

EP-Toxicity Metals

	Regulatory Levels	B-44 (2-4)	B-45 (0-2)	B-45 (2-4)	S-1 (0-2)	S-2 (0-2)	B-46 (0-2)	B-47 (0-2)
Arsenic	5	U	U	U	U	U	U	U
Barium	100	U	U	U	0.221	U	0.175	0.204
Cadmium	1	U	U	U	U	U	U	U
Chromium	5	0.010	0.012	U	U	U	U	0.0089
Lead	5	0.151	.0074	U	U	U	U	0.0061
Mercury	0.2	U	U	U	U	U	U	U
Selenium	1	U	U	U	U	U	U	U
Silver	5	U	U	U	U	U	U	U

	Regulatory Levels	B-48 (0-2)	B-49 (0-2)	B/MW -50 (0-2)	B/MW -51 (0-2)	B-52 (0-2)	B-53 (0-2)	B-54 (0-2)	B-55 (0-2)
Arsenic	5	U	U	0.0071	U	U	U	U	U
Barium	100	0.329	0.261	0.280	0.402	0.436	.593	0.473	0.263
Cadmium	1	U	U	U	0.011	0.010	0.012	0.005	U
Chromium	5	U	0.0068	U	0.020	U	U	0.011	0.023
Lead	5	0.0099	0.0086	U	0.075	0.008	0.047	0.042	0.044
Mercury	0.2	U	U	U	U	U	U	U	U
Selenium	1	U	U	U	0.150	U	U	U	U
Silver	5	U	U	U	0.0234	U	0.011	0.012	U

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

(Parts per Million)

Metals

	B-34 (0-2)	B-34 (4-6)	B/MW -36 (0-2)	B/MW -36 (2-4)	B/MW -36 (Grab)	B/MW -38 (0-2)	B/MW -38 (2-4)	B-39 (0-2)	B-39 (2-4)	B/MW -40 (0-2)	B/MW -40 (2-4)
Aluminum	5,710.0	2,130.0	5,790.0	3,620.0	3,830.0	5,790.0	2,790.0	1,630.0	9,880.0	2,510.0	4,860.0
Antimony	U	U	U	U	U	U	U	U	7.7	U	U
Arsenic	1.7	6.8	6.1	20.0	4.6	2.8	8.7	1.7	4.0	12.2	5.2
Barium	122.0	69.2	81.7	140.0	60.5	263.0	178.00	63.7	62.3	119.0	66.8
Beryllium	0.6	0.6	0.5	0.7	0.9	0.8	0.7	0.9	1.1	0.9	1.0
Cadmium	U	U	U	U	U	0.8	U	U	U	U	U
Calcium	103,700.0	1,530.0	2,460.0	5,800.0	2,250.0	57,000.0	22,400.0	3,290.0	625.0	4,200.0	642.0
Chromium	15.8	8.2	14.0	6.3	4.3	21.0	23.4	34.2	11.4	17.2	9.3
Cobalt	U	U	U	13.2	U	7.4	U	U	U	U	12.5
Copper	599.0	63.0	141.0	130.0	69.0	23.9	101.0	143.0	82.4	151.0	306.0
Iron	6,720.0	9,610.0	19,100.0	14,000.0	11,800.0	4,240.0	10,300.0	18,400.0	24,200.0	19,300.0	17,300.0
Lead	98.6	252.0	258.0	391.0	344.0	281.0	482.0	191.0	289.0	311.0	820.0
Magnesium	3,610.0	837.0	856.0	4,750.0	U	3,570.0	1,670.0	1,390.0	U	916.0	1,350.0
Manganese	122.0	74.0	201.0	541.0	157.0	115.0	97.5	179.0	161.0	152.0	292.0
Mercury	0.1	0.3	0.2	0.4	0.1	0.9	0.7	0.1	0.3	0.3	0.2
Nickel	9.8	U	10.5	15.7	11.2	10.4	8.6	12.0	U	10.0	11.8
Potassium	2,170.0	659.0	U	U	U	801.0	U	U	U	U	U
Selenium	U	U	U	U	U	U	U	U	U	U	U
Silver	U	U	U	U	U	U	U	U	U	U	U
Sodium	U	U	U	U	U	3,470.0	U	U	U	U	U
Thallium	U	U	U	U	U	U	U	U	U	U	U
Vanadium	23.3	11.6	28.9	12.6	8.3	68.3	39.8	27.9	9.7	44.9	12.4
Zinc	189.0	33.6	126.0	253.0	152.0	259.0	166.0	2,090.0	43.5	104.0	161.0

	B-41 (0-2)	B-41 (2-4)	B/MW -42 (0-2)	B/MW -42 (2-4)	B-43 (0-2)	B-43 (2-4)	B-44 (0-2)	B-44 (2-4)	B-45 (0-2)	B-45 (2-4)	S-1 (0-2)
Aluminum	3,080.0	4,280.0	1,260.0	2,710.0	1,870.0	4,700.0	5,190.0	2,790.0	7,340.0	5,470.0	5,600.0
Antimony	U	U	15.9	U	U	U	U	U	U	U	U
Arsenic	13.9	1.6	5.4	72.9	5.5	7.8	2.6	5.6	13.3	1.8	U
Barium	62.3	27.2	120.0	107.0	74.5	174.0	73.9	37.4	378.0	63.7	100.0
Beryllium	1.0	0.5	1.1	1.0	0.8	.63	0.7	0.5	0.6	9.2	1.4
Cadmium	U	U	U	U	U	U	U	U	U	U	U
Calcium	1,380.0	949.0	2,710.0	4,160.0	20,500.0	2,450.0	19,500.0	18,800.0	18,000.0	3,460.0	13,200.0
Chromium	8.4	10.6	14.5	6.3	21.0	9.8	21.1	14.2	17.1	52.3	14.5
Cobalt	9.6	U	U	8.9	U	U	U	U	7.7	38.3	9.2
Copper	175.0	20.9	142.0	83.6	131.0	33.9	77.3	40.1	39.1	582.0	78.3
Iron	20,600.0	9,750.0	22,800.0	17,400.0	15,600.0	10,300.0	12,000.0	8,140.0	10,900.0	29,100.0	9,960.0
Lead	567.0	33.9	288.0	120.0	204.0	48.3	132.0	50.2	277.0	543.0	136.0
Magnesium	719.0	2,120.0	1,270.0	1,160.0	10,100.0	2,520.0	6,150.0	7,860.0	5,180.0	3,460.0	3,370.0
Manganese	291.0	114.0	132.3	331.0	229.0	226.0	224.0	295.0	182.0	292.0	289.0
Mercury	0.2	0.1	0.1	U	0.2	0.1	0.2	0.2	0.3	0.1	0.1
Nickel	20.0	17.8	15.8	18.9	15.3	16.5	14.6	14.2	15.3	84.6	24.4
Potassium	U	U	U	U	U	U	1,060.0	U	2,850.0	1,730.0	1,090.0
Selenium	U	U	U	U	U	U	U	U	U	U	U
Silver	1.3	U	U	U	1.5	U	U	U	U	1.2	0.6
Sodium	U	U	U	U	U	U	U	U	U	U	U
Thallium	U	U	U	U	U	U	U	U	U	U	U
Vanadium	11.3	11.6	28.6	13.7	96.0	14.9	34.3	14.7	31.7	34.4	21.0
Zinc	312.0	196.0	44.8	59.0	141.0	236.0	148.0	175.0	309.0	3,850.0	474.0

U= Unidentified

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

(Parts per Million)

Metals

	S-2 (0-2)	B-46 (0-2)	B-46 (2-4)	B-47 (0-2)	B-47 (2-4)	B-48 (0-2)	B-48 (2-4)	B-49 (0-2)	B-49 (4-6)	B/MW -50 (0-2)	B/MW -50 (4-6)
Aluminum	5,420.0	5,760.0	6,270.0	5,810.0	7,990.0	4,710.0	7,540.0	2,170.0	9,380.0	12,600.0	19,300.0
Antimony	U	U	U	U	U	U	U	U	U	U	U
Arsenic	U	4.0	4.5	1.4	1.5	2.8	14.6	16.7	5.6	24.8	2.9
Barium	67.4	132.0	294.0	204.0	116.0	129.0	83.3	241.0	46.3	133.0	77.9
Beryllium	0.7	U	U	U	U	U	U	U	U	U	U
Cadmium	U	U	U	U	U	U	U	U	U	U	U
Calcium	7,130.0	18,200.0	14,200.0	9,890.0	4,730.0	56,600.0	11,700.0	16,500.0	3,100.0	19,000.0	2,650.0
Chromium	15.1	20.5	22.8	17.1	19.7	14.1	14.8	8.8	22.4	26.9	25.6
Cobalt	5.8	9.5	5.1	7.6	7.6	5.4	6.0	5.0	6.3	9.8	9.8
Copper	36.1	55.8	60.5	46.3	63.5	182.0	168.0	122.0	120.0	138.0	117.0
Iron	8,140.0	18,500.0	49,200.0	18,900.0	19,200.0	21,800.0	15,400.0	39,600.0	26,900.0	34,100.0	30,400.0
Lead	74.7	125.0	346.0	177.0	105.0	136.0	216.0	445.0	39.8	188.0	39.7
Magnesium	3,350.0	8,610.0	3,610.0	3,180.0	2,650.0	5,250.0	2,280.0	5,030.0	4,210.0	4,160.0	4,070.0
Manganese	214.0	246.0	575.0	213.0	290.0	365.0	159.0	206.0	181.0	330.0	250.0
Mercury	0.1	0.2	0.5	0.3	0.3	1.2	0.6	3.4	0.4	2.0	U
Nickel	20.9	23.7	27.6	19.5	25.5	22.0	23.9	24.0	17.9	34.7	28.1
Potassium	1,600.0	810.0	737.0	2,180.0	1,570.0	874.0	756.0	U	2,790.0	902.0	2,020.0
Selenium	U	U	U	U	U	U	U	U	U	U	U
Silver	U	U	U	U	U	U	U	U	U	U	U
Sodium	U	315.0	452.0	288.0	443.0	337.0	1,410.0	190.0	1,880.0	296.0	307.0
Thallium	U	U	U	U	U	U	U	U	U	U	U
Vanadium	18.4	25.1	27.2	21.4	22.5	34.1	32.8	15.5	25.3	46.3	33.5
Zinc	211.0	194.0	361.0	365.0	235.0	787.0	460.0	858.0	615.0	538.0	1,010.0

	B/MW -50 17.5	B/MW -51 (0-2)	B/MW -51 (6-8)	B-52 (0-2)	B-52 (6-8)	B-53 (0-2)	B-53 (8-10)	B-54 (0-2)	B-54 (2-4)	B-55 (0-2)	B-55 (2-4)
Aluminum	1,560.0	9,260.0	1,500.0	10,700.0	10,100.0	16,800.0	15,200.0	10,600.0	11,800.0	5,560.0	3,570.0
Antimony	U	U	U	U	U	U	U	U	U	U	U
Arsenic	4.1	10.5	8.2	10.4	3.5 (B)	4.0	33.0	5.0	5.8	2.5	9.2
Barium	57.3	164.0	889.0	200.0	61.6 (B)	530.0	71.4 (B)	210.0	256.0	60.6	75.3
Beryllium	U	U	U	U	U	U	U	U	U	2.4	U
Cadmium	U	U	U	U	U	U	U	U	U	U	U
Calcium	2,940.0	16,600.0	10,000.0	78,900.0	4,360.0	69,200.0	1,840.0	18,900.0	49,400.0	40,400.0	13,600.0
Chromium	27.3	54.6	49.4	27.9	24.9	32.9	25.1	84.4	169.0	16.5	18.3
Cobalt	10.6	9.7 B	20.1 (B)	6.9 (B)	9.3 (B)	7.1 (B)	15.3 (B)	10.5 (B)	8.2B	6.5	10.4
Copper	402.0	84.4	960.0	117.0	87.8	122.0	223.0	121.0	86.8	98.3	422.0
Iron	39,000.0	21,100.0	64,300.0	18,000.0	26,200.0	12,300.0	29,400.0	25,200.0	18,700.0	10,800.0	50,300.0
Lead	66.7	181.0	2,750.0	762.0	68.8	464.0	146.0	226.0	770.0	64.0	448.0
Magnesium	5,280.0	11,100.0	2,790.0	9,230.0	3,460.0	17,800.0	4,880.0	8,500.0	11,700.0	3,920.0	960.0
Manganese	467.0	598.0	108,000.0	2,190.0	609.0	1,360.0	842.0	446.0	437.0	153.0	193.0
Mercury	U	4.3	U	1.1	U	2.4	U	0.4	0.7	0.1	1.2
Nickel	40.4	69.9	25.8	21.5	16.2	22.6	37.0	31.5	24.9	80.5	87.5
Potassium	2,900.0	1,230 B	1,710 (B)	1,340 (B)	1,040 (B)	1,910 (B)	1,830 (B)	2,550.0	1,620 (B)	369.0	417.0
Selenium	U	U	U	U	U	U	U	U	U	U	U
Silver	U	U	10.2	5.1	U	U	U	U	U	U	U
Sodium	678.0	220 B	341 B	509 (B)	138 (B)	789 (B)	172 (B)	285.0(B)	988 (B)	541.0	436.0
Thallium	U	U	U	U	U	U	U	U	U	U	U
Vanadium	38.4	52.3	60.9	45.9	27.9	68.0	30.9	54.7	49.4	227.0	26.4
Zinc	1,640.0	380.0	688.0	629.0	341.0	507.0	1,150.0	404.0	620.0	312.0	1,090.0

U= Unidentified

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

Semivolatiles

(parts per million; ppm)

	B-34 (0-2)	B-34 (4-6)	B/MW -36 (0-2)	B/MW -36 (2-4)	B/MW -36 (Grab)	B/MW -38 (0-2)	B/MW -38 (2-4)	B-39 (0-2)	B-39 (2-4)
Naphthalene	U	U	U	U	391.0	U	1.6	U	U
2-Methylnaphthalene	U	U	U	U	138.0	U	1.9	U	U
Acenaphthlyene	U	3.2	U	U	35.5	U	U	U	U
Acenaphthene	0.4	U	U	9.0	213.0	U	0.6	U	U
Fluorene	0.5	U	U	8.2	235.0	U	0.7	U	U
Phenanthrene	3.6	11.8	7.7	44.7	966.0	3.0	5.0	2.6	12.0
Anthracene	1.3	4.5	2.0	15.7	582.0	0.9	1.3	U	3.1
Fluoranthrene	4.7	14.1	6.7	52.8	995.0	5.6	6.0	2.4	15.0
Pyrene	5.8	16.9	8.3	39.5	1,100.0	4.9	7.0	2.4	14.0
Benzo(a)Anthracene	3.6	18.4	4.3	24.3	696.0	2.9	4.2	U	6.5
Chrysene	2.8	13.8	3.8	22.7	618.0	2.7	4.2	U	6.4
Benzo(b)Fluoranthene	2.6	22.3	2.8	19.8	420.0	2.2	3.3	U	5.6
Benzo(k)Fluoranthene	1.7	10.3	2.4	12.0	242.0	2.0	3.5	U	3.1
Benzo(a)Pyrene	2.3	24.2	3.1	18.5	455.0	2.6	3.7	U	5.0
Indeno (1,2,3-cd)Pyrene	1.6	23.2	2.3	10.5	208.0	1.6	2.4	U	2.4
Dibenz(a,h)Anthracene	0.9	12.7	U	6.8	138.0	0.8	1.3	U	U
Benzo(g,h,i)Perylene	2.1	22.8	2.6	10.5	232.0	1.6	2.6	U	2.5
PaB-eqivalent	4.0	43.4	4.1	30.9	728.4	4.1	5.9	0.0	6.5

U=Undetected

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

Semivolatiles

(parts per million; ppm)

	B/MW -40 (0-2)	B/MW -40 (2-4)	B-41 (-0-2)	B-41 (2-4)	B/MW -42 (0-2)	B/MW -42 (2-4)	B-43 (0-2)	B-43 (2-4)	B-44 (0-2)
Naphthalene	0.5	1.6	0.5	U	1.3	1.5	0.6	2.6	U
2-Methylnaphthalene	0.5	0.6	U	U	1.2	0.7	U	1.1	U
Acenaphthlyene	U	U	U	U	U	U	U	U	U
Acenaphthene	U	1.2	0.6	0.7	U	0.7	0.6	1.4	U
Fluorene	U	1.4	0.6	0.8	U	0.7	0.5	1.5	U
Phenanthrene	3.6	12.0	5.5	4.6	3.3	6.0	2.9	3.6	U
Anthracene	0.7	3.1	1.3	1.5	4.4	1.8	0.8	1.2	U
Fluoranthrene	3.1	15.2	5.9	4.2	4.4	9.1	5.7	2.5	10.0
Pyrene	3.3	12.0	5.9	3.4	3.6	13.0	4.8	1.6	9.0
Benzo(a)Anthracene	1.8	5.9	2.8	1.7	2.2	5.9	2.2	0.5	5.6
Chrysene	1.7	4.6	2.7	1.5	3.0	5.9	2.4	0.5	4.5
Benzo(b)Fluoranthene	1.1	3.3	2.2	1.3	2.9	4.2	1.6	U	4.6
Benzo(k)Fluoranthene	0.7	2.4	1.5	0.7	1.5	3.0	1.3	U	4.1
Benzo(a)Pyrene	10.0	3.3	2.3	1.2	1.8	5.1	1.6	U	4.1
Indeno (1,2,3-cd)Pyrene	0.7	2.3	1.0	0.5	1.2	2.5	0.8	U	U
Dibenz(a,h)Anthracene	0.4	1.2	0.4	U	0.6	1.4	U	U	U
Benzo(g,h,i)Perylene	0.9	2.3	1.0	0.5	1.1	2.8	0.8	U	U
PaB-eqivalent	10.8	5.7	3.4	1.6	3.0	7.8	2.1	0.1	5.2

U=Undetected

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

Semivolatiles

(parts per million; ppm)

	B-44 (2-4)	B-45 (0-2)	B-45 (2-4)	S-1 (0-2)	S-2 (0-2)	B-46 (0-2)	B-46 (2-4)	B-47 (0-2)	B-47 (2-4)
Naphthalene	U	U	0.7	U	U	1.1 J	1.5	0.2 J	U
2-Methylnaphthalene	U	U	0.4	U	U	3.2	0.9 J	0.1 J	U
Acenaphthlyene	U	U	U	U	U	U	1.0 J	0.2 J	U
Acenaphthene	U	U	0.5	U	U	2.0	2.8	0.3 J	U
Fluorene	U	U	0.6	U	U	2.5	2.4	0.3 J	0.1 J
Phenanthrene	U	1.3	4.0	1.0	U	11.0	22.0	3.3	1.3
Anthracene	U	U	1.1	U	U	3.1	5.5	0.9 J	0.3
Fluoranthrene	U	1.4	4.6	1.6	1.1	8.3	22.0	4.5	1.5
Pyrene	U	1.7	4.4	1.6	1.1	6.8	18.0	3.8	1.2
Benzo(a)Anthracene	U	0.8	3.1	0.8	0.8	4.2	11.0	2.1	0.6 J
Chrysene	U	0.7	2.4	0.8	0.8	5.1	14.0	2.5	0.8
Benzo(b)Fluoranthene	U	0.7	2.0	0.8	0.6	4.6	14.0	3.2	0.8
Benzo(k)Fluoranthene	U	0.5	2.3	0.6	0.5	2.0	3.8	U	0.3 J
Benzo(a)Pyrene	U	0.7	1.9	0.8	0.7	4.0	10.0	2.2	0.6 J
Indeno (1,2,3-cd)Pyrene	U	0.6	1.7	0.4	U	2.6	7.3	1.4	0.4 J
Dibenz(a,h)Anthracene	U	U	0.9	U	U	0.8 J	1.9	0.4 J	0.1 J
Benzo(g,h,i)Perylene	U	0.7	1.9	0.5	0.4	2.6	6.9	1.4	0.4 J
PaB-eqivalent	0.0	0.9	3.5	1.0	0.8	5.9	15.2	3.3	0.9

U=Undetected

J=Estimated Value

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

Semivolatiles

(parts per million; ppm)

	B-48 (0-2)		B-48 (2-4)		B-49 (0-2)		B-49 (4-6)		B/MW -50 (0-2)		B/MW -50 (4-6)		B/MW -50 (17.5)		B/MW -51 (0-2)		B/MW -51 (6-8)	
Naphthalene	0.1	J	0.1	J	0.2	J		U	1.3	J	5.3		220.0	D		U		U
2-Methylnaphthalene	0.1	J	0.1	J	0.2	J		U	0.9	J	4.9		99.0	D		U		U
Acenaphthlyene	0.1	J	0.1	J	0.7	J		U	1.4	J	0.4	J		U		U		U
Acenaphthene	0.2	J	0.2	J	0.2	J		U	4.0		17.0		170.0		0.3	J		U
Fluorene	0.2	J	0.1	J	0.2	J		U	3.6	J	13.0		130.0	D	0.3	J		U
Phenanthrene	1.7		2.1		4.3		0.2	J	35.0		46.0		350.0	D	5.4		0.3	J
Anthracene	0.6	J	0.5	J	1.4	J	0.1	J	10.0		15.0		52.0	D	1.1	J	0.0	J
Fluoranthrene	2.5		2.7		7.7		0.3	J	39.0		24.0		120.0	D	7.5		0.2	J
Pyrene	2.3		2.8		8.5		0.2	J	45.0		24.0		85.0	D	6.4		0.2	J
Benzo(a)Anthracene	1.3		1.3		4.9		0.2	J	23.0		12.0		15.0	JD	4.6		0.2	J
Chrysene	1.6		1.7		6.1		0.3	J	29.0		13.0		15.0	JD	5.7			U
Benzo(b)Fluoranthene	1.5		2.3		5.9		0.9		30.0		13.0		5.9	JD	5.1		0.2	J
Benzo(k)Fluoranthene	0.5	J		U	2.6			U	6.1		1.8	J		U	3.1		0.2	J
Benzo(a)Pyrene	1.3		1.5		5.5		0.6		22.0		8.7		3.2	JD	5.0		0.2	J
Indeno (1,2,3-cd)Pyrene	0.9	J	0.9	J	3.4		0.4	J	11.0		3.7			U	3.4		0.2	J
Dibenz(a,h)Anthracene	0.3	J	0.4	J	1.1	J	0.3	J	4.1		1.5	J		U	0.9	J	0.4	J
Benzo(g,h,i)Perylene	0.9	J	1.1	J	3.6		0.5		12.0		4.0			U	3.6		0.1	J
PaB-eqivalent	2.0		2.4		8.1		1.1		32.6		13.1		5.3		7.2		0.6	

U=Undetected

J=Estimated Value

D=Diluted

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

Semivolatiles

(parts per million; ppm)

	B-52 (0-2)	B-52 (6-8)	B-53 (0-2)	B-53 (8-10)	B-54 (0-2)	B-54 (2-4)	B-55 (0-2)	B-55 (2-4)
Naphthalene	U	U	1.2 J	0.1 J	U	0.3 J	1.4	6.3
2-Methylnaphthalene	U	U	1.3 J	0.1 J	U	U	0.2 J	3.8
Acenaphthlyene	U	U	U	0.0 J	U	0.3 J	U	0.4 J
Acenaphthene	0.4 J	U	8.8	0.2 J	0.2 J	0.7 J	U	0.3 J
Fluorene	0.3 J	0.0 J	6.1	0.2 J	0.2 J	0.7 J	0.0 J	0.7 J
Phenanthrene	4.3	0.2 J	45.0	2.2	2.5	8.3	0.3 J	2.8 J
Anthracene	0.9 J	0.0 J	12.0	0.5 J	0.6 J	2.2	0.1 J	0.7 J
Fluoranthrene	4.7	0.2 J	56.0	1.8	2.6	11.0	0.3 J	2.2
Pyrene	5.7	0.2 J	42.0	1.4	2.0	10.0	0.4 J	2.6
Benzo(a)Anthracene	2.5	0.1 J	24.0	0.9	1.5	4.6	U	1.0 J
Chrysene	3.1	0.2 J	28.0	1.2	1.8	4.9	0.2 J	1.4 J
Benzo(b)Fluoranthene	4.3	0.2 J	23.0	0.8	2.2	5.0	0.3 J	1.6 J
Benzo(k)Fluoranthene	U	U	16.0	0.6	U	2.5	U	U
Benzo(a)Pyrene	3.3	0.1 J	23.0	0.9	1.5	4.7	0.2 J	1.4 J
Indeno (1,2,3-cd)Pyrene	2.7	0.0 J	15.0	0.6	0.9 J	3.0	0.1 J	1.0 J
Dibenz(a,h)Anthracene	0.6 J	U	4.4 J	0.1 J	0.2 J	0.8 J	U	0.2 J
Benzo(g,h,i)Perylene	3.1	U	13.0	0.5	0.8 J	3.1	0.1 J	1.4 J
PaB-eqivalent	4.9	0.1	33.8	1.3	2.1	6.8	0.2	2.0

U=Undetected

J=Estimated Value

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

Volatile Organics

(parts per million; ppm)

	B-41 (0-2)	B-41 (2-4)	B/MW-42 (0-2)	B/MW-42 (2-4)	B-43 (0-2)	B-43 (2-4)	B-44 (0-2)	B-44 (2-4)	B-45 (0-2)	B-45 (2-4)	S-1 (0-2)	S-2 (0-2)
Chloromethane	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	U	U	U	U	U	U	U	U	U	U	U	U
Vinyl Chloride	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	U	U	U	U	U	U	U	U	U	U	U	U
Methylene Chloride	.013	.010	U	U	.020	U	.043	.014	U	.015	U	U
Acetone	U	U	U	U	.073	U	U	U	U	U	U	U
Carbon Disulfide	U	U	U	U	.010	U	.012	U	U	U	U	U
1,1-Dichloroethene	U	U	U	U	.0093	U	.010	U	U	U	U	U
1,1-Dichloroethane	U	U	U	U	U	U	U	U	U	U	U	U
Trans-1,2-dichloroethene	U	U	U	U	.0083	U	.0068	U	U	U	U	U
Chloroform	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethene (total)	U	U	U	U	U	U	U	U	U	U	U	U
2-Butanone	U	U	U	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U	U
Carbon Tetrachloride	U	U	U	U	U	U	11	U	U	U	U	U
Vinyl Acetate	U	U	U	U	U	U	U	U	U	U	U	U
Bromodichloromethane	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropene	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-dichloropropene	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	U	U	U	U	U	U	U	U	U	U	U	U
Benzene	U	U	U	U	U	U	U	U	U	U	U	U
Dibromochloromethane	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	U	U	U	.0078	U	U	U	U	U	U	U	U
Chlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	U	U	U	U	U	.0068	U	U	U	U	U	U
Styrene	U	U	U	U	U	U	U	U	U	U	U	U
m-Xylene	U	U	U	U	U	.029	U	U	U	U	U	U
o,p-Xylene	U	U	U	U	U	.034	U	U	U	U	U	U
Total dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U

U = Not Detected

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

Volatile Organics
(parts per million; ppm)

	B-46 (0-2)	B-46 (2-4)	B-47 (0-2)	B-47 (2-4)	B-48 (0-2)	B-48 (2-4)	B-49 (0-2)	B-49 (4-6)	B/MW-50 (0-2)	B/MW-50 (4-6)
Chloromethane	U	U	U	U	U	U	U	U	U	U
Bromomethane	U	U	U	U	U	U	U	U	U	U
Vinyl Chloride	U	U	U	U	U	U	U	U	U	U
Chloroethane	U	U	U	U	U	U	U	U	U	U
Methylene Chloride	U	U	U	U	U	U	U	U	U	U
Acetone	U	U	U	U	U	U	U	U	U	U
Carbon Disulfide	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	U	U	U	U	U	U	U	U	U	U
Trans-1,2-dichloroethene	U	U	U	U	U	U	U	U	U	U
Chloroform	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethene (total)	U	U	U	U	U	U	U	U	U	U
2-Butanone	U	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	U	U	U	U	U	U	U	U	U	U
Carbon Tetrachloride	U	U	U	U	U	U	U	U	U	U
Vinyl Acetate	U	U	U	U	U	U	U	U	U	U
Bromodichloromethane	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropene	U	U	U	U	U	U	U	U	U	U
cis-1,3-dichloropropene	U	U	U	U	U	U	U	U	U	U
Trichloroethene	U	U	U	U	U	U	U	U	U	U
Benzene	U	U	U	U	U	U	U	U	U	.007
Dibromochloromethane	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	U	U
Bromoform	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	U	U
2-Hexanone	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	U	U	U	U	U	U	U	U	U	U
Toluene	U	U	U	U	U	U	U	U	U	.016
Chlorobenzene	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	U	U	U	U	U	U	U	U	U	.004 J
Styrene	U	U	U	U	U	U	U	U	U	U
Total Xylenes	U	U	U	U	U	U	U	U	U	.024

U = Not Detected
J=Estimated Value
B=Found in Blank

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

Volatile Organics

(parts per million; ppm)

	B/MW-50 (17.5)	B/MW-51 (0-2)	B/MW-51 (6-8)	B-52 (0-2)	B-52 (6-8)	B-53 (0-2)	B-53 (8-10)	B-54 (0-2)	B-54 (2-4)	B-55 (0-2)	B-55 (2-4)
Chloromethane	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	U	U	U	U	U	U	U	U	U	U	U
Vinyl Chloride	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	U	U	U	U	U	U	U	U	U	U	U
Methylene Chloride	U	.018 BJ	.040	U	U	.008 B	U	.006 B	.007 B	U	U
Acetone	U	U	U	U	U	.024	U	U	U	.019	U
Carbon Disulfide	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	U	U	U	U	U	U	U	U	U	U	U
Trans-1,2-dichloroethene	U	U	U	U	U	U	U	U	U	U	U
Chloroform	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethene (total)	U	U	.002 J	U	U	U	U	U	U	U	U
2-Butanone	U	U	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U
Carbon Tetrachloride	U	U	U	U	U	U	U	U	U	U	U
Vinyl Acetate	U	U	U	U	U	U	U	U	U	U	U
Bromodichloromethane	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropene	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-dichloropropene	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	U	U	.016	U	U	U	U	U	U	U	U
Benzene	.021 J	U	U	U	U	U	U	U	U	U	U
Dibromochloromethane	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U
Bromoform	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	U	.60	.210	.014	U	.005 J	U	U	.011	U	U
Toluene	.015	U	U	U	U	U	U	U	U	.002 J	6.70 J
Chlorobenzene	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	.120	U	U	U	U	U	U	U	U	.005 J	28.0
Styrene	U	U	U	U	U	U	U	U	U	U	U
Total Xylenes	.20	U	U	U	U	U	U	U	U	.008	19.0

U = Not Detected
J=Estimated Value
B=Found in Field Blank

SOIL ANALYSIS DATA -1989 SAMPLING PROGRAM

PCBs /Total Petroleum Hydrocarbons

(Parts per million; ppm)

PCBs:

	B-34 (0-2)	B-34 (4-6)	B/MW-36 (0-2)	B/MW-36 (2-4)	B/MW-36 Grab	B/MW-38 (0-2)	B/MW-38 (2-4)	B-39 (0-2)	B-39 (2-4)	B/MW-40 (0-2)	B/MW-40 (2-4)
Aroclor-1016	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1221	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1232	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1242	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1248	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1254	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1260	U	U	U	U	U	U	U	4.2	U	U	U

PCBs:

	B-41 (0-2)	B-41 (2-4)	B/MW-42 (0-2)	B/MW-42 (2-4)	B-43 (0-2)	B-43 (2-4)	B-44 (0-2)	B-44 (2-4)	B-45 (0-2)	B-45 (2-4)	S-1 (0-2)
Aroclor-1016	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1221	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1232	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1242	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1248	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1254	U	U	U	U	U	U	U	U	U	.490	U
Aroclor-1260	U	U	U	U	U	U	U	U	U	U	U

PCBs:

	S-2 (0-2)	B-46 (0-2)	B-47 (0-2)	B-48 (0-2)	B-49 (0-2)	B/MW-50 (0-2)	B/MW-51 (0-2)	B-52 (0-2)	B-53 (0-2)	B-54 (0-2)	B-55 (0-2)
Aroclor-1016	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1221	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1232	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1242	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1248	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1254	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1260	U	U	U	U	U	U	U	U	U	U	U

Total Petroleum Hydrocarbons (TPH):

	B-46 (0-2)	B-46 (2-4)	B-47 (0-2)	B-47 (2-4)	B-48 (0-2)	B-48 (2-4)	B-49 (0-2)	B-49 (4-6)	B/MW -50 (0-2)	B/MW -50 (4-6)	B/MW -50 (17.5)
TPH	2,510.0	961.0	714.0	19.0	375.0	64.6	476.0	28.2	476.0	224.0	427.0

Total Petroleum Hydrocarbons (TPH):

	B/MW -51 (0-2)	B/MW -51 (6-8)	B-52 (0-2)	B-52 (6-8)	B-53 (0-2)	B-53 (8-10)	B-54 (0-2)	B-54 (2-4)	B-55 (0-2)	B-55 (2-4)
TPH	1,410.0	748.0	9,710	335.0	858.0	127.0	1,770.0	2,140.0	979.0	7,980.0

U=Unidentified

GROUNDWATER ANALYSIS DATA -1989 SAMPLING PROGRAM

METALS

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance Value	B/MW-36		B/MW-38	
			Total	Dissolved	Total	Dissolved
Aluminum			7140.0	368.0	46300.0	1,350.0
Antimony		3	U	U	U	U
Arsenic	25		17.5	U	127.0	12.2
Barium	1,000		515.0	89.0	1430.0	568.0
Beryllium		3	U	U	9.0	U
Cadmium	10		U	U	U	4.1
Calcium			68,600.0	59,800.0	296,000.0	249,000.0
Chromium	50		15.0	U	108.0	U
Cobalt			U	U	84.0	U
Copper	200		250.0	U	1,710.0	U
Iron	300		46,700.0	219.0	14,200.0	703.0
Lead	25		659.0	7.8	5290.0	38.3
Magnesium		35,000	20,700.0	16,700.0	161,000.0	160,000.0
Manganese	300		8,150.0	7,130.0	4,380.0	3,000.0
Mercury	2		0.5	U	17.5	U
Nickel			U	U	117.0	U
Potassium			14,600.0	14,300.0	51,700.0	47,500.0
Selenium	10		U	U	U	U
Silver	50		U	U	U	U
Sodium	20,000		40,000.0	31,600.0	1,070,000	1,080,000
Thallium		4	U	U	U	U
Vanadium			U	U	359.0	139.0
Zinc	300		584.0	72.0	5,610.0	212.0

U=Undetected

GROUNDWATER ANALYSIS DATA -1989 SAMPLING PROGRAM

METALS

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance Value	B/MW-40		B/MW-42	
			Total	Dissolved	Total	Dissolved
Aluminum			18,700.0	1,320.0	15,500.0	1,910.0
Antimony		3	U	U	U	U
Arsenic	25		10.6	U	20.9	U
Barium	1,000		288.0	138.0	212.0	U
Beryllium		3	U	1.0	U	U
Cadmium	10		5.2	7.8	U	U
Calcium			280,000.0	260,000.0	453,000.0	442,000.0
Chromium	50		35.0	U	U	U
Cobalt			58.0	50.0	U	U
Copper	200		216.0	U	242.0	U
Iron	300		43,600.0	761.0	54,400.0	947.0
Lead	25		714.0	16.2	755.0	15.3
Magnesium		35,000	126,000.0	110,000.0	414,000.0	403,000.0
Manganese	300		4,900.0	3,510.0	1,730.0	630.0
Mercury	2		U	U	1.2	U
Nickel			194.0	109.0	132.0	48.0
Potassium			10,700.0	8,330.0	19,700.0	18,300.0
Selenium	10		U	U	U	U
Silver	50		U	U	10.0	U
Sodium	20,000		17,800.0	17,700.0	50,000.0	50,700.0
Thallium		4	U	U	U	U
Vanadium			162.0	103.0	366.0	304.0
Zinc	300		2,760.0	1,420.0	891.0	203.0

U=Undetected

GROUNDWATER ANALYSIS DATA -1989 SAMPLING PROGRAM

METALS

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance Value	MW-9		MW-10	
			Total	Dissolved	Total	Dissolved
Aluminum			5,250.0	8,989.0	6,020.0	1,120.0
Antimony		3	U	U	U	U
Arsenic	25		17.1	U	U	U
Barium	1,000		526.0	69.0	146.0	125.0
Beryllium		3	U	U	U	U
Cadmium	10		3.3	U	U	U
Calcium			154,000.0	129,000.0	247,000.0	199,000.0
Chromium	50		14.0	U	39.0	20.0
Cobalt			U	U	U	U
Copper	200		101.0	U	115.0	U
Iron	300		64,300.0	969.0	2,120.0	133.0
Lead	25		784.0	18.3	185.0	6.5
Magnesium		35,000	31,400.0	33,800.0	572,000.0	509,000.0
Manganese	300		1,320.0	975.0	662.0	515.0
Mercury	2		1.8	U	1.1	U
Nickel			U	U	64.0	39.0
Potassium			27,700.0	260,000.0	179,000.0	162,000.0
Selenium	10		U	U	U	U
Silver	50		U	U	10.0	8.0
Sodium	20,000		93,400.0	95,400.0	4,510,000.0	3,650,000
Thallium		4	U	U	U	U
Vanadium			55.0	U	442.0	380.0
Zinc	300		828.0	61.0	321.0	75.0

U=Undetected

GROUNDWATER ANALYSIS DATA -1989 SAMPLING PROGRAM

METALS

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance Value	MW-13		MW-14	
			Total	Dissolved	Total	Dissolved
Aluminum			1,530.0	632.0	13,000.0	2,770.0
Antimony		3	U	U	U	U
Arsenic	25		U	U	7.8 B	9.3 B
Barium	1,000		437.0	108.0 B	459.0	2,610.0
Beryllium		3	U	U	U	U
Cadmium	10		U	U	U	U
Calcium			182,000.0	187,000.0	213,000.0	209,000.0
Chromium	50		6.4 B	15.8	50.3	11.2
Cobalt			U	U	35.8 B	17.8 B
Copper	200		78.1	U	463.0	U
Iron	300		1,730.0	655.0	58,100.0	35,400.0
Lead	25		187.0	36.0	48.6	12.8
Magnesium		35,000	554,000.0	561,000.0	47,700.0	41,000.0
Manganese	300		118.0	120.0	3,110.0	2,830.0
Mercury	2		3.5	1.6	0.35	U
Nickel			U	U	87.1	25.2 B
Potassium			194,000.0	198,000.0	26,600.0	21,100.0
Selenium	10		U	U	U	U
Silver	50		U	U	U	U
Sodium	20,000		4,700,000.0	4,340,000.0	49,600.0	49,500.0
Thallium		4	U	U	U	U
Vanadium			14.3 B	14.3 B	84.5	29.7 B
Zinc	300		481	105.0	2,280.0	382.0

U=Undetected

B=Below Detection Limit

GROUNDWATER ANALYSIS DATA -1989 SAMPLING PROGRAM

METALS

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance Value	B/MW-50		B/MW-51	
			Total	Dissolved	Total	Dissolved
Aluminum			19,700.0	325.0	19,600.0	1,350.0
Antimony		3	U	U	U	U
Arsenic	25		12.5	U	7.6 B	U
Barium	1,000		121.0 B	U	193.0 B	244.0
Beryllium		3	U	U	U	U
Cadmium	10		U	U	U	U
Calcium			90,300.0	86,900.0	138,000.0	128,000.0
Chromium	50		46.2	6.3 B	178.0	8.4 B
Cobalt			17.3 B	U	25.1 B	U
Copper	200		105.0	17.8 B	178.0	13.3 B
Iron	300		35,000.0	1,460.0	43,200.0	6,310.0
Lead	25		36.0	U	5.1	U
Magnesium		35,000	26,800.0	20,900.0	29,600.0	22,800.0
Manganese	300		1,000.0	607.0	2,990.0	2,110.0
Mercury	2		4.6	2.2	U	U
Nickel			38.9 B	U	119.0	U
Potassium			34,100.0	32,400.0	15,900.0	13,800.0
Selenium	10		U	U	U	U
Silver	50		10.0	U	U	U
Sodium	20,000		83,700.0	97,600.0	29,700.0	27,500.00
Thallium		4	U	U	U	U
Vanadium			55.7	U	57.6	15.4 B
Zinc	300		249.0	95.5	727.0	85.6

U=Undetected

B=Below Detection Limit

GROUNDWATER ANALYSIS DATA -1989 SAMPLING PROGRAM

Semivolatiles
(parts per billion)

	NYS DEC STANDARD	NYS DEC GUIDANCE VALUES	B/MW-36	B/MW-38	B/MW-40	B/MW-42	MW-9
Naphthalene		10	62	U	U	U	U
2-Methylnaphthalene			52	U	U	U	U
Acenaphthylene			U	U	U	U	U
Acenephthene	20		71	U	U	U	U
Fluorene		50	81	U	U	U	U
Phenanthrene		50	140	14	U	13	U
Anthracene		50	71	U	U	U	U
Fluoranthrene		50	150	24	U	37	U
Pyrene		50	150	14	U	29	U
Benzo(a)Anthracene		0.07	86	11	U	16	U
Chrysene		0.002	80	10	U	17	U
Benzo (b) Fluoranthene		0.002	55	13	U	10	U
Benzo(k)Fluoranthene		0.002	46	12	U	10	U
Benzo(a)Pyrene			61	16	U	11	U
Indeno(1,2,3-cd)Pyrene		0.002	26	11	U	U	U
Dibenz(a,h)Anthracene			20	U	U	U	U
Benzo(g,h,i)Perylene			21	11	U	U	U

U = Unidentified

	NYS DEC STANDARD	NYS DEC GUIDANCE VALUES	MW-10	MW-13	MW-14	B/MW-50	B/MW-51
Naphthalene		10	U	3	U	1200	U
2-Methylnaphthalene			U	U	4	370	U
Acenaphthylene			U	U	U	U	U
Acenephthene	20		U	U	18	450	U
Fluorene		50	U	U	10	340	U
Phenanthrene		50	U	U	U	370	U
Anthracene		50	U	U	U	37	U
Fluoranthrene		50	U	2	U	70	U
Pyrene		50	U	3	U	32	U
Benzo(a)Anthracene		0.07	U	U	U	U	U
Chrysene		0.002	U	U	U	U	U
Benzo (b) Fluoranthene		0.002	U	U	U	U	U
Benzo(k)Fluoranthene		0.002	U	U	U	U	U
Benzo(a)Pyrene			U	U	U	U	U
Indeno(1,2,3-cd)Pyrene		0.002	U	U	U	U	U
Dibenz(a,h)Anthracene			U	U	U	U	U
Benzo(g,h,i)Perylene			U	U	U	U	U

U = Unidentified

GROUNDWATER ANALYSIS DATA -1989 SAMPLING PROGRAM

Volatile Organics
(parts per billion; ppb)

	NYS DEC STANDARD	NYS DEC GUIDANCE VALUES	B/MW-36	MW-B38	B/MW-40	B/MW-42	MW-9
Chloromethane			U	U	U	U	U
Bromomethane	5		U	U	U	U	U
Vinyl Chloride	2		U	U	U	U	U
Chloroethane	5		U	U	U	U	U
Methylene Chloride	5		U	U	U	U	U
Acetone		50	U	U	U	U	U
Carbon Disulfide			U	U	U	U	U
1,1-Dichloroethene	5		U	U	U	U	U
1,1-Dichloroethane	5		U	U	U	U	U
Trans-1,2-dichloroethene			U	U	U	U	U
Chloroform	7		U	U	U	U	U
1,2-Dichloroethane	5		U	U	U	U	U
2-Butanone			U	U	U	U	U
1,1,1-Trichloroethane	5		U	U	U	U	U
Carbon Tetrachloride	5		U	U	U	U	U
Vinyl acetate			U	U	U	U	U
Bromodichloromethane		50	U	U	U	U	U
1,2-Dichloropropane	5		U	U	U	U	U
cis-1,3-Dichloropropene			U	U	U	U	U
Trichloroethene	5		11	U	U	U	U
Benzene	.7		1.4	6.5	U	U	U
Dibromochloromethane		50	U	U	U	U	U
Trans-1,3-Dichloropropene			U	U	U	U	U
1,1,2-Trichloroethane	5		U	U	U	U	U
Bromoform		50	U	U	U	U	U
4-Methyl-2-pentanone			U	U	U	U	U
2-Hexanone		50	4.2	U	U	U	U
1,1,2,2-Tetrachloroeth	5		U	U	U	U	U
Tetrachloroethene	5		U	U	U	U	U
Toluene	5		24	24	U	U	U
Chlorobenzene		5	U	U	U	U	U
Ethylbenzene	5		3.2	10	U	U	U
Styrene	5		U	U	U	U	U
m-Xylene	5		6.7	U	U	U	U
o,p-Xylene	5		2.8	U	U	U	U
Total dichlorobenze			U	U	U	U	U

U = Not Detected

GROUNDWATER ANALYSIS DATA -1989 SAMPLING PROGRAM

Volatile Organics
(parts per billion; ppb)

	NYS DEC STANDARD	NYS DEC GUIDANCE VALUES	MW-10	MW-13	MW-14	B/MW-50	B/MW-51
Chloromethane			U	U	U	U	U
Bromomethane	5		U	U	U	U	U
Vinyl Chloride	2		U	U	U	U	U
Chloroethane	5		U	U	U	U	U
Methylene Chloride	5		U	7 B	U	46	81
Acetone		50	U	U	U	71	U
Carbon Disulfide			U	U	U	U	U
1,1-Dichloroethene	5		U	U	U	U	U
1,1-Dichloroethane	5		U	U	U	U	U
'1,2-Dichloroethene (total)			U	U	U	U	140
Chloroform	7		U	U	U	U	U
1,2-Dichloroethane	5		U	U	U	U	U
2-Butanone			U	U	U	U	U
1,1,1-Trichloroethane	5		U	U	U	U	U
Carbon Tetrachloride	5		U	U	U	U	U
Vinyl acetate			U	U	U	U	U
Bromodichloromethane		50	U	U	U	U	U
1,2-Dichloropropane	5		U	U	U	U	U
cis-1,3-Dichloropropene			U	U	U	U	U
Trichloroethene	5		U	U	U	U	95
Dibromochloromethane		50	U	U	U	U	U
1,1,2-Trichloroethane	5		U	U	U	U	U
Benzene	.7		U	U	6	390	U
Trans-1,3-Dichloropropene			U	U	U	U	U
Bromoform		50	U	U	U	U	U
4-Methyl-2-pentanone			U	U	U	U	U
2-Hexanone		50	U	U	U	U	U
Tetrachloroethene	5		U	U	U	U	400
1,1,2,2-Tetrachloroeth	5		U	U	U	U	U
Toluene	5		U	U	U	110	U
Chlorobenzene		5	U	U	U	U	U
Ethylbenzene	5		U	U	U	77	U
Styrene	5		U	U	U	U	U
Total Xylenes	5		U	U	U	720	U
			U				
U = Not Detected			U				
B=Detected in Method Blank							

SOIL ANALYSIS DATA -1994 SAMPLING PROGRAM

Semivolatiles

(parts per million; ppm)

	B1A-I (8-10)	B3A-I (2-4)	B3A-I (8-10)	B5A-I (2-4)	B8A-I (6-8)	B9A-I (8-10)	B11A-I (8-10)	B14A-I (10-12)	B17A-I (8-10)	B19A-I (8-10)
N-Nitrosodimethylamine	U	U	U	U	U	U	U	U	U	U
bis(2-Chloroethyl)Ether	U	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U
bis(2-Chloroisopropyl)ether	U	U	U	U	U	U	U	U	U	U
N-Nitroso-Di-n-Propylamine	U	U	U	U	U	U	U	U	U	U
Hexachloroethane	U	U	U	U	U	U	U	U	U	U
Nitrobenzene	U	U	U	U	U	U	U	U	U	U
Isophorone	U	U	U	U	U	U	U	U	U	U
bis(-2-Chloroethoxy)Methane	U	U	U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	U	U
Naphthalene	0.72 J	780.00	5.50	U	U	U	U	U	U	U
Hexachlorobutadiene	U	U	U	U	U	U	U	U	U	U
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	U	U
2-Chloronaphthalene	U	U	U	U	U	U	U	U	U	U
Dimethylphthalate	U	U	U	U	U	U	U	U	U	U
Acenaphthlyene	0.52 J	200.00	4.50	0.53 J	U	U	U	U	U	U
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U
Acenaphthene	2.10	U	U	U	U	.5 J	U	U	U	U
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U
Diethylphthalate	U	U	U	U	U	U	U	U	U	U
4-Chlorophenyl-phenyether	U	U	U	U	U	U	U	U	U	U
Fluorene	2.20	200.00	4.80	0.49 J	U	0.38 J	U	U	U	U
N-Nitrosodiphenylamine		U	U	U	U	U	U	U	U	U
1,2-Diphenylhydrazine (Azobenzene)	U	U	U	U	U	U	U	U	U	U
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	U	U

U= Undetected
J = Below Method Detection Limit

SOIL ANALYSIS DATA -1994 SAMPLING PROGRAM

Semivolatiles

(parts per million; ppm)

	B1A-1 (8-10)	B-3A-I (2-4)	B-3A-I (8-10)	B-5A-I (2-4)	B-8-I (6-8)	B-9A-I 8-10)	B-11A-I (8-10)	B-14A-I (10-12)	B-17A-I (8-10)	B19A-I (8-10)
Hexachlorobenzene	U	U	U	U	U	U	U	U	U	U
Phenanthrene	12.00	700.00	19.00	5.10	0.37 J	2.30	10.00 J	5.30 J	4.30 J	11.00
Anthracene	4.80	270.00	6.20	1.50	U	0.69 J	3.10 J	1.50 J	U	0.30 J
Di-n-butylphthalate	U	U	0.69 J	U	U	U	U	U	U	U
Fluoranthene	20.00	520.00	13.00	6.80	1.40	3.20	12.00 J	5.50 J	5.60 J	1.40
Benzidine	U	U	U	U	U	U	U	U	U	U
Pyrene	20.00	420.00	11.00	5.80	1.20	2.00	14.00	3.50 J	3.80 J	1.40
Butylbenzylphthalate	U	U	U	U	U	0.99 J	14.00	U	U	U
3,3-Dichlorobenzidene	U	U	U	U	U	U	U	U	U	U
Benzo(a)anthracene	11.00	U	5.40	3.10	0.71 J	1.40	6.50 J	2.50 J	U	0.72 J
Chrysene	11.00	190.00	5.10	3.00	0.74 J	1.30	7.00 J	2.50 J	U	0.78 J
bis(2-Ethylhexyl)phthalate	U	U	0.58 J	U	U	24.00	11.00	8.90	U	U
Di-n-octylphthalate	U	U	U	U	U	4.70	26.00	U	U	U
Benzo(b)fluoranthene	29.00	270.00	9.00	4.90	1.60	2.50	15.00	6.30	3.00 J	1.90
Benzo(k)fluoranthene	U	U	U	U	0.38 J	0.51 J	U	1.70 J	U	U
Benzo(a)pyrene	19.00	280.00	7.40	4.10	1.20	1.40	11.00	4.80 J	4.00 J	1.10
Indeno(1,2,3-cd)pyrene	4.70	94.00	2.20	9.10 J	0.43 J	0.40 J	3.40 J	2.30 J	U	0.34 J
Dibenz(a,h)anthracene	2.40	38.00 J	0.83 J	0.47 J	0.19 J	U	U	U	U	U
benzo(g,h,i)perylene	4.90	79.00	1.70	0.90 J	0.40 J	U	U	U	U	0.39 J
2-Chlorophenol	U	U	U	U	U	U	U	U	U	U
2-Nitrophenol	U	U	U	U	U	U	U	U	U	U
Phenol	U	160.00	U	U	U	U	U	U	U	U
2,4-Dimethylphenol	U	50.00 J	U	U	U	U	U	U	U	U
2,4- Dichlorophenol	U	U	U	U	U	U	U	U	U	U
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	U	U	U	U	U	U	U	U	U	U
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	U	U
4-Nitrophenol	U	U	U	U	U	U	U	U	U	U
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	U	U
Total Non-Target Compounds	80.90	2917.00	53.33	20.04	191.54	89.00	4348.00	346.90	831.00	7.60
PaB-eqivalent	25.88	354.59	9.90	6.28	1.67	1.84	13.50	5.93	4.30	1.40

U= Undetected

J = Below Method Detection Limit

SOIL ANALYSIS DATA -1994 SAMPLING PROGRAM

Semivolatiles

(parts per million; ppm)

	20A-I (8-10)	B23A-I (8-10)	FB	QW-P-02	QW-P-03	QW-P-04	QW-P-05	QW-P-06	FB
N-Nitrosodimethylamine	U	U	U	U	U	U	U	U	U
bis(2-Chloroethyl)Ether	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	U
bis(2-Chloroisopropyl)ether	U	U	U	U	U	U	U	U	U
N-Nitroso-Di-n-Propylamine	U	U	U	U	U	U	U	U	U
Hexachloroethane	U	U	U	U	U	U	U	U	U
Nitrobenzene	U	U	U	U	U	U	U	U	U
Isophorone	U	U	U	U	U	U	U	U	U
bis(-2-Chloroethoxy)Methane	U	U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	U
Naphthalene	0.35 J	210.00	U	U	0.68 J	5.40	7.40	0.39 J	U
Hexachlorobutadiene	U	U	U	U	U	U	U	U	U
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	U
2-Chloronaphthalene	U	U	U	U	U	U	U	U	U
Dimethylphthalate	U	U	U	U	U	U	U	U	U
Acenaphthlyene	U	U	U	U	U	0.37 J	U	0.32 J	U
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	U
Acenaphthene	2.80	300.00	U	U	2.70	5.90	22.00	1.50	U
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	U
Diethylphthalate	U	U	U	U	U	U	U	U	U
4-Chlorophenyl-phenyether	U	U	U	U	U	U	U	U	U
Fluorene	2.60	280.00	U	U	2.80	7.50	24.00	1.50	U
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	U
1,2-Diphenylhydrazine (Azobenzene)	U	U	U	U	U	U	U	U	U
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	U

U= Undetected
J = Below Method Detection Limit

SOIL ANALYSIS DATA -1994 SAMPLING PROGRAM

Semivolatiles

(parts per million; ppm)

	B20A (8-10)	B23A (8-10)	FB	QW-P-02	QW-P-03	QW-P-04	QW-P-05	QW-P-06	FB
Hexachlorobenzene	U	U	U	U	U	U	U	U	
Phenanthrene	4.70	760.00	U	0.49 J	32.00	47.00	180.00	11.00	
Anthracene	2.50	84.00	U	U	6.40	11.00	50.00	2.90	
Di-n-butylphthalate	U	U	U	U	U	U	U	U	
Fluoranthene	9.20	280.00	U	0.93	33.00	43.00	180.00	13.00	
Benzidine	U	U	U	U	U	U	U	U	
Pyrene	5.30	150.00	U	1.00	40.00	44.00	170.00	17.00	
Butylbenzylphthalate	U	U	U	U	U	U	1.00 J	1.00	
3,3-Dichlorobenzidene	U	U	U	U	U	U	U	U	
Benzo(a)anthracene	3.80	44.00	U	0.44 J	15.00	20.00	76.00	6.90	
Chrysene	3.60	50.00	U	0.52 J	17.00	20.00	74.00	7.70	
bis(2-Ethylhexyl)phthalate	U	U	U	0.59 J	1.80 J	0.79 J	2.70	3.00	
Di-n-octylphthalate	U	U	U	U	U	U	U	U	
Benzo(b)fluoranthene	7.10	39.00 J	U	0.99	30.00	37.00	160.00	14.00	
Benzo(k)fluoranthene	U	11.00 J	U	U	U	U	U	U	
Benzo(a)pyrene	4.90	37.00 J	U	0.56 J	16.00	19.00	72.00	7.20	
Indeno(1,2,3-cd)pyrene	1.60	13.00 J	U	0.20 J	4.00	4 60	18.00	2.10	
Dibenz(a,h)anthracene	0.45 J	U	U	U	15.00 J	1.90	10.00	0.73 J	
benzo(g,h,i)perylene	1.40	14.00 J	U	0.18 J	4.20	4.20	17.00	2.10	
Total Non-Target Compounds	194.10	2018.00			73.90	62	154	20.28	0
BaP-equivalent	6.60	46.76	0.00	0.72	35.92	27.08	107.474	10.24	0

U = Undetected

J = Below Method Detection Limit

FB=Field Blank

SOIL ANALYSIS DATA -1994 SAMPLING PROGRAM

Volatile Organics

(parts per million; ppm)

	B1A-I (8-10)	B3A-I (2-4)	B3A-I (8-10)	B5A-I (2-4)	B8A-I (6-8)	B9A-I (8-10)	B11A-I (8-10)	B14A-I (10-12)	B17A-I (8-10)	B19A-I 8-10)	B20A-I (8-10)	B23A-I (8-10)	FB	TB
Chloromethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Vinyl Chloride	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Methylene Chloride	U	U	.008	.005JB	.110	U	U	U	U	.008	U	U	.015	.016
Trichlorofluoromethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethene (total)	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Carbon Tetrachloride	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromodichloromethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cis-1,3-dichloropropene	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl ether	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	U	.006	.009	U	U	U	U	U	U	U	U	U	U	U
Dibromochloromethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Benzene	U	.020	.033	U	U	U	U	U	U	U	U	U	U	U
Trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	U	U	U	.032	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	U	4.60	56	U	U	U	.740	U	U	U	U	U	U	U
Chlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	U	2.2	.026	U	U	U	.280J	U	U	U	U	.110	U	U
Total xylenes	U	9.4	.480	U	U	U	.580	1.40	U	U	U	1.0	U	U
Total Non-Target Compounds		30.5												

U = Not Detected

J = Below detection Limit

FB=Field Blank

TB=Trip Blank

SOIL ANALYSIS DATA -1994 SAMPLING PROGRAM

PCBs

(Parts per million; ppm)

	B1A-I (8-10)	B3A-I (2-4)	B3A-I (8-10)	B5A-I (2-4)	B8A-I (6-8)	B9A-I (8-10)	B11A-I (8-10)	B14A-I (10-12)	B17A-I (8-10)
Aroclor-1016	U	U	U	U	U	U	U	U	U
Aroclor-1221	U	U	U	U	U	U	U	U	U
Aroclor-1232	U	U	U	U	U	U	U	U	U
Aroclor-1242	U	U	U	U	U	U	U	U	U
Aroclor-1248	U	U	U	U	U	U	U	U	U
Aroclor-1254	U	U	U	U	U	U	U	U	U
Aroclor-1260	U	U	U	U	U	U	U	U	U

	QW-P-02 (0-2)	QW-P-03 (0-2)	QW-P-04 (0-2)	QW-P-05 (0-2)	QW-P-06 (0-2)	B19A-I (8-10)	B20A-I (8-10)	B23A-I (8-10)	FB
Aroclor-1016	U	U	U	U	U	U	U	U	U
Aroclor-1221	U	U	U	U	U	U	U	U	U
Aroclor-1232	U	U	U	U	U	U	U	U	U
Aroclor-1242	U	U	U	U	U	U	U	U	U
Aroclor-1248	U	U	U	U	U	U	U	U	U
Aroclor-1254	U	U	U	U	U	U	U	U	U
Aroclor-1260	U	U	U	U	U	.240	U	U	U

U=Undetected

SOIL ANALYSIS DATA -1994 SAMPLING PROGRAM
TCLP ANALYSIS
(parts per million, ppm)

	B16A-I	B23A-I	QW-P-02	QW-P-03	QW-P-04	QW-P-05	QW-P-06
VOLATILES							
Vinyl chloride	U	U	U	U	U	U	U
1, 1-Dichloroethene	U	U	U	U	U	U	U
Chloroform	U	U	U	U	U	U	U
1, 2-Dichloroethane	U	U	U	U	U	U	U
Methyl ethyl ketone	U	U	U	U	U	U	U
Carbon tetrachloride	U	U	U	U	U	U	U
Trichloroethene	U	U	U	U	U	U	U
Benzene	U	U	U	U	U	U	U
Teterachloroethene	U	U	U	U	U	U	U
Chlorobenzene	U	U	U	U	U	U	U
SEMIVOLATILES	U	14J	U	14J	U	U	U
Pyridine	U	U	U	U	U	U	U
1, 4-Dichlorobenzene	U	U	U	U	U	U	U
Hexachloroehane	U	U	U	U	U	U	U
Nitrobenzene	U	U	U	U	U	U	U
Hexachlorobutadiene	U	U	U	U	U	U	U
2,4-Dinitrotoluene	U	U	U	U	U	U	U
Hexchlorobenzene	U	U	U	U	U	U	U
Pentachlorophenol	U	U	U	U	U	U	U
2, 4, 5-Trichlorophenol	U	U	U	U	U	U	U
2, 4, 6-Trichlorophenol	U	U	U	U	U	U	U
2-Methylphenol	U	U	U	U	U	U	U
3&4-Methylphenol	U	U	U	U	U	U	U
PEST/HERB							
Endrin	U	U	U	U	U	U	U
Lindane	U	U	U	U	U	U	U
Methoxychlor	U	U	U	U	U	U	U
Toxaphene	U	U	U	U	U	U	U
Chlordane	U	U	U	U	U	U	U
Heptachlor	U	U	U	U	U	U	U
Heptachlor epoxide	U	U	U	U	U	U	U
2, 4-D	U	U	U	U	U	U	U
2, 4, 5-TP (Silvex)	U	U	U	U	U	U	U
METALS							
Arsenic	U	U	U	U	U	U	U
Barium	0.547	0.439	0.432	0.470	0.513	0.469	0.486
Cadmium	U	U	0.005	0.011	0.007	U	U
Chromium	U	U	U	U	U	U	U
Lead	0.050	1.79	0.057	0.340	U	U	0.07
Mercury	U	U	U	U	U	U	U
Selenium	U	U	U	U	U	U	U
Silver	U	U	U	0.021	U	U	U
INORGANIC PARAMETERS							
REACTIVITY							
Cyanide	U	U					
Sulfide	U	U					
CORROSIVITY (pH)	7.18	7.65					
IGNITABILITY	***	***					

U=Undetected
J=detected
*** Sample does not exhibit the characteristics of ignitability

GROUNDWATER ANALYSIS DATA -1994 SAMPLING PROGRAM

Metals

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance Value	MW-B13A		MW-B23A		FB
			Total	Dissolved	Total	Dissolved	
Antimony		3	U	U	U	U	U
Arsenic	25		346	U	55	U	U
Beryllium		3	7	U	U	U	U
Cadmium	10		8	U	U	U	U
Chromium	50		273	10	52	U	U
Copper	200		1,350	U	128	U	4,760
Lead	25		10,700	U	275	U	12
Mercury	2		106	U	U	U	U
Nickel			301	U	75	U	U
Selenium	10		U	U	U	U	U
Silver	50		U	U	U	U	U
Thallium		4	U	35	U	U	U
Zinc	300		5770	U	430	40	98

U=Undetected
FB=Field blank

GROUNDWATER ANALYSIS DATA -1994 SAMPLING PROGRAM

Volatile Organics

(parts per billion; ppb)

	NYS DEC STANDARD	NYS DEC GUIDANCE VALUES	MW-B13A	MW-B23A	FB	TB
Chloromethane			U	U	U	U
Bromomethane	5		U	U	U	U
Vinyl Chloride	5		U	U	U	U
Chloroethane	5		U	U	U	U
Methylene Chloride	5		U	U	15	20
Trichlorofluoromethane	5		U	U	U	U
1,1-Dichloroethene			U	U	U	U
1,1-Dichloroethane	5		U	U	U	U
1,2-Dichloroethene (total)			U	U	U	U
Chloroform	7		U	U	U	U
1,2-Dichloroethane	5		U	U	U	U
1,1,1-Trichloroethane	5		U	U	U	U
Carbon Tetrachloride	5		U	U	U	U
Bromodichloromethane		50	U	U	U	U
1,2-Dichloropropane	5		U	U	U	U
Cis-1,3-dichloropropene			U	U	U	U
2-Chloroethyl vinyl ether			U	U	U	U
Trichloroethene	5		U	U	U	U
Dibromochloromethane		50	U	U	U	U
1,1,2-Trichloroethane	5		U	U	U	U
Benzene	.7		U	U	U	U
Trans-1,3-Dichloropropene			U	U	U	U
Bromoform		50	U	U	U	U
Tetrachloroethene	5		U	U	U	U
1,1,2,2-Tetrachloroethane	5		U	U	U	U
Toluene	5		U	U	U	U
Chlorobenzene		5	U	U	U	U
Ethylbenzene	5		U	10	U	U
Total xylenes	5		U	99	U	U
Total Non-Target Compounds			0	873	0	0

U = Not Detected
FB=Field Blank
TB=Trip Blank

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Target Compound List Volatile Organics (TCL-VOCs)in subsurface soils (2-4' or greater)
(parts per billion; ppb)

	B/MW-6A (6-8') 01/28/98	BMW-7A (5-7') 01/28/98	Trip Blank 01/28/98	Trip Blank 01/26/98	Field Blank
Chloromethane	U	U	U	U	U
Bromomethane	U	U	U	U	U
Vinyl Chloride	U	U	U	U	U
Chloroethane	U	U	U	U	U
Methylene Chloride	U	U	16.0	U	U
Acetone	U	13	U	U	U
Carbon Disulfide	U	U	U	U	U
1,1-Dichloroethene	U	U	U	U	U
1,1-Dichloroethane	U	U	U	U	U
1,2-Dichloroethene (total)	U	U	U	U	U
Chloroform	U	U	4 J	U	U
1,2-Dichloroethane	U	U	U	U	U
2-Butanone	U	U	U	U	U
1,1,1-Trichloroethane	U	U	U	U	U
Carbon Tetrachloride	U	U	U	U	U
Bromodichloromethane	U	U	U	U	U
1,2-Dichloropropane	U	U	U	U	U
Cis-1,3-dichloropropene	U	U	U	U	U
Trichloroethene	U	U	U	U	U
Dibromochloromethane	U	U	U	U	U
1,1,2-Trichloroethane	U	U	U	U	U
Benzene	U	U	U	U	U
Trans-1,3-Dichloropropene	U	U	U	U	U
Bromoform	U	U	U	U	U
4-Methyl-2-Pentanone	U	U	U	U	U
2-Hexanone	U	U	U	U	U
Tetrachloroethene	2 J	U	U	.8 J	U
1,1,2,2-Tetrachloroethane	U	U	U	U	U
Toluene	U	U	U	U	U
Chlorobenzene	U	U	U	U	U
Ethylbenzene	U	U	U	U	U
Styrene	U	U	U	U	U
Xylenes (total)	U	U	U	U	U
Total Target Compounds	0	13	16	0	0

U= Undetected
J = Below Method Detection Limit

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Target Compound List Semivolatiles (TCL-SVOCs), including PAHs, in shallow (0-2') and subsurface (2-4' or deeper) soils

(parts per billion; ppb)

	B-1A 0-2'		B-1A (2-4')		B-2A (0-2')		B-2A (2-4')		B-3A (0-2)		B-3A (2-4')		B-4A (0-2')		B-4A (2-4')		B-5A (0-2')		B-5A (2-4')		B/MW-6A 0-2'	
Phenol	U		U		U		U		U		U		U		U		U		U		U	
bis(2-Chloroethyl)Ether	U		U		U		U		U		U		U		U		U		U		U	
2-Chlorophenol	U		U		U		U		U		U		U		U		U		U		U	
1,3-Dichlorobenzene	U		U		U		U		U		U		U		U		U		U		U	
1,4-Dichlorobenzene	U		U		U		U		U		U		U		U		U		U		U	
1,2-Dichlorobenzene	U		U		U		U		U		U		U		U		U		U		U	
2-Methylphenol	U		U		U		U		U		U		U		U		U		U		U	
2,2'-oxybis (1-Chloropropane)	U		U		U		U		U		U		U		U		U		U		U	
4-Methylphenol	U		U		U		U		U		U		U		U		U		U		U	
N-Nitroso-Di-n-Propylamine	U		U		U		U		U		U		U		U		U		U		U	
Hexachloroethane	U		U		U		U		U		U		U		U		U		U		U	
Nitrobenzene	U		U		U		U		U		U		U		U		U		U		U	
Isophorone	U		U		U		U		U		U		U		U		U		U		U	
2-Nitrophenol	U		U		U		U		U		U		U		U		U		U		U	
2,4-Dimethylphenol	U		U		U		U		U		U		U		U		U		U		U	
bis(-2-Chloroethoxy)Methane	U		U		U		U		U		U		U		U		U		U		U	
2,4-Dichlorophenol	U		U		U		U		U		U		U		U		U		U		U	
1,2,4-Trichlorobenzene	U		U		U		U		U		U		U		U		U		U		U	
Naphthalene	63	J	U		3,800		740		3,100	J	U		4,800	J	420	J	U		1,200	J	19,000	
4-Chloroaniline	U		U		U		U		U		U		U		U		U		U		U	
Hexachlorobutadiene	U		U		U		U		U		U		U		U		U		U		U	
4-Chloro-3-methylphenol	U		U		3,300	J	U		U		U		U		U		U		U		U	
2-Methylnaphthalene	33	J	U		U		2,300		1,500	J	U		2,900	J	260	J	U		680	J	16,000	J
Hexachlorocyclopentadiene	U		U		U		U		U		U		U		U		U		U		U	
2,4,6-Trichlorophenol	U		U		U		U		U		U		U		U		U		U		U	
2,4,5-Trichlorophenol	U		U		U		U		U		U		U		U		U		U		U	
2-Chloronaphthalene	U		U		U		U		U		U		U		U		U		U		U	
2-Nitroaniline	U		U		U		U		U		U		U		U		U		U		U	
Dimethylphthalate	U		U		U		U		U		U		U		U		U		U		U	
Acenaphthlyene	26	J	U		1,100	J	330	J	580	J	U		U		120	J	U		500	J	3,600	J
2,6-Dinitrotoluene	U		U		U		U		U		U		U		U		U		U		U	
3-Nitroaniline	U		U		U		U		U		U		U		U		U		U		U	
Acenaphthene	97	J	U		1,700	J	120	J	8,400		U		16,000		820	J	1,700	J	2,100	J	14,000	J
Total PAHs	**8,952**		**590**		**88,900**		**11,270**		**332,380**		**19,090**		**700,800**		**40,950**		**104,500**		**111,400**		**708,400**	

U= Undetected

J = Below Method Detection Limit

B = Detected in the laboratory method blank

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Semivolatiles, including PAHs, in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per billion; ppb)

	B-1A 0-2'		B-1A (2-4')		B-2A (0-2')		B-2A (2-4')		B-3A (0-2)		B-3A (2-4')		B-4A (0-2')		B-4A (2-4')		B-5A (0-2')		B-5A (2-4')		B/MW-6A 0-2'	
2,4-Dinitrophenol	66	J		U		U		U		U		U		U		U		U		U		U
4-Nitrophenol		U		U		U		U		U		U		U		U		U		U		U
Dibenzofuran		U		U		U		U	4,000	J		U	6,900	J	520	J		U	1,200	J	10,000	J
2,4-Dinitrotoluene		U		U		U		U		U		U		U		U		U		U		U
Diethylphthalate		U		U		U		U		U		U		U		U		U		U	1,700	J
4-Chlorophenyl-phenyether		U		U		U		U		U		U		U		U		U		U		U
Fluorene	86	J		U	2,000	J	140	J	6,900	J		U	14,000	J	870	J	1,900	J	2,100	J	26,000		
4-Nitroaniline		U		U		U		U		U		U		U		U		U		U		U
4,6-Dinitro-2-methylphenol		U		U		U		U		U		U		U		U		U		U		U
N-Nitrosodiphenylamine (1)		U		U		U		U		U		U		U		U		U		U		U
4-Bromophenyl-phenylether		U		U		U		U		U		U		U		U		U		U		U
Hexachlorobenzene		U		U		U		U		U		U		U		U		U		U		U
Pentachlorophenol		U		U		U		U		U		U		U		U		U		U		U
Phenanthrene	1,200		45	J	13,000		630		47,000		2,200	J	80,000		5,800		14,000	J	14,000		130,000	
Anthracene	260	J	12	J	4,400		260	J	12,000		490	J	23,000		1,400	J	3,800	J	4,000		34,000	
Carbazole	120	J		U		U		U	7,600			U	15,000		680	J	1,700	J	1,700	J	6,000	J
Di-n-butylphthalate		U		U		U		U	380	J		U	1,100	J		U		U		U		U
Fluoranthene	1,100		70	J	7,900		780		48,000		2,800	J	85,000		5,400		17,000	J	14,000		88,000	
Pyrene	1,300		88	J	17,000		1,900		50,000		2,800	J	110,000		6,400		16,000	J	18,000		120,000	
Butylbenzylphthalate		U		U		U		U		U		U		U		U		U		U		U
3,3'-Dichlorobenzidine		U		U		U		U		U		U		U		U		U		U		U
Benzo(a)anthracene	750		47	J	6,800		740		32,000		1,600	J	64,000		4,200		9,100	J	10,000		61,000	
Chrysene	790		51	J	7,500		820		31,000		1,700	J	61,000		4,000		9,300	J	9,500		57,000	
bis(2-Ethylhexyl)phthalate	170	J	90	J	1,500	J	2,400		6,100	J	42,000		4,800	J	670	J	77,000		12,000			U
Di-n-octylphthalate		U		U		U		U		U		U		U		U	4,600	J		U		U
Benzo(b)fluoranthene	580		39	J	3,600	J	480		23,000		1,300	J	45,000		2,500		6,700	J	6,500		30,000	
Benzo(k)fluoranthene	620		42	J	3,400	J	370	J	20,000		1,200	J	47,000		2,900		7,500	J	8,200		38,000	
Benzo(a)pyrene	710		56	J	8,300		1,100		19,000		1,500	J	54,000		2,200		7,800	J	8,300		43,000	
Indeno(1,23-cd)pyrene	750		47	J	6,000		1,000		20,000		1,400	J	49,000		2,300		7,200	J	7,700		26,000	
Dibenz (a,h) anthracene	280	J		U		U	360	J	8,300			U	16,000		1,100	J	2,500	J	2,700	J	8,800	J
Benzo(g,h,i)perylene	340	J	93	J	2,400	J	1,500		3,100	J	2,100	J	32,000		520	J		U	2,600	J	10,000	J

U= Undetected
J = Below Method Detection Limit
B = Detected in the laboratory method blank

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Semivolatiles, including PAHs, in shallow (0-2') and subsurface (2-4' or deeper) soils

(parts per billion; ppb)

	B/MW-6A (2-4')		B/MW-7A (0-2')		B/MW-7A (2-4')		B/MW-7A (5-7')		B/MW-8A (1.5-3.5')		B/MW-8A (3.5-5.5')		B/MW-9A (1-3')		B/MW-9A (3-5')		B/MW10A (0-2')		B/MW10A (2-4')		B-11A (0-2')		B-12A (0-2')	
Phenol		U		U		U		U	50	J	24	J		U		U		U		U		U		U
bis(2-Chloroethyl)Ether		U		U		U		U	32	J				U		U		U		U		U		U
2-Chlorophenol		U		U		U		U		U				U		U		U		U		U		U
1,3-Dichlorobenzene		U		U		U		U		U				U		U		U		U		U		U
1,4-Dichlorobenzene		U		U		U		U		U				U		U		U		U		U		U
1,2-Dichlorobenzene		U		U		U		U	31	J				U		U		U		U		U		U
2-Methylphenol		U		U		U		U		U				U		U		U		U		U		U
2,2' -oxybis (1-Chloropropane)		U		U		U		U		U				U		U		U		U		U		U
4-Methylphenol		U		U		U		U	50	J				U		U		U		U		U		U
N-Nitroso-Di-n-Propylamine		U		U		U		U		U				U		U		U		U		U		U
Hexachloroethane		U		U		U		U		U				U		U		U		U		U		U
Nitrobenzene		U		U		U		U		U				U		U		U		U		U		U
Isophorone		U		U		U		U		U				U		U		U		U		U		U
2-Nitrophenol		U		U		U		U		U				U		U		U		U		U		U
2,4-Dimethylphenol		U		U		U		U		U				U		U		U		U		U		U
bis(-2-Chloroethoxy)Methane		U		U		U		U		U				U		U		U		U		U		U
2,4-Dichlorophenol		U		U		U		U		U				U		U		U		U		U		U
1,2,4-Trichlorobenzene		U		U		U		U		U				U		U		U		U		U		U
Naphthalene	370	J	52	J	1,100	J	24	J	240	J	27	J	200	J	40,000	J	52	J	68	J	69	J	62	J
4-Chloroaniline		U		U		U		U		U				U		U		U		U		U		U
Hexachlorobutadiene		U		U		U		U		U				U		U		U		U		U		U
4-Chloro-3-methylphenol		U		U		U		U		U				U		U		U		U		U		U
2-Methylnaphthalene	240	J	34	J	560	J		U	190	J	98	J	120	J	20,000	J	37	J	130	J	57	J	39	J
Hexachlorocyclopentadiene		U		U		U		U		U				U		U		U		U		U		U
2,4,6-Trichlorophenol		U		U		U		U		U				U		U		U		U		U		U
2,4,5-Trichlorophenol		U		U		U		U		U				U		U		U		U		U		U
2-Chloronaphthalene		U		U		U		U		U				U		U		U		U		U		U
2-Nitroaniline		U		U		U		U		U				U		U		U		U		U		U
Dimethylphthalate		U		U		U		U		U				U		U		U		U		U		U
Acenaphthlyene	150	J	34	J	190	J	69	J	130	J	6	J	320	J	7,600	J	46	J	59	J	120	J	61	J
2,6-Dinitrotoluene		U		U		U		U		U				U		U		U		U		U		U
3-Nitroaniline		U		U		U		U		U				U		U		U		U		U		U
Acenaphthene	330	J	94	J	3,300	J		U	110	J	11	J	240	J	52,000		42	J	120	J	43	J	43	J
Total PAHs	**26,100**		**8,160**		**134,690**		**3,641**		**27,799**		**3,126**		**57,980**		**1,743,600**		**6,069**		**9,732**		**6,366**		**6,111**	

U= Undetected
J = Below Method Detection Limit
B = Detected in the laboratory method blank

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Semivolatiles, including PAHs

(parts per billion; ppb)

	B/MW-6A (2-4')		B/MW-7A (0-2')		B/MW-7A (2-4')		B/MW-7A (5-7')		B/MW-8A (1.5-3.5')		B/MW-8A (3.5-5.5')		B/MW-9A (1-3')		B/MW-9A (3-5')		B/MW10A (0-2')		B/MW10A (2-4')		B-11A (0-2')		B-12A (0-2')	
2,4-Dinitrophenol		U		U		U		U		U		U		U		U		U		U		U		U
4-Nitrophenol		U		U		U		U		U		U		U		U		U		U		U		U
Dibenzofuran	200	J	52	J	1,500	J	31	J	160	J	28	J	240	J	45,000		31	J	73	J	37	J	28	J
2,4-Dinitrotoluene		U		U		U		U		U		U		U		U		U		U		U		U
Diethylphthalate	61	J		U		U		U	29	JB	17	JB	32	JB		U	18	JB	18	JB	15	JB	17	JB
4-Chlorophenyl-phenyether		U		U		U		U		U		U		U		U		U		U		U		U
Fluorene	490	J	100	J	3,000	J	65	J	78	J	15	J	160	J	54,000		42	J	140	J	31	J	36	J
4-Nitroaniline		U		U		U		U		U		U		U		U		U		U		U		U
4,6-Dinitro-2-methylphenol		U		U		U		U		U		U		U		U		U		U		U		U
N-Nitrosodiphenylamine (1)		U		U		U		U		U		U		U		U		U		U		U		U
4-Bromophenyl-phenylether		U		U		U		U		U		U		U		U		U		U		U		U
Hexachlorobenzene		U		U		U		U		U		U		U		U		U		U		U		U
Pentachlorophenol		U		U		U		U		U		U		U		U		U		U		U		U
Phenanthrene	3,100		980		16,000		460		2,700		440		3,500		320,000		440		1,200		560		400	
Anthracene	810		250	J	5,200		130	J	500	J	44	J	1,100	J	84,000		120	J	330	J	130	J	110	J
Carbazole	190	J	120	J	2,600	J	64	J	200	J	24	J	340	J	21,000	J	45	J	100	J	45	J	40	J
Di-n-butylphthalate		U	28	J		U		U	26	JB	16	JB	52	JB		U	22	JB	21	JB	20	JB	20	JB
Fluoranthene	3,300		950		16,000		520		4,300		560		7,900		270,000		960		1,600		1,000		840	
Pyrene	4,300		1,300		20,000		570		3,100		300	J	6,600		240,000		1,400		1,900		720		1,800	
Butylbenzylphthalate		U		U		U		U		U		U		U		U		U		U		U		U
3,3'-Dichlorobenzidine		U		U		U		U		U		U		U		U		U		U		U		U
Benzo(a)anthracene	2,700		740		12,000		320	J	2,600		250	J	6,000		120,000		600		920		660		460	
Chrysene	2,500		770		12,000		320	J	3,100		420		6,200		130,000		520		850		670		350	
bis(2-Ethylhexyl)phthalate	240	J	590			U	190	J	2,100	B	1,500	B	3,000	B	2,400	JB	990	B	380	B	570	B	1,700	B
Di-n-octylphthalate		U		U		U		U		U		U		U		U		U		U		U		U
Benzo(b)fluoranthene	1,600		590		7,800		220	J	3,900		480		9,400		100,000		630		800		770		470	
Benzo(k)fluoranthene	1,800		460		10,000		280	J	2,900		380	J	5,700		86,000		510		720		660		580	
Benzo(a)pyrene	2,100		650		10,000		270	J	2,800		160	J	7,400		130,000		530		780		710		560	
Indeno(1,2,3-cd)pyrene	1,400		620		9,300		220	J	700	J	24	J	1,800	J	56,000		110	J	150	J	140	J	130	J
Dibenz (a,h) anthracene	510	J	230	J	3,400	J	77	J	290	J	9	J	670	J	21,000	J	43	J	55	J	49	J	49	J
Benzo(g,h,i)perylene	640	J	340	J	5,400		96	J	320	J		U	790	J	33,000	J	24	J	40	J	34	J	160	J

U= Undetected

J = Below Method Detection Limit

B = Detected in the laboratory method blank

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Pesticides in Surficial Soils (0-2")
(parts per billion; ppb)

	B-1A (0-2")	B-2A (0-2")	B-3A (0-2")	B-4A (0-2")	B-5A (0-2")	B-6A (0-2")	B-7A (0-2")	
a'pha-BHC	U	U	U	U	U	U	U	0.11
beta-BHC	U	U	U	U	U	U	U	0.2
delta-BHC	U	U	U	U	U	U	U	0.3
gamma-BHC (Lindane)	U	U	U	U	U	U	U	0.06
Heptachlor	U	0.82 JP	U	16.0 JP	U	U	U	0.1
Aldrin	U	U	U	U	U	U	U	0.041
Heptachlor Epoxide	U	U	U	U	U	U	U	0.02
Endosulfan I	U	U	U	U	U	U	U	0.9
Dieldrin	U	2.9 JP	U	28.0 J	1.3 JP	9.7 J	U	0.044
4, 4' -DDE	540.0	6.9 J	13.0	210.0	10.0	22.0 JP	59.0	2.1
Endrin	U	3.4 JP	U	U	U	U	U	0.1
Endosulfan II	U	0.98 JP	2.8 JP	49.0 JP	U	U	U	0.9
4, 4' -DDD	U	U	1.4 JP	85.0	1.4 JP	11.0 JPB	U	2.9
Endosulfan Sulfate	U	U	U	U	U	U	U	1.0
4, 4' -DDT	190.0 J	3.9 JP	16.0 P	340.0 P	4.7 P	52.0 PB	24.0 JP	2.1
Methoxychlor	U	U	U	U	U	53.0 JP	U	N/A
Endrin Ketone	U	U	U	U	U	U	39.0	
Endrin Aldehyde	U	10.0 P	U	U	U	U	U	
alpha-Chlordane	U	15.0 P	14.0 P	130.0 P	3.2 P	18.0 JP	U	0.54
gamma-Chlordane	U	13.0	8.0	84.0	1.5 J	9.1 J	6.2 J	
Toxaphene	U	U	U	U	U	U	U	

U= Undetected
J = Below Method Detection Limit
B = Detected in the laboratory method blank
P = greater than 25 percent difference for detected concentrations between the two GC columns

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Pesticides in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per billion; ppb)

	B-1A (0-2')	B-1A (2-4')	B-2A (0-2')	B-2A (2-4')	B-3A (0-2')	B-3A (2-4')	B-4A (0-2')	B-4A (2-4')	B-5A (0-2')	B-5A (2-4')	B/MW-6A (0-2')
alpha-BHC	U	U	U	U	U	U	U	U	U	U	U
beta-BHC	U	U	U	U	U	U	U	U	U	U	U
delta-BHC	U	U	U	U	U	U	U	U	U	U	U
gamma-BHC (Lindane)	U	U	U	U	U	U	U	U	U	U	U
Heptachlor	U	U	0.54 JP	U	U	U	U	U	2.8 JP	2.3 JP	U
Aldrin	U	U	U	U	U	U	U	U	U	U	U
Heptachlor Epoxide	U	U	U	U	U	U	U	U	U	U	U
Endosulfan I	U	U	U	U	U	U	U	U	U	U	U
Dieldrin	U	U	U	U	U	U	9.7 JP	U	U	U	U
4, 4' -DDE	9.6	1.4 JP	25	8.8	68.0	19.0 P	100.0	26.0	36.0	48.0	110.0
Endrin	U	U	U	6.3 JP	U	U	U	U	U	U	U
Endosulfan II	U	U	U	U	U	U	U	U	U	U	U
4, 4' -DDD	U	U	14 JP	4.6 JP	U	4.5 JP	23.0 JP	2.2 JP	34.0 P	4.8 JP	U
Endosulfan Sulfate	U	U	U	U	U	U	U	U	U	U	U
4, 4' -DDT	3.3 JP	1.2 J	74 P	10 P	49.0	24.0 P	40.0 P	12.0 JP	34.0 P	18.0 P	22.0 JP
Methoxychlor	U	U	U	U	U	U	U	U	U	U	U
Endrin Ketone	9.0 P	U	U	U	U	U	U	U	30.0 P	51.0 P	U
Endrin Aldehyde	U	U	15 JP	U	U	U	U	U	U	U	U
alpha-Chlordane	U	U	8.2 JP	1.3 JP	U	12.0 P	40.0 P	U	57.0 P	18.0 P	U
gamma-Chlordane	U	U	4.3 JP	1.3 JP	5.2 JP	5.5 JP	17.0 J	U	35.0 P	9.1 J	U
Toxaphene	U	U	U	U	U	U	U	U	U	U	U

U= Undetected
J = Below Method Detection Limit
B = Detected in the laboratory method blank
P = greater than 25 percent difference for detected concentrations between the two GC columns

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Pesticides in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per billion; ppb)

	B/MW-6A (2-4')		B-7A (0-2')		B-7A (2-4')		B-7A (5-7')		B/MW-8A (1.5-3.5')		B/MW-8A (3.5-5.5')		B/MW-9A (1-3')		B/MW-9A (3-5')		B/MW-10A (0-2')		B/MW-10A (2-4')		B-11A (0-2')		B-12A (0-2')	
alpha-BHC		U		U		U		U		U		U		U		U		U		U		U		U
beta-BHC		U		U		U		U		U		U		U		U		U		U		U		U
delta-BHC		U		U		U		U		U		U		U		U		U		U		U		U
gamma-BHC (Lindane)		U		U		U		U		U		U		U		U		U		U		U		U
Heptachlor		U		U		U		U		U		U		U		U		U		U	0.2	JP	0.4	JP
Aldrin		U		U		U		U		U		U		U		U		U		U		U		U
Heptachlor Epoxide		U		U		U		U		U		U		U		U		U		U		U		U
Endosulfan I		U		U		U		U		U		U		U		U		U		U		U		U
Dieldrin		U		U		U		U		U		U		U		U		U		U		U	1.0	J
4, 4' -DDE	18.0		3.1	JP	72.0		1.5	JP	19.0		5.4	P	22.0	JP	240.0		3.2	JP	4.0	JB	7.2	P	3.9	
Endrin		U		U		U		U		U		U		U		U	3.2	JP		U		U		U
Endosulfan II		U		U		U		U		U		U		U		U		U		U		U	1.2	JP
4, 4' -DDD		U	1.5	JP		U		U		U		U		U		U	3.9	PB	2.5	JPB		U	3.6	PB
Endosulfan Sulfate		U		U		U		U		U		U		U		U		U		U		U		U
4, 4' -DDT		U	0.97	JP	21.0	JP	1.1	JP		U		U		U	93.0	B	8.2	B	5.8	JPB	8.6	PB	6.0	PB
Methoxychlor		U	3.8	JP		U		U		U		U		U	360.0	JB		U		U		U		U
Endrin Ketone	12.0	P		U		U		U	21.0	P		U		U		U		U		U		U		U
Endrin Aldehyde		U	1.0	JP		U		U		U		U		U		U		U		U		U		U
alpha-Chlordane		U		U		U		U		U		U		U		U	2.3	P	2.8	JP	2.3	P	3.1	P
gamma-Chlordane		U		U		U		U		U		U		U		U	1.4	JP	1.4	J	1.4	J	1.7	JP
Toxaphene		U		U		U		U		U		U		U		U		U		U		U		U

U= Undetected
J = Below Method Detection Limit
B = Detected in the laboratory method blank
P = greater than 25 percent difference for detected concentrations between the two GC colu nns

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

PCBs in shallow (0-2') and subsurface (2-4' or deeper) soils

(Parts per billion; ppb)

	B/MW-10A (0-2')	B/MW-10A (2-4')	B-11A (0-2')	B-12A (0-2')
Aroclor-1016	U	U	U	U
Aroclor-1221	U	U	U	U
Aroclor-1232	U	U	U	U
Aroclor-1242	U	U	U	U
Aroclor-1248	U	U	U	U
Aroclor-1254	38	42 JP	45	27 JP
Aroclor-1260	100 P	U	180	U

U= Undetected

J = Below Method Detection Limit

P = greater than 25 percent difference for detected concentrations between the two GC columns

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Volatile Organic Compounds (STARS Parameters)
(parts per billion; ppb)

	Method Blank	Field Blank	SG-1(3-5)
Benzene	U	U	U
Ethylbenzene	U	U	9
Toluene	U	U	U
Xylenes (total)o	U	U	2
Xylenes (total)mp	U	U	9
Isopropylbenzene	U	U	13
Propylbenzene	U	U	7
p-Isopropyltoluene	U	U	5
1,2,4-Trimethylbenzene	U	U	25
1,3,5-Trimethylbenzene	U	U	14
Butylbenzene	U	U	U
Sec-Butylbenzene	U	U	2
Naphthalene	U	U	120
Methyl tert-Butyl Ether	U	U	U

U= Undetected
J = Below Method Detection Limit

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Total RCRA Metals in Surficial Soils (0-2")
(parts per million; ppm)

	B-1A (0-2")	B-2A (0-2")	B-3A (0-2")	B-4A (0-2")	B-5A (0-2")	B-6A (0-2")	B-7A (0-2")
Arsenic	25	3.9	5.5	10.2	2.3	6.4	4.3
Barium	911	94.2	623	280	61.3	198	67.0
Cadmium	5.4	U	2.9	3.6	U	4.1	0.29 B
Chromium	182	15.3	44.6	61.4	9.2	126	16.4 B
Lead	2,600	508	505	1,140	79.2	538	125.0
Mercury	3.6 N	UN	0.9 N	8.1 N	0.13 N	0.69 N	0.16 N
Selenium	2.4	1.8	1.6	1.5	0.62 B	1.8	1.6
Silver	0.86 B	U	1.1 B	1.8 B	U	0.9 B	U

U=Undetected
E= Estimated value because of interference
B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)
N = Spiked sample recovery not within control limits

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Total RCRA Metals in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per million; ppm)

	B-1A (0-2')		B-1A (2-4')		B-2A (0-2')		B-2A (2-4')		B-3A (0-2')		B-3A (2-4')	
Arsenic	4.4		1.1	B	6.9		0.90	B	4.8		6.5	
Barium	87.6		38.7	B	85.3		69.6		143		190	
Cadmium	0.26	B		U		U		U	1.1	B	2.5	
Chromium	26.5		15.2		49.0		12.2		31.3		17.7	
Lead	178		8.1		133		40.9		413		584	
Mercury	0.52	N		U		U		U	1.4	N	2.4	N
Selenium	1.1		0.95	B	1.3		1.2		1.4		1.1	B
Silver		U		U		U		U	0.41	B		U

U=Undetected
E= Estimated value because of interference
B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)
N = Spiked sample recovery not within control limits

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Total RCRA Metals in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per million; ppm)

	B-4A (0-2')		B-4A (2-4')		B-5A (0-2')		B-5A (2-4')		B/MW-6A (0-2')	
Arsenic	4.8		29.8		5.4		7.4		4.2	
Barium	229		377		134		112		81.6	
Cadmium	1.6		1.0	B	0.80	B		U		U
Chromium	26.3		10.5		29.5		24.2		29.8	
Lead	290		712		302		229		580	
Mercury	1.1	N	1.2	N	1.6	N	3.7	N	0.29	N
Selenium	1.6		0.82	B	1.6		1.3		1.6	
Silver	0.47	B		U	0.44	B		U		U

U=Undetected
E= Estimated value because of interference
B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Total RCRA Metals in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per million; ppm)

	B/MW-6A (2-4')		B/MW-7A (0-2')		B/MW-7A (2-4')		B/MW-7A (5-7')		B/MW-8A (1.5-3.5')	
Arsenic	3.9	B	4.2		8.7		1.0	B	53.4	
Barium	582		81.6		140		22.5	B	680	
Cadmium	17.7			U	0.7	B		U		U
Chromium	3.2	B	29.8		15.6		5.4		20.8	
Lead	682	E	580		2,210		14.6		143	
Mercury		U	0.29	N	2.6	N		UN	60.2	N
Selenium	6.6		1.6		2.0		0.99	B	12.1	
Silver	1.0	B		U		U		U		U

U=Undetected
E= Estimated value because of interference
B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL
N = Spiked sample recovery not within control limits

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

Total RCRA Metals in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per million; ppm)

	B/MW-8A (3.5-5.5')		B/MW-9A (1-3')		B/MW-9A (3-5')		B/MW-10A (0-2')		B/MW-10A (2-4')		B-11A (0-2')		B-12A (0-2')	
Arsenic	13.1		6.3		12.4		2.3		2.1		4.8		3.3	
Barium	72.7		219		110		48.2		44.8		116		71.7	
Cadmium	0.37	B		U		U		U		U	0.52	B		U
Chromium	14		23.3	B	11.9		9.8		9.9		10.1		8.2	
Lead	24.8	B	123		303		66		49.5		110		65.1	
Mercury	27.7	N	2.2	N	8.9	N		UN	0.11	N	1.8	N	0.15	N
Selenium	3.7		2.1		3.8		0.56	B	0.61	B	0.83	B	0.82	B
Silver		U		U		U		U		U		U		U

U=Undetected
E= Estimated value because of interference
B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)
N = Spiked sample recovery not within control limits

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

TCLP Metals in Surficial Soils (0-2")

(parts per billion; ppb)

	Regulatory Limit	B-1A (0-2")	B-2A (0-2")	B-3A (0-2")	B-4A (0-2")	B-5A (0-2")	B-6A (0-2")	B-7A (0-2")
Arsenic	5,000	17.8	9.3 B	4 B	3.7 B	U	3.6 B	2.7
Barium	100,000	526 E	381 E	644 E	500 E	375 E	463 E	424
Cadmium	1,000	74.7	3.5 B	21.2	25.9	5.1	45.9	5 B
Chromium	5,000	13.9	3.7 B	4.8 B	4.7 B	2.9 B	12.4	1.2 B
Lead	5,000	6,620	35.6	421	993	199	250	27.1 E
Mercury	200	2.5	U	U	U	U	U	U
Selenium	1,000	4.4 B	10.8	9.8	6.6	8	9.8	6.7
Silver	5,000	U	U	U	U	U	U	U

U=Undetected

E= Estimated value because of interference

B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)

N = Spiked sample recovery not within control limits

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

TCLP Metals in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per billion; ppb)

	Regulatory Limit	B-1A (0-2')	B-1A (2-4')	B-2A (0-2')	B-2A (2-4')	B-3A (0-2')	B-3A (2-4')
Arsenic	5,000	U	U	5 B	3.2 B	3.6 B	6.6 B
Barium	100,000	804	396	443	700	576	379
Cadmium	1,000	8	2.1 B	2.4 B	2.4 B	13.9	23.1
Chromium	5,000	39	9.5 B	3 B	8.6 B	2.5 B	2.1 B
Lead	5,000	254 E	23.4 E	28.4 E	207 E	1,790 E	1,110 E
Mercury	200	U	U	U	U	U	U
Selenium	1,000	6.6	7.3	8.4	7.7	7.6	7.9
Silver	5,000	U	U	U	U	U	U

U=Undetected
E= Estimated value because of interference
B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)
N = Spiked sample recovery not within control limits

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

TCLP Metals in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per billion; ppb)

	Regulatory Limit	B-4A (0-2')	B-4A (2-4')	B-5A (0-2')	B-5A (2-4')	B/MW-6A (0-2')
Arsenic	5,000	2.8 B	18.2	3.5 B	2.7 B	4.6 B
Barium	100,000	404	269	600	492	449
Cadmium	1,000	13.4	8.0	14.5	9.0	24.2
Chromium	5,000	3.7 B	1.6 B	8.7 B	3.7 B	19.3
Lead	5,000	56.4 E	1,620 E	482 E	1,120 E	800 E
Mercury	200	U	U	U	U	U
Selenium	1,000	7.4	7.8	6.6	7.8	10
Silver	5,000	U	U	U	U	U

U=Undetected
E= Estimated value because of interference
B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)
N = Spiked sample recovery not within control limits

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

TCLP Metals in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per billion; ppb)

	Regulatory Limit	B/MW-6A (2-4')	B/MW-6A (6-8')	B/MW-7A (0-2')	B/MW-7A (2-4')	B/MW-7A (5-7')	B/MW-8A (1.5-3.5')
Arsenic	5,000	3.9 B	U	U	2.9 B	U	7.9 B
Barium	100,000	582	263	450	253	201	585 E
Cadmium	1,000	17.7	U	5.7	6.4	1.3 B	8.2
Chromium	5,000	3.2 B	8.8 B	1.8 B	12.3	1.4 B	8.3 B
Lead	5,000	682 E	71.9 B	141 E	7,450 E	16.2 E	61
Mercury	200	U	U	U	U	U	70.4
Selenium	1,000	6.6	52.8 B	6.7	7.8	7.4	38.1
Silver	5,000	1.0 B	U	U	U	U	U

U=Undetected
E= Estimated value because of interference
B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)
N = Spiked sample recovery not within control limits

SOIL ANALYSIS DATA -1998 SAMPLING PROGRAM

TCLP Metals in shallow (0-2') and subsurface (2-4' or deeper) soils
(parts per billion; ppb)

	Regulatory Limit	B/MW-8A (3.5-5.5')	B/MW-9A (1-3')	B/MW-9A (3-5')	B/MW-10A (0-2')	B/MW-10A (2-4')	B-11A (0-2')	B-12A (0-2')
Arsenic	5,000	4.5 B	U	2.3 B	2.6 B	4.4 B	U	U
Barium	100,000	384 E	521 E	388 E	456 E	409 E	607 E	549 E
Cadmium	1,000	4.0 B	7.7	5.2	4.0 B	4 B	6.4	3.8 B
Chromium	5,000	2.7 B	9.4 B	2.2 B	1.4 B	2.6 B	U	U
Lead	5,000	2.3 B	21.6	11,700	98.4	89.5	26.1	30.1
Mercury	200	U	U	U	U	U	U	U
Selenium	1,000	28	10.7	12.3	8.7	3.7 B	8.5	7.5
Silver	5,000	U	U	U	U	U	U	U

U=Undetected
E= Estimated value because of interference
B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)
N = Spiked sample recovery not within control limits

GROUNDWATER ANALYSIS DATA -1998 SAMPLING PROGRAM

Target Compound List Volatile Organics
(parts per billion; ppb)

	NYS DEC STANDARD	NYS DEC GUIDANCE VALUES	B\MW-6A	B\MW-7A	B\MW-8A	B\MW-9A	B\MW-10A	B\MW-50	Trip Blank	Field Blank
Chloromethane			U	U	U	U	U	U	U	U
Bromomethane	5		U	U	U	U	U	U	U	U
Vinyl Chloride	5		U	U	U	U	U	U	U	U
Chloroethane	5		U	U	U	U	U	U	U	U
Methylene Chloride	5		U	U	U	U	6 J	U	U	U
Acetone			U	U	U	U	140.0	3 J	U	1.0
Carbon Disulfide			U	U	U	U	U	U	U	U
1,1-Dichloroethene			U	U	U	U	U	U	U	U
1,1-Dichloroethane	5		U	U	U	U	U	U	U	U
1,2-Dichloroethene (total)			5 J	U	U	U	U	U	U	U
Chloroform	7		U	U	U	U	U	U	U	U
1,2-Dichloroethane	5		U	U	U	U	U	U	U	U
2-Butanone			U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	5		U	U	U	U	3 J	U	U	U
Carbon Tetrachloride	5		U	U	U	U	U	U	U	U
Bromodichloromethane		50	U	U	U	U	U	U	U	U
1,2-Dichloropropane	5		U	U	U	U	U	U	U	U
Cis-1,3-dichloropropene			U	U	U	U	U	U	U	U
Trichloroethene	5		U	U	U	U	U	U	U	U
Dibromochloromethane		50	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	5		U	U	U	U	U	U	U	U
Benzene	.7		U	1 J	370	990	U	86	U	U
Trans-1,3-Dichloropropene			U	U	U	U	U	U	U	U
Bromoform		50	U	U	U	U	U	U	U	U
4-Methyl-2-Pentanone			U	U	U	U	U	U	U	U
2-Hexanone			U	U	U	U	U	U	U	U
Tetrachloroethene	5		U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5		U	U	U	U	U	U	U	U
Toluene	5		U	U	650	4,000	U	43	U	U
Chlorobenzene		5	U	U	U	U	U	U	U	U
Ethylbenzene	5		U	U	540	2,200	U	200	U	U
Styrene			U	U	88 J	340	U	3 J	U	U
Xylenes (total)	5		U	U	5,500	8,000	U	270	U	U
Total Target Compounds			**5**	**1.0**	**6,778**	**15,530**	**146**	**605**	**U**	**U**

U = Not Detected
J = Concentration below the minimum detection limit but is greater than zero

GROUNDWATER ANALYSIS DATA -1998 SAMPLING PROGRAM

Target Compound List Semivolatiles, including PAHs

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance	MW-6A	MW-7A	MW-8A	MW-9A	MW-10A	MW-50	FB
Phenol	1		U	U	U	U	U	U	U
bis(2-Chloroethyl)Ether	1		U	U	U	U	U	U	U
2-Chlorophenol	1		U	U	U	U	U	U	U
1,3-Dichlorobenzene	5		U	U	U	U	U	U	U
1,4-Dichlorobenzene	4.7		U	U	U	U	U	U	U
1,2-Dichlorobenzene	4.7		U	U	U	U	U	U	U
2-Methylphenol	1		U	U	U	U	U	U	U
2,2' -oxybis (1-Chloropropane)			U	U	U	U	U	U	U
4-Methylphenol	1		U	U	U	U	U	U	U
N-Nitroso-Di-n-Propylamine			U	U	U	U	U	U	U
Hexachloroethane	5		U	U	U	U	U	U	U
Nitrobenzene	5		U	U	U	U	U	U	U
Isophorone		50	U	U	U	U	U	U	U
2-Nitrophenol	1		U	U	U	U	U	U	U
2,4-Dimethylphenol	1		U	U	U	150 J	U	U	U
bis(-2-Chloroethoxy)Methane			U	U	U	U	U	U	U
2,4-Dichlorophenol	4.7		U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	5		U	U	U	U	U	U	U
Naphthalene		10	1 J	U	11,000	13,000	U	2000	2 J
4-Chloroaniline			U	U	U	U	U	U	U
Hexachlorobutadiene	5		U	U	U	U	U	U	U
4-Chloro-3-methylphenol	1		U	U	U	U	U	U	0.2 J
2-Methylnaphthalene			0.2 J	U	740 J	1,600 J	U	310 J	U
Hexachlorocyclopentadiene	5		U	U	U	U	U	U	U
2,4,6-Trichlorophenol	1		U	U	U	U	U	U	U
2,4,5-Trichlorophenol	1		U	U	U	U	U	U	U
2-Chloronaphthalene		10	U	U	U	U	U	U	U
2-Nitroaniline	5		U	U	U	U	U	U	U
Dimethylphthalate		50	U	U	U	U	U	U	U
Acenaphthlyene			U	U	U	25 J	U	U	U
2,6-Dinitrotoluene	5		U	U	U	U	U	U	U
3-Nitroaniline	5		U	U	U	U	U	U	U
Acenaphthene		20	1.0 J	21.0	87 J	460 J	U	680	U
Total Target Compounds			**37**	**77**	**12,292**	**17,294**	**1**	**4,374**	**6**

U= Undetected

J = Below Method Detection Limit

B = Detected in the laboratory method blank

FB =Field Blank

GROUNDWATER ANALYSIS DATA -1998 SAMPLING PROGRAM

Target Compound List Semivolatiles, including PAHs

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance	MW-6A	MW-7A	MW-8A	MW-9A	MW-10A	MW-50	FB
2,4-Dinitrophenol	1.0		U	U	U	U	U	U	U
4-Nitrophenol	1.0		U	U	U	U	U	U	U
Dibenzofuran			U	8 J	90 J	400 J	U	390 J	0.4 JB
2,4-Dinitrotoluene	5.0		U	U	U	U	U	U	U
Diethylphthalate		50.0	U	0.6 JB	U	U	U	U	U
4-Chlorophenyl-phenyether			U	U	U	U	U	U	U
Fluorene		50.0	U	15	64 J	340 J	U	260 J	U
4-Nitroaniline	5.0		U	U	U	U	U	U	U
4,6-Dinitro-2-methylphenol	1.0		U	U	U	U	U	U	U
N-Nitrosodiphenylamine (1)		50.0	U	U	U	U	U	U	U
4-Bromophenyl-phenylether			U	U	U	U	U	U	U
Hexachlorobenzene		0.35	U	U	U	U	U	U	U
Pentachlorophenol	1.0		U	U	U	U	U	U	U
Phenanthrene		50.0	0.4 J	5 J	97 J	660 J	U	450	0.1 J
Anthracene		50.0	0.1 J	6 J	94 J	120 J	U	31 J	U
Carbazole			U	0.5 J	120 J	190 J	U	110 J	0.08 J
Di-n-butylphthalate	50.0		0.2 JB	0.3 JB	U	U	1.0 J	U	0.6 JB
Fluoranthene		50.0	0.1 J	7 J	U	160 J	U	78 J	U
Pyrene		50.0	0.1 J	6 J	U	120 J	U	49 J	U
Butylbenzylphthalate		50.0	U	U	U	U	U	U	U
3,3'-Dichlorobenzidine	5.0		U	U	U	U	U	U	U
Benzo(a)anthracene		0.002	U	1 J	U	34 J	U	8 J	U
Chrysene		0.002	U	1 J	U	35 J	U	8 J	U
bis(2-Ethylhexyl)phthalate	50.0		34	3 J	U	U	U	U	3 J
Di-n-octylphthalate		50.0	U	U	U	U	U	U	U
Benzo(b)fluoranthene		0.002	U	0.6 J	U	U	U	U	U
Benzo(k)fluoranthene		0.002	U	0.7 J	U	U	U	U	U
Benzo(a)pyrene			U	0.7 J	U	U	U	U	U
Indeno(1,23-cd)pyrene		0.002	U	0.4 J	U	U	U	U	U
Dibenz (a,h) anthracene			U	U	U	U	U	U	U
Benzo(g,h,i)perylene			U	0.4 J	U	U	U	U	U

U= Undetected

J = Below Method Detection Limit

B = Detected in the laboratory method blank

FB =Field Blank

GROUNDWATER ANALYSIS DATA -1998 SAMPLING PROGRAM

Target Analyte List Metals (TAL-Metals)

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance Value	MW-6A		MW-7A		MW-8A	
			Total	Dissolved	Total	Dissolved	Total	Dissolved
Aluminum			3,340	21.2 B	9,760	27.0 B	1,930	19.9 B
Antimony		3	U	3 B	17.2 B	12.4 B	U	3.3 B
Arsenic	25		22	U	19.1	U	125.0	112.0
Barium	1,000		190 B	72.3 B	277	77.6 B	146 B	105 B
Beryllium		3	U	U	1.7 B	U	U	U
Cadmium	10		U	U	U	U	U	U
Calcium			166,000	152,000	177,000	174,000	57,800	50,500
Chromium	50		6.1 B	U	29	U	6.2 B	U
Cobalt			2.6 B	U	21.7 B	1.9 B	1.9 B	U
Copper	200		10.8 B	U	211	U	20.9 B	U
Iron	500		37,300	75 B	25,800	48.6 B	3,480	U
Lead	25		20	U	3,340	2.3 B	13	U
Magnesium		35,000	36,000	33,200	16,900	15,900	89,200	85,600
Manganese	300		1,840	1,540	1,440	630	109	52.80
Mercury	2		UN	UN	2.3 N	UN	5.1 N	0.20 UN
Nickel			5.4 B	4.9 B	37.7 B	6.3 B	11.8 B	6.3 B
Potassium			18,600 E	16,400 E	7,650 E	7,200 E	215,000 E	207,000 E
Selenium	10		U	U	4.4 B	3.8 B	36	42.9
Silver	50		U	U	U	U	U	U
Sodium	20,000		65,000	60,800 E	15,800 E	17,300 E	164,000 E	167,000 E
Thallium		4	U	U	U	U	U	U
Vanadium			13.6 B	U	78	U	21.9 B	9.7 B
Zinc	300		24	3.5 B	890	27.8	51.1	17.5 B

U=Undetected

E= Estimated value because of interference

B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)

N = Spiked sample recovery not within control limits

GROUNDWATER ANALYSIS DATA -1998 SAMPLING PROGRAM

Target Analyte List Metals (TAL-Metals)

(parts per billion; ppb)

	NYS DEC Standard	NYS DEC Guidance Value	MW-9A		M-W10A		MW-50	
			Total	Dissolved	Total	Dissolved	Total	Dissolved
Aluminum			7,700	14.1 B	134.B	233	4,990	306
Antimony		3	3.6 B	4.1 B	U	3.3B	3.9 B	6.7 B
Arsenic	25		9.6 B	2.5 B	2.7B	U	4.2 B	U
Barium	1,000		435.0	249	54.3B	56.8B	85.7 B	9.9 B
Beryllium		3	1.1B	U	2.2B	2.2B	U	U
Cadmium	10		U	U	U	1.1B	1.7 B	U
Calcium			102,000	97,000	271,000	282,000	40,200	16,000
Chromium	50		16.2	1.0 B	1.1B	1.7B	17.9	U
Cobalt			12.3 B	4.1 B	U	U	11.8 B	U
Copper	200		4.1 B	U	1.6B	4.5B	7.6 B	U
Iron	500		25100	562	926	1,910	10,800	386
Lead	25		139	U	U	U	29.8	2.0 B
Magnesium		35,000	74200	71,800	470,000	487,000	11,900	3,470 B
Manganese	300		3240	2880	152	160	380	129
Mercury	2		0.60 N	UN	U	U	0.29 N	0.20 UN
Nickel			17.7 B	4.1 B	3.5B	3.7B	11.1 B	2.7 B
Potassium			179,000 E	174,000 E	257,000	263,000	11,700 E	5,520 E
Selenium	10		U	U	U	U	U	U
Silver	50		U	U	U	U	U	U
Sodium	20,000		159000 E	161,000 E	93,300	91,000	41,500 E	21,700 E
Thallium		4	U	U	U	U	U	U
Vanadium			25.6 B	U	U	U	17.8 B	2.4 B
Zinc	300		136	20.9	17.4	23.1	53.7	U

U=Undetected

E= Estimated value because of interference

B = Analytical results between instrument detection limit (IDL) and contract required detection limit (CRDL)

N = Spiked sample recovery not within control limits

APPENDIX B
HEALTH AND SAFETY PLAN

Health and Safety Plan
for
Implementation of Work Plan
(Subsurface Investigation within Building Interiors)
Queens West Development Site, Long Island City, New York
Development Parcel 9

Prepared By:

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1. INTRODUCTION

The Queens West Development site is located in Long Island City, Queens New York (see Figure 1, Project Location Map). The project site consists of parcel 9 ("project site") and occupies the city block between the Center Boulevard to the west, 5th Street to the east, 47th Road to the north, and 48th Avenue to the south (See Figure 2, Project Site Map). This block has a long history of industrial use, including paint manufacturers and chemical companies. Concerns for this past industrial usage has prompted soil and groundwater testing on the project site in 1985-86, 1989, and 1994. The initial testing of the project site found a level of leachable mercury in a soil sample above the EP Toxicity Standard of 0.2 ppm. This soil sample was collected immediately outside the project site (See Sample S-018 on Figure 3) Based upon this sample's exceedance of the EP Toxicity Standard for Mercury, the NYS DEC listed the site as a potential inactive hazardous waste site. Subsequent sampling in 1989 and 1994 found no levels of mercury in the soil that exceeded criteria for hazardous waste. However, the subsequent sampling identified the following concerns:

- Tetrachloroethene, a common solvent also known as perchloroethylene, or PCE, was detected in soil samples B/MW-51, B-52, B-53, and B-54 collected immediately east of the project site. PCE levels in the soil were generally highest in the surface samples (0-2 feet), suggesting surficial dumping at these locations. PCE also was found in the groundwater from well B/MW-51.

- Elevated levels of semivolatile organic compounds, including polycyclic aromatic hydrocarbons (PAHs), were detected in the soil boring B/MW-50 at the west end of the project site block. Levels of PAHs in the soil were particularly high below the groundwater level. The groundwater sampled from a well at this location contained benzene, toluene, ethylbenzene, xylene, naphthalene, PAHs, and some phenols. These contaminants could originate from waste oil or from coal tar.

- Toluene, ethylbenzene, and xylene were detected in the soil at boring B-55, indicating a possible petroleum release.

A work plan was prepared and accepted by the NYS DEC to perform additional soil and groundwater testing in order to develop a remediation program for the site. All proposed soil, soil-gas, and groundwater sampling locations of the work plan are shown on Figure 3.

2. OBJECTIVE

The purpose of this Health and Safety Plan (HSP) is to protect field personnel and others during the implementation of the Work Plan. This HSP is in conformance with the various Occupational Safety and Health Administration (OSHA) standards and other applicable regulations governing site investigation operations at inactive hazardous waste site, and all AKRF, Inc. policies and procedures on health and safety. It has been prepared to establish practices and procedures to protect the health of AKRF personnel and others during all soil and groundwater testing proposed by the work plan.

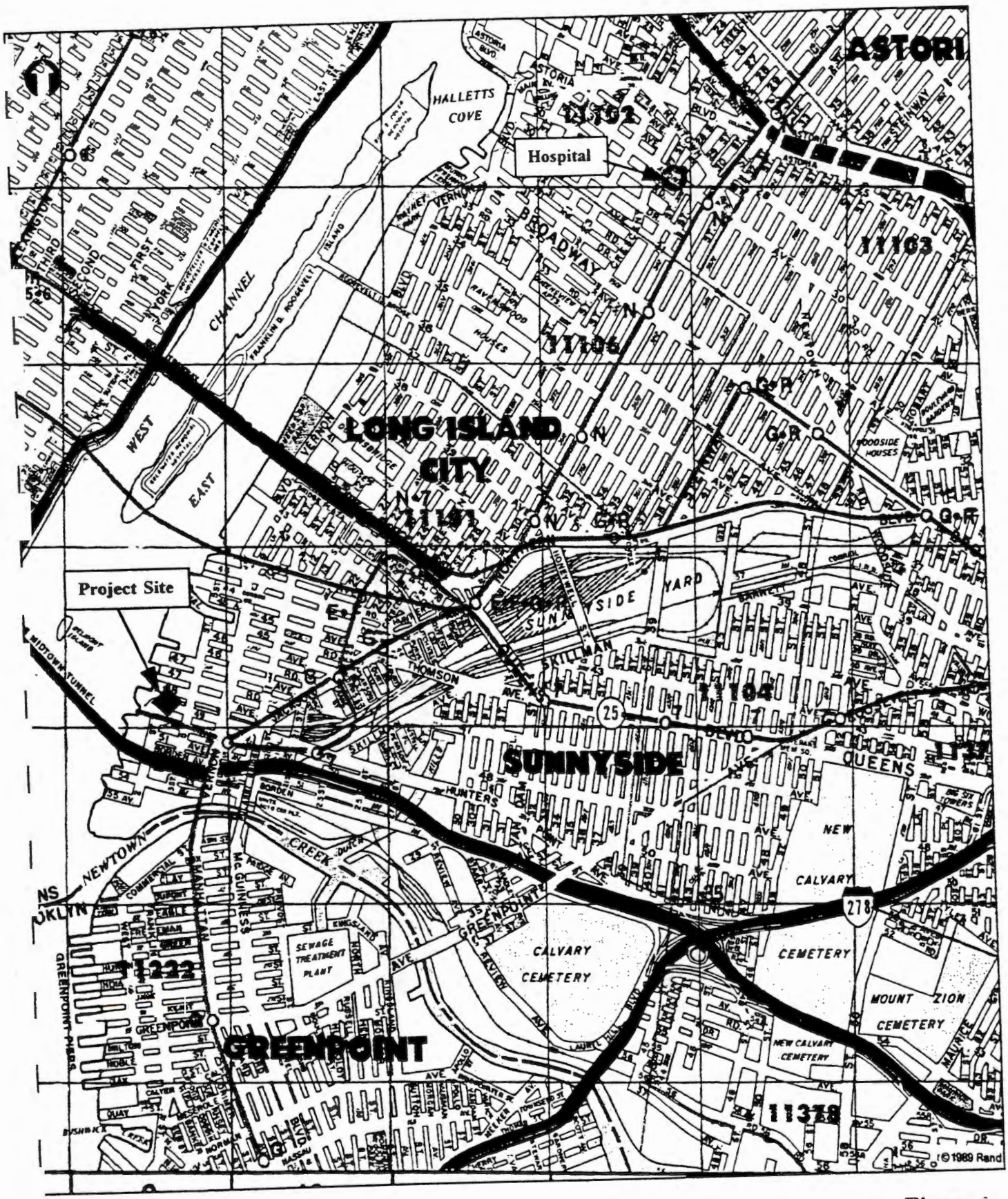
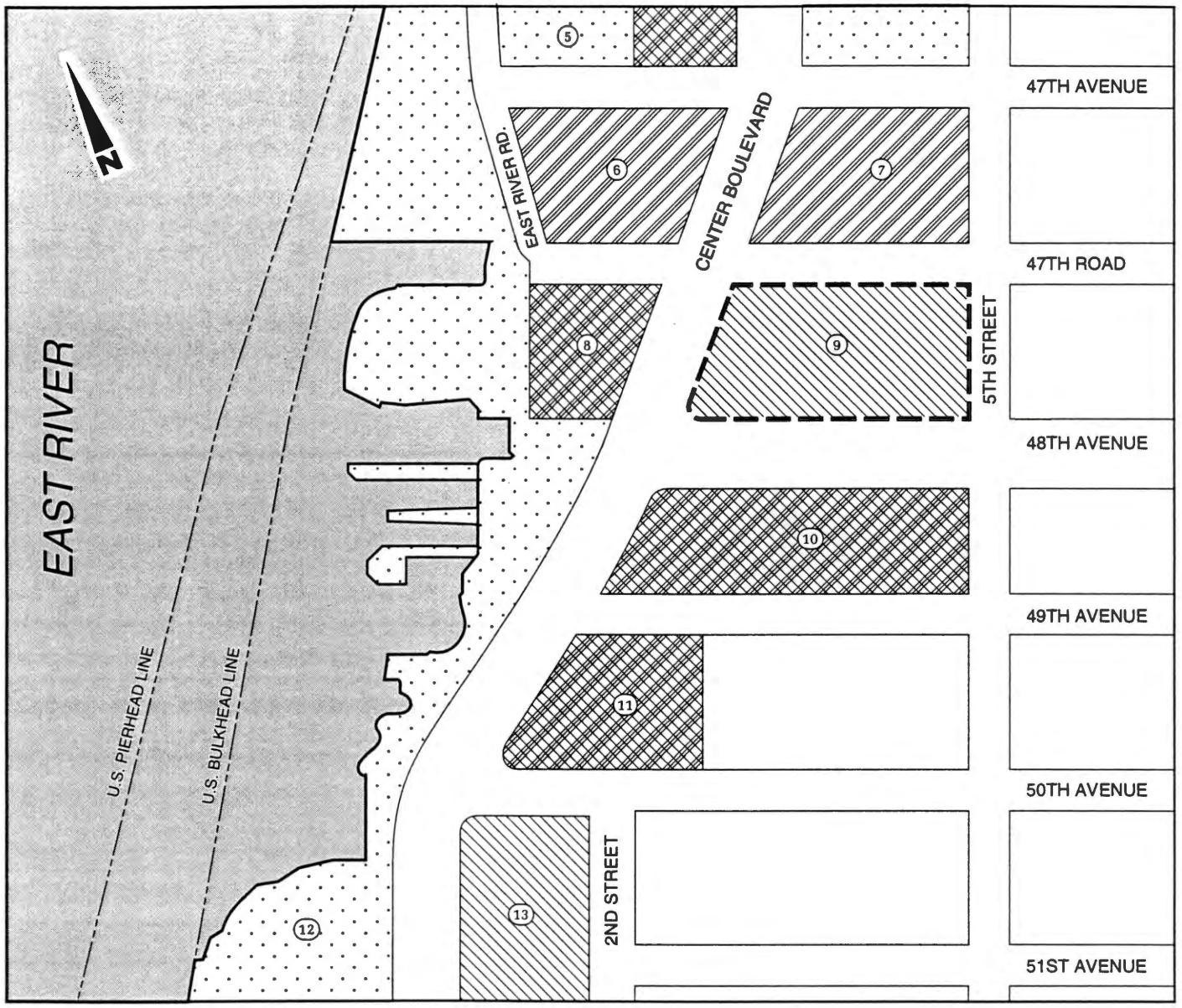
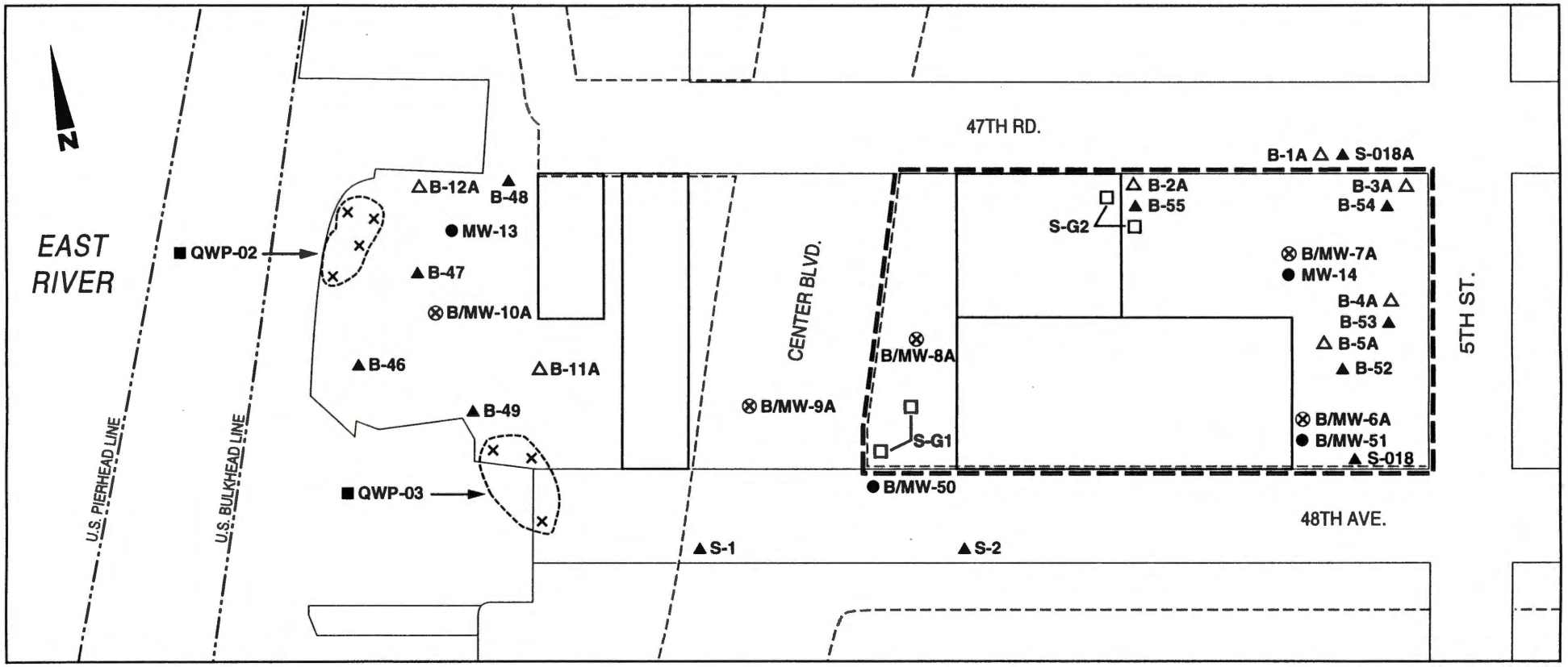


Figure 1
Project Site Location

Project Site Map



- Project Site Boundary
- (5) Parcel Number
- Residential
- Commercial
- Residential with Commercial Overlay
- Open Space



- Work Area Boundary
- Proposed Street
- ⊗ Proposed Soil/Groundwater Sampling Location
- △ Proposed Soil Sampling Location
- □ Proposed Soil Gas Location
- ● Previous Soil/Groundwater Sampling Location
- ▲ Previous Soil Sampling Location
- ■ Composite Sampling
- × Discrete Sampling Location
- Area of Composite Sampling

Figure 3

Prior and Proposed Sampling Locations

3. HEALTH AND SAFETY GUIDELINES AND PROCEDURES

A. HAZARD EVALUATION

Existing environmental conditions on the site were summarized in the Additional Sampling Work Plan prepared for the NYS DEC, dated December 1997, and in reports summarizing the findings of prior subsurface investigations. The principal environmental hazards identified by the prior sampling are as follows:

1) Mercury in the soil and groundwater,

2) Tetrachloroethene ("perc") in the soil and groundwater, and

3) Elevated levels of polycyclic aromatic hydrocarbons (PAHs) in the soil and groundwater.

In addition to the aforementioned potential hazardous wastes, the prior testing indicate the likelihood of petroleum contamination in the soil and/or groundwater. None of the petroleum levels in the soil or groundwater, however, suggest a safety hazard.

Mercury

Prior sampling results indicated that there was mercury in the upper four feet of soil on the site. Total mercury levels in the soil were up to 4.3 parts per million (ppm). None of the leachable mercury levels in the soil, however, exceeded the prior EP-Toxicity standard of 0.2 ppm except for a sample collected immediately outside the project site (Sample S-018A). Mercury (total and dissolved) was also found in the groundwater. Total levels of mercury ranged from 0.35 to 20 parts per billion (ppb); dissolved levels of mercury were as high as 2.2 ppb.

Based upon the known, past usage of the site as a paint manufacturer, mercury is most likely in the form of inorganic compounds. Likely routes of exposure to inorganic mercury compounds include inhalation of vapors, accidental ingestion, skin absorption, and skin or eye contact. Exposure to inorganic mercury compounds can result in the following symptoms:

- Skin irritation,
- Chest pains,
- Dyspnea (breathing difficulty),
- Bronchitis,
- Insomnia,
- Irritability,
- Indecision,
- Headache,
- Fatigue,
- Weakness,
- Salivation,
- Gastrointestinal Disturbance,

- Anorexia,
- Proteinuria (excess protein in urine) and
- Weight Loss

Tetrachloroethene ("perc")

Tetrachloroethene ("perc") was found in both the soil and groundwater of the site. Concentrations of perc in the soil were as high as 0.60 ppm, and was generally confined to the upper two feet of soil on the east end of the site. Concentrations of perc in the groundwater were as high 400 ppb.

The likely routes of exposure to perc are the same as inorganic mercury: inhalation of vapors, accidental ingestion, skin absorption, and skin or eye contact. Perc is a potential occupational carcinogen. Exposure to perc can result in the following symptoms:

- Irritated eyes, nose and throat,
- Nausea,
- Skin redness,
- Vertigo,
- Dizziness,
- Loss of coordination,
- Headache,
- Somnolence (sleepiness), and
- Liver damage.
- Weight Loss

Polycyclic aromatic hydrocarbons (PAHs)

Polycyclic aromatic hydrocarbons (PAHs) were found in the soil throughout the project site. The highest PAH levels were generally confined to soil near the groundwater interface (8-10 feet below the existing grade) at the west end of the site. Levels of phenanthrene in the soil below the groundwater interface (B/MW-50) were as high as 350 parts per million. Elevated levels of PAHs were found in the groundwater from well B/MW-50, with a concentration of naphthalene as high as 1,200 ppb.

Some of the PAHs detected in soil and groundwater are known or suspected carcinogens. Potential routes of exposure include direct contact, accidental ingestion, and inhalation of dust.

These contaminants were the described requirements of this HASP, not to be followed, will represent a potential health and safety hazard to AKRF, Inc.'s personnel, the drilling crew, and others during drilling and well installation activities.

B. DESIGNATED PERSONNEL

AKRF will appoint one of its on-site personnel as the on-site Health and Safety Officer (HSO). This individual will be responsible for the implementation of the HSP. The HSO will have a 4-year college degree in occupational safety or a related science/engineering field, and 2 years of experience in implementation of air monitoring and hazardous materials sample programs. The HSO will have completed a 40-hour training course that meets OSHA requirements of 29 CFR Part 1910, Occupational Safety and Health Standards.

The HSO will be present on-site during the conduct of all field operations, and will be responsible for all health and safety activities and the delegation of duties to the field crew. The HSO has stop-work authorization, which he/she will execute on his/her determination of an imminent safety hazard, emergency situation, or other potentially dangerous situation. If the HSO must be absent from the field, he/she will designate a replacement who is familiar with the health and safety plan, air monitoring, and protection equipment.

C. TRAINING

All those who enter the work area must recognize and understand the potential hazards to health and safety. All field personnel must attend a training program, whose purpose is to:

- Make them aware of the potential hazards they may encounter;
- Provide the knowledge and skills necessary for them to perform the work with minimal risk to health and safety;
- Make them aware of the purpose and limitations of safety equipment; and
- Ensure that they can safely avoid or escape from emergencies.

Each member of the field crew will be instructed in the above objectives before he/she goes onto the site. The HSO will be responsible for conducting the training program.

D. MEDICAL SURVEILLANCE PROCEDURE.

All AKRF, Inc. and subcontractor personnel performing field work at the site are required to have passed a complete medical surveillance examination in accordance with 29 CFR 1910.120 (f). A physicians medical release for work will be confirmed by the HSO before an employee can begin site activities. The medical examination will, at a minimum, be provided annually and upon termination of hazardous waste site work.

E. SITE WORK ZONES

In areas of concern, the work area must be divided into various zones to prevent the spread of contamination, ensure that proper protective equipment is donned, and provide an area for contamination.

The Exclusion Zone is defined as all areas of Parcels 8 and 9 where exposure to subsurface soils and/or groundwater could occur. Thus, all proposed sampling locations of the work plan will represent the Exclusion Zone. The Contamination Reduction Zone (CRZ) is the area where decontamination procedures take place and is located next to the Exclusion Zone. The Support Zone is the zone area where support-facilities-such as vehicles, a field phone, fire extinguisher, and first aid supplies-are located. The emergency staging area (part of the Support Zone) is the area where all workers on site would assemble in the event of an emergency. These zones shall be designated daily, depending on that day's activities. All field personnel will be informed of the location of these zones before work begins.

Control measures such as "Caution" tape and traffic cones will be placed around the perimeter of the proposed sampling locations to prevent entrance onto the areas with exposed soil and/or groundwater.

F. AIR MONITORING

A Photoionization Detector, (OVM), and a Jerome Mercury Vapor Meter will be used to perform air monitoring during all drilling, monitoring well installation, containerizing of drill cuttings and groundwater, and sampling of soil and groundwater. The purpose of the air monitoring program is to avoid or minimize exposure of the field personnel and the public to potential environmental hazards in the soil and groundwater. Results of the air monitoring will be used to determine the appropriate response action, if needed. The OVM will be calibrated with isobutylene in accordance with the manufacturers recommendations.

Work Zone Air Monitoring

Real time air monitoring will be done, with the OVM and Jerome Meter, whenever drilling or sampling (soil or groundwater) is being performed. The OVM will measure the airborne levels of volatile organic compounds, including perc and volatile contaminants often associated with petroleum releases. The Jerome Meter will measure airborne levels of mercury.

Measurements for airborne VOCs and mercury will be taken prior to commencement of work and for at least 1 minute every 60 minutes during the work. Continuous monitoring will be undertaken when first exposing soils and groundwater at each proposed sampling location and during the drumming of soil cuttings and groundwater. These measurements will be made as close to the workers as practical and at the breathing height of the workers. The HSO shall set up the equipment and confirm that it is working properly. His/her designee may oversee the air measurements during the day. The initial measurement for the day will be performed before the start of work and will establish the background level for that day. The final measurement for the day will be performed after the end of work. The action levels for mercury and VOCs and responses are listed below.

ACTION LEVEL	RESPONSE ACTION
Less than 20 ppm of VOCs above background, and less than 0.02 mg/m^3 of Inorganic Mercury	Continue work in modified Level D
Between 20 and 100 ppm of VOCs above background, or between 0.02 mg/m^3 and 0.1 mg/m^3 of inorganic mercury.	Upgrade to Level C with appropriate respirator cartridge for mercury and/or volatile organic compounds/particulates
More than 100 ppm of VOCs above background or 0.1 mg/m^3 of mercury*	Stop work. Resume work when source of vapors is abated and readings are less than 100 ppm of VOCs or 0.1 mg/m^3 of mercury

** OSHA's 8-hour time-weighted-average Permissible Exposure Limit (PEL) for PCE is 100 ppm*; OSHA's ceiling limit for mercury is 0.01 mg/m^3

Response Actions

AKRF will respond to the results of the air monitoring in accordance with the actions specified above. Compliance with the specified response action for the listed action levels will ensure the protection of the health and safety of AKRF personnel and others during site activities.

G. PERSONAL PROTECTION EQUIPMENT

The personal protection equipment required for various kinds of site investigation tasks are based on 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, Appendix B, "General Description and Discussion of the Levels of Protection and Protective Gear."

AKRF field personnel and other site personnel shall wear modified Level D personal protective equipment during the implementation of the work plan. The protection will be upgraded to Level C if the results of the air monitoring indicates that Level C equipment is warranted.

Modified Level D

Respiratory Protection: None

Protective Clothing: Disposable Tyvek suit, outer polyvinyl alcohol (PVA) gloves and inner vinyl gloves

Level C

Respiratory Protection: Air purifying respirator with organic vapor/particulate and/or mercury vapor cartridges.

Protective Clothing: Same as modified Level D

H. GENERAL WORK PRACTICES

To protect the health and safety of the field personnel, all field personnel will adhere to the guidelines listed below.

- Eating, drinking, chewing gum or tobacco, and smoking are prohibited, except in designated areas on the site. These areas will be designated by the HSO.
- Workers must wash their hands and face thoroughly on leaving the work area and before eating, drinking, or any other such activity. The workers should shower as soon as possible after leaving the site.
- Contact with exposed soil, groundwater or suspected surfaces should be avoided.
- Contact lenses should not be worn on-site.
- The buddy system should always be used; each buddy should watch for signs of fatigue, exposure, and heat stress.

I. DISPOSAL OF DRILL CUTTINGS AND GROUNDWATER

All drill cuttings from borings shall be disposed of in strict accordance with applicable regulations and NYS DEC Technical and Administration Guidance Memorandum (TAGM HWR-89-4032). Cuttings shall be disposed within the borehole under the following conditions:

- The boring will not be used for the installation of a monitoring well, and
- The upper six (6) inches of cohesive compacted soil shall be placed over the area of the bore hole.

Cuttings from monitoring well locations shall be disposed of on the project site in accordance with the following requirements:

- There is no evidence of pure waste (i.e. discoloration or staining) in the cuttings,
- Cuttings exhibit no contamination that exceed the action levels specified in the HASP for mercury or volatile organic compounds, and
- Cuttings from monitoring well locations meeting the aforementioned conditions shall be placed on-site and covered by six (6) inches of compacted, cohesive soil. The on-site location for disposal of cuttings from the installation of monitoring wells will be determined by the HSO or in consultation with the owner's representative.

Cuttings from monitoring well locations that have pure waste or exhibit readings that exceed action levels of the HASP shall be placed in 55-gallon drums (DOT 17H), with ring-top lids, for off-site disposal. Filled drums of cuttings will be temporarily stored on the project site at a secure location designated by the HSO or in consultation with the owner's representative. In accordance with laboratory results, the drums of contaminated cuttings shall be disposed of at an appropriate off-site disposal facility.

All groundwater from the development and later purging of monitoring wells shall be drummed in 55-gallon drums, and the drums placed for temporary on-site storage at a secure location

designated by the HSO or in consultation with the owner's representative. After testing, groundwater may be disposed of in the sewer system if it meets the standards set forth in the New York City's sewer ordinance. Otherwise, off-site disposal of the contaminated groundwater must be arranged.

J. EMERGENCY PROCEDURES AND EMERGENCY RESPONSE PLAN

The field crew will be equipped with emergency equipment, such as a first aid kit and disposable eye washes. In the case of a medical emergency, the HSO will determine the nature of the emergency and he/she will have someone call for an ambulance, if needed. If the nature of the injury is not serious—i.e., the person can be moved without expert emergency medical personnel—he/she should be driven to a hospital by on-site personnel. There will be an on-site field phone. The location of the nearest hospital, shown on Figure 1, is 25-10 30th Avenue, Long Island City, in Queens, New York. The Hospital is located at the intersection of 30th Avenue and Crescent Street, in Queens, New York. From the site, proceed north on Vernon Boulevard to 30th Avenue, turn east, and continue five blocks to the hospital

Telephone numbers are:

Police	911
Fire	911
Ambulance	911
Poison Control	(800) 562-8736
Nearest Hospital	(718) 482-1000

4. ACKNOWLEDGMENTS OF HSP

Below is an affidavit that must be signed by all workers who enter the site. A copy of the HSP must be on-site at all times and will be kept by the HSO.

AFFIDAVIT

I, _____ (name), of _____ (company name), have read the Health and Safety Plan (HSP) for the Development Parcels and 9 of the Queens West Development Site. I agree to conduct all on-site work in accordance with the requirements set forth in this HSP and understand that failure to comply with this HSP could lead to my removal from the site.

Signed: _____ Date: _____