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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION INACTIVE HAZARDOUS WASTE DISPOSAL SITE REGISTRY DELISTING PETITION FOR THE EAST HAMPTON SEPTAGE LAGOONS EAST HAMPTON, NEW YORK NYSDEC SITE NO. 1-52-058

PREPARED FOR

TOWN OF EAST HAMPTON

Remediation

PREPARED BY

FPM

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SEPTEMBER, 1998

(99)
152058

FPM

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September 25, 1998

RECEIVED
SEP 28
HAZARDOUS WASTE REMEDIATION
REGION 1

Mr. Michael Coscia
Environmental Engineer
New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
Building 40, SUNY Stony Brook
Stony Brook, NY 11790

Re: **East Hampton Septage Lagoons**
NYSDEC Site No. 1-52-058
FPM File No. 158-95-28A

Dear Mr. Coscia:

Enclosed please find two copies of the report entitled "New York State Department of Environmental Conservation Inactive Hazardous Waste Disposal Site Registry Delisting Petition for the East Hampton Septage Lagoons, East Hampton, New York".

Should you have any questions, please do not hesitate to call me at (516) 737-6200, ext. 209.

Very truly yours,

Peter Dermody
Senior Hydrogeologist
Department Manager

PD:tac
Enclosure

cc: Catherine Lester (w/o encl.)
Leonard Bernard (w/o encl.)
Lisa Liquori (w/o encl.)
Peter Hammerle (w/o encl.)
Job Potter (w/o encl.)
Pat Mansir (w/o encl.)
Cynthia Shea, Esq.(w/o encl.)
Stephen Latham, Esq. (w/o encl.)

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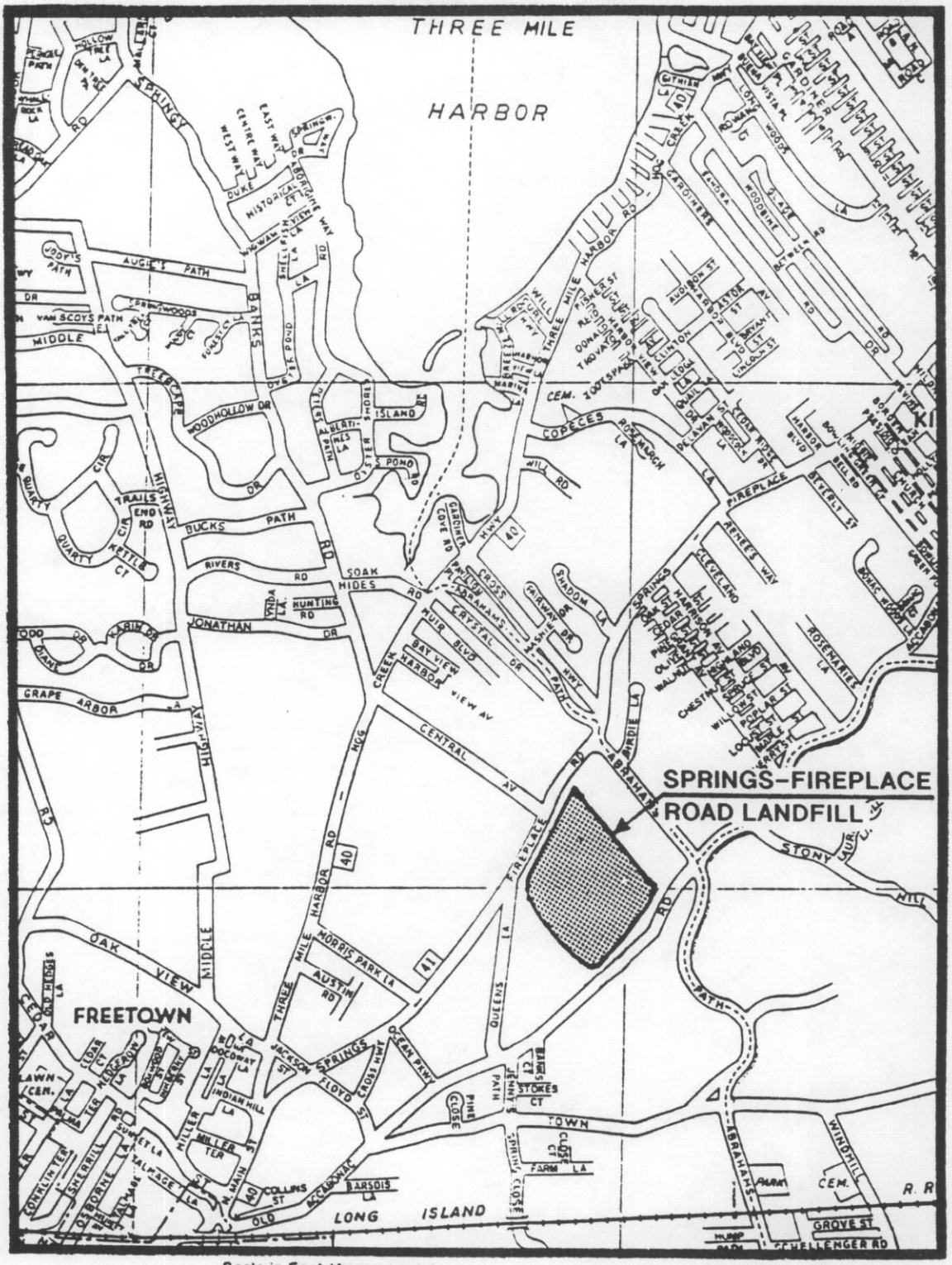
A	1989 Septage Lagoons Sampling Data
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NYSDEC REGION 1

SECTION 1.0
INTRODUCTION

The East Hampton Septage Lagoons site is located at the Springs-Fireplace Road Landfill, Town of East Hampton, Suffolk County, New York. It is a municipal solid waste landfill which is owned and operated by the Town of East Hampton (see Figure 1.1 for site location). It was established in the early 1960s on 27 acres of undeveloped property and has since expanded to an approximately sixty-acre facility. It is reported to have accepted municipal, commercial, light industrial, and septage waste. Two septage lagoons (designated as the north and south lagoons) were used for the disposal of local septage waste from approximately 1967 through 1987. In 1987, a sewage treatment plant was constructed for the disposal of the local septage waste.

The New York State Department of Environmental Conservation (NYSDEC) designated the septage lagoons as a Class 2a Inactive Hazardous Waste Disposal Site (Registry number 1-52-058) due to sampling performed on the sludge in the lagoons by the Suffolk County Department of Health Services in March, 1982 which showed detections of methylene chloride (42,000 ppb), phenols (39 ppb), and toluene (250 ppb). Subsequent sampling by Fanning, Phillips and Molnar (FPM) in 1989 showed elevated concentrations of metals and volatile organic compounds (see Appendix A for 1989 sampling results). The lagoons were subsequently remediated (1997 and 1998). This report presents the information for a delisting petition as required by the NYSDEC.



Fanning, Phillips & Molnar
Engineers

FIGURE 1.1
LOCATION OF THE
SPRINGS-FIREPLACE ROAD LANDFILL
TOWN OF EAST HAMPTON, NEW YORK

SOURCE:
HAGSTROM, 1990 SUFFOLK COUNTY ATLAS

Drawn By: JDS	Checked By: SOD	Date: 5-14-96

SECTION 2.0
HISTORY OF PROPERTY OWNERSHIP AND LAND USE

The Springs-Fireplace Road Landfill is located between Accabonac and Springs-Fireplace Roads in the Town of East Hampton. Owned by the Town of East Hampton, the Springs-Fireplace Road Landfill was closed to the landfilling of municipal waste in October, 1994 and a transfer/recycling/ composting facility was established by the Town of East Hampton on the property. Near the southeast corner of the landfill, two septage lagoons were used for the disposal of local septage waste.

SECTION 3.0
HYDROGEOLOGIC, GEOGRAPHIC, AND DEMOGRAPHIC INFORMATION

3.1 Geology and Hydrogeology

In the vicinity of the East Hampton Septage Lagoons site, the bedrock is approximately 1,200 feet below the National Geodetic Vertical Datum (NGVD) of 1929 (approximately equal to mean sea level). The site is located near the center of the Ronkonkoma Moraine, which runs generally east-west along the length of the South Fork. A detailed description of the geology of the site has been previously presented in the Draft Investigation Report for the Springs-Fireplace Road Landfill (FPM, 1996). In general, upper Cretaceous deposits rest unconformably above the bedrock and are, in turn, overlain by Pleistocene Upper Glacial deposits which are approximately 300 to 350 feet thick. Upper Glacial deposits in the vicinity of the septage lagoons include the Ronkonkoma Drift, which includes moraine deposits of sand and gravel with occasional lenses of clay, and outwash deposits which consist of stratified fine- to coarse-grained sand with occasional gravel.

The aquifers of the South Fork of Long Island are the sole source of public water supply, agriculture, and industry. In the area of the Springs-Fireplace Road Landfill, the Upper Glacial and the Magothy Aquifers are utilized as a water supply source. The average annual precipitation on the South Fork recorded at Bridgehampton, New York is 46 inches per year (U.S. Department of Commerce, NOAA, 1984). Approximately half of this precipitation is lost to evapotranspiration and runoff with the remainder infiltrating into the subsurface. The Suffolk County Department of Health Services March, 1996 Water Table Contour Map shows the water table elevation in the vicinity of the septage lagoons to be between 5 and 10 feet above mean sea level (MSL). The estimated position of the regional groundwater divide is located to the south of, and in close proximity to, the Springs-Fireplace Road

Landfill. The horizontal groundwater flow direction is generally toward the north-northeast. A detailed description of the hydrogeology in the vicinity of the septage lagoons at the Springs-Fireplace Road Landfill can be found in the Draft Closure Investigation Report (FPM, 1996).

3.2 Geography and Demographics

The East Hampton Septage Lagoon site is located at the Springs-Fireplace Road Landfill in the Town of East Hampton. The site is located on the South Fork of Long Island near the east end of the fork on what is referred to as the "mainland" area of East Hampton. The South Fork is bordered on the north by Peconic Bay and on the south by the Atlantic Ocean. The surface elevation of the site is approximately 100 feet above MSL and generally slopes to the southwest. The site is located near the south side of the Ronkonkoma moraine and near the north edge of associated outwash deposits.

East Hampton Town is approximately 63 square miles in area, 23 miles long, and .38 to 8 miles wide. The population of East Hampton is approximately 17,000. Approximately 50 percent of the land within the unincorporated area of the Town is vacant. About 18 percent of the total land area is dedicated to open space and recreational uses. Of the developed land area, approximately 33.6 percent is dedicated to residential uses and approximately 13.2 percent is dedicated to streets. More detailed demographic information can be found in the Town of East Hampton Water Resources Management Report (February, 1987).

SECTION 4.0
HISTORY OF ENVIRONMENTAL INVESTIGATIONS

Early environmental investigations at the East Hampton Septage Lagoons site have been previously described in the East Hampton Septage Lagoon Concept Engineering Work Plan (FPM, 1995) and in the Draft Closure Investigation Report for the Springs-Fireplace Road Landfill (FPM, 1996). In summary, these investigations showed that approximately 1,600 cubic yards of septage sludge was present in these lagoons and that the sludge was impacted primarily with volatile organic compounds and metals. A groundwater monitoring well, well S-12, was installed downgradient of the septage lagoons at the request of NYSDEC for the purpose of monitoring groundwater quality downgradient of the septage lagoons. The well has been sampled along with the other wells at the Spring-Fireplace Road Landfill. The history of sampling results are shown in Table 4.1. The results show that no significant impacts to the groundwater have been found and the results are similar to other wells at the landfill.

The septage lagoons were remediated in 1997 and 1998 as per the NYSDEC-approved remediation work plan. The standing water above the sludge was pumped from the lagoons and trucked to the East Hampton Sanitary Waste Treatment Plant (located adjacent to the landfill) for storage. The sludge was then transported to the Town of East Hampton Municipal Solid Waste Composting facility (located on the landfill property) where it was composted with other feed stock materials as per the approvals of NYSDEC.

In November, 1997, post-excavation soil samples were obtained by FPM following removal of the sludge from the former north and south septage lagoons. Three samples were collected from each lagoon. The sampling was witnessed by Mr. Michael Coscia of the NYSDEC. These samples were analyzed by a New York State Department of Health-certified laboratory for Target Compound List

TABLE 4.1
WELL S-12
GROUNDWATER CHEMICAL ANALYTICAL DATA
SPRINGS-FIREPLACE ROAD LANDFILL, TOWN OF EAST HAMPTON, NEW YORK

WELL NO.	S-12							NYSDEC GA Standards and Guidance Values
SAMPLE DATE	04/04/96	12/05/96	03/20/97	06/18/97	09/24/97	12/03/97	3/11/98	
BASELINE PARAMETERS								
LEACHATE INDICATORS in mg/l								
Total Kjeldahl Nitrogen	6.86	10.4	8.62	6.22	7.05	6.23	4.86	-
Ammonia	73.96	10.4	7.31	6.09	6.60	6.04	4.89	2
Nitrate	0.39	0.1 U	0.1 U	0.100 U	0.100 U	0.100 U	0.100 U	10 ***
COD	12.3	24	32.5	41.0	10.00 U	29.7	27.6	-
BOD	5	2 U	4	2.00 U	6	2.00 U	2.00 U	-
Total Organic Carbon	66.5	1 U	5.81	9.99	4.27	7.70	1.00 U	-
Total Dissolved Solids	472	186	199	200	165	189	191	500
Sulfate	97.5	26.5	30.8	37.0	26.5	52.1	45.9	250
Alkalinity as CaCO3	167	106	129	102	93.0	86.7	79.8	-
Phenols	0.01	0.001 U	0.365	0.018	0.015	0.006	0.0150	0.001
Chloride	22	25	27.2	29.0	26.0	31.3	31.6	250
Bromide	2 U	2.1	2 U	2.000 U	2.000 U	2.000 U	2.00 U	2
Total Hardness as CaCO3	92.4	88	63.3	62.3	69.8	74.7	82.4	-
Color in Pt-Co units	50	NA	30	NA	NA	NA	NA	15
INORGANIC PARAMETERS in ug/l								
Aluminum	2,890	NA	1,860	NA	NA	NA	NA	-
Antimony	6 U	NA	4 U	NA	NA	NA	NA	3
Arsenic	5.3 B	NA	4.5 B	NA	NA	NA	NA	25
Barium	100 B	NA	120 B	NA	NA	NA	NA	1,000
Beryllium	1 U	NA	1 U	NA	NA	NA	NA	3
Boron	54.5 B	NA	64.8 B	NA	NA	NA	NA	1,000
Cadmium	1 U	0.2 U	1 U	1.0 U	1.0 U	1.0 U	1.2 B	10
Calcium	19,200	18,400	18,400	17,700	19,600	20,200	21,800	-
Chromium	2.7 B	NA	4 B	NA	NA	NA	NA	50
Hexavalent Chromium	10 U	NA	10 U	NA	NA	NA	NA	50
Cobalt	10.8 B	NA	9 B	NA	NA	NA	NA	-
Copper	2.8 B	NA	14.4 B	NA	NA	NA	NA	200
Cyanide	10 U	NA	10 U	NA	NA	NA	NA	100
Iron	2,010	926	3,500	2,750	1,190	1,320	2,070	300
Lead	5.1	4.1	7.8	5.9	3.5	2.7 B	4.5	25
Magnesium	4,630	4,260 B	4,200 B	4,260 B	5,070	5,860	6,800	35,000
Manganese	9,850	14,400	10,800	11,000	13,400	14,100	16,500	300
Mercury	0.2 U	NA	0.2 U	NA	NA	NA	NA	2
Nickel	15.2 B	NA	14 B	NA	NA	NA	NA	-
Potassium	4,300	4,800 B	3,680	3,550 B	4,140 B	4,280 B	4,900 B	-
Selenium	4 U	NA	3.4 B	NA	NA	NA	NA	10
Silver	1 U	NA	1 U	NA	NA	NA	NA	50
Sodium	58,700 E	20,400	20,400	20,100	17,000	13,600	16,900	20,000
Thallium	6 U	NA	2 U	NA	NA	NA	NA	4
Vanadium	1.5 B	NA	3 B	NA	NA	NA	NA	-
Zinc	42.9	NA	197	NA	NA	NA	NA	300
Iron plus Manganese	11,860	15,326	14,300	13,750	14,590	15,420	18,570	500 **

Notes:
U = Analyte result less than the instrument detection limit (IDL).
E = Reported value is estimated because of interference.
B = Analyte result is between IDL and contract required detection limit.
mg/l = milligrams per liter
ug/l = micrograms per liter
- = NYSDEC GA Ambient Water Quality Standard or Guideline not established.
BOD = Biochemical Oxygen Demand
COD Chemical Oxygen Demand
** = Value applies to the sum of iron and manganese.
*** = Value applies to the sum of nitrate and nitrite
NA = Not Analyzed
Shaded values exceed the NYSDEC Class GA Ambient Water Quality Standard or Guidance Value.

TABLE 4.1 (CONTINUED)
WELL S-12
GROUNDWATER CHEMICAL ANALYTICAL DATA
SPRINGS-FIREPLACE ROAD LANDFILL, TOWN OF EAST HAMPTON, NEW YORK

WELL NO.	S-12							NYSDEC GA Standards and Guidance Values
SAMPLE DATE	04/04/96	12/05/96	03/20/97	06/18/97	09/24/97	12/03/97	3/11/98	
BASELINE PARAMETERS								
ORGANIC PARAMETERS in ug/l								
Acetone	10 U	NA	10 U	NA	NA	NA	NA	-
Acrylonitrile	35 U	NA	35 U	NA	NA	NA	NA	5
Benzene	5 U	NA	5 U	NA	NA	NA	NA	0.7
Bromochloromethane	**	NA	**	NA	NA	NA	NA	5 ****
Bromodichloromethane	5 U	NA	5 U	NA	NA	NA	NA	50
Bromoform	5 U	NA	5 U	NA	NA	NA	NA	50
Carbon Disulfide	5 U	NA	5 U	NA	NA	NA	NA	-
CarbonTetrachloride	5 U	NA	5 U	NA	NA	NA	NA	5
Chlorobenzene	8	NA	3 J	NA	NA	NA	NA	5
Chloroethane	10 U	NA	10 U	NA	NA	NA	NA	5 ****
Chloroform	5 U	NA	5 U	NA	NA	NA	NA	7
Dibromochloromethane	5 U	NA	5 U	NA	NA	NA	NA	50
1,2-Dibromo-3-chloropropane	10 U	NA	10 U	NA	NA	NA	NA	5 ****
1,2-Dibromomethane	10 U	NA	10 U	NA	NA	NA	NA	5 ****
1,2-Dichlorobenzene	5 U	NA	5 U	NA	NA	NA	NA	4.7 *
1,4-Dichlorobenzene	5 U	NA	5 U	NA	NA	NA	NA	4.7 *
trans-1,4-Dichloro-2-butene	10 U	NA	10 U	NA	NA	NA	NA	5 ****
1,1-Dichloroethane	5 U	NA	5 U	NA	NA	NA	NA	5
1,2-Dichloroethane	5 U	NA	5 U	NA	NA	NA	NA	5
1,1-Dichloroethene	5 U	NA	5 U	NA	NA	NA	NA	5
cis-1,2-Dichloroethylene	5 U	NA	5 U	NA	NA	NA	NA	5 ****
trans-1,2-Dichloroethylene	5 U	NA	5 U	NA	NA	NA	NA	5
1,2-Dichloropropane	5 U	NA	5 U	NA	NA	NA	NA	5
cis-1,3-Dichloropropene	5 U	NA	5 U	NA	NA	NA	NA	5
trans-1,3-Dichloropropene	5 U	NA	5 U	NA	NA	NA	NA	5
Ethylbenzene	5 U	NA	5 U	NA	NA	NA	NA	5
2-Hexanone	10 U	NA	10 U	NA	NA	NA	NA	50
Bromomethane	10 U	NA	10 U	NA	NA	NA	NA	5 ****
Chloromethane	10 U	NA	10 U	NA	NA	NA	NA	5 ****
Dibromomethane	10 U	NA	10 U	NA	NA	NA	NA	5 ****
Methylene Chloride	5 U	NA	5 U	NA	NA	NA	NA	5
2-Butanone	10 U	NA	10 U	NA	NA	NA	NA	-
Iodomethane	5 U	NA	5 U	NA	NA	NA	NA	5 ****
4-methyl-2-pentanone	10 U	NA	10 U	NA	NA	NA	NA	-
Styrene	5 U	NA	5 U	NA	NA	NA	NA	5
1,1,1,2-Tetrachloroethane	10 U	NA	10 U	NA	NA	NA	NA	5 ****
1,1,2,2-Tetrachloroethane	5 U	NA	5 U	NA	NA	NA	NA	5
Tetrachloroethene	5 U	NA	5 U	NA	NA	NA	NA	5
Toluene	5 U	NA	5 U	NA	NA	NA	NA	5
1,1,1-Trichloroethane	5 U	NA	5 U	NA	NA	NA	NA	5
1,1,2-Trichloroethane	5 U	NA	5 U	NA	NA	NA	NA	5
Trichloroethene	5 U	NA	5 U	NA	NA	NA	NA	5
Trichlorofluoromethane	10 U	NA	10 U	NA	NA	NA	NA	5
1,2,3-Trichloropropane	10 U	NA	10 U	NA	NA	NA	NA	5 ****
Vinyl acetate	10 U	NA	10 U	NA	NA	NA	NA	-
Vinyl chloride	10 U	NA	10 U	NA	NA	NA	NA	2
m,p-Xylenes	5 U	NA	5 U	NA	NA	NA	NA	5
o-Xylene	5 U	NA	5 U	NA	NA	NA	NA	5

Notes:
U = Analyte result less than the instrument detection limit (IDL).
J = Concentration is an estimated value which is less than the specified minimum detection limit but is greater than zero.
- = NYSDEC GA Ambient Water Quality Standard or Guideline not established.
ug/l = micrograms per liter.
* = Value applies to the sum of 1,2-Dichlorobenzene and 1,4-Dichlorobenzene.
** = Bromochloromethane is a NYSDEC-authorized surrogate and, therefore, is not reported.
**** = Principal Organic Contaminant Standard applies.
Shaded values exceed the NYSDEC Ambient Water Quality Standard or Guidance Value.
NA = Not Analyzed
B = Analyte detected in associated blank sample.

(TCL) volatile organic compounds (VOCs) and Target Analyte List (TAL) metals utilizing Contract Laboratory Program (CLP) methods. A letter report dated December 11, 1997 to Mr. Michael Coscia from FPM reported the results of these analyses (see Appendix B). Although some concentrations of VOCs were detected, none of these detections exceeded NYSDEC Recommended Soil Cleanup Objectives for either lagoon. Exceedances of the NYSDEC Objectives for some metals were noted for the south lagoon, however, these exceedances represented a significant reduction from the initial metals concentrations. Some sludge remained at the west end and on the south side of the north lagoon and metals concentrations from samples collected from these areas of the north lagoon exceeded NYSDEC Objectives. Based upon these results, FPM recommended that no further remediation or sampling be performed in the south lagoon and that two additional soil samples be obtained from the north lagoon following additional remediation there. A response to this letter dated January 9, 1998 from Mr. Coscia to Mr. David Paolelli, Environmental Facilities Manager at the Department of Sanitation, Town of East Hampton, stated that the NYSDEC concurred with the conclusions, that the south lagoon area could be reused by the Town of East Hampton's Solid Waste Management Facility in accordance with 6 NYCRR Part 360, and that following a successful additional remediation of the north lagoon, the Department would consider delisting the site from the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites (see Appendix C).

Additional sludge was removed from the west end and south side of the north lagoon in January, 1998. On January 20, 1998, additional end sampling was performed by FPM in these portions of the former north lagoon at the Springs-Fireplace Road Landfill. The samples were analyzed by a New York State Department of Health-certified laboratory for TAL metals utilizing CLP methods. A letter report dated February 4, 1998 to Mr. Michael Coscia from FPM reports the results of these analyses (see

Appendix D). Although minor exceedances of the NYSDEC Soil Cleanup Objectives occurred for several of the metals analyzed, these represented significant reductions from their initial concentrations. Based upon the results, FPM recommended no further remediation or sampling at the north lagoon area. A NYSDEC response letter dated March 17, 1998 concurred with these recommendations and indicated that a delisting petition may be prepared to have the site removed from the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites (see Appendix E).

Based on the information presented, FPM, on behalf of the Town of East Hampton, requests that the NYSDEC consider delisting the East Hampton Septage Lagoons from the Registry of Inactive Hazardous Waste Disposal Sites.

APPENDIX A

1989 SEPTAGE LAGOONS SAMPLING DATA

TABLE 5.1

DETECTED METALS FROM SAMPLES S-1 AND S-4
(ALL CONCENTRATIONS AND RESULTS IN mg/kg)

Parameter	Samples S-1	S-4
Aluminum	7,120	6,650
Arsenic	2.60	6.70
Barium	262	498
Cadmium	3.60	10.8
Chromium	26.2	44.0
Copper	1,020	1,550
Sodium	1,740	2,370
Zinc	1,210	1,880
Calcium	5,020	7,350
Iron	8,640	9,170
Lead	146	484
Magnesium	833	1,050
Manganese	64.3	61.5
Mercury	2.90	4.20
Nickel	19.0	26.4
Potassium	224	214
Selenium	1.40	2.90
Silver	21.4	26.4

TABLE 5.2

DETECTED ORGANIC COMPOUNDS (ALL RESULTS IN ug/kg)

Parameters	North Lagoon S-1	North Lagoon S-2	South Lagoon S-3	South Lagoon S-4	South Lagoon S-5
Volatile Organic Compounds					
Toluene	1,100	16,000	1,700	2,700	3,300
Chlorobenzene	240	U	12,000	U	U
1,2-Dichlorobenzene	1,700	12,000	13,000	61,000	27,000
1,3-Dichlorobenzene	470	4,200	350	11,000	5,500
1,4-Dichlorobenzene	970	8,800	3,100	17,000	9,100
Acetone	360	3,700	1,100	1,300	2,000
Xylenes	144	1,100	180	17,000	8,100
Carbon Disulfide	U	1,500	210		2,000
Ethylbenzene	U	U	U	3,300	1,700
Total Volatile Organic Compounds	4,984	47,300	31,640	113,300	58,700
Pesticides & PCBs					
Total Pesticides & PCBs	U	-	-	U	-
Semi-Volatile Organics					
4-Chloroaniline	3,000	-	-	9,800	-
2-Methylnaphthalene	U	-	-	6,200	-
Total Semi-Volatile Organics	3,000	-	-	16,000	-

U - Undetected
\- - Not tested for

APPENDIX B

FPM LETTER TO NYSDEC, DECEMBER 11, 1997

FANNING, PHILLIPS & MOLNAR
Engineers and Geohydrologists
909 MARCONI AVENUE
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VIA FAX AND MAIL

December 11, 1997

Mr. Michael Coscia
Environmental Engineer
New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
Building 40, SUNY Stony Brook
Stony Brook, NY 11790

Re: **Soil Sampling Results, Former Septage Lagoons**
Springs-Fireplace Road Landfill
Town of East Hampton
FP&M Project No. 158-95-28A

Dear Mr. Coscia:

Soil samples were obtained following remediation at the former locations of the north and south septage lagoons at the above-referenced facility. The samples were obtained on November 6, 1997 during a site inspection performed by yourself and representatives of the Town of East Hampton, L. K. McLean Associates (McLean), and Fanning, Phillips and Molnar (FP&M). Three samples were collected from each lagoon, including one sample from the bottom and two samples from the sides of each lagoon. Some sludge remained in the northern end and on the southern wall of the north lagoon. Samples were collected from each of these areas (N-8 and N-7, respectively) to evaluate if additional remediation would be required. Subsequently, additional remediation was performed as documented in a December 8, 1997 letter from McLean (attached).

In accordance with our discussion on November 6, 1997, the samples were analyzed by a New York State Department of Health-certified laboratory for Target Compound List volatile organic compounds (VOCs) and Target Analyte List (TAL) metals utilizing Contract Laboratory Program (CLP) methods. The chemical analytical data are summarized in Table 1 and the laboratory sample data summary package is attached. For comparison, the previous chemical analytical data for metals and VOCs from samples of the sludge in the lagoons are shown in Tables 2.1 and 2.2.

Although concentrations of several VOCs were detected in most of the soil samples, the concentrations were very low. The detections of acetone and 2-butanone appear to be related to laboratory contamination since these parameters were detected in the associated blanks. None of

the detected concentrations exceeds its New York State Department of Environmental Conservation (NYSDEC) Recommended Soil Cleanup Objective. Based on these data, no further soil sampling for VOCs is recommended for either lagoon.

Metals were detected in the soil samples. For samples collected from the former location of the north lagoon, exceedances of the NYSDEC objectives for arsenic, barium, beryllium, copper, iron, mercury, nickel, selenium, and zinc were noted. However, most of these exceedances occurred for samples N-7 and N-8 which were obtained in areas which have since undergone further remediation. For the sample from the bottom of the lagoon (which has not undergone additional remediation), the only exceedances were for zinc and beryllium which were detected at 31.9 and 0.24 milligrams per kilogram (mg/kg), respectively, which are slightly above their respective objectives (20 and 0.16 mg/kg). For comparison, prior to remediation the zinc concentrations in the north lagoon ranged from 115 to 1,210 mg/kg. Beryllium was not previously detected. Based on these data, FP&M recommends obtaining two soil samples from the area that has undergone additional remediation and analyzing those samples for TAL metals. No further remediation or soil sampling is recommended for the bottom of the lagoon.

For samples collected from the former location of the south lagoon, exceedances of the NYSDEC objectives for beryllium, copper, iron, mercury, and zinc were noted. In general, these detections only slightly exceed their respective objectives. Beryllium was detected in one sample at 0.22 mg/kg (its objective is 0.16 mg/kg); copper was detected in two samples at concentrations ranging from 49 to 624 mg/kg (its objective is 25 mg/kg); iron was detected in all three samples at concentrations ranging from 2,110 to 2,780 mg/kg (its objective is 2,000 mg/kg); mercury was detected in one sample at 2.4 mg/kg (its objective is 0.1 mg/kg); and zinc was detected in all three samples at concentrations ranging from 38.8 to 403 mg/kg (its objective is 20 mg/kg).

Although exceedances of the NYSDEC objectives for several metals were noted, the concentrations detected generally represent significant reductions in metals concentrations relative to the initial metals concentrations in the south lagoon. For comparison, prior to remediation copper concentrations in the south lagoon ranged from 1,550 to 1,890 mg/kg, iron concentrations ranged from 9,170 to 12,140 mg/kg, mercury concentrations ranged from 2.1 to 4.2 mg/kg, and zinc concentrations ranged from 1,880 to 2,470 mg/kg. Beryllium was not previously detected in samples from the south lagoon.

Based on these data, much of the metals-impacted material in the south lagoon has been removed and the remaining metals concentrations are generally only slightly above their respective NYSDEC Objectives. FP&M recommends that no additional remediation or soil sampling be required for the south lagoon.

Should you have any questions, please do not hesitate to call me at (516) 737-6200, ext. 209.

Very truly yours,

Peter Dermody
Senior Hydrogeologist
Department Manager

Attachments

cc: Catherine H. Lester
Lisa Liquori
Len Bernard
Nancy McCaffrey
Tom Knobel
Peter Hammerle
Robert Savage, Esq.

sod\easthamptonbackupII/septlt1

FRM

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GEORGE J. KAIGH, P.E., L.S.
EUGENE F. DALY, P.E.
RAYMOND G. DIBIASE, P.E.
LOUIS A. SAULINO, P.E.

cc: PD

December 8, 1997

New York State Department
of Environmental Conservation
Division of Hazardous Waste Remediation
Building 40, SUNY, Stony Brook
Stony Brook, NY 11790

ATT: Michael Coscia, Environmental Engineer

RE: TOWN OF EAST HAMPTON - SPRINGS FIREPLACE ROAD SOLID WASTE FACILITY - SEPTAGE-LAGOON REMEDIATION WORK
LKMA NO. 30-145-05-23

Dear Mr. Coscia: -

Pursuant to our joint site inspection on November 6, 1997 of the referenced septage lagoons, grab samples were obtained as required for the post excavation investigation.

During the sampling period, an area within the northerly lagoon was identified and appeared to contain remnants of sludge material. A sample (N-8) was taken at this location. Furthermore, it was recommended by the Department to perform further excavation and remediation work based on our visual inspection. Subsequently, additional excavation and remediation work has been performed within the northerly lagoon.

At this time, pending the results for Sample N-8, we will await the requirements for additional post excavation investigation and testing as may be necessary.

Should you have any questions regarding the remediation work performed and/or the project in general, please feel free to contact this office.

Very truly yours,

Vincent A Gaudiello

Vincent A. Gaudiello, P.E.

VAG:efr
cc: Town Board
D. Paolelli, Environmental Facilities Manager
Town Attorney
P. Dermody, Fanning, Phillips and Molnar
S. Latham, Special Counsel
L. Riley, NYSDEC, Region 1 Attorney

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TABLE 1
SOIL SAMPLE CHEMICAL ANALYTICAL DATA
NORTH AND SOUTH SEPTAGE LAGOONS
TOWN OF EAST HAMPTON, NEW YORK

	North Lagoon			South Lagoon			QA/QC	NYSDEC Recommended Soil Cleanup Objectives
Sample No.	N-6	N-7	N-8	S-9	S-10	S-11	S-9 Duplicate	
Location	Bottom	South Side	West Side	Bottom	East Side	West Side	Bottom	
Volatile Organic Compounds in micrograms per kilogram								
Methylene Chloride	3 J	1 J	22 J	ND	ND	ND	2 J	100
Acetone	22 B	9 JB	170 B	ND	10 JB	3 JB	5 JB	200
2-Butanone	2 JB	2 JB	29 J	ND	ND	ND	ND	300
Tetrachloroethene	1 J	0.8 J	ND	ND	0.7 J	5 J	ND	1,400
Carbon Disulfide	ND	ND	7 J	ND	ND	ND	ND	2,700
Benzene	ND	ND	25 J	ND	ND	ND	ND	60
Toluene	ND	ND	46 J	ND	ND	ND	ND	1,500
Chlorobenzene	ND	ND	870	ND	ND	ND	ND	1,700
Xylene (total)	ND	ND	100	ND	ND	ND	ND	1,200
Metals in milligrams per kilogram								
Aluminum	901	4,290	12,200	1,230	2,380	3,360	1,030	SB
Arsenic	ND	ND	8.4	ND	ND	4.2	ND	7.5
Barium	4.3 B	23.8 B	446	7.3 B	13.8 B	144	7.2 B	300
Beryllium	ND	0.24 B	ND	ND	0.22 B	ND	ND	0.16
Cadmium	ND	ND	6.6	ND	0.34 B	3.4	ND	10
Calcium	68.7 B	572 B	9,180	1,980	144 B	1,300 B	191 B	SB
Chromium	1.7 B	3.8	42.9	2.5	3.2	13.8	1.7 B	50
Cobalt	ND	0.68 B	2.9 B	0.52 B	0.54 B	0.68 B	ND	30
Copper	3.9 B	49.1	1,900	9.7	49.0	624	11.8	25
Iron	1,260	3,900	15,000	2,110	2,610	2,780	1,580	2,000

FRM

TABLE 1 (CONTINUED)
SOIL SAMPLE CHEMICAL ANALYTICAL DATA
NORTH AND SOUTH SEPTAGE LAGOONS
TOWN OF EAST HAMPTON, NEW YORK

	North Lagoon			South Lagoon			QA/QC	NYSDEC Recommended Soil Cleanup Objectives
Sample No.	N-6	N-7	N-8	S-9	S-10	S-11	S-9 Duplicate	
Location	Bottom	South Side	West Side	Bottom	East Side	West Side	Bottom	
Metals in milligrams per kilogram (cont'd)								
Lead	2.2	9.2	322	8.3	5.9	188	11.5	400*
Magnesium	148 B	293 B	1,580 B	264 B	299 B	441 B	226 B	SB
Manganese	10.9	47.7	128	20.3	14.8	17.7	13.5	SB
Mercury	ND	ND	2.9	ND	ND	2.4	ND	0.1
Nickel	1.1 B	2.8 B	22.4	1.7 B	1.9 B	6.2 B	1.7 B	13
Potassium	82.1 B	127 B	784 B	120 B	130 B	159 B	88.6 B	SB
Selenium	ND	ND	10.8 N	ND	ND	1.9 N	0.88 BN	2
Silver	ND	0.45 B	43.5	ND	0.44 B	7.6	ND	SB
Sodium	34.3 B	52.9 B	312 B	72.2 B	47.2 B	82.1 B	35.2 B	SB
Vanadium	2.4 B	6.6 B	17.2 B	3.3 B	4.7 B	6.0 B	2.3 B	150
Zinc	31.9	140	2,170	38.8	50.4	403	35.4	20

Notes: All samples collected November 6, 1997.

ND = Not detected.

J = An estimated value greater than zero but less than the detection limit.

B = For organic compounds, analyte was detected in the associated blanks. For metals, reported value is less than the Contract Required Detection Limit but greater than the Instrument Detection Limit.

N = Matrix spiked sample recovery not within control limits.

SB = Site background.

* = USEPA residential screening level for lead is 400 milligrams per kilogram.

Bold values exceed NYSDEC Recommended Soil Cleanup Objectives.

Only detected analytes are reported. Please refer to the laboratory data for the complete list of analytes.

FR&M

TABLE 2.1
DETECTED METALS AND VOLATILE ORGANIC COMPOUNDS IN SLUDGE
FROM THE SEPTAGE LAGOONS
AT THE SPRINGS-FIREPLACE ROAD LANDFILL
OCTOBER 1, 1990

Parameters	North Lagoon S-1	South Lagoon S-2
Metals in milligrams per kilogram		
Silver	U	29.1
Aluminum	7,110	10,500
Barium	U	640
Calcium	784	9,160
Cadmium	1.4	8.7
Chromium	11.2	50.9
Copper	78	1,890
Iron	7,420	12,140
Mercury	0.33	2.1
Potassium	476	618
Magnesium	756	1,530
Manganese	101	101.8
Sodium	204	691
Nickel	U	36.4
Lead	18.5	798
Selenium	U	4.2
Zinc	115	2,470
Volatile Organic Compounds in micrograms per kilogram		
Methylene Chloride	U	51
Trichloroethene	U	54
Benzene	U	67
Toluene	210	2,200
Chlorobenzene	1,200	410
Ethylbenzene	U	1,200
Xylenes (total)	63	6,400
Acetone	940	23,000
2-Butanone (MEK)	200	6,600
Carbon Disulfide	U	650
Phenols	U	U

Notes: U = Not detected
Only detected parameters are reported.

FRM

TABLE 2.2
DETECTED VOLATILE ORGANIC COMPOUNDS AND METALS IN SLUDGE FROM THE SEPTAGE LAGOONS AT THE SPRINGS-FIREPLACE ROAD LANDFILL
MAY, 1989

Parameters	North Lagoon			South Lagoon	
	S-1	S-2	S-3	S-4	S-5
Metals in milligrams per kilogram					
Aluminum	7,120	NT	NT	6,650	NT
Arsenic	2.60	NT	NT	6.70	NT
Barium	262	NT	NT	498	NT
Cadmium	3.60	NT	NT	10.8	NT
Chromium	26.2	NT	NT	44.0	NT
Copper	1,020	NT	NT	1,550	NT
Sodium	1,740	NT	NT	2,370	NT
Zinc	1,210	NT	NT	1,880	NT
Calcium	5,020	NT	NT	7,350	NT
Iron	8,640	NT	NT	9,170	NT
Lead	146	NT	NT	484	NT
Magnesium	833	NT	NT	1,050	NT
Manganese	64.3	NT	NT	61.5	NT
Mercury	2.90	NT	NT	4.20	NT
Nickel	19.0	NT	NT	26.4	NT
Potassium	224	NT	NT	214	NT
Selenium	1.40	NT	NT	2.90	NT
Silver	21.4	NT	NT	26.4	NT
Volatile Organic Compounds in micrograms per kilogram					
Toluene	1,100	16,000	1,700	2,700	3,300
Chlorobenzene	240	U	12,000	U	U
1,2-Dichlorobenzene	1,700	12,000	13,000	61,000	27,000
1,3-Dichlorobenzene	470	4,200	350	11,000	5,500
1,4-Dichlorobenzene	970	8,800	3,100	17,000	9,100
Xylenes	144	1,100	180	17,000	8,100
Carbon Disulfide	U	1,500	210	U	2,000
Ethylbenzene	U	U	U	3,300	1,700
Acetone	360	3,700	1,100	1,300	2,000

Notes: U - Not detected
NT - The parameter was not tested.
Only detected parameters are reported.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

N-6

IEA/CT Contract: _____

IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

soil/water) SOIL Lab Sample ID: 972768A-01

/vol: 5 (g/mL) G Lab File ID: >D3626

(low/med) LOW Date Received: 11/07/97

e: not dec. 24 Date Analyzed: 11/15/97

: 007-624 ID: 0.53 (mm) Dilution Factor: 1.0

act Volume: _____(uL) Soil Aliquot Volume: _____(uL)

	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Chloromethane	13	U
	Bromomethane	13	U
	Vinyl Chloride	13	U
	Chloroethane	13	U
	Methylene Chloride	3	J
	Acetone	22	B
	Carbon Disulfide	13	U
	1,1-Dichloroethene	13	U
	1,1-Dichloroethane	13	U
	1,2-Dichloroethene (total)	13	U
	Chloroform	13	U
	1,2-Dichloroethane	13	U
	2-Butanone	2	JB
	1,1,1-Trichloroethane	13	U
	Carbon Tetrachloride	13	U
	Bromodichloromethane	13	U
	1,2-Dichloropropane	13	U
-5	cis-1,3-Dichloropropene	13	U
	Trichloroethene	13	U
	Dibromochloromethane	13	U
	1,1,2-Trichloroethane	13	U
	Benzene	13	U
-6	trans-1,3-Dichloropropene	13	U
	Bromoform	13	U
	4-Methyl-2-Pentanone	13	U
	2-Hexanone	13	U
	Tetrachloroethene	1	J
	1,1,2,2-Tetrachloroethane	13	U
	Toluene	13	U
	Chlorobenzene	13	U
	Ethylbenzene	13	U
	Styrene	13	U
	Xylene (total)	13	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

N-7

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Matrix: (soil/water) SOIL Lab Sample ID: 972768A-02

Sample wt/vol: 5 (g/mL) G Lab File ID: >D3627

Level: (low/med) LOW Date Received: 11/07/97

% Moisture: not dec. 13 Date Analyzed: 11/15/97

GC Column: 007-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: ____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	1	J
67-64-1	Acetone	9	JB
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	2	JB
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	.8	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

N-8

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Matrix: (soil/water) SOIL Lab Sample ID: 972768A-03

Sample wt/vol: 1 (g/mL) G Lab File ID: >D3641

Level: (low/med) LOW Date Received: 11/07/97

% Moisture: not dec. 48 Date Analyzed: 11/16/97

GC Column: 007-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: ____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	96	U
74-83-9	Bromomethane	96	U
75-01-4	Vinyl Chloride	96	U
75-00-3	Chloroethane	96	U
75-09-2	Methylene Chloride	22	J
67-64-1	Acetone	170	B
75-15-0	Carbon Disulfide	7	J
75-35-4	1,1-Dichloroethene	96	U
75-34-3	1,1-Dichloroethane	96	U
540-59-0	1,2-Dichloroethene (total)	96	U
67-66-3	Chloroform	96	U
107-06-2	1,2-Dichloroethane	96	U
78-93-3	2-Butanone	29	J
71-55-6	1,1,1-Trichloroethane	96	U
56-23-5	Carbon Tetrachloride	96	U
75-27-4	Bromodichloromethane	96	U
78-87-5	1,2-Dichloropropane	96	U
10061-01-5	cis-1,3-Dichloropropene	96	U
79-01-6	Trichloroethene	96	U
124-48-1	Dibromochloromethane	96	U
79-00-5	1,1,2-Trichloroethane	96	U
71-43-2	Benzene	25	J
10061-02-6	trans-1,3-Dichloropropene	96	U
75-25-2	Bromoform	96	U
108-10-1	4-Methyl-2-Pentanone	96	U
591-78-6	2-Hexanone	96	U
127-18-4	Tetrachloroethene	96	U
79-34-5	1,1,2,2-Tetrachloroethane	96	U
108-88-3	Toluene	46	J
108-90-7	Chlorobenzene	870	
100-41-4	Ethylbenzene	96	U
100-42-5	Styrene	96	U
1330-20-7	Xylene (total)	100	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-9

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Matrix: (soil/water) SOIL Lab Sample ID: 972768A-04

Sample wt/vol: 5 (g/mL) G Lab File ID: >D3635

Level: (low/med) LOW Date Received: 11/07/97

% Moisture: not dec. 5 Date Analyzed: 11/16/97

GC Column: 007-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-10

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Matrix: (soil/water) SOIL Lab Sample ID: 972768A-05

Sample wt/vol: 5 (g/mL) G Lab File ID: >D3636

Level: (low/med) LOW Date Received: 11/07/97

% Moisture: not dec. 7 Date Analyzed: 11/16/97

GC Column: 007-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	10	JB
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	.7	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-11

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Matrix: (soil/water) SOIL Lab Sample ID: 972768A-06

Sample wt/vol: 5 (g/mL) G Lab File ID: >D3637

Level: (low/med) LOW Date Received: 11/07/97

% Moisture: not dec. 25 Date Analyzed: 11/16/97

GC Column: 007-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: ____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	13	U
67-64-1	Acetone	3	JB
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	5	J
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (total)	13	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S-9 DUP

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Matrix: (soil/water) SOIL Lab Sample ID: 972768A-07

Sample wt/vol: 5 (g/mL) G Lab File ID: >D3638

Level: (low/med) LOW Date Received: 11/07/97

% Moisture: not dec. 12 Date Analyzed: 11/16/97

GC Column: 007-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: ____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	5	JB
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	VBLKDJ	99	89	92		0
02	N-6	108	85	94		0
03	N-7	100	86	94		0
04	VBLKDK	104	99	94		0
05	S-9	111	96	96		0
06	S-10	111	90	93		0
07	S-11	112	89	94		0
08	S-9 DUP	112	98	96		0
09	N-6MS	104	94	94		0
10	N-6MSD	104	97	94		0
11	N-8	109	83	91		0
12						
13						
14						
15						
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27						
28						
29						
30						

QC LIMITS

SMC1 (TOL) = Toluene-d8 (84-138)
SMC2 (BFB) = Bromofluorobenzene (59-113)
SMC3 (DCE) = 1,2-Dichloroethane-d4 (70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Matrix Spike - EPA Sample No.: N-6 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	66	0	54	82	59-172
Trichloroethene	66	0	50	76	62-137
Benzene	66	0	55	83	66-142
Toluene	66	0	59	89	59-139
Chlorobenzene	66	0	57	86	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	66	57	86	5	22	59-172
Trichloroethene	66	53	80	5	24	62-137
Benzene	66	57	86	4	21	66-142
Toluene	66	61	92	3	21	59-139
Chlorobenzene	66	61	92	7	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits.

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKDJ

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Lab File ID: >D3614 Lab Sample ID: VBLKDJ

Date Analyzed: 11/15/97 Time Analyzed: 0846

GC Column: 007-624 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: HP5972D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	N-6	972768A-01	>D3626	1659
02	N-7	972768A-02	>D3627	1737
03				
04				
05				
06				
07				
08				
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27				
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29				
30				

COMMENTS: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKDJ

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Matrix: (soil/water) SOIL Lab Sample ID: VBLKDJ

Sample wt/vol: 5 (g/mL) G Lab File ID: >D3614

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 11/15/97

GC Column: 007-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	2	J
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKDK

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Lab File ID: >D3631 Lab Sample ID: VBLKDK

Date Analyzed: 11/16/97 Time Analyzed: 0758

GC Column: 007-624 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: HP5972D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	S-9	972768A-04	>D3635	1049
02	S-10	972768A-05	>D3636	1127
03	S-11	972768A-06	>D3637	1205
04	S-9 DUP	972768A-07	>D3638	1243
05	N-6MS	972768A-01MS	>D3639	1322
06	N-6MSD	972768A-01MSD	>D3640	1359
07	N-8	972768A-03	>D3641	1438
08				
09				
10				
11				
12				
13				
14				
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30				

COMMENTS: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKDK

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Matrix: (soil/water) SOIL Lab Sample ID: VBLKDK

Sample wt/vol: 5 (g/mL) G Lab File ID: >D3631

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 11/16/97

GC Column: 007-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: ____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	6	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Lab File ID: (Standard): >D3613 Date Analyzed:11/15/97

Instrument ID: HP5972D Time Analyzed:0744

GC Column: 007-624 ID: 0.53 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA	#	RT	#	IS2(DFB) AREA	#	RT	#	IS3(CBZ) AREA	#	RT	#
	12 HOUR STD	565724		14.42		2878324		15.38		2462035		19.01	
	UPPER LIMIT	1131448		14.92		5756648		15.88		4924070		19.51	
	LOWER LIMIT	282862		13.92		1439162		14.88		1231018		18.51	
	EPA SAMPLE NO.												
01	VBLKDJ	589337		14.40		2948492		15.36		2529749		18.99	
02	N-6	414160		14.37		1956015		15.35		1539678		18.99	
03	N-7	499501		14.32		2306042		15.31		1897611		18.94	
04													
05													
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: IEA/CT Contract: _____

Lab Code: IEACT Case No.: 2768A SAS No.: _____ SDG No.: A2768

Lab File ID: (Standard): >D3630 Date Analyzed:11/16/97

Instrument ID: HP5972D Time Analyzed:0705

GC Column: 007-624 ID: 0.53 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	537647	14.42	2636391	15.41	2386049	19.04
	UPPER LIMIT	1075294	14.92	5272782	15.91	4772098	19.54
	LOWER LIMIT	268824	13.92	1318196	14.91	1193024	18.54
	EPA SAMPLE NO.						
01	VBLKDK	533141	14.28	2553540	15.29	2225692	18.99
02	S-9	488844	14.42	2348790	15.40	1957497	19.03
03	S-10	466347	14.46	2321227	15.43	1782734	19.05
04	S-11	468860	14.42	2247727	15.40	1780259	19.01
05	S-9 DUP	517289	14.37	2496506	15.34	2039482	18.97
06	N-6MS	522756	14.40	2547526	15.38	2165608	18.98
07	N-6MSD	525440	14.42	2535220	15.40	2152242	19.03
08	N-8	488158	14.40	2246839	15.38	1770219	18.99
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

N-6

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

Matrix (soil/water): SOIL Lab Sample ID: 972768A-01

Level (low/med): LOW Date Received: 11/07/97

% Solids: 94.4

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	901.			P
7440-36-0	Antimony	1.7	U		P
7440-38-2	Arsenic	0.64	U		P
7440-39-3	Barium	4.3	B		P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	68.7	B		P
7440-47-3	Chromium	1.7	B		P
7440-48-4	Cobalt	0.42	U		P
7440-50-8	Copper	3.9	B		P
7439-89-6	Iron	1260			P
7439-92-1	Lead	2.2			P
7439-95-4	Magnesium	148.	B		P
7439-96-5	Manganese	10.9			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.1	B		P
7440-09-7	Potassium	82.1	B		P
7782-49-2	Selenium	0.85	U	N	P
7440-22-4	Silver	0.21	U		P
7440-23-5	Sodium	34.3	B		P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	2.4	B		P
7440-66-6	Zinc	31.9			P
57-12-5	Cyanide				NR

Color Before: BROWN Clarity Before: OPAQUE Texture: MED

Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments:

_____

_____

_____

_____

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

N-7

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

Matrix (soil/water): SOIL Lab Sample ID: 972768A-02

Level (low/med): LOW Date Received: 11/07/97

% Solids: 91.2

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4290			P
7440-36-0	Antimony	1.8	U		P
7440-38-2	Arsenic	0.66	U		P
7440-39-3	Barium	23.8	B		P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.22	U		P
7440-70-2	Calcium	572.	B		P
7440-47-3	Chromium	3.8			P
7440-48-4	Cobalt	0.68	B		P
7440-50-8	Copper	49.1			P
7439-89-6	Iron	3900			P
7439-92-1	Lead	9.2			P
7439-95-4	Magnesium	293.	B		P
7439-96-5	Manganese	47.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.8	B		P
7440-09-7	Potassium	127.	B		P
7782-49-2	Selenium	0.88	U	N	P
7440-22-4	Silver	0.45	B		P
7440-23-5	Sodium	52.9	B		P
7440-28-0	Thallium	1.1	U		P
7440-62-2	Vanadium	6.6	B		P
7440-66-6	Zinc	140.			P
57-12-5	Cyanide				NR

Color Before: BROWN Clarity Before: OPAQUE Texture: MED

Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

N-8

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

Matrix (soil/water): SOIL Lab Sample ID: 972768A-03

Level (low/med): LOW Date Received: 11/07/97

% Solids: 42.3

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12200			P
7440-36-0	Antimony	3.8	U		P
7440-38-2	Arsenic	8.4			P
7440-39-3	Barium	446.			P
7440-41-7	Beryllium	0.47	U		P
7440-43-9	Cadmium	6.6			P
7440-70-2	Calcium	9180			P
7440-47-3	Chromium	42.9			P
7440-48-4	Cobalt	2.9	B		P
7440-50-8	Copper	1900			P
7439-89-6	Iron	15000			P
7439-92-1	Lead	322.			P
7439-95-4	Magnesium	1580	B		P
7439-96-5	Manganese	128.			P
7439-97-6	Mercury	2.9			CV
7440-02-0	Nickel	22.4			P
7440-09-7	Potassium	784.	B		P
7782-49-2	Selenium	10.8		N	P
7440-22-4	Silver	43.5			P
7440-23-5	Sodium	312.	B		P
7440-28-0	Thallium	2.4	U		P
7440-62-2	Vanadium	17.2	B		P
7440-66-6	Zinc	2170			P
57-12-5	Cyanide				NR

Color Before: BROWN Clarity Before: OPAQUE Texture: MED

Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

S-9

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

Matrix (soil/water): SOIL Lab Sample ID: 972768A-04

Level (low/med): LOW Date Received: 11/07/97

% Solids: 95.9

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1230			P
7440-36-0	Antimony	1.7	U		P
7440-38-2	Arsenic	0.62	U		P
7440-39-3	Barium	7.3	B		P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	1980			P
7440-47-3	Chromium	2.5			P
7440-48-4	Cobalt	0.52	B		P
7440-50-8	Copper	9.7			P
7439-89-6	Iron	2110			P
7439-92-1	Lead	8.3			P
7439-95-4	Magnesium	264.	B		P
7439-96-5	Manganese	20.3			P
7439-97-6	Mercury	0.099	U		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	120.	B		P
7782-49-2	Selenium	0.83	U	N	P
7440-22-4	Silver	0.21	U		P
7440-23-5	Sodium	72.2	B		P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	3.3	B		P
7440-66-6	Zinc	38.8			P
57-12-5	Cyanide				NR

Color Before: BROWN Clarity Before: OPAQUE Texture: MED

Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

S-10

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

Matrix (soil/water): SOIL Lab Sample ID: 972768A-05

Level (low/med): LOW Date Received: 11/07/97

% Solids: 91.6

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2380			P
7440-36-0	Antimony	1.7	U		P
7440-38-2	Arsenic	0.66	U		P
7440-39-3	Barium	13.8	B		P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.34	B		P
7440-70-2	Calcium	144.	B		P
7440-47-3	Chromium	3.2			P
7440-48-4	Cobalt	0.54	B		P
7440-50-8	Copper	49.0			P
7439-89-6	Iron	2610			P
7439-92-1	Lead	5.9			P
7439-95-4	Magnesium	299.	B		P
7439-96-5	Manganese	14.8			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	1.9	B		P
7440-09-7	Potassium	130.	B		P
7782-49-2	Selenium	0.87	U	N	P
7440-22-4	Silver	0.44	B		P
7440-23-5	Sodium	47.2	B		P
7440-28-0	Thallium	1.1	U		P
7440-62-2	Vanadium	4.7	B		P
7440-66-6	Zinc	50.4			P
57-12-5	Cyanide				NR

Color Before: BROWN Clarity Before: OPAQUE Texture: MED

Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

S-11

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

Matrix (soil/water): SOIL Lab Sample ID: 972768A-06

Level (low/med): LOW Date Received: 11/07/97

% Solids: 64.3

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3360			P
7440-36-0	Antimony	2.5	U		P
7440-38-2	Arsenic	4.2			P
7440-39-3	Barium	144.			P
7440-41-7	Beryllium	0.31	U		P
7440-43-9	Cadmium	3.4			P
7440-70-2	Calcium	1300	B		P
7440-47-3	Chromium	13.8			P
7440-48-4	Cobalt	0.68	B		P
7440-50-8	Copper	624.			P
7439-89-6	Iron	2780			P
7439-92-1	Lead	188.			P
7439-95-4	Magnesium	441.	B		P
7439-96-5	Manganese	17.7			P
7439-97-6	Mercury	2.4			CV
7440-02-0	Nickel	6.2	B		P
7440-09-7	Potassium	159.	B		P
7782-49-2	Selenium	1.9		N	P
7440-22-4	Silver	7.6			P
7440-23-5	Sodium	82.1	B		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	6.0	B		P
7440-66-6	Zinc	403.			P
57-12-5	Cyanide				NR

Color Before: BROWN Clarity Before: OPAQUE Texture: MED

Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

S-9 DUP

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

Matrix (soil/water): SOIL Lab Sample ID: 972768A-07

Level (low/med): LOW Date Received: 11/07/97

% Solids: 94.9

Concentration Units (ug/L or mg/kg dry weight): Mg/Kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1030			P
7440-36-0	Antimony	1.7	U		P
7440-38-2	Arsenic	0.63	U		P
7440-39-3	Barium	7.2	B		P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	191.	B		P
7440-47-3	Chromium	1.7	B		P
7440-48-4	Cobalt	0.42	U		P
7440-50-8	Copper	11.8			P
7439-89-6	Iron	1580			P
7439-92-1	Lead	11.5			P
7439-95-4	Magnesium	226.	B		P
7439-96-5	Manganese	13.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	88.6	B		P
7782-49-2	Selenium	0.88	B	N	P
7440-22-4	Silver	0.21	U		P
7440-23-5	Sodium	35.2	B		P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	2.3	B		P
7440-66-6	Zinc	35.4			P
57-12-5	Cyanide				NR

Color Before: BROWN Clarity Before: OPAQUE Texture: MED

Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments:

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U.S. EPA - CLP

3
BLANKS

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: _____ SAS No.: _____ SDG No.: A2768

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	13.0	U	13.0	U	13.0	U	24.8	B	2.646	B	P
Antimony	8.0	U	8.0	U	8.0	U	8.0	U	1.600	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Barium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cadmium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Calcium	8.0	U	17.1	B	8.0	U	8.0	U	1.600	U	P
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cobalt	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Copper	1.0	U	1.0	U	1.0	U	-1.4	B	0.200	U	P
Iron	20.0	U	20.0	U	20.0	U	20.0	U	4.000	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Magnesium	8.0	U	19.1	B	8.0	U	8.0	U	1.600	U	P
Manganese	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Mercury	0.3		0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	P
Potassium	20.0	U	20.0	U	20.0	U	20.0	U	4.000	U	P
Selenium	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Silver	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Sodium	9.0	U	18.0	B	13.9	B	13.6	B	1.800	U	P
Thallium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Vanadium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Zinc	1.0	U	1.0	U	1.0	U	1.0	U	2.271	B	P
Cyanide											NR

U.S. EPA - CLP

3
BLANKS

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: _____ SAS No.: _____ SDG No.: A2768

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prep-aration Blank	C	M
Aluminum			48.0	B							P
Antimony			8.0	U							P
Arsenic			3.0	U							P
Barium			1.0	U							P
Beryllium			1.0	U							P
Cadmium			1.0	U							P
Calcium			18.0	B							P
Chromium			1.0	U							P
Cobalt			2.0	U							P
Copper			-2.0	B							P
Iron			20.0	U							P
Lead			2.0	U							P
Magnesium			20.1	B							P
Manganese			4.0	U							P
Mercury											NR
Nickel			2.0	U							P
Potassium			20.0	U							P
Selenium			4.0	U							P
Silver			1.0	U							P
Sodium			11.9	B							P
Thallium			5.0	U							P
Vanadium			1.0	U							P
Zinc			1.0	U							P
Cyanide											NR

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

N-6S

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 94.39

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	1220.5606		901.4735		423.77	75.3		P
Antimony	75-125	87.7840		1.6951	U	105.94	82.8		P
Arsenic	75-125	8.3415		0.6357	U	8.48	98.4		P
Barium	75-125	388.7973		4.3069	B	423.77	90.7		P
Beryllium	75-125	10.1654		0.2119	U	10.59	96.0		P
Cadmium	75-125	1.0380	B	0.2119	U	1.06	98.0		P
Calcium				68.6846	B	0.00	0.0		P
Chromium	75-125	39.7018		1.6743	B	42.38	89.7		P
Cobalt	75-125	96.2076		0.4238	U	105.94	90.8		P
Copper	75-125	52.0263		3.8823	B	52.97	90.9		P
Iron		1064.3986		1258.8143		211.89	-91.8		P
Lead	75-125	6.0320		2.2106		4.24	90.2		P
Magnesium				147.9636	B	0.00	0.0		P
Manganese	75-125	105.9296		10.9199		105.94	89.7		P
Mercury	75-125	0.4459		0.1009	U	0.50	88.4		CV
Nickel	75-125	97.7721		1.1191	B	105.94	91.2		P
Potassium				82.1264	B	0.00	0.0		P
Selenium	75-125	2.8052		0.8475	U	2.12	132.4	N	P
Silver	75-125	6.2183		0.2119	U	10.59	58.7		P
Sodium				34.2644	B	0.00	0.0		P
Thallium	75-125	8.5864		1.0594	U	10.59	81.0		P
Vanadium	75-125	97.2747		2.3663	B	105.94	89.6		P
Zinc	75-125	121.1358		31.8731		105.94	84.2		P
Cyanide									NR

Comments:

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

N-6A

b Name: IEA Contract: _____

ab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

trix: SOIL Level (low/med): LOW

Concentration Units: ~~MG/KG~~ ug/L

alyte	Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
luminum									NR
timony									NR
senic									NR
arium									NR
eryllium									NR
dmium									NR
lcium									NR
hromium									NR
balt									NR
pper									NR
on									NR
ead									NR
agnesium									NR
nganese									NR
rcury									NR
ickel									NR
tassium									NR
lenium	75-125	12.4125		4.0000	U	20.00	124.1		P
lver									NR
dium									NR
allium									NR
nadium									NR
nc									NR
anide									NR

DMT 12/2/97

mments:

FORM V (PART 2) - IN ILM03.0

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

N-6D

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2768 SAS No.: _____ SDG No.: A2768

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 94.39 % Solids for Duplicate: 94.39

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		901.4735		1070.9143		17.2		P
Antimony		1.6951	U	1.6951	U			P
Arsenic		0.6357	U	0.7437	B	200.0		P
Barium		4.3069	B	5.2790	B	20.3		P
Beryllium		0.2119	U	0.2119	U			P
Cadmium		0.2119	U	0.2119	U			P
Calcium		68.6846	B	72.8125	B	5.8		P
Chromium		1.6743	B	1.6474	B	1.6		P
Cobalt		0.4238	U	0.4238	U			P
Copper		3.8823	B	4.4972	B	14.7		P
Iron		1258.8143		1433.8460		13.0		P
Lead	0.6	2.2106		2.0316		8.4		P
Magnesium		147.9636	B	183.0226	B	21.2		P
Manganese	3.1	10.9199		13.6873		22.5		P
Mercury		0.1009	U	0.1009	U			CV
Nickel		1.1191	B	1.1392	B	1.8		P
Potassium		82.1264	B	109.6822	B	28.7		P
Selenium		0.8475	U	0.8475	U			P
Silver		0.2119	U	0.2119	U			P
Sodium		34.2644	B	35.5694	B	3.7		P
Thallium		1.0594	U	1.0594	U			P
Vanadium		2.3663	B	2.6697	B	12.0		P
Zinc		31.8731		24.8218		24.9		P
Cyanide								NR

APPENDIX C

NYSDEC LETTER TO EAST HAMPTON, JANUARY 9, 1998

New York State Department of Environmental Conservation
Division of Environmental Remediation - Region 1
Building 40 - SUNY, Stony Brook, New York 11790-2356
Phone (516) 444-0240
Fax # (516) 444-0248

John P. Cahill
Commissioner

cc
SD

January 9, 1998

Mr. David D. Paolelli
Environmental Facilities Manager
Department of Sanitation
Town of East Hampton
159 Pantigo Road
East Hampton, New York 11937

RE: **Status of Remediation of Sludge Lagoons**
Solid Waste Management Facility - Springs Fireplace Road, Town of East Hampton

Dear Mr. Paolelli:

The Department has received and reviewed the report from Fanning, Phillips and Molnar entitled "Soil Sampling Results, Former Septage Lagoons" dated December 11, 1997.

At the meeting on December 17, 1997 between the Town and the Department, it was stated that the report was an accurate account of the remediation actions taken and based on the sampling results documented, the Department concurred with the conclusions of the report.

In regard to the conclusions of the report, the Department does not require any further remediation actions to the south lagoon. The south lagoon area can be reused by the Town's Solid Waste Management Facility in accordance with 6 NYCRR Part 360.

With regard to the north lagoon, further sampling at the two locations where additional remediation was done is scheduled with Ms. Stephanie Davis for January 28, 1998. A January 7 sampling date was canceled because inclement weather makes the activity at the site unsafe.

When the north lagoon is shown to be successfully remediated, the Department will consider delisting the site from the registry of the Inactive Hazardous Waste Disposal Sites.

It remains the responsibility of the Town to properly compost the removed sludge into a reusable material in accordance with the work plan.

Sincerely,

Michael Coscia

Michael A. Coscia, P.E.
Environmental Engineer

MAC:cmb
cc: Catherine H. Lester
Vincent Gaudiello
Peter Dermody
Stephanie O. Davis
L. Riley, NYSDEC
S. Snee, NYSDEC
R. Becherer, NYSDEC

APPENDIX D

NYSDEC LETTER TO FPM, FEBRUARY 4, 1998

FANNING, PHILLIPS & MOLNAR
Engineers and Geohydrologists
909 MARCONI AVENUE
RONKONKOMA, NEW YORK 11779

RICHARD FANNING, P.E. (1931-1984)
KEVIN J. PHILLIPS, P.E., Ph.D.
GARY A. MOLNAR, P.E.

516/737-6200
718/767-3337
TELECOPIER 516/737-2410

VIA FAX AND MAIL

February 4, 1998

Mr. Michael Coscia
Environmental Engineer
New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
Building 40, SUNY Stony Brook
Stony Brook, NY 11790

Re: **Additional Soil Sampling Results, Former North Septage Lagoon**
Springs-Fireplace Road Landfill
Town of East Hampton
FP&M Project No. 158-95-28A

Dear Mr. Coscia:

Soil samples were obtained following additional remediation at the former location of the north septage lagoon at the above-referenced facility. The samples were obtained on January 20, 1998 during a site visit by yourself and representatives of L. K. McLean Associates (McLean) and Fanning, Phillips and Molnar (FP&M). Two samples were collected by FP&M from the former north lagoon location including one sample from northern end (N-8A) and one from the southern wall (N-7A) of the lagoon. Additional remediation had been performed in each of these areas following the November 6, 1997 sampling event. The additional samples were collected to evaluate if additional remediation would be required.

In accordance with our discussions on November 6, 1997 and January 20, 1998, the samples were analyzed by a New York State Department of Health-certified laboratory for Target Analyte List (TAL) metals utilizing Contract Laboratory Program (CLP) methods. The chemical analytical data are summarized in Table 1 and the laboratory sample data summary package is attached. For comparison, the chemical analytical data for metals and VOCs from the November 6, 1997 sampling event are included on Table 1.

Several metals were detected in the soil samples. For the sample collected from the south side of the former lagoon (N-7A), minor exceedances of the NYSDEC Recommended Soil Cleanup Objectives (objectives) for copper, iron, and zinc were noted. For the sample collected from the west end of the former lagoon (N-8A), minor exceedances of the NYSDEC objectives for copper,

iron, mercury, and zinc were noted. In general, these concentrations are slightly above their respective NYSDEC objectives and represent significant reductions from the concentrations detected in these areas during the November 6, 1997 sampling event. Based on these data, no further remediation or soil sampling is recommended for the former north lagoon.

If you concur with these conclusions and recommendations, in accordance with your letter of January 9, 1998, the Town of East Hampton will begin preparation of a petition to delist this site from the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites.

Should you have any questions, please do not hesitate to call me at (516) 737-6200, ext. 209.

Very truly yours,

Peter Dermody /mc

Peter Dermody
Senior Hydrogeologist
Department Manager

PD:tac
Attachments

cc: Catherine H. Lester
Cynthia Shea, Esq.
Leonard Bernard
Pat Mansir
Job Potter
Peter Hammerle

crc\clients\eh\septagelagoons/septlt3

TABLE 1
SOIL SAMPLE CHEMICAL ANALYTICAL DATA
NORTH AND SOUTH SEPTAGE LAGOONS
TOWN OF EAST HAMPTON, NEW YORK

	North Lagoon					South Lagoon			QA/QC		NYSDEC Recommended Soil Cleanup Objectives
Sample No.	N-6	N-7	N-7A	N-8	N-8A	S-9	S-10	S-11	S-9 Duplicate	N-8A Duplicate	
Location	Bottom	South Side		West Side		Bottom	East Side	West Side	Bottom	West Side	
Sample Date	11/6/97	11/6/97	1/20/98	11/6/97	1/20/98	11/6/97	11/6/97	11/6/97	11/6/97	1/20/98	
Volatile Organic Compounds in micrograms per kilogram											
Methylene Chloride	3 J	1 J	NA	22 J	NA	ND	ND	ND	2 J	NA	100
Acetone	22 B	9 JB	NA	170 B	NA	ND	10 JB	3 JB	5 JB	NA	200
2-Butanone	2 JB	2 JB	NA	29 J	NA	ND	ND	ND	ND	NA	300
Tetrachloroethene	1 J	0.8 J	NA	ND	NA	ND	0.7 J	5 J	ND	NA	1,400
Carbon Disulfide	ND	ND	NA	7 J	NA	ND	ND	ND	ND	NA	2,700
Benzene	ND	ND	NA	25 J	NA	ND	ND	ND	ND	NA	60
Toluene	ND	ND	NA	46 J	NA	ND	ND	ND	ND	NA	1,500
Chlorobenzene	ND	ND	NA	870	NA	ND	ND	ND	ND	NA	1,700
Xylene (total)	ND	ND	NA	100	NA	ND	ND	ND	ND	NA	1,200
Metals in milligrams per kilogram											
Aluminum	901	4,290	2,020	12,200	3,230	1,230	2,380	3,360	1,030	4,390	SB
Arsenic	ND	ND	0.49 B	8.4	0.85 B	ND	ND	4.2	ND	1.2 B	7.5
Barium	4.3 B	23.8 B	15.1 B	446	24.0 B	7.3 B	13.8 B	144	7.2 B	29.0 B	300
Beryllium	ND	0.24 B	ND	ND	ND	ND	0.22 B	ND	ND	ND	0.16
Cadmium	ND	ND	0.31 BN	6.6	0.35 BN	ND	0.34 B	3.4	ND	0.25 BN	10
Calcium	68.7 B	572 B	149 B	9,180	995 B	1,980	144 B	1,300 B	191 B	741 B	SB
Chromium	1.7 B	3.8	2.1 B	42.9	3.8	2.5	3.2	13.8	1.7 B	5.3	50
Cobalt	ND	0.68 B	0.53 B	2.9 B	1.2 B	0.52 B	0.54 B	0.68 B	ND	2.2 B	30
Copper	3.9 B	49.1	25.2	1,900	32.4	9.7	49.0	624	11.8	36.0	25
Iron	1,260	3,900	2,260	15,000	3,810	2,110	2,610	2,780	1,580	5,100	2,000

FR&M

TABLE 1 (CONTINUED)
SOIL SAMPLE CHEMICAL ANALYTICAL DATA
NORTH AND SOUTH SEPTAGE LAGOONS
TOWN OF EAST HAMPTON, NEW YORK

	North Lagoon					South Lagoon			QA/QC		NYSDEC Recommended Soil Cleanup Objectives
Sample No.	**N-6**	**N-7**	**N-7A**	**N-8**	**N-8A**	**S-9**	**S-10**	**S-11**	**S-9 Duplicate**	**N-8A Duplicate**	
Location	**Bottom**	**South Side**		**West Side**		**Bottom**	**East Side**	**West Side**	**Bottom**	**West Side**	
Sample Date	**11/6/97**	**11/6/97**	**1/20/98**	**11/6/97**	**1/20/98**	**11/6/97**	**11/6/97**	**11/6/97**	**11/6/97**	**1/20/98**	
Metals in milligrams per kilogram (cont'd)											
Lead	2.2	9.2	6.9	322	15.4	8.3	5.9	188	11.5	22.0	400*
Magnesium	148 B	293 B	202 B	1,580 B	599 B	264 B	299 B	441 B	226 B	646 B	SB
Manganese	10.9	47.7	43.0	128	57.1	20.3	14.8	17.7	13.5	71.9	SB
Mercury	ND	ND	ND	**2.9**	**0.11**	ND	ND	**2.4**	ND	**0.12**	0.1
Nickel	1.1 B	2.8 B	1.9 B	**22.4**	3.8 B	1.7 B	1.9 B	6.2 B	1.7 B	4.5 B	13
Potassium	82.1 B	127 B	105 B	784 B	208 B	120 B	130 B	159 B	88.6 B	259 B	SB
Selenium	ND	ND	0.69 BN	**10.8 N**	0.60 BN	ND	ND	1.9 N	0.88 BN	0.82 BN	2
Silver	ND	0.45 B	0.53 B	43.5	0.39 B	ND	0.44 B	7.6	ND	0.35 BN	SB
Sodium	34.3 B	52.9 B	50.7 B	312 B	106 B	72.2 B	47.2 B	82.1 B	35.2 B	87.2 B	SB
Vanadium	2.4 B	6.6 B	3.2 B	17.2 B	5.8 B	3.3 B	4.7 B	6.0 B	2.3 B	7.6 B	150
Zinc	**31.9**	**140**	**54.2**	**2,170**	**111**	**38.8**	**50.4**	**403**	**35.4**	**97.6**	20

Notes:
- NA = Not analyzed.
- ND = Not detected.
- J = An estimated value greater than zero but less than the detection limit.
- B = For organic compounds, analyte was detected in the associated blanks. For metals, reported value is less than the Contract Required Detection Limit but greater than the Instrument Detection Limit.
- N = Matrix spiked sample recovery not within control limits.
- SB = Site background.
- * = USEPA residential screening level for lead is 400 milligrams per kilogram.

Bold values exceed NYSDEC Recommended Soil Cleanup Objectives.

Only detected analytes are reported. Please refer to the laboratory data for the complete list of analytes.

ATTACHMENTS

American Environmental Network

200 Monroe Turnpike • Monroe, CT 06468 • (203) 261-4458 • Fax (203) 268-5346

RECEIVED

February 02, 1998

cc: SD 7pll has pkg.

Ms. Stephanie Davis
FANNING PHILLIPS + MOLNAR
909 Marconi Avenue
Ronkonkoma, NY 11779

Dear Ms. Davis :

Please find enclosed the analytical results of 4 sample(s) received at our laboratory on January 21, 1998. This report contains sections addressing the following information at a minimum:

- sample summary
- analytical methodology
- state certifications
- definition of data qualifiers and terminology
- analytical results
- chain-of-custody

IEA Report #7098-0134A	Purchase Order #PROJ #158-95-28A
Project ID: EH/SEPTAGE	

Copies of this analytical report and supporting data are maintained in our files for a minimum of five years unless special arrangements have been made. Unless specifically indicated, all analytical testing was performed at this laboratory location and no portion of the testing was subcontracted.

We appreciate your selection of our services and welcome any questions or suggestions you may have relative to this report. Please contact your customer service representative at (203) 261-4458 for any additional information. Thank you for utilizing our services; we hope you will consider us for your future analytical needs.

I have reviewed and approved the enclosed data for final release.

Very truly yours,

Cheryl A. Cascella for

Jeffrey C. Curran
Laboratory Manager

JCC

7098-0134A

FANNING, PHILIPS & MOLNAR

Case Narrative

Metals - ICAP metals were determined using a JA61E trace ICAP; mercury was determined by the cold vapor technique utilizing the Thermo Jarrell Ash Model QS-1 E mercury analyzer using guidance provided in SW846 according to the following methods: ICAP-3010/3050/6010; mercury-7470/7471.

Three "N" flags resulted from spike analysis of sample SS-102 0-1 for antimony, cadmium, and selenium. Since the post-digestion spike recoveries were within the control limits, a matrix interference was not suspected.

No other problems occurred during analysis. All appropriate protocols were employed. All data appears to be consistent.

IEC's are electronically employed by the JA61E trace ICAP. However, the ICSA is utilized as a monitoring device to detect any additional adjustments that may be required. These modifications are calculated and applied manually. They are so noted in the raw data.

TABLE AS-1.0
7098-0134A
FANNING PHILLIPS + MOLNAR
TAL METALS

Aqueous

All values are ug/L.

Client Sample I.D.	FB012098			
Lab Sample I.D.	980134A-04			
Aluminum	48.4B			
Antimony	4.3B			
Arsenic	2.0U			
Barium	1.0U			
Beryllium	1.0U			
Cadmium	1.0U			
Calcium	62.3B			
Chromium	1.0U			
Cobalt	1.0U			
Copper	10.0U			
Iron	22.0B			
Lead	1.1B			
Magnesium	8.0U			
Manganese	1.0U			
Mercury	0.20U			
Nickel	2.0U			
Potassium	39.3B			
Selenium	2.0U			
Silver	1.0U			
Sodium	94.2B			
Thallium	2.0U			
Vanadium	1.0U			
Zinc	3.0U			

See Appendix for qualifier definitions

TABLE AS-1.1
7098-0134A
FANNING PHILLIPS + MOLNAR
TAL METALS

All values are mg/Kg dry weight basis.

Client Sample I.D.	N-7A(SOUTH)	N-8A(WEST)	N-88	
Lab Sample I.D.	980134A-01	980134A-02	980134A-03	
Aluminum	2020	3230	4390	
Antimony	0.65UN	0.68UN	0.71UN	
Arsenic	0.49B	0.85B	1.2B	
Barium	15.1B	24.0B	29.0B	
Beryllium	0.22U	0.23U	0.24U	
Cadmium	0.31BN	0.35BN	0.25BN	
Calcium	149.B	995.B	741.B	
Chromium	2.1B	3.8	5.3	
Cobalt	0.53B	1.2B	2.2B	
Copper	25.2	32.4	36.0	
Iron	2260	3810	5100	
Lead	6.9	15.4	22.0	
Magnesium	202.B	599.B	646.B	
Manganese	43.0	57.1	71.9	
Mercury	0.11U	0.11	0.12	
Nickel	1.9B	3.8B	4.5B	
Potassium	105.B	208.B	259.B	
Selenium	0.69BN	0.60BN	0.82BN	
Silver	0.53B	0.39B	0.35B	
Sodium	50.7B	106.B	87.2B	
Thallium	0.43U	0.45U	0.48U	
Vanadium	3.2B	5.8B	7.6B	
Zinc	54.2	111.	97.6	

See Appendix for qualifier definitions

INORGANICS APPENDIX

C - Concentration qualifiers

U - Indicates analyte was not detected at method reporting limit.

B - Indicates analyte result between IDL and contract required detection limit (CRDL)

Q - QC qualifiers

E - Reported value is estimated because of the presence of interference

M - Duplicate injection precision not met

N - Spiked sample recovery not within control limits

S - The reported value was determined by the method of standard additions (MSA)

W - Post-digest spike recovery furnace analysis was out of 85-115 percent control limit, while sample absorbance was less than 50 percent of spike absorbance

* - Duplicate analysis not within control limit

+ - Correlation coefficient for MSA is less than 0.995

M - Method codes

P - ICP

A - Flame AA

F - Furnace AA

CV - Cold vapor AA (manual)

C - Cyanide

NR - Not Required

NC - Not Calculated as per protocols

STATE CERTIFICATIONS

In some instances it may be necessary for environmental data to be reported to a regulatory authority with reference to a certified laboratory. For your convenience, the laboratory identification numbers for the AEN-Connecticut laboratory are provided in the following table. Many states certify laboratories for specific parameters or tests within a category (i.e. method 325.2 for wastewater). The information in the following table indicates the lab is certified in a general category of testing such as drinking water or wastewater analysis. The laboratory should be contacted directly if parameter-specific certification information is required.

AEN-Connecticut
Certification Summary (as of September 1997)

State	Responsible Agency	Certification	Lab Number
Connecticut	Department of Health Services	Drinking Water, Wastewater	PH-0497
Maine	Department of Human Services	Wastewater	CT023
Massachusetts	Department of Environmental Protection	Potable/Non-Potable Water	CT023
New Hampshire	Department of Environmental Services	Drinking Water, Wastewater	2528
New Jersey	Department of Environmental Protection	Drinking Water, Wastewater	46410
New York	Department of Health	CLP, Drinking Water, Wastewater, Solid/ Hazardous Waste	10602
North Carolina	Division of Environmental Management	Wastewater Hazardous Waste	388
North Dakota	Department of Health and Consolidated Laboratories	Non-Potable/Potable Hazardous Waste	R-138
Oklahoma	Department of Environmental Quality	General Water Quality/ Sludge Testing	9614
Rhode Island	Department of Health	Chemistry...Non-Potable Water and Wastewater	A43
Washington	Department of Ecology	Wastewater/ Hazardous Waste	C231
West Virginia	Division of Environmental Protection	Wastewater/ Hazardous Waste	263
Wisconsin	Department of Natural Resources	Wastewater/ Hazarous Waste	998355710

7098-0134A
FANNING PHILLIPS + MOLNAR
SAMPLE SUMMARY

ENT ID	LAB ID	MATRIX	DATE COLLECTED	DATE RECEIVED
A(SOUTH)	980134A-01	SOIL	01/20/98	01/21/98
A(WEST)	980134A-02	SOIL	01/20/98	01/21/98
8	980134A-03	SOIL	01/20/98	01/21/98
012098	980134A-04	WATER	01/20/98	01/21/98

IEA-CT ANALYTICAL SUMMARY

Client ID: FB012098, N-7A(SOUTH), N-88, N-8A(WEST)
Job Number: 7098-0134A

Date: 2/2/98

Qty	Matrix	Analysis	Description
4	None	DISK	Diskette Prep.
3	SOIL	MET-NCLP4.0-TAL	TAL Metals
1	WATER	MET-NCLP4.0-TAL	TAL Metals

APPENDIX E

NYSDEC LETTER TO FPM, MARCH 17, 1998

cc: SD

New York State Department of Environmental Conservation
Division of Environmental Remediation - Region 1
Building 40 - SUNY, Stony Brook, New York 11790-2356
Phone (516) 444-0240
Fax # (516) 444-0248



John P. Cahill
Commissioner

March 17, 1998

Mr. Peter Dermody
Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, New York 11779

RE: **Additional Soil Sampling Results**
North Septage Lagoon
Springs - Fireplace Road Landfill
Town of East Hampton

Dear Mr. Dermody:

I reviewed your letter of February 4, 1998 and the accompanying data for the sampling events of January 20, 1998 and November 6, 1997. The additional remediation performed in each of the areas where the samples were taken in the North Lagoon significantly reduced the concentrations of the metal contaminants as shown by the data.

I concur with your conclusion that no further remediation or soil sampling is needed for the North Lagoon. In my January 9, 1998 letter, I also stated that no further action was necessary in the south lagoon. The Town of East Hampton may petition to delist this site from the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites as a result of their remediation actions.

It remains the responsibility of the Town, under the work plan developed as part of the Stipulation of Settlement dated October 5, 1994, to properly compost the removed sludge into an acceptable material for beneficial use.

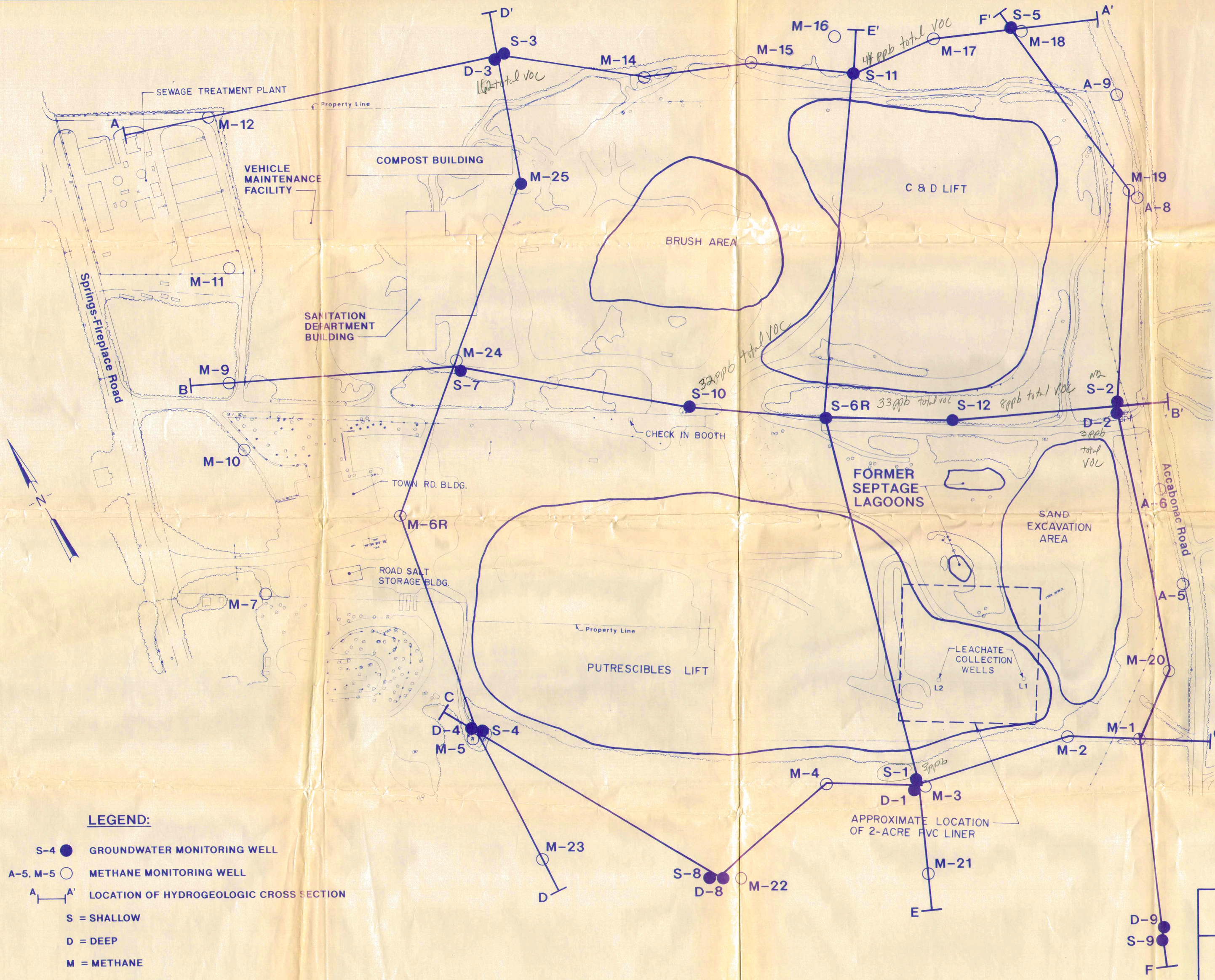
Sincerely,

Michael Coscia

Michael A. Coscia, P.E.
Environmental Engineer

MAC:cmb

cc: Catherine H. Lester
David D. Paolelli
Vincent Gandiello
Stephanie O. Davis
R. Becherer, NYSDEC
L. Riley, NYSDEC
S. Snee, NYSDEC



LEGEND:

- S-4 ● GROUNDWATER MONITORING WELL
- A-5, M-5 ○ METHANE MONITORING WELL
- A — A' LOCATION OF HYDROGEOLOGIC CROSS SECTION
- S = SHALLOW
- D = DEEP
- M = METHANE
- R = REPLACEMENT

01-0123

NOTE: BASE MAP DRAWN BY LOUIS K. McLEAN ASSOCIATES, P.C. CONSULTING ENGINEERS
LOCATIONS OF NEW SANITATION DEPARTMENT BUILDINGS ARE APPROXIMATE.

5/15/96
10/16/95
10/18/94
REVISED: 3/18/93

PLATE 1

LOCATIONS OF MONITORING WELLS MAP Q 9-0123 (RED BINDER)

SPRINGS-FIREPLACE ROAD LANDFILL

EAST HAMPTON, N.Y.

Fanning, Phillips & Molnar
Engineers
Ronkonkoma New York

Drawn By: JDS
Checked By: SDP
Scale: 1"=100'
Date: 4/10/91
Drawing No:
Sheet ___ Of ___

158-89-05 (1336)