NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SITE HISTORY
HARRISON SUBRESIDENCY

HARRISON, NEW YORK

DRAFT

September 1993

LMS LAWLER, MATUSKY & SKELLY ENGINEERS
Environmental Science & Engineering Consultants
One Blue Hill Plaza • Pearl River, New York 10965

#446-062

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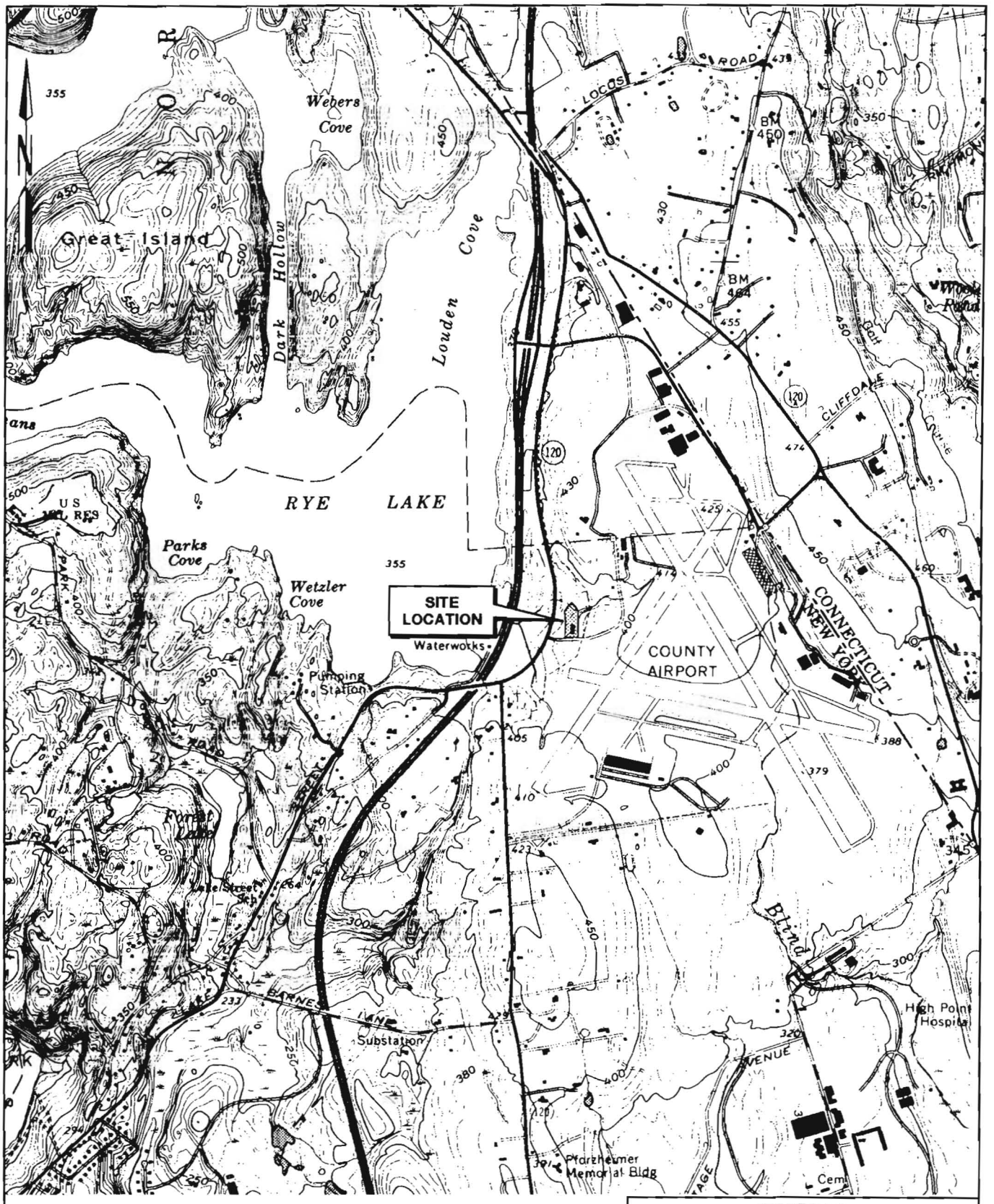
CHAPTER 1

BACKGROUND INFORMATION

The Harrison Subresidency is a currently ~~inactive~~ seasonal highway maintenance support and storage facility located in the Town of Harrison, Westchester County, New York (Figure 1-1). This site history was prepared based on interviews with New York State Department of Transportation (NYSDOT) employees who had worked at the site and review of NYSDOT files.

Until 1967 the site was undeveloped and reportedly consisted of woods and wetland areas. Beginning in 1967 the southernmost portion of the site was filled with concrete and associated debris generated during the construction of Interstate 684. The on-site buildings were constructed and the site commenced operation as a vehicle and salt storage facility as well as a landfill for roadside and highway construction debris. The debris consisted of steel guard-rails, concrete, asphalt, shoulder scrapings, and miscellaneous debris found along the roadside, including white goods and dead animals. The concrete block garage used for vehicle storage was also reportedly used for paint storage in the winter until 1976. Old paint containers containing various amounts of residue were used for traffic control purposes. The containers which were damaged by cars were disposed of in the landfill until 1976. After 1976 metal debris, empty paint containers, and residue were shipped off site to the NYSDOT regional headquarters in Poughkeepsie, where they were disposed of by a commercial scavenging contractor. From 1967 to approximately 1972 the site was unfenced. The site is currently secured by a chain-link fence and a locking gate.

By 1976 the extent of the fill area was about half of its present size. The fill was placed from south to north, with the earliest disposals taking place adjacent to the north wall of the main site building, and continuing northward. The area, formerly a wetland, was drained in approximately 1974-1975 by placing a 48-in. culvert in an east-west orientation. The culvert was constructed to preserve drainage beneath the fill. This culvert, currently in service, approximately bisects the fill area (Figure 1-2).



Map source: USGS 7.5 minute quadrangle map, Glenville, Conn. NY, 1960
Photorevised 1971

FIGURE 1-1

SITE LOCATION

HARRISON SUBRESIDENCY
NYSDOT PIN A98906.701

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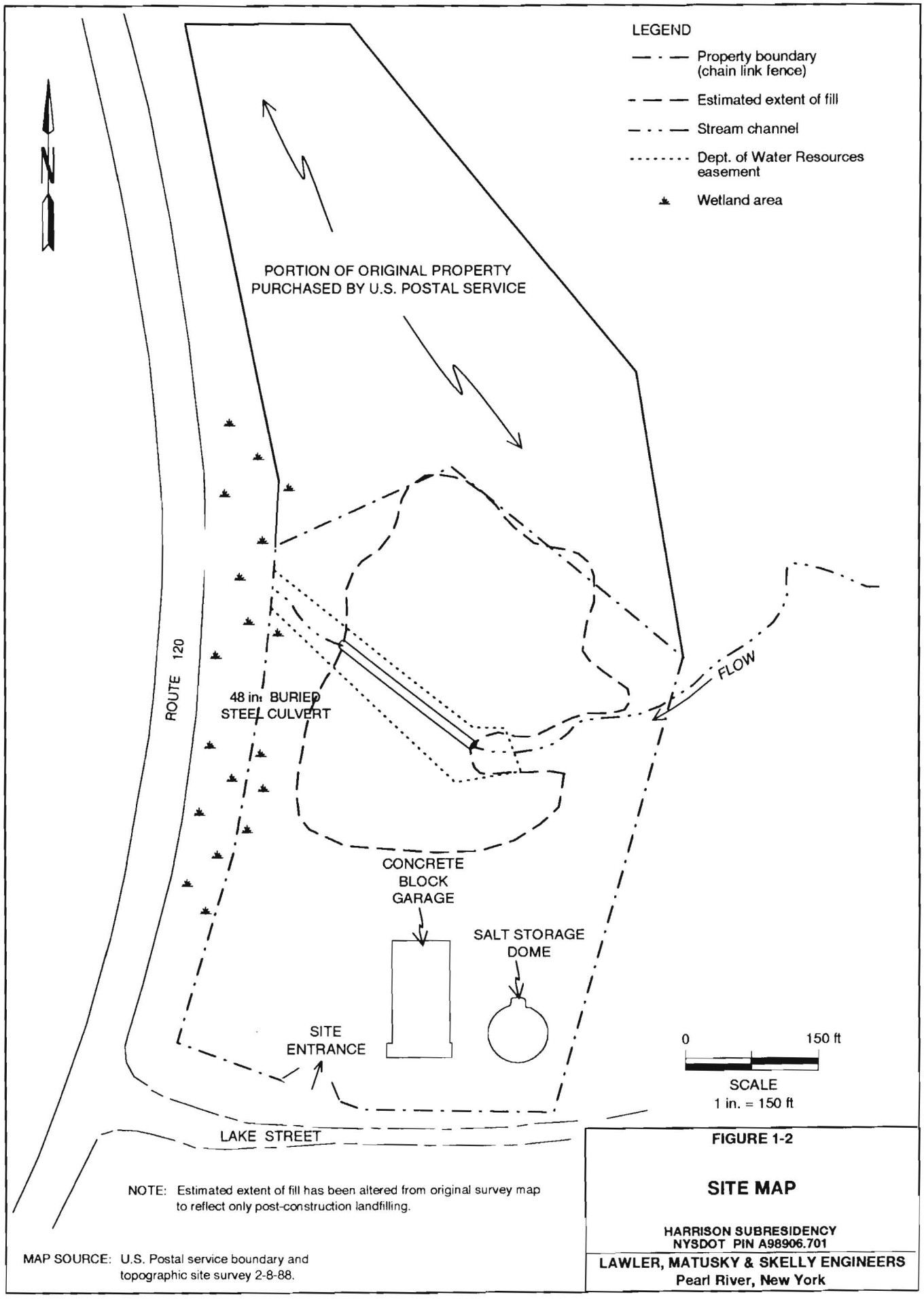


NOTE: Estimated extent of fill has been altered from original survey map to reflect only post-construction landfilling.

MAP SOURCE: U.S. Postal service boundary and topographic site survey 2-8-88.

FIGURE 1-2

SITE MAP

HARRISON SUBRESIDENCY
NYSDOT PIN A98906.701

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

Between 1976 and 1985 the fill material was reportedly restricted to roadside debris, road shoulder scrapings, and miscellaneous asphalt and concrete. Between 1985 and 1993 it is reported that the fill material consisted of shoulder scrapings and asphalt. Currently, the outer perimeter of the north end of the landfill contains old tires, drums (apparently sound; however, no internal investigation was performed to determine whether there were any contents in the drums), and other miscellaneous debris.

In February 1988 International Technology Corporation (IT) submitted an environmental assessment of four contiguous properties in Westchester County to the U.S. Postal Service (USPS). The southernmost of these properties included the Harrison Subresidency. USPS planned to construct a General Mail/Vehicle Maintenance Facility (GMF/VMF) over the four parcels. The assessment briefly described the Harrison Subresidency as a highway maintenance facility where roadside debris and rubble were disposed of in a landfill. Rust-colored liquid was noted to be entering the small stream that flowed through the site. Also in February 1988, IT conducted a soil and surface water sampling survey at the site, apparently in response to a request by USPS. Soil samples were collected from the landfill and surface water samples were collected from the site stream. The results were submitted to USPS in June 1988.

In October 1990 Rizzo Associates, Inc. (Rizzo), submitted an "Updated Environmental Assessment for GMF/VMF Facility, Westchester County, New York," to USPS. This report reiterated much of the information included in the two IT Corporation reports. Two surface water and sediment sampling surveys were conducted by Rizzo at the Harrison Subresidency, the results of which are discussed in this report. Rizzo concluded that the landfill was not adversely impacting the environment.

The property originally encompassed 9.96 acres. In 1988 USPS entered into negotiations with NYSDOT with the goal of purchasing the property. NYSDOT refused the USPS offer at the time due to the adverse impact the loss of the property would have had on their road maintenance operations. Renegotiation resulted in the USPS offering to buy only a 4.06-acre portion of the property in 1990, consisting of the wooded area to the north of the landfill.

NYSDOT accepted the offer and the property transaction was completed in 1991 (Appendix A, Ref. 1) (see Figure 2-1).

In early 1992 New York City Water Police noted an orange stain on water entering Rye Lake and followed the watercourse upstream to the site. The New York City Department of Environmental Protection (NYCDEP) conducted four sampling surveys at the site in spring 1992. Also at this time, Energy and Environmental Associates, Inc., performed a surface electromagnetic survey of the landfill and submitted the results to NYCDEP. In May 1993 the City of New York notified NYSDOT that, based on the results of their sample surveys, the City was prepared to file suit against NYSDOT under the provisions of the Federal Water Pollution Control Act unless an agreement to alleviate the alleged pollution emanating from the landfill could be reached (Ref. 1, Appendix A).

In June 1992 NYSDOT collected surface water samples from the site stream to characterize the nature of surface water exiting the site. NYSDOT concluded that only iron and manganese concentrations were above acceptable levels, and that in-stream aeration was precipitating these metals from the water at increasing distances downstream from the site.

In spring 1993, in response to continuing concerns on the part of the City of New York, NYSDOT arranged for a test pit survey at the site to characterize the waste material buried in the landfill. On 27 April 1993, during a test pit investigation, a 55-gal drum containing road-striping paint was excavated. The drum was damaged during the excavation and required overpacking. Soil stained by the damaged drum was excavated, sampled, and staged pending removal.

In August 1993 NYSDOT signed an Order on Consent with the New York State Department of Environmental Conservation (NYSDEC) to perform a Preliminary Site Assessment (PSA) of the Harrison Subresidency. NYSDOT retained Lawler, Matusky & Skelly Engineers (LMS) to perform the PSA.

CHAPTER 2

SAMPLING HISTORY

All of the laboratory results summarized in this chapter are presented in Appendix B.

2.1 IT CORPORATION MAY 1988 REPORT

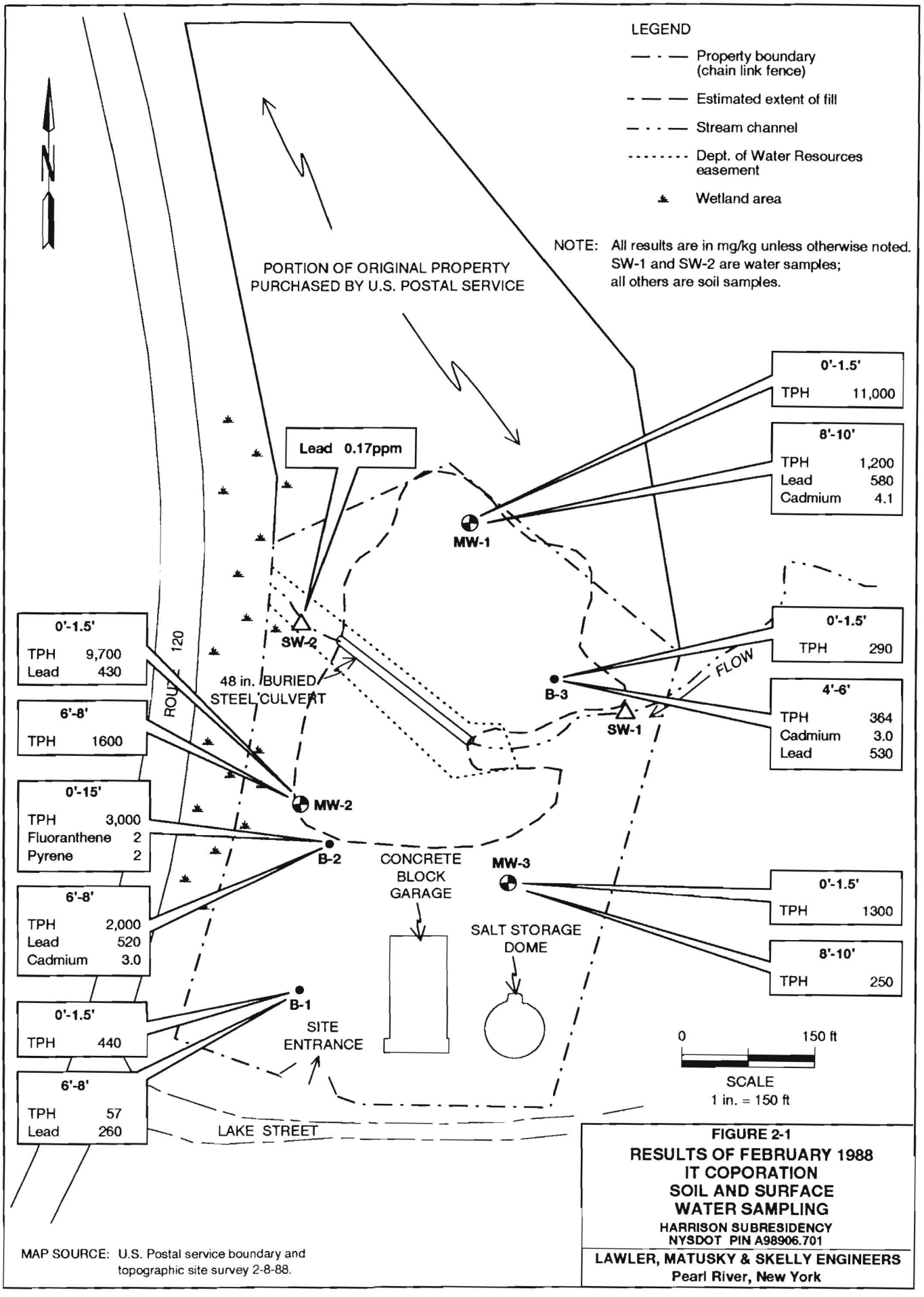
In February 1988 IT Corporation (IT) installed six test borings through the fill area. Two soil samples were collected from each boring, one from the 0- to 2-ft interval, and one from just above the water table. Three of the borings were converted to 2-in. PVC monitoring wells (MW-1, -2, and -3). No groundwater samples were collected. At this time IT also collected two surface water samples, one upstream and one downstream of the fill area, from the small stream that flows through the landfill via a 48-in. steel culvert.

The samples were analyzed for total petroleum hydrocarbons (TPHs) total phenols, priority pollutant metals and cyanide, volatile organic compounds (VOCs), and PCBs/pesticides. Petroleum hydrocarbons at concentrations ranging from 57 to 11,000 mg/kg were detected in all soil samples. Lead and cadmium were detected in several soil samples at concentrations ranging from 260 to 580 mg/kg and 3.0 to 4.1 mg/kg, respectively. The boring locations (B-1, -2, -3, MW-1, -2, and -3) and sample results are depicted on Figure 2-1.

2.2 RIZZO ASSOCIATES, INC., OCTOBER 1990 REPORT

In May 1989 Rizzo Associates, Inc. (Rizzo), collected five surface water (SW-1 through -5) and three sediment samples (SD-1, -3, and -4) from the wetland area immediately north and west of the fill area (Figure 2-2). The samples were analyzed for total phenols, total cyanide, priority pollutant metals, VOCs, semivolatiles, and pesticides/PCBs.

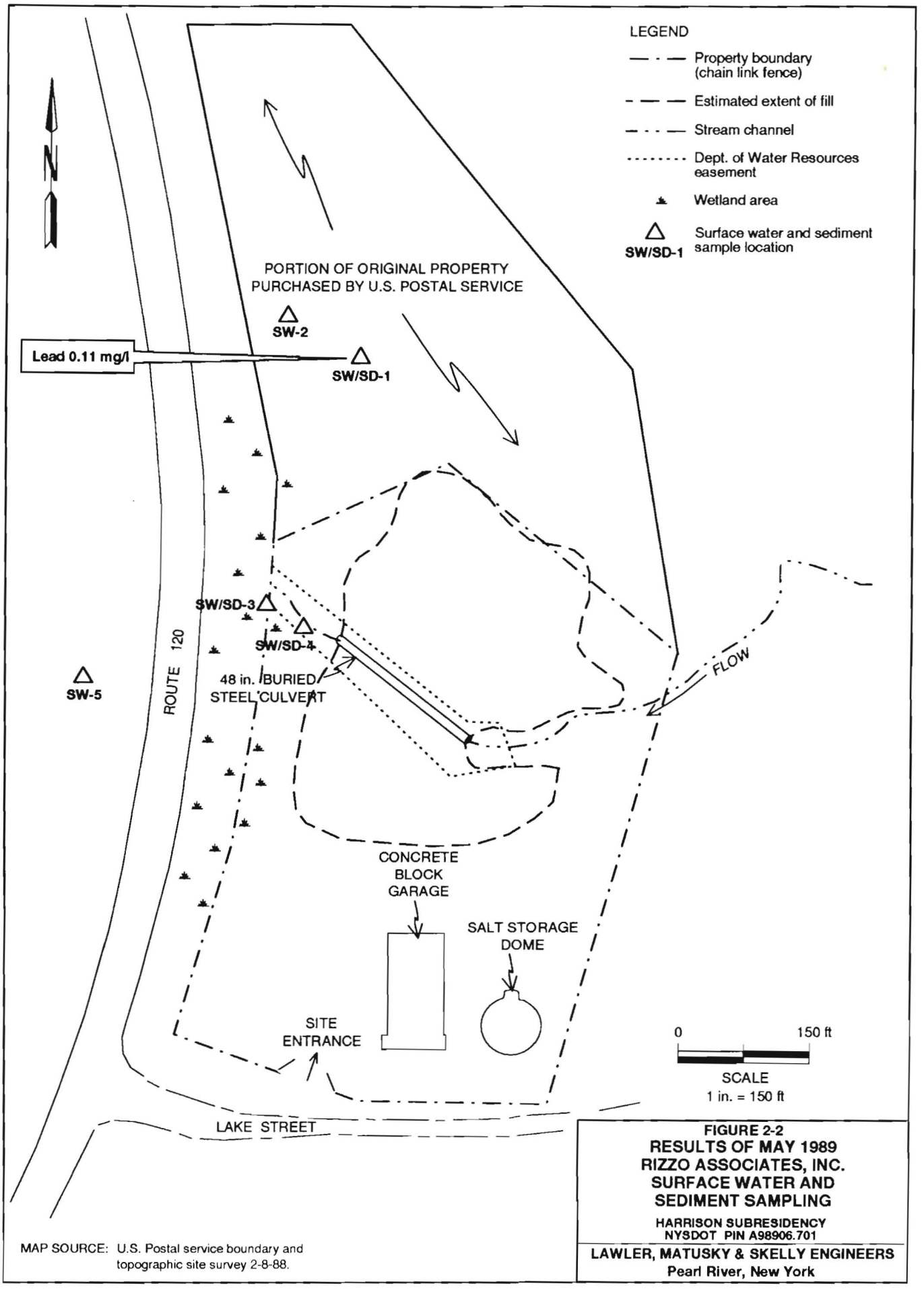
The results of those analyses indicate that hazardous constituents were not detected in any of the sediment or surface water samples, with the exception of surface water sample SW-1. Lead



MAP SOURCE: U.S. Postal service boundary and topographic site survey 2-8-88.

FIGURE 2-1
RESULTS OF FEBRUARY 1988 IT COPORATION SOIL AND SURFACE WATER SAMPLING
HARRISON SUBRESIDENCY
NYSDOT PIN A98906.701

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York



MAP SOURCE: U.S. Postal service boundary and topographic site survey 2-8-88.

FIGURE 2-2
RESULTS OF MAY 1989
RIZZO ASSOCIATES, INC.
SURFACE WATER AND SEDIMENT SAMPLING

HARRISON SUBRESIDENCY
NYSDOT PIN A98906.701

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

was detected in SW-1 at a concentration of 0.11 mg/l. The lead concentration in SW-1 was compared to the U.S. Environmental Protection Agency (EPA) maximum contaminant level (MCL) of 0.05 mg/l in the report provided by Rizzo.

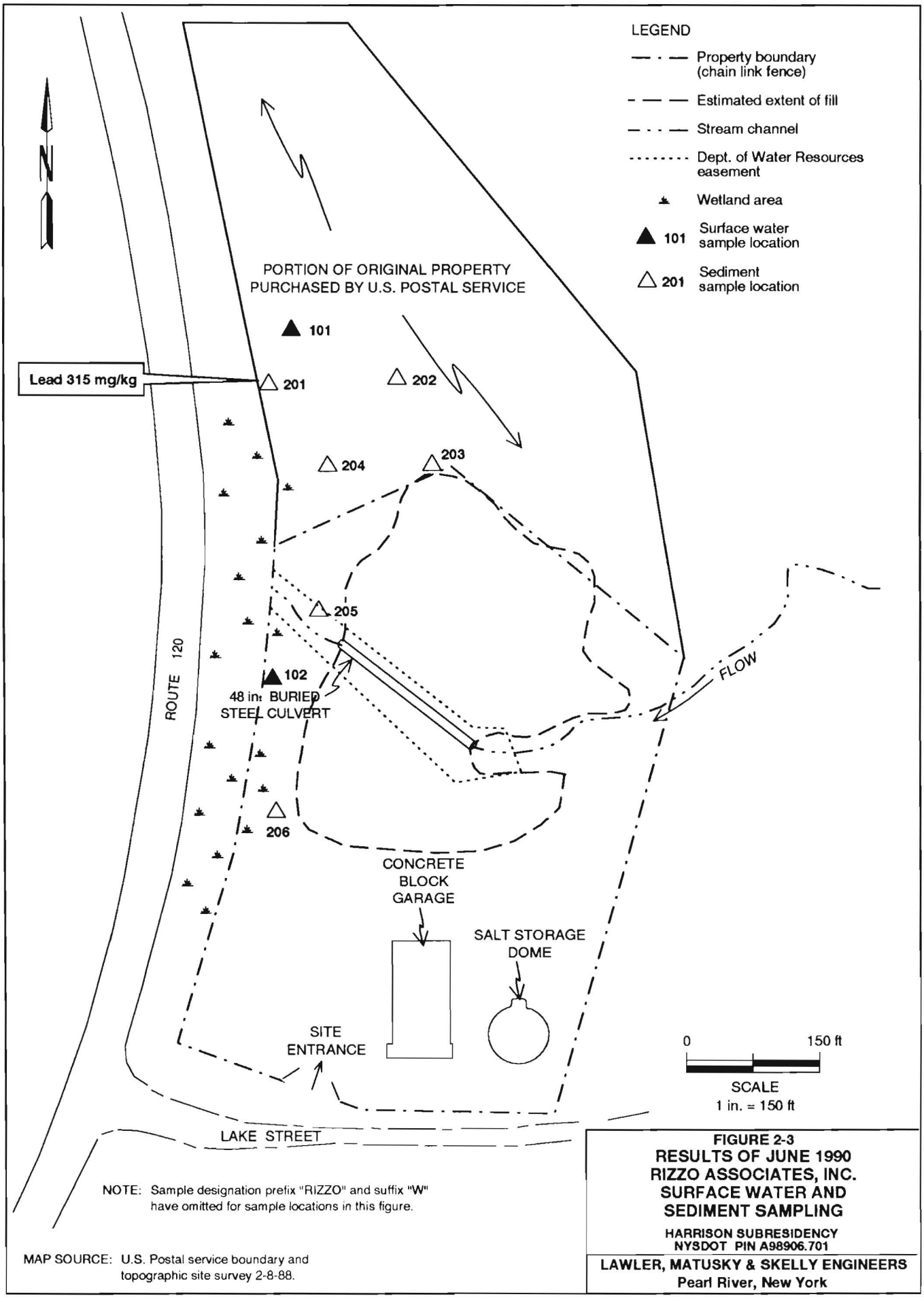
Rizzo again collected surface water and sediment samples in June 1990 from the wetland area immediately north and west of the fill area (Figure 2-3). Two surface water samples (Rizzo 101W and 102W) and six sediment samples (Rizzo 201W through 206W) were collected and analyzed for priority pollutant metals and cyanide. The results indicated that only one sediment sample, Rizzo 201W, contained hazardous constituents above common ranges for soils; lead was detected at a concentration of 315 mg/kg (greater than the native background range for soils, 2-200 mg/kg, as presented in Rizzo's report). Rizzo attributed the lead in this sample and SW-1, collected in May 1989, to runoff from Route 120. Arsenic, cadmium, chromium, copper, nickel, and zinc, however, were also detected at lower concentrations in several samples.

2.3 NYCDEP SPRING 1992 SAMPLING SURVEYS

NYCDEP conducted four sampling surveys in April and May 1992. Surface water samples were collected during each of the surveys; soil and sediment samples and one drum sample were collected during the surveys. Location information for the samples collected during these surveys is incomplete; NYSDOT has attempted to obtain more information than that included in the survey chain-of-custody forms but has been unsuccessful (Refs. 2 and 3, Appendix A).

2.3.1 7 April 1992 Sampling

NYCDEP collected one soil and two surface water samples on 7 April 1992. It appears the soil sample was possibly a sediment sample; the laboratory data summary indicate the sample contained 44% solids. The soil sample was analyzed for TPHs, semivolatiles, and VOCs. The results of the analyses indicate that the only hazardous constituent reported above the detection limit in soil sample S-1 was chloroform (a common laboratory contaminant), at a concentration of 13 μg/kg.



NOTE: Sample designation prefix "RIZZO" and suffix "W" have omitted for sample locations in this figure.

MAP SOURCE: U.S. Postal service boundary and topographic site survey 2-8-88.

FIGURE 2-3
RESULTS OF JUNE 1990
RIZZO ASSOCIATES, INC.
SURFACE WATER AND
SEDIMENT SAMPLING

HARRISON SUBRESIDENCY
NYSDOT PIN A98906.701

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

The two surface water samples were identified on the chain-of-custody form as leachate; one surface water sample was analyzed for Resource Conservation and Recovery Act (RCRA) metals and the other for cyanide. There was no information provided regarding the sample locations. Barium and lead were detected in surface water sample S-2 at 96 and 7 μg/l, respectively, below the October 1991 NYSDEC Draft Cleanup Policy and Guidelines Standards for freshwater of 1000 and 50 μg/l, respectively.

2.3.2 13 May 1992 Sampling

NYCDEP collected three soil, five sediment, and five surface water samples on 13 May 1992. Samples 3, 8, 9, 10, 11, 12, and 13 were analyzed for VOCs and samples 1, 2, 4, 5, 6, and 7 were analyzed for target analyte list (TAL) metals, TPHs, chlorides, and PCBs/pesticides. The only sample location information provided was that included on the chain-of-custody form. This information consists of vague references to locations apparently at the site e.g., "at monitoring well" (no number), "behind fence," "sidewall of landfill," "up culvert," etc., but includes no details about the exact locations. Although it is not possible to determine the actual locations of these samples, it appears that samples 4 and 5, both collected "upculvert (sidewall of landfill)," were collected from a point near the influent end of the culvert, where the stream "banks" are composed of fill material (see Figure 2-1). A summary of the analytical data for this sampling event is presented in Table 2-1.

The results of the VOC analyses indicate that only acetone (33 μg/kg) and 2-butanone (26 μg/kg) were detected in sediment sample 8. The results of the TAL metals analyses indicate that each of the metals analyzed, with the exception of cadmium, were detected in each of the samples. Cadmium (1.8 mg/kg) was only detected in sample 1 (sediment), located "at monitoring well." TPHs were detected at concentrations ranging from 55 to 96 mg/kg in samples 2 (sediment), 4 (soil), and 5 (soil) located "behind fence" and "upculvert sidewall of landfill," respectively. The chloride analyses indicate detectable levels in samples 1 (sediment), 2 (sediment), and 4 (soil), with concentrations ranging from 0.6 to 1.4 mg/kg. All but sediment samples 2 and 6 showed various levels of pesticides,ranging from 3.8 μg/kg of aAlpha-Endosulfan in sample 5 to 13 μg/kg of 4,4-DDT in sample 7. Both pesticide concentrations are

TABLE 2-1 (Page 1 of 2)

NYCDEP SAMPLING RESULTS (MAY 13, 1992)

HARRISON SUBRESIDENCY PIN # A989.06.701

SAMPLE NO.	3	8	9	10	11	12	13
MATRIX	STREAM SEDIMENT	STREAM SEDIMENT	STREAM WATER	STREAM WATER	STREAM WATER	STREAM WATER	STREAM WATER
SAMPLE LOCATION AS PER NYCDEP CHAIN OF CUSTODY	BEHIND FENCE	UP-CULVERT	BEHIND FENCE	UP-CULVERT	BACKROUND WATER (sic)	UP CULVERT WATER	DOWN STREAM
VOLATILE ORGANICS							
UNITS	(µg/kg)	(µg/kg)	(µg/l)	(µg/l)	(µg/l)	(µg/kg)	(µg/kg)
Acetone	ND	33	ND	ND	ND	ND	NA
2-butanone	ND	26	ND	ND	ND	ND	NA
Methylene chlor	280	ND	ND	ND	ND	ND	NA

ND - Not detected at analytical detection limit.
NA - Not available.

TABLE 2-1 (Page 2 of 2)

NYCDEP SAMPLING RESULTS (MAY 13, 1992)

HARRISON SUBRESIDENCY PIN # A989.06.701

SAMPLE NO.	1	2	4	5	6	7
MATRIX	STREAM SEDIMENT	STREAM SEDIMENT	SOIL	SOIL	STREAM SEDIMENT	SOIL
SAMPLE LOCATION AS PER NYCDEP CHAIN OF CUSTODY	AT MONITORING WELL	BEHIND FENCE	UPCULVERT (SIDEWALL OF LANDFILL)	UPCULVERT (SIDEWALL OF LANDFILL)	BACKROUND SEDIMENT (sic)	UPCULVERT BACKROUND (sic)
TAL METALS (mg/kg)						
Aluminum	8,470	3,810	7,390	7,970	3,710	16,400
Barium	150	33.1	67	32.7	41.6	41.6
Cadmium	1.8	ND	ND	ND	ND	ND
Calcium	4,200	3,140	4,660	7,050	839	853
Chromium	24.9	8.6	19.6	17.7	7.2	27.3
Cobalt	ND	ND	7.8	5.5	ND	ND
Copper	26.3	9.4	44.6	21.7	7.8	16.4
Iron	26,700	11,400	23,900	18,600	8,220	20,700
Lead	64.7	36.6	158	46.5	8.1	46.9
Magnesium	3,150	5,290	3,710	5,620	N/A	C,010
Manganese	618	262	242	300	756	198
Nickel	20.4	14.2	61.9	13.7	8.2	15.0
Potassium	1,310	563	1,640	1,300	841	764
Selenium	76.4	35.7	80.2	85.2	25.3	93.1
Sodium	165	123	300	70	49.9	52.0
Vanadium	26.7	7.4	19.8	15.8	8.3	34.7
Zinc	200	53	271	577	23.6	47.9
TPH (mg/kg)	ND	80	55	96	ND	ND
CHLORIDE (mg/kg)	0.7	0.6	1.4	ND	ND	ND
PESTICIDES/PCBs (µg/kg)						
Alpha-endosulfan	9.4	ND	7.7	3.8	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND
Methoxychlor	10	ND	8.0	5.0	ND	ND
4,4-DDD	ND	ND	4.4	ND	ND	ND
4,4-DDE	11	ND	4.9	ND	ND	6.3
4,4-DDT	ND	ND	8.7	6.1	ND	13

ND - Not detected at analytical detection limit.
N/A - Not available.

below the NYSDEC recommended soil cleanup objectives of 900 μg/kg for alpha-Endosulfan and 2100 μg/kg for 4,4-DDE. Analysis of downstream leachate sample 8 indicates that all inorganics (with the exception of manganese, mercury, selenium, and cyanide) are in excess of the NYSDEC Draft Cleanup Policy and Guidelines for fresh surface water.

2.3.3 20 May 1992 Sampling

NYCDEP collected one drum, seven surface water, and three sediment samples on 20 May 1992. Selected samples were analyzed for VOCs, base neutral acid extractables (BNAs), RCRA metals, TAL metals, pesticides/PCBs, TPHs, and chlorides. A summary of the analytical data is presented in Table 2-2. The sample location descriptions included on the chain-of-custody forms are slightly more detailed than those for the previous NYCDEP sampling surveys. Most of the descriptions state whether the sample was collected from an up- or downgradient location relative to the landfill. The drum sample was a solid matrix collected "at two drums, south edge of landfill". The drum position (surface or subsurface) was not reported.

The results of the laboratory analyses indicate that no VOCs were detected in any of the samples analyzed for VOCs. One sample had detectable levels of polyaromatic hydrocarbons (PAHs) based on the results of the semivolatile analyses. The data for sample No. 7 showed four PAH compounds present at concentrations ranging from 2.2 to 3.3 mg/kg. The results of the pesticides/PCBs analyses indicate that each of the samples analyzed (2, 6 and 11) had detectable levels of pesticides (Table 2-2). The concentrations in these samples ranged from 5.9 μg/kg of 4,4-DDE in sample No. 6 to 61 μg/kg alpha-Endosulfan in sample No. 11, both below the NYSDEC recommended soil cleanup objectives.

Three samples (samples 1, 2, and 5) were analyzed for RCRA metals. The results of those analyses show that only barium (74.6 mg/kg), chromium (7.2 mg/kg), and selenium (108 mg/kg) were detected in sample No. 2. The other samples did not show detectable levels of any RCRA metals. Samples 6, 8, and 11 were analyzed for TAL metals; the results of those,analyses indicate that several metals were detected in each of the samples (Table 2-2).

TABLE 2-2 (Page 1 of 3)

NYCDEP SAMPLING RESULTS (MAY 20, 1992)

HARRISON SUBRESIDENCY PIN # A989.06.701

SAMPLE NO.	3	4	7	9	10
MATRIX	LEACHATE	SURFACE WATER	SEDIMENT	LEACHATE	SURFACE WATER
SAMPLE LOCATION AS PER NYCDEP CHAIN OF CUSTODY	FROM LANDFILL NORTH EDGE	UPSTREAM OF LANDFILL	DOWNSTREAM OF CULVERT	DOWNSTREAM	DOWNSTREAM OF CULVERT
UNITS	(mg/kg)	(mg/l)	(mg/kg)	(mg/l)	(mg/l)
VOLATILE ORGANICS	ND	ND	ND	ND	ND
SEMIVOLATILE ORGANICS					
Fluoranthene	ND	NR	3.3	ND	NR
4-methylphenol	ND	NR	2.4	ND	NR
Phenanthrene	ND	NR	2.4	ND	NR
Pyrene	ND	NR	2.2	ND	NR

ND - Not detected at analytical detection limit.
NR - Analysis not performed.

TABLE 2-2 (Page 2 of 3)

NYCDEP SAMPLING RESULTS (MAY 20, 1992)

HARRISON SUBRESIDENCY PIN # A989.06.701

SAMPLE NO.	1	2	5	6	11
MATRIX	SURFACE WATER	SEDIMENT	WATER	SEDIMENT	SOLID
SAMPLE LOCATION AS PER NYCDEP CHAIN OF CUSTODY	UPSTREAM OF LANDFILL	UPSTREAM	DOWNSTREAM OF CULVERT	DOWNSTREAM OF CULVERT	FIRST SAMPLE AT TWO DRUMS SOUTH EDGE OF LANDFILL
PESTICIDES/PCBs					
UNITS	**(µg/l)**	**(µg/kg)**	**(µg/l)**	**(µg/kg)**	**(µg/kg)**
Alpha endosulphan	NR	14	NR	ND	61
Gamma-BHC	NR	ND	NR	ND	28
Beta-BHC	NR	31	NR	7.8	ND
Endrin	NR	ND	NR	ND	34
Endosulfan sulfate	NR	ND	NR	ND	36
4,4-DDE	NR	22	NR	5.9	ND
4,4-DDT	NR	ND	NR	ND	37
Heptachlor epoxide	NR	9.5	NR	ND	ND
RCRA METALS					
UNITS	**(mg/l)**	**(mg/kg)**	**(mg/l)**	-	-
Arsenic	ND	ND	ND	NR	NR
Barium	ND	74.6	ND	NR	NR
Cadmium	ND	ND	ND	NR	NR
Chromium	ND	7.2	ND	NR	NR
Lead	ND	ND	ND	NR	NR
Mercury	ND	ND	ND	NR	NR
Selenium	ND	108	ND	NR	NR
Silver	ND	ND	ND	NR	NR

ND - Not detected at analytical detection limit.
NR - Analysis not performed.

TABLE 2-2(Page 3 of 3)

NYCDEP SAMPLING RESULTS (MAY 20, 1992)

HARRISON SUBRESIDENCY PIN # A989.06.701

SAMPLE NO.	2	6	8	11
MATRIX	SEDIMENT	SEDIMENT	LEACHATE	SOLID
SAMPLE LOCATION AS PER NYCDEP CHAIN OF CUSTODY	UPSTREAM	DOWNSTREAM OF CULVERT	DOWNSTREAM	FIRST SAMPLE AT TWO DRUMS SOUTH EDGE OF LANDFILL
UNITS	(mg/kg)	(mg/kg)	(mg/l)	(mg/kg)
TAL METALS				
Aluminum	NR	4,800	34.3	7,120
Antimony	NR	ND	0.44	ND
Arsenic	NR	ND	1.2	ND
Barium	NR	66.6	19.2	375
Cadmium	NR	ND	1.5	2.5
Calcium	NR	2,930	1,180	9,420
Chromium	NR	7.4	0.20	32.0
Cobalt	NR	ND	1.2	ND
Copper	NR	14.3	0.68	52.8
Iron	NR	13,900	14,000	79,100
Lead	NR	130	3.4	513
Magnesium	NR	3,450	41.9	3,560
Manganese	NR	705	46.8	335
Mercury	NR	ND	0.0013	ND
Nickel	NR	24.1	0.41	21.5
Potassium	NR	611	22.5	1,760
Selenium	NR	60.3	ND	263
Silver	NR	ND	0.23	ND
Sodium	NR	132	37.4	292
Vanadium	NR	8.5	0.42	31.2
Zinc	NR	64	3.7	377
Cyanide	NR	ND	0.02	NR
TPH	ND	ND	ND	ND
CHLORIDE	ND	62	29	160

ND - Not detected at analytical detection limit.
NR - Analysis not performed

TPHs were not detected in any of the samples analyzed (2, 6, 8, and 11). Chloride was detected in samples 6, 8, and 11, reported in concentrations of 29 mg/l in sample 8 (leachate), 62 mg/kg in sample 6 (sediment), and 160 mg/kg in sample 11 (solid).

2.3.4 28 May 1992 Sampling

NYCDEP collected two soil samples, three sediment samples, and six surface water samples on 28 May 1992. Based on information on the chain-of-custody forms the samples were apparently collected near the up- and downstream ends of the 48-in. culvert that is buried beneath the landfill. There is a discrepancy for sample No. 4: between the matrix listed on the NYCDEP chain-of-custody form (leachate) does not agree with the matrix listed on the laboratory data summary report (soil). The sample results (for sample No. 4) were reported the units of micrograms per kilogram (μg/kg).

Selected samples collected by NYCDEP on 28 May 1992 were analyzed for VOCs, semivolatiles, pesticides/PCBs, RCRA metals, TAL metals, TPHs, and chlorides. The results of those analyses indicate that metals and organic compounds were detected in several samples (Table 2-3).

The results of the VOC and semivolatile analyses indicate that low levels of acetone (16 and 24 μg/kg, respectively) and methylene chloride (6 μg/l) were detected in the samples analyzed (acetone and methylene chloride are common laboratory contaminants). The pesticide/PCB results indicate that both of the samples analyzed (1 and 2) had detectable levels of 4,4-DDE, 4,4-DDD, and 4,4-DDT, ranging in concentrations from 2.5 to 3.1 μg/kg, below the NYSDEC recommended cleanup levels.

The results of the metals analyses indicate that RCRA metals were present in each of the samples analyzed (Table 2-3). Barium and chromium were detected in all four samples and lead was detected in three out of the four samples (2 [soil]), 8 [sediment], and 9 [leachate]) analyzed by the laboratory for either RCRA or TAL metals. Of these soil results, barium concentrations are below the NYSDEC recommended soil cleanup objectives of 300 mg/kg, chromium

TABLE 2-3 (Page 1 of 2)

NYCDEP SAMPLING RESULTS (MAY 28,1992)

HARRISON SUBRESIDENCY PIN #A989.06.701

SAMPLE NO.	1	2	6	7
MATRIX	SEDIMENT	SOIL	WATER	WATER
SAMPLE LOCATION AS PER NYCDEP CHAIN OF CUSTODY	UPSTREAM NEAR CULVERT	UPSTREAM NEAR CULVERT	UPSTREAM	DOWNSTREAM CULVERT
RCRA METALS				
UNITS	**(mg/kg)**	**(mg/kg)**	**(mg/l)**	**(mg/l)**
Arsenic	ND	ND	ND	ND
Barium	68.7	45.2	ND	ND
Cadmium	ND	ND	ND	ND
Chromium	16.3	14.3	ND	ND
Lead	ND	20.4	ND	ND
Mercury	ND	ND	ND	ND
Selenium	ND	ND	ND	ND
Silver	ND	ND	ND	ND
Cyanide	ND	ND	NR	ND
PESTICIDES/PCBs				
UNITS	**(µg/kg)**	**(µg/kg)**	**(µg/l)**	**(µg/l)**
4,4-DDE	2.5	3.1	NR	NR
4,4-DDD	2.9	2.6	NR	NR
4,4-DDT	2.5	3.1	NR	NR
TPH (mg/kg)	85	ND	NR	NR
CHLORIDE (mg/kg)	233	1,900	NR	NR

ND - Not detected at analytical detection limit.
NR - Analysis not performed.

TABLE 2-3 (Page 2 of 2)

NYCDEP SAMPLING RESULTS (MAY 28,1993)

HARRISON SUBRESIDENCY PIN # A989.06.701

SAMPLE NO.	3	4	6	8	9	10	11
MATRIX	SEDIMENT	SOIL *	SURFACE WATER	SEDIMENT	LEACHATE	SURFACE WATER	SURFACE WATER
SAMPLE LOCATION AS PER NYCDEP CHAIN OF CUSTODY	UPSTREAM NEAR CULVERT	UP STREAM *	UP STREAM	DOWN STREAM CULVERT	DOWN STREAM CULVERT	DOWN STREAM CULVERT	DOWN STREAM CULVERT
UNITS	(µg/kg)	(µg/kg)	(µg/l)	(mg/kg)	(mg/l)	(µg/l)	(mg/l)
TAL METALS							
Aluminum	NR	NR	NR	6,370	2.2	NR	NR
Barium	NR	NR	NR	52.4	0.16	NR	NR
Cadmium	NR	NR	NR	1.2	ND	NR	NR
Calcium	NR	NR	NR	5,390	46.3	NR	NR
Chromium	NR	NR	NR	11.7	0.016	NR	NR
Copper	NR	NR	NR	16.7	ND	NR	NR
Iron	NR	NR	NR	20,600	54.6	NR	NR
Lead	NR	NR	NR	73.0	0.16	NR	NR
Magnesium	NR	NR	NR	5,580	14.0	NR	NR
Manganese	NR	NR	NR	1,010	4.3	NR	NR
Nickel	NR	NR	NR	20.6	ND	NR	NR
Potassium	NR	NR	NR	1,160	4.2	NR	NR
Sodium	NR	NR	NR	249	126	NR	NR
Vanadium	NR	NR	NR	13.7	0.059	NR	NR
TPH	NR	NR	NR	ND	3	NR	NR
CHLORIDE	NR	NR	NR	98	190	NR	NR
VOLATILE ORGANICS							
Acetone	16	24	ND	NR	NR	ND	ND
Methylane chloride	ND	ND	ND	ND	ND	ND	6
SEMIVOLATILE ORGANICS							
	ND	ND	NR	NR	NR	NR	NR

* - Chain-of-custody indicates sample is "upstream leachate"; however, lab analysis report indicates sample was analyzed as a solid (soil) matrix.
ND - Not detected at analytical detection limit.
NR - Analysis not performed.

concentrations are above the soil cleanup objectives of 10 mg/kg, and lead concentrations are both above and below the cleanup objectives of 30 mg/kg. Metals detected in downstream leachate sample 9 were below the NYSDEC draft Cleanup Policy and Guidelines except for lead (0.16 mg/l), iron (54.6 mg/l), manganese (4.3 mg/l), and vanadium (0.059 mg/l); the draft guideline standards for these metals are 0.05, 0.3, 0.3, and 0.014 mg/l respectively.

The results of the TPH and chloride analyses indicate that TPHs were detected in samples 1 (sediment) and 9 (leachate) at concentrations of 85 and 3 μg/kg, respectively. Chloride was detected at concentrations ranging from 98 to 1900 mg/kg in the three soil and sediment samples (1, 2, and 8) analyzed and was detected at 190 μg/l in sample No. 9 (leachate).

2.4 NYSDOT SAMPLING SURVEYS

2.4.1 5 June 1992 Sampling

On 5 June 1992 NYSDOT collected three surface water samples from the stream that enters the eastern edge of the site and flows through the landfill in the 48-in. steel culvert (see Figure 2-4). Two samples (HSR-1 and HSR-2) were collected from the stream close to where it enters the culvert and one (HSR-3) was collected from the stream where it exits the culvert. HSR-1 was collected from a point 20 ft east of the property line where the stream enters the site; this location is upgradient of the landfill. HSR-2 was collected from a point 10 ft east of the influent end of the culvert within the landfill boundary, i.e., the "banks" of the stream at this point are composed of fill. HSR-3 was collected from a point approximately 20 ft downstream from the effluent end of the culvert. The samples were all analyzed for VOCs, semivolatiles, TAL metals, and pesticides/PCBs. The analytical results are summarized in Table 2-4.

The results of the VOC, semivolatile, and pesticide/PCB analyses indicated that several organic constituents were detected in the samples analyzed. Methylene chloride, a common laboratory contaminant, was the only volatile compound detected, at estimated concentrations of 2 and 3 μg/l in samples HSR-1 and -2, respectively. Methylene chloride was also detected in the

TABLE 2-4

NYSDOT SURFACE WATER SAMPLING RESULTS (JUNE 5,1992)

HARRISON SUBRESIDENCY PIN # A989.06.701

SAMPLE NO.	HSR-1	HSR-2	HSR-3
VOLATILE ORGANICS (ug/l)			
Methylene chloride	2 J B	3 J B	ND
SEMIVOLATILE ORGANICS (ug/l)			
Di-n-butyl phthalate	0.9 J B	0.9 J B	0.7 J B
bis (2-ethylhexl)phthalate	2 J	8 J	0.6 J
PESTICIDES/PCBs (ug/l)			
Beta-BHC	0.010 J B	ND	0.010 J B
Aldrin	0.12 B	0.12 B	0.091 J
TAL METALS (ug/l)			
Aluminum	1,280	4,440	ND
Calcium	32,600	42,500	42,200
Cadmium	ND	8.2	ND
Iron	4,050	17,900	1,230
Magnesium	10,500	12,400	11,400
Manganese	1,310	2,770	584
Sodium	14,600	211,000	95,300
Lead	3.9	38.9	ND
Zinc	31.7	356	ND

B - Compound found in associated blanks.
J - Estimated concentration; compound detected below practical quantitation limit.

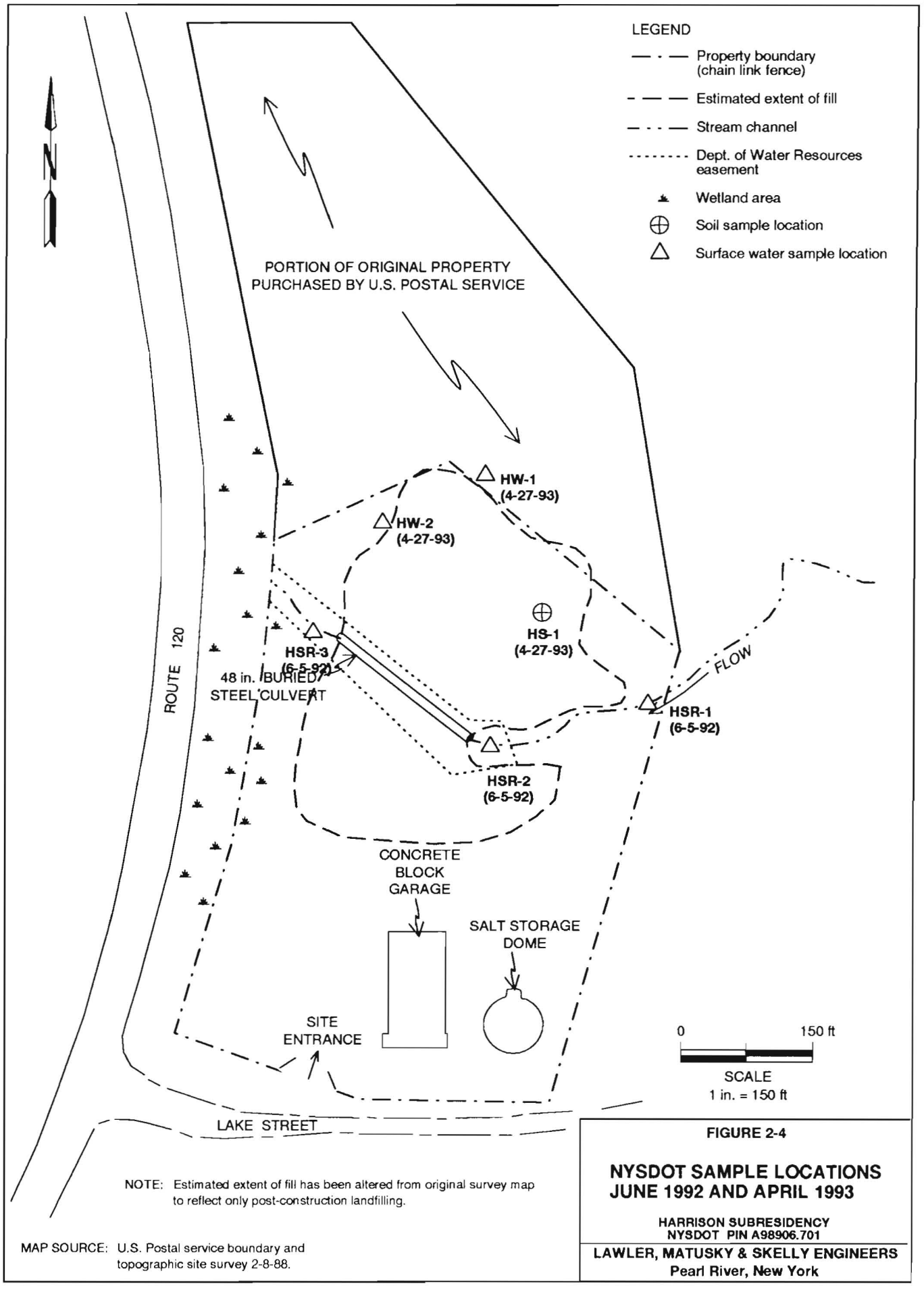
method blank associated with the analyses, indicating that it is most likely a laboratory contaminant. Two semivolatile compounds were detected, di-n-butylphthalate and bis(2-ethylhexl)phthalate (also common laboratory contaminants), in each of the samples analyzed, at estimated concentrations ranging from 0.6 to 8 μg/l. Di-n-butylphthalate was also detected in the associated method blank, requiring that the resulting data be qualified. The results of the pesticide/PCB analyses indicate that beta-BHC and aldrin were detected at low levels in both samples HSR-1 and -3, and aldrin was also detected in HSR-2.

The resulting data for beta-BHC were qualified as estimated and being associated with a blank sample also containing detectable levels of beta-BHC. The aldrin results for samples HSR-1 and -2 were also qualified due to blank contamination, and the data for HSR-3 were qualified as estimated.

The results of the TAL metals analyses indicate that metals were detected, including cadmium and lead. Cadmium was detected in sample HSR-2 at 8.2 μg/l and lead was detected in HSR-1 and -2 at 3.9 and 38.9 μg/l, respectively, concentrations below the NYSDEC draft Cleanup Policy and Guidelines for cadmium and lead standards in freshwater, of 10 and 50 μg/l, respectively.

2.4.2 27 April 1993 Sampling

On 27 April 1993 NYSDOT collected one soil and two surface water samples (HS-1, HW-1, and HW-2) as shown in Figure 2-4, which were analyzed for VOCs, semivolatiles, PCBs/pesticides, and TAL metals. The one soil sample was collected from a test pit that was excavated in the landfill on that date. A drum containing what appeared to be road striping paint was excavated and ruptured; some of the fluid leaked to the surrounding soil. The soil sample (HS-1) was collected from this fluid-stained soil. The surface water samples (HW-1 and -2) were collected from the north edge of the landfill. The analytical results are summarized in Table 2-5.



NOTE: Estimated extent of fill has been altered from original survey map to reflect only post-construction landfilling.

MAP SOURCE: U.S. Postal service boundary and topographic site survey 2-8-88.

FIGURE 2-4

NYSDOT SAMPLE LOCATIONS JUNE 1992 AND APRIL 1993

HARRISON SUBRESIDENCY
NYSDOT PIN A98906.701

LAWLER, MATUSKY & SKELLY ENGINEERS
Pearl River, New York

TABLE 2-5 (Page 1 of 2)

NYSDOT SAMPLING RESULTS (APRIL 27, 1993)

HARRISON SUBRESIDENCY PIN # A989.06.701

SAMPLE NO.	HS-1	HW-1	HW-2
MATRIX	SOIL	SURFACE WATER	SURFACE WATER
UNITS	(mg/kg)	(µg/l)	(µg/l)
VOLATILE ORGANICS			
Acetone	ND	8 J B	9 J B
2-butanone	5,200,000	ND	ND
Methylene chloride	110,000 B	1 J B	1 J B
Carbon tetrachloride	17,000 J	ND	ND
Trichloroethene	110,000	ND	ND
Benzene	560,000	ND	ND
Toluene	24,000,000	1 J	ND
Ethylbenzene	430,000	ND	ND
Xylenes (total)	2,000,000	ND	ND
SEMIVOLATILE ORGANICS			
di-n-butylphthalate	ND	ND	6 J
Benzo (b) fluoranthene	ND	ND	3 J
Benzo (a) fluoranthene	ND	ND	4 J
Fluoranthene	ND	ND	6 J
Pyrene	ND	ND	8 J
Benzo (a) anthracene	ND	ND	3 J
Chrysene	ND	ND	5 J
Phenanthrene	ND	ND	4 J
PESTICIDES/PCBs	ND	ND	ND

B - Compound found in associated blanks.
J - Estimated concentration; compound detected below practical quanitation limit.
ND - Not detected at analytical detection limit.

TABLE 2-5 (Page 2 of 2)

NYSDOT SAMPLING RESULTS (APRIL 27, 1993)

HARRISON SUBRESIDENCY PIN # A989.06.701

SAMPLE NO.	HS-1	HW-1	HW-2
MATRIX	SOIL	SURFACE WATER	SURFACE WATER
UNITS	(mg/kg)	(µg/l)	(µg/l)
TAL METALS			
Aluminum	4,800	2,100	14,900
Arsenic	ND	ND	13.2
Barium	ND	353	441
Calcium	20,000	147,000	89,500
Chromium	14.3	ND	46.6
Copper	24.6	ND	130
Iron	12,600	62,100	102,000
Lead	282	114	1,500
Magnesium	4,180	21,500	14,600
Manganese	445	2,060	1,760
Mercury	ND	ND	0.32
Nickel	12.1	ND	49.1
Potassium	1,190	12,200	7,410
Sodium	ND	35,400	20,500
Zinc	108	280	1,100

ND - Not detected at analytical limit.

A duplicate of soil sample HS-1 was collected from the fluid-stained soil by the spill contractor who was performing the excavation and was analyzed by an independent laboratory for TPHs, VOCs, PCBs, flashpoint, and full Toxicity Characteristic Leaching Procedure (TCLP) contaminants. The results are presented in the Table 2-6.

The results of VOC analyses (see Table 2-5) performed on the soil and surface water samples collected by NYSDOT on 27 April 1993 indicate that elevated levels of VOCs are present in the soil sample (HS-1). The concentrations of volatile compounds ranged from 17,000 to 24,000,000 mg/kg. The majority of the concentrations were attributed to benzene, toluene, ethylbenzene, and xylenes (BTEXs). Estimated concentrations of acetone and methylene chloride (common laboratory contaminants) were detected in each of the surface water samples (HW-1 and -2). The resulting acetone and methylene chloride data were qualified to indicate that both acetone and methylene chloride were detected in the associated method blank. In addition to acetone and methylene chloride, toluene was also detected in sample HW-1 at an estimated concentration of 1 μg/l.

The results of the semivolatile analyses indicate that only surface water sample HW-2 had detectable levels of PAH contaminants. Eight PAH compounds were detected at estimated concentrations ranging from 3 to 8 μg/l. The resulting data show that no pesticides/PCBs were detected in either the soil or surface water samples.

The resulting data from the TAL metals analyses show that various levels of metals are present in each of the samples analyzed. Soil sample HS-1 had concentrations of chromium (14.3 mg/kg), lead (282 mg/kg), nickel (12.1 mg/kg), and zinc (108 mg/kg). Both surface water samples HW-1 and -2 had levels of barium (353 and 441 μg/l, respectively), lead (114 and 1500 μg/l, respectively), and zinc (280 and 1100 μg/l, respectively). Additionally, sample HW-2 also contained levels of arsenic (13.2 μg/l), chromium (46.6 μg/l), mercury (0.32 μg/l) and nickel (49.1 μg/l).

The results of the drum-stained soil analyses performed by a laboratory hired by the spill contractor are summarized in Table 2-6. A duplicate sample was collected from the location

TABLE 2-6

SAMPLE HS-1 DUBLICATE RESULTS

HARRISON SUBRESIDENCY PIN # A989.06.701

PARAMETER	RESULT
TPH	
Total petroleum hydrocarbons	51,200 ppm
Volatile Organic Compounds	
Toluene	7,480 ppm
Ethylbenzene	139 ppm
m- and p- Xylene	667 ppm
o- Xylene	195 ppm
PCB/Pesticides	ND
Flash point	55°C (131°F)
Full TCLP	
TCLP Benzene	2.0 ppm
TCLP 2-Butanone	81 ppm
TCLP Barium	0.768 ppm
TCLP Cadmium	0.006 ppm
TCLP Chromium	0.022 ppm
TCLP Lead	3.99 ppm

where HS-1 was collected. The results of those analyses show that 51,200 mg/kg of TPHs were present and that the BTEX compounds toluene, ethylbenzene, and xylene were detected at 7480, 139, and 862 mg/kg, respectively. No PCBs were detected, and the sample flashed at 131°F.

The results of the drum-stained soil TCLP analyses show that two volatile compounds and four metals were detected in the resulting extract. Benzene and 2-butanone were detected at 2 and 81 μg/l, respectively, in the TCLP extract. Barium, cadmium, chromium, and lead were detected at concentrations of 0.768, 0.006, 0.022, and 3.99 mg/l, respectively. All compounds detected in the TCLP extract were reported at concentrations below TCLP standards, indicating that the spill-saturated soils are nonhazardous.

APPENDIX A

REFERENCE DOCUMENTATION

LIST OF REFERENCES

1) Letter from Robert H. Coven, U.S. Postal Service to Franklin E. White, N.Y.S. Department of Transportation concerning the impending USPS acquisition of NYSDOT property, November 19, 1990.

2) Letter from William S. MacTiernan, N.Y.S. Department of Transportation to Susan E. Amron, N.Y.C. Law Department requesting sampling and geophysical information from surveys condusted at the Harrison DOT facility, January 6, 1993.

3) Memorandum from J.L. Hewitt, N.Y.S. Department of Transportation to William S. MacTiernan, N.Y.S. Department of Transportation regarding NYCDEP's incomplete response to requests for sampling and geophysical information, April 5, 1993.

REFERENCE 1

INTERNATIONAL TECHNOLOGY CORPORATION

U.S. Postal Service (Westchester)
c/o Parsons Brinkerhoff
One Penn Plaza, 250 West 34th Street
New York, NY 10119
ATTN: Mr. Andy Ewing
N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Purgeable Organic Compounds (by GC/MS)	E802065-04 MW-2, 6.0-8.0' (mg/kg)
Methylene Chloride	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Trichlorofluoromethane	ND
Vinyl Chloride	ND

ND - Nondetectable less than 0.25 mg/kg for Acrolein and Acrylonitrile; less than 0.025 mg/kg for other volatile organics above.

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REPORT OF ANALYSIS

Base Neutral Compounds (by GC/MS)	E802065-04 MW-2, 6.0-8.0' (mg/kg)
Acenaphthene	ND
Acenaphthylene	ND
Anthracene	ND
Benzo(a)anthracene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Benzo(a)pyrene	ND
Benzo(g,h,i)perylene	ND
Benzidine	ND
Bis(2-Chloroethyl)ether	ND
Bis(2-Chloroethoxy)methane	ND
Bis(2-Ethylhexyl)phthalate	ND
Bis(2-Chloroisopropyl)ether	ND
4-Bromophenyl Phenyl Ether	ND
Butyl Benzyl Phthalate	ND
2-Chloronaphthalene	ND
4-Chlorophenyl Phenyl Ether	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Di-n-Butylphthalate	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND
3,3'-Dichlorobenzidine	ND

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Auth.: POW-4
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Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Base Neutral Compounds (by GC/MS)	E802065-04 MW-2, 6.0-8.0' (mg/kg)
Diethylphthalate	ND
Dimethylphthalate	ND
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Di-n-Octylphthalate	ND
1,2-Diphenylhydrazine	ND
Fluoranthene	ND
Fluorene	ND
Hexachlorobenzene	ND
Hexachlorobutadiene	ND
Hexachloroethane	ND
Hexachlorocyclopentadiene	ND
Indeno(1,2,3-cd)pyrene	ND
Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodi-n-propylamine	ND
N-Nitrosodiphenylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

ND-Nondetectable less than 1 mg/kg.

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Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Acid Extractable Compounds (by GC/MS)	E802065-04 MW-2, 6.0-8.0' (mg/kg)
4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND
2-Methyl-4,6-dinitrophenol	ND
2-Nitrophenol	ND
4-Nitrophenol	ND
Penthachlorophenol	ND
Phenol	ND
2,4,6-Trichlorophenol	ND

ND - Non Detectable less than 1 mg/kg

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Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Pesticide and PCB Compounds (by GC/MS)	E802065-04 MW-2, 6.0-8.0' (mg/kg)
Aldrin	ND
BHC-alpha	ND
BHC-beta	ND
BHC-gamma (lindane)	ND
BHC-delta	ND
Chlordane	ND
4,4'-DDD	ND
4,4'-DDE	ND
4,4'-DDT	ND
Dieldrin	ND
Endosulfan I	ND
Endosulfan II	ND
Endosulfan Sulfate	ND
Endrin	ND
Endrin Aldehyde	ND
Heptachlor	ND
Heptachlor Epoxide	ND
Toxaphene	ND
PCB-1016	ND
PCB-1221	ND
PCB-1232	ND
PCB-1242	ND
PCB-1248	ND
PCB-1254	ND
PCB-1260	ND

ND - Nondetectable less than 0.5 mg/kg for Pesticides and less than 1.0 mg/kg for PCB's and Toxaphene.

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Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

	E802065-06 MW-3, 0-1.5' (mg/kg)
Cyanide (Total)	<1.1
Petroleum Hydrocarbons	1,300
Phenols (Total)	<0.57
Antimony	<5.7
Arsenic	1.3
Beryllium	<0.57
Cadmium	<0.23
Chromium	26
Copper	13
Lead	64
Mercury	<0.057
Nickel	18
Selenium	<0.57
Silver	<0.57
Thallium	<2.3
Zinc	57

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Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Base Neutral Compounds (by GC/MS)	E802065-06 MW-3, 0-1.5' (mg/kg)
Acenaphthene	ND
Acenaphthylene	ND
Anthracene	ND
Benzo(a)anthracene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Benzo(a)pyrene	ND
Benzo(g,h,i)perylene	ND
Benzidine	ND
Bis(2-Chloroethyl)ether	ND
Bis(2-Chloroethoxy)methane	ND
Bis(2-Ethylhexyl)phthalate	ND
Bis(2-Chloroisopropyl)ether	ND
4-Bromophenyl Phenyl Ether	ND
Butyl Benzyl Phthalate	ND
2-Chloronaphthalene	ND
4-Chlorophenyl Phenyl Ether	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Di-n-Butylphthalate	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND
3,3'-Dichlorobenzidine	ND

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Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Base Neutral Compounds (by GC/MS)	E802065-06 MW-3, 0-1.5' (mg/kg)
Diethylphthalate	ND
Dimethylphthalate	ND
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Di-n-Octylphthalate	ND
1,2-Diphenylhydrazine	ND
Fluoranthene	ND
Fluorene	ND
Hexachlorobenzene	ND
Hexachlorobutadiene	ND
Hexachloroethane	ND
Hexachlorocyclopentadiene	ND
Indeno(1,2,3-cd)pyrene	ND
Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodi-n-propylamine	ND
N-Nitrosodiphenylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

ND-Nondetectable less than 1 mg/kg.

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N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Acid Extractable Compounds (by GC/MS)	E802065-06 MW-3, 0-1.5' (mg/kg)
4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND
2-Methyl-4,6-dinitrophenol	ND
2-Nitrophenol	ND
4-Nitrophenol	ND
Penthachlorophenol	ND
Phenol	ND
2,4,6-Trichlorophenol	ND

ND - Non Detectable less than 1 mg/kg

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Sample Date: 2/5/88

REPORT OF ANALYSIS

Pesticide and PCB Compounds (by GC/MS)	E802065-06 MW-3, 0-1.5' (mg/kg)
Aldrin	ND
BHC-alpha	ND
BHC-beta	ND
BHC-gamma (lindane)	ND
BHC-delta	ND
Chlordane	ND
4,4'-DDD	ND
4,4'-DDE	ND
4,4'-DDT	ND
Dieldrin	ND
Endosulfan I	ND
Endosulfan II	ND
Endosulfan Sulfate	ND
Endrin	ND
Endrin Aldehyde	ND
Heptachlor	ND
Heptachlor Epoxide	ND
Toxaphene	ND
PCB-1016	ND
PCB-1221	ND
PCB-1232	ND
PCB-1242	ND
PCB-1248	ND
PCB-1254	ND
PCB-1260	ND

ND - Nondetectable less than 0.5 mg/kg for Pesticides and less than 1.0 mg/kg for PCB's and Toxaphene.

INTERNATIONAL TECHNOLOGY CORPORATION

U.S. Postal Service (Westchester)
c/o Parsons Brinkerhoff
One Penn Plaza, 250 West 34th Street
New York, NY 10119
ATTN: Mr. Andy Ewing
N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Purgeable Organic Compounds (by GC/MS)	E802065-07 MW-3, 1.5-2.0' (mg/kg)
Acrolein	ND
Acrylonitrile	ND
Benzene	ND
Bromoform	ND
Bromomethane	ND
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromomethane	ND
Chloroethane	ND
2-Chloroethylvinyl Ether	ND
Chloroform	ND
Chloromethane	ND
Dichlorobromomethane	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,1-Dichloroethene	ND
trans-1,2-Dichloroethene	ND
1,2-Dichloropropane	ND
cis-1,3-Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND

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N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Purgeable Organic Compounds (by GC/MS)	E802065-07 MW-3, 1.5-2.0' (mg/kg)
Methylene Chloride	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Trichlorofluoromethane	ND
Vinyl Chloride	ND

ND - Nondetectable less than 0.30 mg/kg for Acrolein and Acrylonitrile; less than 0.030 mg/kg for other volatile organics above.

INTERNATIONAL TECHNOLOGY CORPORATION

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ATTN: Mr. Andy Ewing
N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

	E802065-11 MW-3, 80.-10.0' (mg/kg)
Cyanide (Total)	<1.1
Petroleum Hydrocarbons	250
Phenols (Total)	<0.56
Antimony	<5.6
Arsenic	<1.1
Beryllium	<0.56
Cadmium	<0.22
Chromium	27
Copper	30
Lead	38
Mercury	<0.056
Nickel	19
Selenium	<0.56
Silver	<0.56
Thallium	<2.2
Zinc	71

INTERNATIONAL TECHNOLOGY CORPORATION

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c/o Parsons Brinkerhoff
One Penn Plaza, 250 West 34th Street
New York, NY 10119
ATTN: Mr. Andy Ewing
N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Purgeable Organic Compounds (by GC/MS)	E802065-11 MW-3, 8.0-10.0' (mg/kg)
Acrolein	ND
Acrylonitrile	ND
Benzene	ND
Bromoform	ND
Bromomethane	ND
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromomethane	ND
Chloroethane	ND
2-Chloroethylvinyl Ether	ND
Chloroform	ND
Chloromethane	ND
Dichlorobromomethane	ND
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,1-Dichloroethene	ND
trans-1,2-Dichloroethene	ND
1,2-Dichloropropane	ND
cis-1,3-Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND

INTERNATIONAL TECHNOLOGY CORPORATION

U.S. Postal Service (Westchester)
c/o Parsons Brinkerhoff
One Penn Plaza, 250 West 34th Street
New York, NY 10119
ATTN: Mr. Andy Ewing
N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Purgeable Organic Compounds (by GC/MS)	E802065-11 MW-3, 8.0-10.0' (mg/kg)
Methylene Chloride	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethene	ND
Trichlorofluoromethane	ND
Vinyl Chloride	ND

ND - Nondetectable less than 0.25 mg/kg for Acrolein and Acrylonitrile; less than 0.025 mg/kg for other volatile organics above.

INTERNATIONAL TECHNOLOGY CORPORATION

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c/o Parsons Brinkerhoff
One Penn Plaza, 250 West 34th Street
New York, NY 10119
ATTN: Mr. Andy Ewing
N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Base Neutral Compounds (by GC/MS)	E802065-11 MW-3, 8.0-10.0' (mg/kg)
Acenaphthene	ND
Acenaphthylene	ND
Anthracene	ND
Benzo(a)anthracene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Benzo(a)pyrene	ND
Benzo(g,h,i)perylene	ND
Benzidine	ND
Bis(2-Chloroethyl)ether	ND
Bis(2-Chloroethoxy)methane	ND
Bis(2-Ethylhexyl)phthalate	ND
Bis(2-Chloroisopropyl)ether	ND
4-Bromophenyl Phenyl Ether	ND
Butyl Benzyl Phthalate	ND
2-Chloronaphthalene	ND
4-Chlorophenyl Phenyl Ether	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Di-n-Butylphthalate	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND
3,3'-Dichlorobenzidine	ND

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N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Base Neutral Compounds (by GC/MS)	E802065-11 MW-3, 8.0-10.0' (mg/kg)
Diethylphthalate	ND
Dimethylphthalate	ND
2,4-Dinitrotoluene	ND
2,6-Dinitrotoluene	ND
Di-n-Octylphthalate	ND
1,2-Diphenylhydrazine	ND
Fluoranthene	ND
Fluorene	ND
Hexachlorobenzene	ND
Hexachlorobutadiene	ND
Hexachloroethane	ND
Hexachlorocyclopentadiene	ND
Indeno(1,2,3-cd)pyrene	ND
Isophorone	ND
Naphthalene	ND
Nitrobenzene	ND
N-Nitrosodimethylamine	ND
N-Nitrosodi-n-propylamine	ND
N-Nitrosodiphenylamine	ND
Phenanthrene	ND
Pyrene	ND
1,2,4-Trichlorobenzene	ND

ND-Nondetectable less than 1 mg/kg.

INTERNATIONAL TECHNOLOGY CORPORATION

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c/o Parsons Brinkerhoff
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New York, NY 10119
ATTN: Mr. Andy Ewing
N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Acid Extractable Compounds (by GC/MS)	E802065-11 MW-3, 8.0-10.0' (mg/kg)
4-Chloro-3-methylphenol	ND
2-Chlorophenol	ND
2,4-Dichlorophenol	ND
2,4-Dimethylphenol	ND
2,4-Dinitrophenol	ND
2-Methyl-4,6-dinitrophenol	ND
2-Nitrophenol	ND
4-Nitrophenol	ND
Penthachlorophenol	ND
Phenol	ND
2,4,6-Trichlorophenol	ND

ND - Non Detectable less than 1 mg/kg

INTERNATIONAL TECHNOLOGY CORPORATION

U.S. Postal Service (Westchester)
c/o Parsons Brinkerhoff
One Penn Plaza, 250 West 34th Street
New York, NY 10119
ATTN: Mr. Andy Ewing
N.J. Lab Certification ID #12064

Job #: 541874
Date: 3/4/88
Auth.: POW-4
Lot #: E802065
Invoice #: I01513
Sample Date: 2/5/88

REPORT OF ANALYSIS

Pesticide and PCB Compounds (by GC/MS)	E802065-11 MW-3, 8.0-10.0' (mg/kg)
Aldrin	ND
BHC-alpha	ND
BHC-beta	ND
BHC-gamma (lindane)	ND
BHC-delta	ND
Chlordane	ND
4,4'-DDD	ND
4,4'-DDE	ND
4,4'-DDT	ND
Dieldrin	ND
Endosulfan I	ND
Endosulfan II	ND
Endosulfan Sulfate	ND
Endrin	ND
Endrin Aldehyde	ND
Heptachlor	ND
Heptachlor Epoxide	ND
Toxaphene	ND
PCB-1016	ND
PCB-1221	ND
PCB-1232	ND
PCB-1242	ND
PCB-1248	ND
PCB-1254	ND
PCB-1260	ND

ND - Nondetectable less than 0.5 mg/kg for Pesticides and less than 1 mg/kg for PCB's and Toxaphene.

INTERNATIONAL TECHNOLOGY CORPORATION

U.S. Postal Service Westchester
c/o Parsons Brinkerhoff
One Penn Plaza
250 West 34th Street
New York, NY 10119
Attn: Mr. Andy Ewing
N.J. Lab Certification ID# 12064

Job #: 541874
Date: 3/10/88
Auth.: POW-2
Lot #: E802062
Invoice #: I01512
Sample Date: 2/3/88

REPORT OF ANALYSIS

	E802062-01 B-1 0-1.5' (mg/kg)
Cyanide (Total)	<1.1
Petroleum Hydrocarbons	440
Phenols (Total)	<0.57
Antimony	<2.3
Arsenic	<1.1
Beryllium	<0.57
Cadmium	1.8
Chromium	9.2
Copper	34
Lead	60
Mercury	0.057
Nickel	11
Selenium	<0.57
Silver	<0.57
Thallium	<1.1
Zinc	53

REFERENCE 1

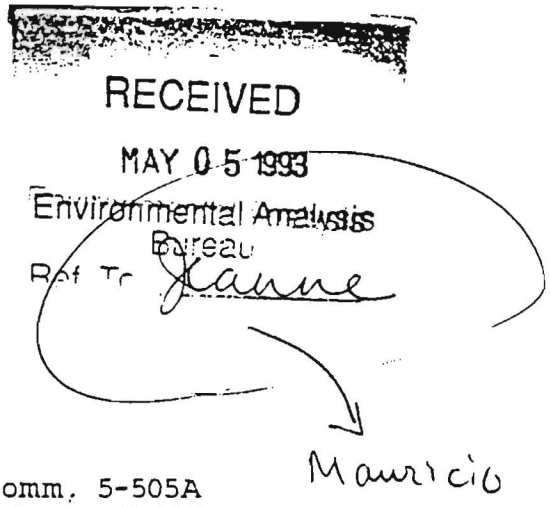
DATE: 05/06/93 CONTROL NO: 931197

FROM: COMMISSIONER OF TRANSPORTATION

TO: D.W. Harp, Asst Comm/Legal Affairs, 5-509

ACTION REQUIRED: Prepare direct reply

ACTION DUE BY: 05/18/93



COORDINATE WITH:

INFORMATION COPY TO:

Commissioner, 5-506
G. Shepherd, Exec Asst to Comm, 5-505A
N.R. Schneider, Secretary to Dept, 5-505
K.W. Shiatte, Asst Comm/Operations, 5-503
K.W. Shiatte, Highway Maintenance, 5-217
M.J. Cuddy, Asst Comm/Engineering, 5-504
G.R. McVoy, Environmental Analysis, 5-303
A.J. Bauman, Region 8, Poughkeepsie

CORRESPONDENT NAME: SUSAN E. AMRON

CORRESPONDENT TITLE: CITY OF NEW YORK LAW DEPARTMENT

PRIMARY SUBJECT: LEGAL AFFAIRS

SECONDARY SUBJECT: MAINTENANCE FACILITY, RT 120, WESTCHESTER CO.

REMARKS:

The City of New York

LAW DEPARTMENT
100 CHURCH STREET
NEW YORK, N.Y. 10007
Room 1620

O. PETER SHERWOOD
Corporation Counsel

(212) 788-1578

April 30, 1993

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Franklin E. White
Commissioner
New York State Department of Transportation
5 Governor Harriman State Campus
Albany, New York 12232

Re: New York State Department of Transportation Maintenance Yard, Route 120, Harrison, Westchester County

Dear Commissioner White:

The New York City Department of Environmental Protection ("DEP") has documented a release and threatened release of hazardous wastes and hazardous substances at and from a facility owned by the New York State Department of Transportation ("DOT") located on Route 120 in Harrison, Westchester County. The site is contaminated among other things with volatile organic compounds and heavy metals. These contaminants have entered the soils at the site and are possibly migrating off-site. This letter constitutes notice pursuant to section 7002(b)(2) of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6972(b)(2), that the conditions at the DOT site violate Subtitle C of RCRA, and that the City may bring suit against DOT pursuant to section 7002 (a)(1)(B) of RCRA, 42 U.S.C. § 6972(a)(1)(B). This letter also constitutes notice that the City may file suit under section 107(a) of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9607(a), to recover all response costs incurred by the City relating to the DOT site.

DEP has also documented a discharge of pollutants from a point source on the DOT site into a navigable waterway without a State Pollutant Discharge Elimination System ("SPDES") permit. On the basis of preliminary investigations performed by DEP, the City believes that metals, salts, oil and grease and other as yet unidentified pollutants disposed of and abandoned by DOT are flowing and threatening to flow from the DOT site through pipes and culverts located on the site into the City's Kensico Reservoir. This letter constitutes notice pursuant to section 505(b)(1)(A) of the Clean Water Act ("CWA"), 33 U.S.C. § 1365(b)(1)(A), that DOT is in violation of an effluent standard or limitation of the CWA, and that the City may bring suit against DOT pursuant to section 505 (a)(1) of the CWA, 42 U.S.C. § 1365(a)(1).

The DOT Site

The DOT site is bordered by Route 120 on the west, Lake Street on the south, the Westchester County Airport on the east and wetlands and undeveloped uplands on the north. The site was formerly used as a highway maintenance yard and landfill by DOT. At present, it appears inactive.

The site is crossed and surrounded by streams and wetlands. In addition, much of the site appears to consist of filled wetland. The streams and wetlands flow into the City's Kensico Reservoir, which is located several hundred feet west of the site. Because 90% of the City's drinking water supply passes through the Kensico Reservoir, the Reservoir is one of the most important in the City's drinking water supply system. Approximately 8 million City residents rely on the City to supply high quality drinking water. Thus contamination of the Kensico Reservoir can pose a substantial threat to public health and safety.

Preliminary Site Investigation

A preliminary site investigation by DEP has indicated that the DOT site is contaminated with a variety of compounds. Soil and groundwater at the site were found to be contaminated with, among other things, volatile organic compounds, metals, pesticides, paint residues, and salts. Compounds found at the site include, but are not limited to, alpha-endosulfan, heptachlor, 4,4-DDE, chloride, acetone, 4-methylphenol, phenanthrene, fluoranthene, and pyrene. In addition, an electrical magnetometer survey has found numerous buried metal objects on the DOT site. A very preliminary investigation has revealed at least one 55-gallon drum, and perhaps others, containing volatile organic compounds, including paint wastes and solvents, buried on the site. DEP has documented a release into the air, soil, and groundwater from the drum.

RCRA Violation

The DOT site is a facility where hazardous wastes have been and are being disposed of within the meaning of RCRA, and it is therefore subject to the standards for hazardous waste management facilities set forth in Subtitle C of RCRA. To the best of the City's knowledge, the DOT site does not meet the standards and requirements for operation and

closure of hazardous waste management facilities set forth in RCRA Subtitle C and EPA's implementing regulations.

The contaminants detected at the DOT site during the preliminary site investigation are hazardous wastes as defined by RCRA. Many of these contaminants may present significant health and environmental risks. Given the levels of contamination at the site, the proximity of the Kensico Reservoir, and the possibility that contaminants are migrating off-site, the City has determined that the DOT site may present an imminent and substantial endangerment to public health and the environment.

CWA Violation

DOT is discharging pollutants from at least two culverts, which constitute point sources, on the DOT site into a tributary of the Kensico Reservoir. Although the CWA prohibits such discharges without a permit, to the City's knowledge, DOT does not have a SPDES permit to discharge pollutants from the DOT site.

Response Costs

To date the City has incurred response costs relating to the preliminary investigation of the DOT site. The City may seek reimbursement of these response costs, together with any future costs incurred relating to the DOT site, including any costs of litigation and attorneys' fees.

* * *

The City's goal is to secure prompt remediation of the DOT site rather than to litigate. Thus it is the City's preference to enter into a binding consensual agreement that will provide for expeditious remediation of the DOT site, a halt to all unpermitted discharges and elimination of any possible threat to the City's drinking water. The City has been meeting with DOT concerning contamination of the DOT site and the need for DOT to remediate it for almost a year. Thus far, DOT has failed to respond to the City's concerns. Therefore, unless DOT is willing to bind itself promptly to resolve this matter in a manner acceptable to the City, the City is prepared to file suit and seek judicial resolution of this matter.

If you wish to discuss resolution of the City's claims against DOT, you may contact me at (212) 788-1578.

Very truly yours,

Susan E. Amron

Susan E. Amron
Assistant Corporation Counsel
Environmental Law Division

cc: Carol Browner, Administrator
United States Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

William J. Muszynski
Acting Regional Administrator
United States Environmental Protection Agency
26 Federal Plaza
New York, New York 10278

Thomas C. Jorling
Commissioner
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Ralph Manna
Regional Director
New York State Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561

Albert F. Appleton
Commissioner
New York City Department of Environmental Protection
59-17 Junction Boulevard
Elmhurst, New York 11373

Nancy Lewson
General Counsel
New York City Department of Environmental Protection
59-17 Junction Boulevard
Elmhurst, New York 11373

Sergio Matos
Director, Site Assessment Program
Division of Hazardous Materials Management
New York City Department of Environmental Protection
59-17 Junction Boulevard
Elmhurst, New York 11373

REFERENCE 2

bcc: J. Hewitt, Env. Analysis, 5-303
M. Clark, Hgwy. Maint., 5-217

RECEIVED JAN 12 1993

January 6, 1993

Susan E. Amron
Assistant Corporation Counsel
Environmental Law Division
New York City Law Department
100 Church Street
New York, N.Y. 10007

Re: Department of Transportation Maintenance
Sub-Headquarters, Harrison, N.Y.,
Westchester County

Dear Ms. Amron:

In your letter to me of December 8, 1992 you indicated that New York City would send to the New York State Department of Transportation (NYSDOT) copies of the electrical magnetometer survey that was done on the DOT maintenance facility. Our receipt and review of this document is an essential prerequisite to our providing you with a proposal for further investigation and/or remedial activity at this site. More specifically we would like the following:

- A map of locations where NYC DEP staff (Stephen Schmaler) collected samples on 4/7/92, 5/13/92, 5/20/92 and 5/27/92. At our meeting Mr. Schmaler agreed to provide this information.

- In providing electromagnetic survey information mentioned above, you should include a Map with some relevant scale so as to indicate the location of the low-resistivity areas, details about the survey used, and spacing of traverses used.

- A map of the sampling locations and the results of the International Technology Corporation's study which NYCDEP claims to show petroleum contamination.

If these documents are not currently in the mail to us, will you please get them to us at your earliest convenience.

Very truly yours,

WILLIAM S. MacTIERNAN
Director
Project Services Bureau

WSM:lc
WSM0393/File 10.37-81

REFERENCE 3

TO: W. S. MacTiernan, Legal Affairs, 5-519

FROM: J. L. Hewitt, Environmental Analysis Bureau, 5-303

SUBJECT: Outstanding Data Needs: Harrison Subresidency, Westchester County

DATE: April 5, 1993

Some of the information you requested in your January 6, 1993 letter to Assistant Corporation Counsel Susan E. Amron (copy attached), was not received, or is of questionable accuracy. The three items specifically requested are discussed below:

1) At our November 30, 1992 meeting with NYC staff we discussed soil and water samples collected on 4/7/92, 5/13/92, 5/20/92 and 5/27/92. Some NYC samples containing low levels of contaminants were described as "up culvert/background" and "upstream," so their location is important in understanding what contaminants may be emanating from the residency land. Mr. Stephen Schmaler stated that he would provide a map showing the locations where he had collected samples.

   Although your January 6, 1993 letter again restated this request, we have not yet received maps or written instructions of where NYC's samples were taken.

2) We also requested that NYC add a scale to their electromagnetic survey map, "EM Survey NYSDOT, Valhalla, NY" to help us locate low resistivity areas during our design of a test pit survey program.

   We received the same map in reply but question its accuracy. NYC's EM Survey map shows that the small stream flowing across the residency property enters a culvert oriented southwest; our surveyed, scaled maps indicate that the culvert is oriented northwest. In addition, no property boundaries or fixed structures are shown on the EM Survey map, and we cannot use it to design the test pit survey program.

3) Maps of the IT Corporation's sampling were requested and received.

Despite these limitations, I suggest that we proceed to design and conduct a test pit survey later this month. Regional staff have flagged the property boundaries to allow us to identify whether any existing monitoring wells lie on NYSDOT property or on property belonging to the U.S. Postal Service or Westchester County. We should invite NYC's DEP staff to be present, as well as NYSDEC's solid waste program staff and interested NYSDOH representatives. We should be prepared to collect roughly six to ten soil samples and analyze them for Target Compound List (TCL) parameters, and be willing to split samples with the NYC DEP.

If we find no evidence of hazardous waste -- and I doubt that we will -- we should be prepared to prepare a proposal to cap the site in a way that meets current regulatory standards for permeability in 6 NYCRR 360-2.13. This will require general site clean-up, regrading, and paving the site with asphalt coated with a urethane sealer to reduce the hydraulic conductivity.

cc: M. Clarke, Highway Maintenance, 5-217
M. Roma, EAB, 5-303