KeySpan Corporation
Environmental Asset Management
175 East Old County Road
Hicksville, NY 11801

April 20, 2004

Douglas MacNeal, Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Western Remedial Action, 11th Floor
625 Broadway
Albany, New York 12233-7010

Re: Rockaway Park
Former Manufactured Gas Plant (MGP) Site
Supplemental Sediment Investigation Report
Order On Consent Index No. D1-0002-98-11
Site No. 2-41-029

Dear Mr. MacNeal:

KeySpan Corporation (KeySpan) is pleased to submit this letter report that summarizes the supplemental sediment investigation conducted in Jamaica Bay adjacent to the Rockaway Park former manufactured gas plant (MGP) site. KeySpan conducted the supplemental sediment investigation at the request of the New York State Department of Environmental Conservation (NYSDEC) to delineate a limited area where MGP constituents were observed near the previous sediment sampling location RPSED02-6. The area was identified in the *Final Remedial Investigation Report* (the "Final RI Report") submitted to the NYSDEC in January 2004.

The sediment investigation activities were conducted in accordance with the "Rockaway Park, Former Manufactured Gas Plant (MGP) Site, Revised Supplemental Sediment Investigation" work plan that was approved by the NYSDEC on October 28, 2003. GEI Consultants, Inc. (GEI) was contracted to implement the work plan. The sediment investigation activities were conducted on November 17, 2003.

Based upon the visual observations and the analytical results, an approximately 80-ft by 25-ft area adjacent to the bulkhead is impacted with MGP related materials. The visual observations of MGP materials are limited to the upper two to four feet of sediments and do not appear to extend further than 30 feet offshore. There does not appear to be any complete lateral migration pathway of coal tar from the subsurface soil on the landside of the site to the sediments.

The remainder of this document provides a summary of the supplemental sediment investigation activities. Table 1 presents the validated sediment analytical data; Plate 1 depicts the locations of

the sediment samples; and Plate 2 depicts a cross section of the impacted area. Attached to this report are lithologic logs of the sediment cores.

Summary of Results of 2002 Sediment Investigation

In October 2002, at the direction of NYSDEC, 19 sediment samples from nine sediment core locations were collected in Jamaica Bay to evaluate whether evidence of impacts from the former MGP site were present. The cores were advanced to depths of 3 to 5 feet below the sediment surface. The sediment sampling results were presented in the Final RI Report. Analytical results from one core (RPSED02-6), located 25 feet north of the bulkhead, contained up to 322 milligrams/kilogram (mg/kg) total polycyclic aromatic hydrocarbons (PAHs). No sheens or other visual evidence of MGP-related impact were observed in other sediment samples, and analytical results for the samples from the other cores were below the sediment effects range median (ERM) for total PAHs. Sediment sample locations and PAH results are shown on Plate 1. Tables 4-41 and 4-42 of the Final RI Report present the analytical results for all 2002 sediment samples.

The offshore area of the site has been well investigated. Plate 2 presents a cross section from the site into the bay. The channel bottom profile shown on the cross section is based on a survey conducted by KeySpan in July 2002 and is based on the sediment cores drilled during the sediment investigation. No free NAPL or tar has been observed in subsurface soils within the bulkhead area. As shown by Plate 2, the physical impacts beneath the bulkhead area and Beach Channel Drive are limited to soil staining and sheen and the maximum observed depth of the observed sheen and staining beneath the bulkhead area is approximately 45 to 50 feet below ground surface (RPSB-116). Physically observed tar was only found in subsurface soils south of Beach Channel Drive (approximately 140 feet inland from the bulkhead) and does not appear to migrate laterally toward or into the sediments beneath Jamaica Bay.

Supplemental Sediment Investigation

On November 17, 2003 GEI and Alpine Ocean Seismic Survey, Inc. (Alpine) implemented the supplemental sediment scope of work utilizing a vibracore sampler equipped with a global positioning system (GPS). Fifteen sediment samples were collected from seven sediment core locations (RPSED03-01 through RPSED03-07; Plate 1). At each sediment core location, a vibracore sampler was deployed from a spud barge and advanced to a maximum depth of 18 feet below the water/sediment interface. The GPS coordinates for each location were recorded and the core locations are depicted on Plate 1.

As described in the work plan, the sample locations were selected to delineate the horizontal and vertical extent of MGP constituents surrounding the location of RPSED02-6.

Fifteen samples from the seven cores were analyzed for SVOCs by EPA Method 8270, Total Organic Carbon (TOC), and pH by CLP Methods. Insufficient water was extracted from the samples to perform an analysis of hardness by method SM2340.B on the samples. Laboratory analyses were performed by Mitkem Corporation of Warwick, Rhode Island. Two samples that exhibited the greatest degree of visual impacts (from core locations RPSED03-01 and RPSED03-05) were also submitted to META Environmental, Inc. for environmental forensics analysis to identify the likely origin of the observed materials.

A moderate "patchy" sheen, a small piece of wood coated with coal tar, a high viscosity NAPL, and pieces of coal were observed in the shallow sediments (upper two to four feet) from the cores at RPSED03-01, RPSED03-02, and RPSED03-05. These three core locations were closest to the original limited area of impact location RPSED02-06. No sheens or other visual evidence of MGP-related materials were observed in the other sediment cores (RPSED03-03, RPSED03-04, RPSED03-06, or RPSED03-07).

Total PAHs from the impacted area ranged from 19.3 mg/kg to 940.8 mg/kg. Total PAH results from the other surficial sediments locations ranged from 5.35 to 54 mg/kg. Analytical results from one sample were above the sediment ERM for total PAHs (940.8 mg/kg at RPSED03-05 at 3.8 to 4 feet below the sediment surface). This sample was collected from sediment surrounding the small piece of wood coated with coal tar. All other analytical results were below the sediment ERM for total PAHs.

Two samples, RPSED03-01 (1-3) and RPSED03-05 (3.8-4), were analyzed by META to attempt to determine the origin of the observed material. Both of the samples analyzed contained MGP residuals.

Deeper sediments, from four to eighteen feet below the sediment surface, did not exhibit any visual evidence of tar. These gray sand sediments contained shell bearing seams of varying thickness similar to those observed on the landside of the site. There were no visual observations of tar-related materials in any of the shell bearing seams identified during the supplemental sediment sampling. In addition, trace PAHs concentrations were only detected in two of the seven samples collected below four feet (0.04 mg/kg total PAHs at RPSED03-01(5-6) and 0.062 mg/kg total PAHs at RPSED03-06(6-7).

CONCLUSIONS AND RECOMMENDATIONS

Sediments containing MGP related materials are present in the shallow sediments in a limited area on the waterside of the bulkhead adjacent to the former MGP site. Based upon the visual observations and the analytical results, the impacts encompass an approximately 80-ft by 25-ft area adjacent to the bulkhead and do not appear to extend further than 30 feet offshore (Plate 1).

There does not appear to be any lateral migration of tar from the subsurface soil on the landside of the site to the sediments (Plate 2). The shell bearing units, which were the primary lateral migration pathway on the landside of the site, did not contain any evidence of tar migration in the sediments. The MGP related materials observed were limited to the shallow sediments in a defined area (Plate 1). The vertical extent of contamination is limited and confined to an area near RPSED02-6 (including RPSED03-01 and RPSED03-05).

The sediments containing MGP-related material are well-defined. As suggested in the Final RI Report, the total PAHs in the sediments represent a limited, localized impact to near-shore sediments. Based on these results it is very doubtful that these contaminants can significantly impact or have significantly impacted the ecology of Beach Channel or Jamaica Bay. As such, no further investigation of the sediment is warranted.

These data suggest that there is not, nor has there been, significant migration of MGP-related contaminants into Jamaica Bay. The data also suggest that the cutoff walls proposed in the January 2004 Feasibility Study will prevent any potential migration of MGP-related contamination to near-shore sediments.

If you have any questions, feel free to contact me at (516) 545-2555.

Sincerely,

Thomas J. Campbell

Thomas J. Campbell
Senior Environmental Engineer

Attachments
cc: T. Kunkel, NYSDEC, Region 2, (1 Copy)
S. Selmer, NYSDOH, (1 Copy)
L. Liebs, KeySpan, (1 CD)
D. Riccobono, KeySpan, (1 CD)
C. Dequillfeldt, NYSDEC Marine Resources, (1 Copy)

Table 1
Jamaica Bay Sediment Analytical Results
Rockaway Park Former MGP Site

Constituent	New York Cleanup Obj. ERL	New York Cleanup Obj. ERM	Site ID/Depth (ft)/Sample ID/Date			
			RPSED03-01	RPSEDXX-XX	RPSED03-01	RPSED03-02
			1-3	1-3	5-6	0-0.25
			RPSED03-01(1-3)	RPSED03-01(1-3) DUP	RPSED03-01(5-6)	RPSED03-02(0-0.25)
			11/17/2003	11/17/2003	11/17/2003	11/17/2003
Semivolatile Organic Compounds (SVOCs)						
Carcinogenic PAHs (mg/kg)						
Acenaphthene	0.02	0.5	37 J	0.4 U	0.39 U	2.1 U
Acenaphthylene	0.04	0.64	22	0.11 J	0.39 U	0.45 J
Anthracene	0.09	1.1	25	0.14 J	0.39 U	0.55 J
Benzo[g,h,i]perylene	NE	NE	5.1 J	0.21 J	0.39 U	0.96 J
Fluoranthene	0.6	5.1	25	0.57	0.39 U	2.2
Fluorene	0.02	0.54	24	0.4 U	0.39 U	2.1 U
Methylnaphthalene,2-	0.07	0.67	2.5 J	0.4 U	0.39 U	2.1 U
Naphthalene	0.16	2.1	66	0.4 U	0.39 U	2.1 U
Phenanthrene	0.24	1.5	100	0.22 J	0.39 U	1 J
Pyrene	0.67	2.6	46	1.6 J	0.04 J	5.4
Total Noncarcinogenic PAHs	NE	NE	352.6	2.85	0.04	10.56
Carcinogenic PAHs (mg/kg)						
Benz[a]anthracene	0.26	1.6	15	0.51	0.39 U	2 J
Benzo[a]pyrene	0.43	1.6	11	0.4	0.39 U	1.4 J
Benzo[b]fluoranthene	NE	NE	8.7	0.37 J	0.39 U	1.7 J
Benzo[k]fluoranthene	NE	NE	2.6 J	0.12 J	0.39 U	0.58 J
Chrysene	0.38	2.8	14	0.5	0.39 U	2 J
Dibenz[a,h]anthracene	0.06	0.26	1.5 J	0.06 J	0.39 U	0.32 J
Indeno[1,2,3-cd]pyrene	NE	NE	3.9 J	0.16 J	0.39 U	0.74 J
Total Carcinogenic PAHs	NE	NE	56.7	2.12	0	8.74
Total PAHs	4.02	448	409.3	4.97	0.04	19.3
Other Semivolatile Organic Compounds (mg/kg)						
Carbazole	NE	NE	1.3 J	0.4 U	0.39 U	2.1 U
Dibenzofuran	NE	NE	3.2 J	0.4 U	0.39 U	2.1 U
pH						
pH	NE	NE	8.4 J	8.2 J	7.8 J	8 J
Total Organic Carbon (mg/kg)						
Total Organic Carbon	NE	NE	18000	1100 J	230	2600

Table 1
Jamaica Bay Sediment Analytical Results
Rockaway Park Former MGP Site

Constituent	New York Cleanup Obj. ERL	New York Cleanup Obj. ERM	Site ID/Depth (ft)/Sample ID/Date			
			RPSED03-02	RPSED03-03	RPSED03-03	RPSED03-04
			4-5	0-0.25	6-7	0-0.25
			RPSED03-02(4-5)	RPSED03-03(0-0.25)	RPSED03-03(6-7)	RPSED03-04(0-0.25)
			11/17/2003	11/17/2003	11/17/2003	11/17/2003
Semivolatile Organic Compounds (SVOCs)						
Carcinogenic PAHs (mg/kg)						
Acenaphthene	0.02	0.5	0.37 U	0.24 J	0.37 U	2 U
Acenaphthylene	0.04	0.64	0.37 U	1.2 J	0.37 U	2 U
Anthracene	0.09	1.1	0.37 UJ	2.8	0.37 U	0.32 J
Benzo[g,h,i]perylene	NE	NE	0.37 U	1.8 J	0.37 U	0.22 J
Fluoranthene	0.6	5.1	0.37 UJ	7.1	0.37 U	0.67 J
Fluorene	0.02	0.54	0.37 UJ	0.59 J	0.37 U	2 U
Methylnaphthalene,2-	0.07	0.67	0.37 U	2 U	0.37 U	2 U
Naphthalene	0.16	2.1	0.37 U	2 U	0.37 U	2 U
Phenanthrene	0.24	1.5	0.37 UJ	4.9	0.37 U	0.7 J
Pyrene	0.67	2.6	0.37 U	15	0.37 U	1.5 J
Total Noncarcinogenic PAHs	NE	NE	0	33.63	0	3.41
Carcinogenic PAHs (mg/kg)						
Benz[a]anthracene	0.26	1.6	0.37 U	5.3	0.37 U	0.59 J
Benzo[a]pyrene	0.43	1.6	0.37 UJ	4.1	0.37 U	0.44 J
Benzo[b]fluoranthene	NE	NE	0.37 UJ	2.6	0.37 U	0.33 J
Benzo[k]fluoranthene	NE	NE	0.37 UJ	1.3 J	0.37 U	2 U
Chrysene	0.38	2.8	0.37 U	5.1	0.37 U	0.58 J
Dibenz[a,h]anthracene	0.06	0.26	0.37 U	0.57 J	0.37 U	2 U
Indeno[1,2,3-cd]pyrene	NE	NE	0.37 U	1.4 J	0.37 U	2 U
Total Carcinogenic PAHs	NE	NE	0	20.37	0	1.94
Total PAHs	4.02	448	0	54	0	5.35
Other Semivolatile Organic Compounds (mg/kg)						
Carbazole	NE	NE	0.37 U	2 U	0.37 U	2 U
Dibenzofuran	NE	NE	0.37 UJ	2 U	0.37 U	2 U
pH						
pH	NE	NE	8.3 J	8.2 J	8 J	8.2 J
Total Organic Carbon (mg/kg)						
Total Organic Carbon	NE	NE	320	1500	100 U	620

Table 1
Jamaica Bay Sediment Analytical Results
Rockaway Park Former MGP Site

Constituent	New York Cleanup Obj. ERL	New York Cleanup Obj. ERM	Site ID/Depth (ft)/Sample ID/Date			
			RPSED03-04	RPSED03-05	RPSED03-05	RPSED03-05
			7-8	0-0.25	3.8-4	9-10
			RPSED03-04(7-8)	RPSED03-05(0-0.25)	RPSED03-05(3.8-4)	RPSED03-05(9-10)
			11/17/2003	11/17/2003	11/17/2003	11/17/2003
Semivolatile Organic Compounds (SVOCs)						
Carcinogenic PAHs (mg/kg)						
Acenaphthene	0.02	0.5	0.38 U	1.1 J	170 J	0.39 U
Acenaphthylene	0.04	0.64	0.38 U	0.24 J	8.4	0.39 U
Anthracene	0.09	1.1	0.38 U	0.63 J	63	0.39 U
Benzo[g,h,i]perylene	NE	NE	0.38 U	0.42 J	7.7	0.39 U
Fluoranthene	0.6	5.1	0.38 U	1.1 J	49	0.39 U
Fluorene	0.02	0.54	0.38 U	0.45 J	50	0.39 U
Methylnaphthalene,2-	0.07	0.67	0.38 U	2.2 U	12	0.39 U
Naphthalene	0.16	2.1	0.38 U	1.1 J	190	0.39 U
Phenanthrene	0.24	1.5	0.38 U	1.5 J	200	0.39 U
Pyrene	0.67	2.6	0.38 U	1.9 J	86	0.39 U
Total Noncarcinogenic PAHs	NE	NE	0	8.44	836.1	0
Carcinogenic PAHs (mg/kg)						
Benz[a]anthracene	0.26	1.6	0.38 U	0.78 J	28	0.39 U
Benzo[a]pyrene	0.43	1.6	0.38 U	0.64 J	22	0.39 U
Benzo[b]fluoranthene	NE	NE	0.38 U	0.71 J	16	0.39 U
Benzo[k]fluoranthene	NE	NE	0.38 U	0.33 J	6.2	0.39 U
Chrysene	0.38	2.8	0.38 U	0.92 J	24	0.39 U
Dibenz[a,h]anthracene	0.06	0.26	0.38 U	2.2 U	2.2	0.39 U
Indeno[1,2,3-cd]pyrene	NE	NE	0.38 U	2.2 U	6.3	0.39 U
Total Carcinogenic PAHs	NE	NE	0	3.38	104.7	0
Total PAHs	4.02	448	0	11.82	940.8	0
Other Semivolatile Organic Compounds (mg/kg)						
Carbazole	NE	NE	0.38 U	2.2 U	2.6	0.39 U
Dibenzofuran	NE	NE	0.38 U	2.2 U	6.6	0.39 U
pH						
pH	NE	NE	7.9 J	8.4 J	8.3 J	8.2 J
Total Organic Carbon (mg/kg)						
Total Organic Carbon	NE	NE	200	29000	730	280

Table 1
Jamaica Bay Sediment Analytical Results
Rockaway Park Former MGP Site

Constituent	New York Cleanup Obj. ERL	New York Cleanup Obj. ERM	Site ID/Depth (ft)/Sample ID/Date			
			RPSED03-06	RPSED03-06(6-7)	RPSED03-07	RPSED03-07
			0-0.25	6-7	0-0.25	5-6
			RPSED03-06(0-0.25)	RPSED03-06(6-7)	RPSED03-07(0-0.25)	RPSED03-07 (5-6)
			11/17/2003	11/17/2003	11/17/2003	11/17/2003
Semivolatile Organic Compounds (SVOCs)						
Carcinogenic PAHs (mg/kg)						
Acenaphthene	0.02	0.5	2.2 U	0.36 U	2.7 U	0.37 U
Acenaphthylene	0.04	0.64	0.51 J	0.36 U	0.76 J	0.37 U
Anthracene	0.09	1.1	0.58 J	0.36 U	1.6 J	0.37 U
Benzo[g,h,i]perylene	NE	NE	0.82 J	0.36 U	0.96 J	0.37 U
Fluoranthene	0.6	5.1	2.2	0.36 U	3.4	0.37 U
Fluorene	0.02	0.54	2.2 U	0.36 U	2.7 U	0.37 U
Methylnaphthalene,2-	0.07	0.67	2.2 U	0.36 U	2.7 U	0.37 U
Naphthalene	0.16	2.1	2.2 U	0.36 U	2.7 U	0.37 U
Phenanthrene	0.24	1.5	0.77 J	0.36 U	2.4 J	0.37 U
Pyrene	0.67	2.6	5	0.062 J	6.7	0.37 U
Total Noncarcinogenic PAHs	NE	NE	9.88	0.062	15.82	0
Carcinogenic PAHs (mg/kg)						
Benz[a]anthracene	0.26	1.6	1.9 J	0.36 U	2.6 J	0.37 U
Benzo[a]pyrene	0.43	1.6	1.4 J	0.36 U	2 J	0.37 U
Benzo[b]fluoranthene	NE	NE	1.3 J	0.36 U	1.6 J	0.37 U
Benzo[k]fluoranthene	NE	NE	0.53 J	0.36 U	0.79 J	0.37 U
Chrysene	0.38	2.8	1.8 J	0.36 U	2.6 J	0.37 U
Dibenz[a,h]anthracene	0.06	0.26	0.24 J	0.36 U	0.32 J	0.37 U
Indeno[1,2,3-cd]pyrene	NE	NE	0.66 J	0.36 U	0.8 J	0.37 U
Total Carcinogenic PAHs	NE	NE	7.83	0	10.71	0
Total PAHs	4.02	448	17.71	0.062	26.53	0
Other Semivolatile Organic Compounds (mg/kg)						
Carbazole	NE	NE	2.2 U	0.36 U	2.7 U	0.37 U
Dibenzofuran	NE	NE	2.2 U	0.36 U	2.7 U	0.37 U
pH						
pH	NE	NE	8.3 J	8.1 J	7.8 J	7.9 J
Total Organic Carbon (mg/kg)						
Total Organic Carbon	NE	NE	14000	240	16000	350

Notes:

ERL - Effects Range Low

ERM - Effects Range Medium

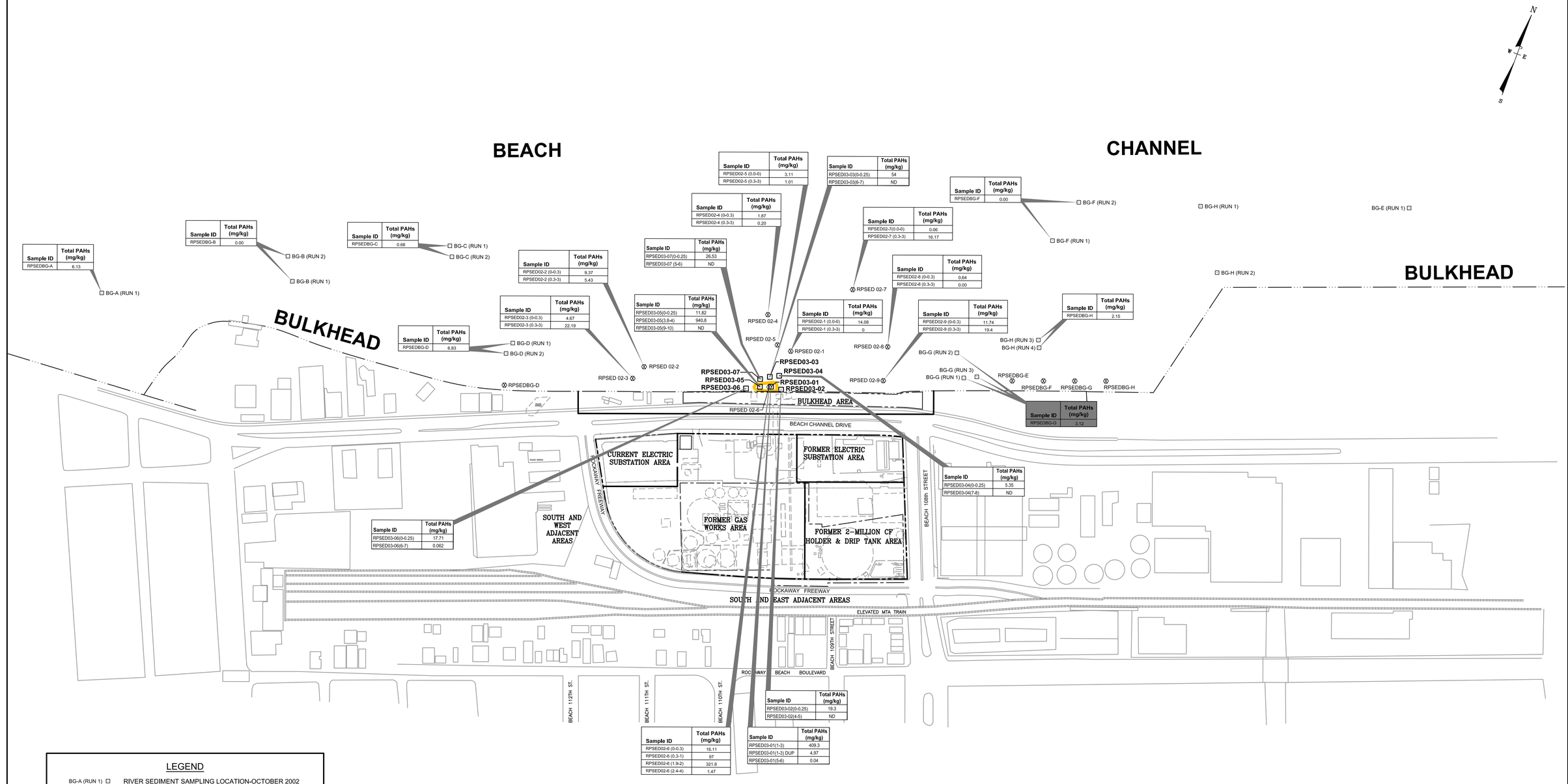
NE - not established

J - estimated value

U - indicates not detected to the reporting limit for organic analysis and the method detection limit for inorganic analysis

mg/kg - milligrams/kilogram or parts per million (ppm)

PAHs are polycyclic aromatic hydrocarbons.



LEGEND

- BG-A (RUN 1) □ — RIVER SEDIMENT SAMPLING LOCATION-OCTOBER 2002
- SED-02-1 ⊗ — VIBRA-CORE SAMPLING LOCATION-OCTOBER 2002
- **RPSED02-2** □ — VIBRA-CORE SAMPLING LOCATION-NOVEMBER 2003
- APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
- LOCATION OF EXISTING STRUCTURE
- APPROXIMATE 1912 SITE BOUNDARY
- CURRENT SITE BOUNDARY
- FORMERLY OWNED PROPERTY
- FENCE
- INFERRED LIMITS OF SEDIMENT IMPACTS

NOTES:
RPSED02-X (0,3-3.0) = SEDIMENT VIBRACORE SAMPLE COLLECTED IN OCTOBER 2002: DEPTH BENEATH SEDIMENT INTERFACE (FEET)
RPSED03-X (0-0.25) = SEDIMENT VIBRACORE SAMPLE COLLECTED IN NOVEMBER 2003: DEPTH BENEATH SEDIMENT INTERFACE (FEET)
RPSEDBG-X = BACKGROUND SEDIMENT SAMPLE COLLECTED AT SEDIMENT INTERFACE WITH SHIPECK SAMPLER IN OCTOBER 2002

SOURCE:
BASE MAP PREPARED FROM DVIRKA & BARTILUCCI (OCTOBER 2002)
INTERPRETATION OF AERIAL PHOTOGRAPH DATED MARCH 31, 1998. APPROXIMATE LOCATIONS OF FORMER MGP STRUCTURES BASED ON INTERPRETATION OF SANBORN FIRE INSURANCE MAPS DATED 1901 AND 1933 AND THE FOLLOWING CONSTRUCTION DRAWING PROVIDED BY KEYSPAN ENERGY:
- PLAN OF GAS WORKS, DATED OCTOBER 1949, REVISED 1950, 1951 AND 1956

NOTE:
SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO BE RELIED UPON BY OTHERS.

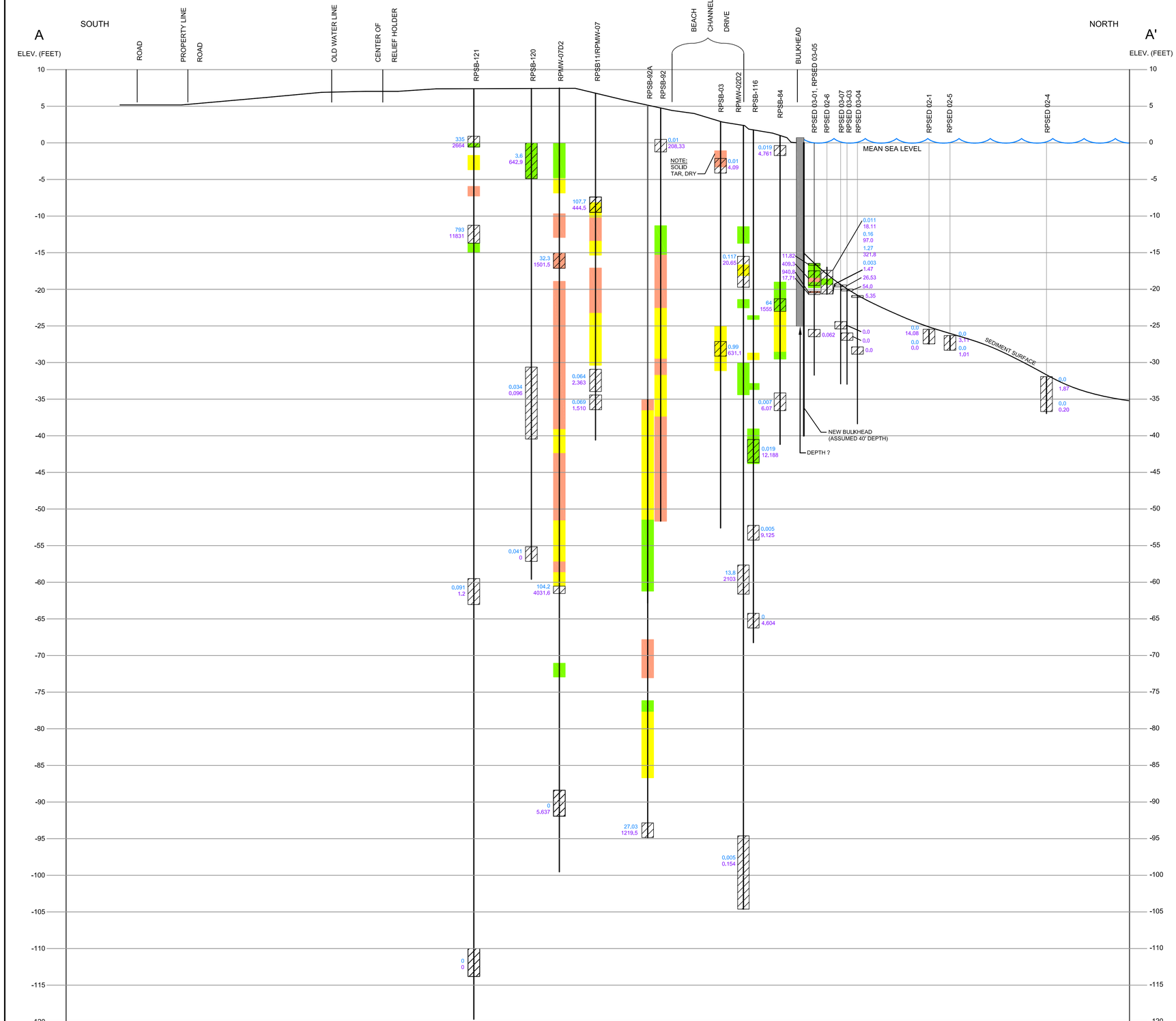
GEI Consultants, Inc.

PLAN PREPARED FOR
KEYSPAN CORPORATION
ROCKAWAY PARK FORMER MGP SITE
ROCKAWAY PARK, NEW YORK

SUPPLEMENTAL SEDIMENT INVESTIGATION SAMPLES TOTAL PAHs (mg/kg)

SCALE: 1"=150'	DRN BY: SCG	**PLATE 1**
DATE: JAN 2004	982482-9-1817	

KEYSPAN\ROCKAWAY\11-2003-NEW COORDS\PLATE\ROCK-SEDANAL



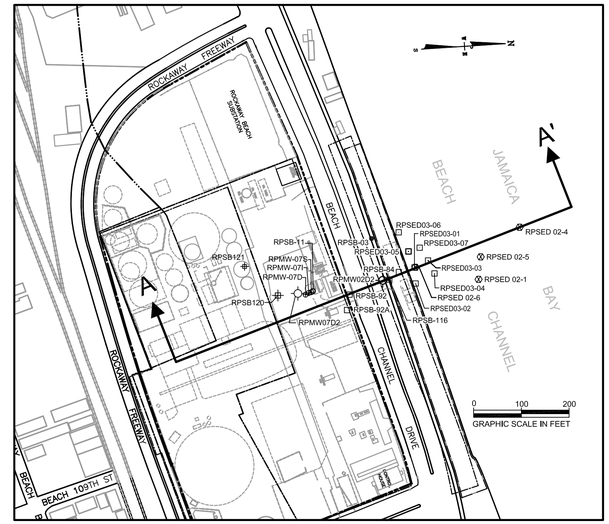
LEGEND

TOTAL BTEX (mg/kg) - 32.3
TOTAL PAHs (mg/kg) - 1501.5

- SAMPLE
- TAR
- SHEEN
- STAINING

NOTE: ALL ELEVATIONS ARE APPROXIMATE.

CROSS-SECTION LOCATION MAP



50 25 0 50 100
APPROXIMATE HORIZONTAL GRAPHIC SCALE IN FEET

7.5 3.75 0 7.5 15
APPROXIMATE VERTICAL GRAPHIC SCALE IN FEET

GEI Consultants, Inc.

PREPARED FOR
KEYSPAN CORPORATION
ROCKAWAY PARK FORMER MGP SITE
ROCKAWAY PARK, NEW YORK

SUPPLEMENTAL SEDIMENT INVESTIGATION
CROSS SECTION A-A'

SCALE: AS NOTED	DRN BY: SCG	**PLATE 2**
DATE: JAN 2004	982482-9-1817	

KEYSPAN\ROCKAWAY\11-2003\PLATE\ROCK-CHANNEL XSEC

Site Id: RPSED03-01

CEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482-9	Project Name: Rockaway Park	Date Started: 11/17/03	Date Completed: 11/17/03
Remarks:		Ground Elevation: 0.00'	Datum: Mean Sea Level
		Contractor: Alpine Ocean Seismic	Total Depth: 15.00'
		Drilling Method: VIBRACORE	
		Logged By: Katie Amos	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description: color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Analyzed Sample Interval	Lithology	Physical Observations	Odors	Elevation (ft)
0-15		100			0.0-3.0: Black, wet, fine to medium SAND, little gravel, little silt, trace shells, poorly sorted, semi-cohesive, sheen throughout, trace blebs, creosote and tar present 2.0-2.5', weathered organic (sewage-like) odor mixed with fuel oil odor. (SW)	1.0-3.0			STRONG	
					3.0-5.0: Gray, wet, fine SAND, trace medium to coarse sand, very trace fine gravel, well-sorted, semi-cohesive, moderately stiff, no visual contamination, sulfur odor. (SP)					
					5.0-10.0: Gray, wet, fine SAND, becomes slightly coarser at 6.0', trace shells, no visual contamination, sulfur odor. (SP)	5.0-6.0				
				10	10.0-15.0: Gray, wet, fine SAND, trace medium sand, semi-cohesive, moderately stiff, no visual contamination, sulfur odor. (SP)				MODERATE	-10
			41 ppm							
			24 ppm							
			24 ppm							
					15.0: End of boring.					

Legend: Physical Observations

None | Sheen | Stain | Heavy

Site Id: RPSED03-02

GEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482-9	Project Name: Rockaway Park	Date Started: 11/17/03	Date Completed: 11/17/03
Remarks:		Ground Elevation: 0.00'	Datum: Mean Sea Level
		Contractor: Alpine Ocean Seismic	Total Depth: 15.00'
		Drilling Method: VIBRACORE	
		Logged By: Katie Amos	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description: color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Analyzed Sample Interval	Lithology	Physical Observations	Odors	Elevation (ft)
0-15		100	17 ppm		0.0-3.6: Dark brown, wet, SILT, little fine sand, trace shells, trace gravel and cobbles, soft, semi-cohesive, poorly sorted, very trace trace sheen at 3.6', sulfur odor. (SM)	0.0-0.25				
			5 ppm							
			65 ppm		3.6-5.0: Gray, wet, fine SAND, trace coarse sand, trace shells, moderately stiff, semi-cohesive, sulfur odor. (SP)					
			17 ppm			4.0-5.0				
					5.0-10.0: Gray, wet, fine SAND, trace fine to coarse gravel, no visual contamination, sulfur odor. (SP)					
			5 ppm						MODERATE	
			8 ppm							
			10 ppm							
				10	10.0-15.0: Gray, wet, fine SAND, moderately stiff, no visual contamination, sulfur odor. (SP)					-10
			35 ppm							
			16 ppm							
			10 ppm							
					15.0: End of boring.					

Legend: Physical Observations

None | Sheen | Stain | Heavy

Site Id: RPSED03-03

GEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482-9	Project Name: Rockaway Park	Date Started: 11/17/03	Date Completed: 11/17/03
Remarks:		Ground Elevation: 0.00'	Datum: Mean Sea Level
		Contractor: Alpine Ocean Seismic	Total Depth: 12.90'
		Drilling Method: VIBRACORE	
		Logged By: Katie Amos	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description: color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Analyzed Sample Interval	Lithology	Physical Observations	Odors	Elevation (ft)
0-15		86	17 ppm		0.0-1.9: Dark brown, wet, fine SAND, trace silt, trace cobbles, trace shells, semi-cohesive, no visual contamination, sulfur odor. (SW)	0.0-0.25				
					1.9-2.1: Dark brown, peaty layer, silt and organics, soft, cohesive, no visual contamination, organic odor. (PT)					
			13 ppm		2.1-6.0: Gray, fine to medium SAND, trace shells, trace fine gravel, no visual contamination, sulfur odor. (SP)					
			7 ppm						MODERATE	
					6.0-12.9: Gray, wet, fine SAND, well-sorted, no visual contamination, sulfur odor. (SP)	6.0-7.0				
			3 ppm							
			5 ppm							
			5 ppm	10						-10
			3 ppm							
					12.9: End of boring.					

Legend: Physical Observations

None | Sheen | Stain | Heavy

Site Id: RPSED03-04

GEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482-9	Project Name: Rockaway Park	Date Started: 11/17/03	Date Completed: 11/17/03
Remarks:		Ground Elevation: 0.00'	Datum: Mean Sea Level
		Contractor: Alpine Ocean Seismic	Total Depth: 17.50'
		Drilling Method: VIBRACORE	
		Logged By: Katie Amos	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description: color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Analyzed Sample Interval	Lithology	Physical Observations	Odors	Elevation (ft)
0-17.5		100			0.0-0.6: Dark brown, wet, fine SAND, trace coarse gravel, trace shell, soft, semi-cohesive, no visual contamination, no odor. (SP)	0.0-0.25				0
			0 ppm		0.6-5.0: Gray, wet, fine SAND, trace shells, trace gravel, becomes medium sand in bottom 1.0', no visual contamination, moderate sulfur odor. (SP)					
			0.2 ppm							
			3 ppm							
			5 ppm							
					5.0-10.0: SAA (SP)					
			8 ppm						MODERATE	
			4 ppm							
			3 ppm							
				10	10.0-15.0: SAA (SP)					-10
			2 ppm							
			0.8 ppm							
			0.4 ppm							

Legend: Physical Observations — None, Sheen, Stain, Heavy

Site Id: RPSED03-04

GEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482-9	Project Name: Rockaway Park	Date Started: 11/17/03	Date Completed: 11/17/03
Remarks:		Ground Elevation: 0.00'	Datum: Mean Sea Level
		Contractor: Alpine Ocean Seismic	Total Depth: 17.50'
		Drilling Method: VIBRACORE	
		Logged By: Katie Amos	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Analyzed Sample Interval	Lithology	Physical Observations	Odors	Elevation (ft)
					15.0–17.5: SAA, trace sulfur odor. (SP)					
			0.6 ppm						MODERATE	
			0.3 ppm							
					17.5: End of boring.					
				20						-20

Legend: Physical Observations — None, Sheen, Stain, Heavy

Site Id: RPSED03-05

GEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482-9	Project Name: Rockaway Park	Date Started: 11/17/03	Date Completed: 11/17/03
Remarks:		Ground Elevation: 0.00'	Datum: Mean Sea Level
		Contractor: Alpine Ocean Seismic	Total Depth: 15.00'
		Drilling Method: VIBRACORE	
		Logged By: Katie Amos	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description: color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Analyzed Sample Interval	Lithology	Physical Observations	Odors	Elevation (ft)
0-15		100			0.0-3.3: Dark brown, fine SAND, some silt, trace organics, soft, semi-cohesive, sheen throughout, strong sulfur odor. (SM)	0.0-0.25				0
			17 ppm							
			31 ppm							
			60 ppm		3.3-5.0: Gray, fine SAND, little wood, trace shells, semi-cohesive, moderately stiff, tar globule on piece of wood at 3.8-4.0', no other visual contamination, sulfur odor. (SP)					
			24 ppm			3.8-4.0				
					5.0-10.0: Gray, wet, fine SAND, trace fine gravel, no visual contamination, strong sulfur odor. (SP)					
			10 ppm						STRONG	
			106 ppm							
			80 ppm							
				10	10.0-15.0: SAA (SP)					-10
			77 ppm							
			70 ppm							
					15.0: End of boring.					

Legend: Physical Observations

None | Sheen | Stain | Heavy

Site Id: RPSED03-06

GEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482-9	Project Name: Rockaway Park	Date Started: 11/17/03	Date Completed: 11/17/03
Remarks:		Ground Elevation: 0.00'	Datum: Mean Sea Level
		Contractor: Alpine Ocean Seismic	Total Depth: 18.00'
		Drilling Method: VIBRACORE	
		Logged By: Katie Amos	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description: color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Analyzed Sample Interval	Lithology	Physical Observations	Odors	Elevation (ft)
0-18		100			0.0-4.3: Dark brown, wet, fine SAND and SILT, trace shells, trace organics, trace fine gravel, soft, semi-cohesive, no visual contamination, strong sulfur odor. (SM)	0.0-0.25				
			20 ppm							
			55 ppm							
			25 ppm		4.3-5.0: Gray, wet, fine SAND, no visual contamination, sulfur odor. (SP)					
			11 ppm							
					5.0-10.0: Gray, wet, fine SAND, little fine gravel and shells in top 4", no visual contamination, sulfur odor. (SP)					
						6.0-7.0			STRONG	
				10	10.0-15.0: Gray, wet, fine SAND, no visual contamination, sulfur odor. (SP)					-10

Legend: Physical Observations — None, Sheen, Stain, Heavy

Site Id: RPSED03-06

GEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482-9	Project Name: Rockaway Park	Date Started: 11/17/03	Date Completed: 11/17/03
Remarks:		Ground Elevation: 0.00'	Datum: Mean Sea Level
		Contractor: Alpine Ocean Seismic	Total Depth: 18.00'
		Drilling Method: VIBRACORE	
		Logged By: Katie Amos	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Analyzed Sample Interval	Lithology / Physical Observations	Odors	Elevation (ft)
					15.0–18.0: SAA, strong sulfur odor. (SP)			STRONG	
					18.0: End of boring.				
				20					-20

Legend: Physical Observations — None, Sheen, Stain, Heavy

Site Id: RPSED03-07

GEI Consultants, Inc.

Client: Keyspan Energy, Inc.			
Project Number: 982482-9	Project Name: Rockaway Park	Date Started: 11/17/03	Date Completed: 11/17/03
Remarks:		Ground Elevation: 0.00'	Datum: Mean Sea Level
		Contractor: Alpine Ocean Seismic	Total Depth: 13.50'
		Drilling Method: VIBRACORE	
		Logged By: Katie Amos	Certified By: Matt O'Neil

Split Spoon Sample Depth (ft.)	Blows Per 6 Inches	Recovery %	PID	Depth (ft.)	Soil Description: color, density, SOIL, admixture, moisture, other notes, ORIGIN.	Analyzed Sample Interval	Lithology	Physical Observations	Odors	Elevation (ft)
0-15		90			0.0-0.6: Dark brown, wet, SILT, trace cobbles, very soft, semi-cohesive, no visual contamination, strong organic odor. (ML)	0.0-0.25				
					0.6-1.6: Dark brown, wet, fine SAND, trace silt, trace shells, trace gravel, no visual contamination, organic odor. (SP)					
					1.6-5.0: Gray, fine to medium SAND, trace shells, no visual contamination, sulfur odor. (SP)					
					5.0-10.0: Gray, fine SAND, well-sorted, moderately stiff, no visual contamination, sulfur odor. (SP)	5.0-6.0			MODERATE	
				10	10.0-13.5: SAA (SP)					-10
					13.5: End of boring.					

Legend: Physical Observations

None | Sheen | Stain | Heavy

KeySpan Corporation
Environmental Asset Management
175 East Old County Road
Hicksville, NY 11801

April 20, 2004

Douglas MacNeal, Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Western Remedial Action, 11th Floor
625 Broadway
Albany, New York 12233-7010

Re: Rockaway Park
Former Manufactured Gas Plant (MGP) Site
Supplemental Sediment Investigation Report
Order On Consent Index No. D1-0002-98-11
Site No. 2-41-029

Dear Mr. MacNeal:

Enclosed are two (2) hard copies and one (1) electronic copy on compact disc (CD) of the following letter report:

Supplemental Sediment Investigation Report
Rockaway Park Former Manufactured Gas Plant Site
Rockaway Park, New York
April 20, 2004

Enclosed is one (1) electronic copy on compact disc (CD) of the Data Usability Reports, Validated Form I Data, Meta Environmental Forensic Report. By copy of this letter the above referenced document has also been forwarded to the parties named below.

If you have any questions, or require any additional information, feel free to contact me at (516) 545-2555.

Sincerely,

Thomas J. Campbell/bgh

Thomas J. Campbell
Senior Environmental Engineer

Enclosure
cc: T. Kunkel, NYSDEC, Region 2, (1 Copy)
S. Selmer, NYSDOH, (1 Copy)
L. Liebs, KeySpan, (1 CD)
D. Riccobono, KeySpan, (1 CD)
C. Dequillfeldt, NYSDEC Marine Resources, (1 Copy)

Data Usability Summary Report

Site: Rockaway Park, Former MGP
Laboratory: Mitkem Corporation, Warwick, RI
Report No.: B1828
Reviewer: Lorie MacKinnon/GEI Consultants
Date: March 2, 2004

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
RP-SED-03-01(1-3)	B1828-01	SVOC, pH, TOC
RP-SED-03-01(5-6)	B1828-02	SVOC, pH, TOC
RP-SED-03-02(0-0.25)	B1828-03	SVOC, pH, TOC
RP-SED-03-02(4-5)	B1828-04	SVOC, pH, TOC
RP-SED-03-03(0-0.25)	B1828-05	SVOC, pH, TOC
RP-SED-03-03(6-7)	B1828-06	SVOC, pH, TOC
RP-SED-03-04(0-0.25)	B1828-07	SVOC, pH, TOC
RP-SED-03-04(7-8)	B1828-08	SVOC, pH, TOC
RP-SED-03-05(0-0.25)	B1828-09	SVOC, pH, TOC
RPSED-03-05(3.8-4)	B1828-10	SVOC, pH, TOC
RP-SED-03-05(9-10)	B1828-11	SVOC, pH, TOC
RP-SED-03-06(0-0.25)	B1828-12	SVOC, pH, TOC
RP-SED-03-06(6-7)	B1828-13	SVOC, pH, TOC
RP-SED-03-07(0-0.25)	B1828-14	SVOC, pH, TOC
RP-SED-03-07(5-6)	B1828-15	SVOC, pH, TOC
FB11180301	B1828-16	SVOC, pH, TOC, Hardness
RP-SEDXX-XX	B1828-17	SVOC, pH, TOC
Associated QC Samples:	Field Blanks:	FB11180301
	Field Duplicate pair:	RP-SED-03-01(5-6)/RP-SEDXX-XX

The above listed samples were collected on November 17 and 18, 2003 and were analyzed for semivolatile organic compounds (SVOCs) by SW-846 method 8270C, pH by SW-846 method 9045, hardness by Standard Method 2340, and total organic carbon (TOC) by EPA method 415. The data validation was based on the USEPA Region II Standard Operating Procedure (SOP) for the Validation of Organic Data Acquired using SW-846 Method 8270C, SOP No. HW-22, Revision 2, June 2001 and USEPA Region II Standard Operating Procedure (SOP) for the Evaluation of Metals Data for the Contract Laboratory Program, SOP No. HW-2, Revision 11, January 1992.

The organic data were evaluated based on the following parameters:

* · Data Completeness
· Holding Times and Sample Preservation
* · Gas Chromatography/Mass Spectrometry (GC/MS) Tunes

- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
* · Internal Standards
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results
- Quantitation Limits and Data Assessment

* - All criteria were met.

All results were found to be usable.

The organic validation recommendations were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP Category B deliverables for the SVOC analyses.

Holding Times and Sample Preservation

The SVOC extraction took place 14 days outside of the required holding time for sample FB11180301. The positive and nondetect results for sample FB11180301 were qualified as estimated (J/UJ1). Results may be biased low.

GC/MS Tunes

All criteria were met in the SVOC analyses.

Initial and Continuing Calibrations

Compounds that did not meet criteria in the SVOC initial and continuing calibrations are summarized in the following tables.

Instrument ID S1 Compound	IC 12/08/03	CC 12/12/03
2,4-dimethylphenol	X (20.1%)	
hexachlorocyclopentadiene	X (27.5%)	XX (32.4%)
acenaphthylene	X (15.6%)	

Instrument ID S1 Compound	IC 12/08/03	CC 12/12/03
4-nitroaniline		XX (57.2%)
3-nitroaniline	X (16.9%)	
carbazole	X (29.3%)	XX (25.4%)
3,3'-dichlorobenzidine	X (20.4%)	XX (26.7%)
Samples Affected	FB1118031	FB1118031

Instrument ID S4 Compound	IC 12/05/03	CC 12/08/03
2,4-dimethylphenol	X (15.4%)	
hexachlorocyclopentadiene	X (24.7%)	XX (21.8%)
acenaphthene	X (15.1%)	
2,4-dinitrophenol	X (20.7%)	
4-chlorophenyl-phenylether	X (16.4%)	
4-bromophenyl-phenylether	X (17.3%)	
hexachlorobenzene	X (19.4%)	
pentachlorophenol	X (19.3%)	
Samples Affected	All soils	SED03-05(3.8-4)DL, SED03-01(1-3)

X = Initial calibration (IC) relative standard deviation (%RSD) > 15; estimate (J3) positive and (UJ3) blank-qualified nondetect results.

XX = Continuing calibration (CC) percent difference (%D) > 20; estimate (J/UJ4) positive and nondetect results.

+ = Response factor (RRF) < 0.05; Estimate (J2) positive results and reject (R2) nondetect results.

The positive results for acenaphthene in samples SED03-01(1-3), SED03-03(0-0.25), SED03-05(0-0.25), and SED03-05(3.8-4) were qualified as estimated (J3) due to initial calibration nonconformances.

The following results were qualified as estimated (J/UJ4) due to continuing calibration nonconformances: hexachlorocyclopentadiene, 4-nitroaniline, carbazole, and 3,3'-dichlorobenzidine in sample FB1118031 and hexachlorocyclopentadiene in sample SED03-01(1-3).

Validation actions were not required for 2,4-dimethylphenol, hexachlorocyclopentadiene, acenaphthylene, 3-nitroaniline, carbazole, and 3,3'-dichlorobenzidine in sample FB1118031; 2,4-

dimethylphenol, hexachlorocyclopentadiene, 2,4-dinitrophenol, 4-chlorophenyl-phenylether, 4-bromophenyl-phenylether, hexachlorobenzene, and pentachlorophenol in the soil samples due to initial calibration nonconformances as the affected results were nondetect.

Validation action was not required for hexachlorocyclopentadiene in sample SED03-05(3.8-4)DL as the result was not reported from the diluted analysis.

Blanks

The following table summarizes the method blank contamination in the SVOC analyses.

Compound	Type of Blank	Associated Samples	Maximum Concentration	Blank Action Level
Bis(2-ethylhexyl)phthalate	Soil Method Blank	All soil samples	85 ug/kg	850 ug/kg

Blank Actions

If the sample concentration ≤ QL and ≤ blank action level, qualify the result as not detected (U6) at the QL.
If the sample concentration > QL and ≤ blank action level, qualify the result as not detected (U6) at the reported value.
If the sample concentration > blank action level, report the value unqualified.

Based on the action levels determined, the results for bis(2-ethylhexyl)phthalate in samples SED03-01(5-6), SED03-02(4-5), SED03-03(6-7), SED03-04(7-8), SED03-05(9-10), SED03-06(6-7), SED03-07(0-0.25), SED03-07(5-6), and SEDXX-XX were qualified as nondetect (U6) due to method blank contamination.

Target compounds were not detected in the field blank sample.

Surrogate Recoveries

The following table summarizes the surrogate recoveries that failed to meet the acceptance criteria in the SVOC analyses:

Sample ID	Percent Recovery						Validation action
	2-FP 44-95	Phenol-d5 45-99	TBP 50-111	NBZ 46-102	2-FBP 52-107	TP-d14 61-113	
SED03-05(0-0.25)	-	-	44%	-	-	50%	Not required (NR)
SED03-05(3.8-4)	-	-	-	-	-	52%	Not required (NR)
SED03-07(0-	-	-	50%	-	-	58%	Not required (NR)

0.025)							

- Within control limits
NR- Validation action not required for one semivolatile surrogate outside of control limits in each fraction.

2-FP - 2-Fluorophenol
TBP - 2,4,6-Tribromophenol
NBZ - Nitrobenzene-d5
2-FBP - 2-Fluorobiphenyl
TP-d14 - Terphenyl-d14

Surrogates were diluted out of the20-fold dilution of sample SED03-01(1-3). Validation action was not required on this basis.

MS/MSD Results

An MS/MSD was performed on sample SED03-02(4-5) for the SVOC analyses. The following table lists the analyte MS/MSD recoveries which were outside of the laboratory established control limits.

Compound	MS/MSD %R	QC Limits	Action
2,4,6-trichlorophenol	MSD 49	53-115	Estimate (UJ8) the nondetect result for 2,4,6-trichlorophenol in SED03-02(4-5); possible low bias.
2,4,5-trichlorophenol	53, 53	59-113	Estimate (UJ8) the nondetect result for 2,4,5-trichlorophenol in SED03-02(4-5); possible low bias.
2-nitroaniline	MSD 58	63-117	Estimate (UJ8) the nondetect result for 2-nitroaniline in SED03-02(4-5); possible low bias.
dimethylphthalate	58, 53	62-117	Estimate (UJ8) the nondetect result for dimethylphthalate in SED03-02(4-5); possible low bias.
2,6-dinitrotoluene	MSD 58	60-118	Estimate (UJ8) the nondetect result for 2,6-dinitrotoluene in SED03-02(4-5); possible low bias.
dibenzofuran	58, 58	61-112	Estimate (UJ8) the nondetect result for dibenzofuran in SED03-02(4-5); possible low bias.
diethylphthalate	MSD 58	61-120	Estimate (UJ8) the nondetect result for diethylphthalate in SED03-02(4-5); possible low bias.
4-chlorophenyl-phenylether	53, 52	59-116	Estimate (UJ8) the nondetect result for 4-chlorophenyl-phenylether in SED03-02(4-5); possible low bias.
fluorene	58, 53	63-115	Estimate (UJ8) the nondetect result for fluorene in SED03-02(4-5); possible low bias.
4-bromophenyl-phenylether	53, 53	66-110	Estimate (UJ8) the nondetect result for 4-bromophenyl-phenylether in SED03-02(4-5); possible low bias.

Compound	MS/MSD %R	QC Limits	Action
hexachlorobenzene	58, 53	67-112	Estimate (UJ8) the nondetect result for hexachlorobenzene in SED03-02(4-5); possible low bias.
phenanthrene	63, 58	70-115	Estimate (UJ8) the nondetect result for phenanthrene in SED03-02(4-5); possible low bias.
anthracene	MSD 58	63-117	Estimate (UJ8) the nondetect result for anthracene in SED03-02(4-5); possible low bias.
di-n-butylphthalate	63, 63	70-120	Estimate (UJ8) the nondetect result for di-n-butylphthalate in SED03-02(4-5); possible low bias.
fluoranthene	63, 58	64-121	Estimate (UJ8) the nondetect result for fluoranthene in SED03-02(4-5); possible low bias.
bis(2-ethylhexyl)phthalate	MSD 60	64-115	Estimate (UJ8) the nondetect result for bis(2-ethylhexyl)phthalate in SED03-02(4-5); possible low bias.
di-n-octylphthalate	58, 53	69-137	Estimate (UJ8) the nondetect result for di-n-octylphthalate in SED03-02(4-5); possible low bias.
benzo(b)fluoranthene	MSD 53	61-129	Estimate (UJ8) the nondetect result for benzo(b)fluoranthene in SED03-02(4-5); possible low bias.
benzo(k)fluoranthene	MSD 58	62-130	Estimate (UJ8) the nondetect result for benzo(k)fluoranthene in SED03-02(4-5); possible low bias.
benzo(a)pyrene	63, 53	66-119	Estimate (UJ8) the nondetect result for benzo(a)pyrene in SED03-02(4-5); possible low bias.

-within control limits

Internal Standards

All criteria were met in the SVOC analyses.

LCS Results

The following table lists the compound recoveries found outside of the validation control limits of 60 - 140% or laboratory established control limit (if tighter) in the LCS analyses and the resultant actions in the SVOC analyses.

Compound	Recovery (%)	Control Limits	Associated Samples	Actions
phenol	42	60-140	FB11180301	Estimate (UJ9) the nondetect results

Compound	Recovery (%)	Control Limits	Associated Samples	Actions
2-chlorophenol 1,4-dichlorobenzene 1,2-dichlorobenzene hexachloroethane 2-nitrophenol 2,4-dinitrophenol hexachlorobutadiene hexachlorocyclopentadiene 2,4,6-trichlorophenol 2,4,5-trichlorophenol	40 56 58 56 44 52 58 18 54 56			for the affected analytes in sample FB11180301; possible low bias.
3-nitroaniline 4-nitroaniline carbazole	120 160 136	47-115 47-117 54-126	FB11180301	Validation action was not required; affected results were nondetect and therefore not affected by the potential high bias.
1,4-dichlorobenzene 4-chloroaniline 3-nitroaniline	59 36 56	60-140	All soil samples	Estimate (UJ9) the nondetect results for the affected analytes in all soil samples; possible low bias.

Field Duplicate Results

The field duplicate pair of SED03-01(5-6) and SEDXX-XX was submitted with this sample group. The following table lists the %RPDs found outside of the control limit of 50% or +/-2x quantitation limit (QL) for levels <5xQL. The direction of the bias cannot be determined by this nonconformance.

Analyte	SED03-01(5-6) (ug/kg)	SEDXX-XX (ug/kg)	RPD (%)	Actions
Pyrene	40 J	1600	190	Estimate (J10) the positive results for pyrene in samples SED03-01(5-6) and SEDXX-XX.

Quantitation Limits and Data Assessment

Sample calculations were spot-checked; there were no errors noted.

Results were reported which were below the lowest calibration standard level (RL) and above the method detection limit (MDL) in the SVOC analyses. These results were qualified by the laboratory (J). These results were qualified as estimated (J5) due to uncertainty at the low end of calibration. The following table lists the sample dilutions which were performed and reported. Quantitation limits were elevated accordingly.

Rockaway Park Project 982482

Sample	SVOC Analysis Reported
SED03-01(1-3)	Laboratory performed 20-fold dilution analysis
SED03-02(0-0.25)	Final extract volume 5 ml; therefore quantitation limits elevated by a factor of 5.
SED03-03(0-0.25)	Final extract volume 5 ml; therefore quantitation limits elevated by a factor of 5.
SED03-04(0-0.25)	Final extract volume 5 ml; therefore quantitation limits elevated by a factor of 5.
SED03-05(0-0.25)	Final extract volume 5 ml; therefore quantitation limits elevated by a factor of 5.
SED03-05(3.8-4)	8-fold dilution was performed for reporting of naphthalene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, and pyrene. Remaining analytes were reported from undiluted analysis (final extract volume 5 ml) Quantitation limits are elevated by a factor of 5 for remaining analytes.
SED03-06(0-0.25)	Final extract volume 5 ml; therefore quantitation limits elevated by a factor of 5.
SED03-07(0-0.25)	Final extract volume 5 ml; therefore quantitation limits elevated by a factor of 5.

The inorganic data were evaluated based on the following parameters:

*	Data Completeness
	Holding Times and Sample Preservation
*	Instrument Calibration
NA	Contract Required Detection Limit (CRDL) Standard Analysis
*	Blank Analysis Results
NA	Inductively Coupled Plasma (ICP) Interference Check Sample Results
	Matrix Spike (MS) Results
*	Laboratory Duplicate Results
	Field Duplicate Results
	Laboratory Control Sample (LCS) Results
NA	ICP Serial Dilution Results
*	Detection Limit Results and Sample Quantitation

* All criteria were met for this parameter.
NA - Not applicable to methods reviewed.

All results were found to be usable. The validation recommendations were based on the following information.

Data Completeness

The data package was complete as defined under the requirements for the NYSDEC ASP Category B deliverables for the pH, Hardness, and TOC analyses.

Holding Times and Sample Preservation

Although a holding time criteria is not specified in the SW-846 pH method 9045, it is recommended to perform the analysis "as soon as possible". A holding time criteria of four days was used to evaluate the soil pH analysis. The pH analysis for all soil samples was performed four days outside of this recommended criteria. The pH results for all soil samples were qualified as estimated (J1) due to this exceedance.

Instrument Calibration

All criteria were met in the pH and TOC analyses.

Blank Analysis Results

All method blank results were found to be less than the quantitation limit (QL).

MS Results

A matrix spike analysis was not associated with the TOC analysis. Validation action was not required on this basis.

Laboratory Duplicate Results

All criteria were met.

Field Duplicate Results

The field duplicate pair of SED03-01(5-6) and SEDXX-XX was submitted with this sample group. The following table lists the %RPDs found outside of the inorganic control limit of 100% or +/-2x quantitation limit (QL) for levels <5xQL. The direction of the bias cannot be determined by this nonconformance.

Analyte	SED03-01(5-6) (mg/kg)	SEDXX-XX (mg/kg)	RPD (%)	Actions
TOC	230	1100	131	Estimate (J10) the positive results for TOC in samples SED03-01(5-6) and SEDXX-XX.

Laboratory Control Sample Results

The following table lists the analyte recoveries found outside of the control limits of 80-120% in the LCS analyses.

Analyte	Recovery (%)	Validation Actions
TOC - AQ	38.1	Estimate (UJ9) the nondetect result for TOC in sample FB1118031; possible low bias.

Detection Limit Results and Sample Quantitation

Dilutions were not required. Sample calculations were spot-checked; there were no errors noted.

Environmental Forensic Report

Rockaway

SDG: GI031119

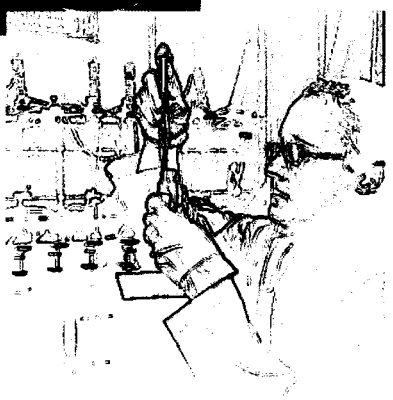
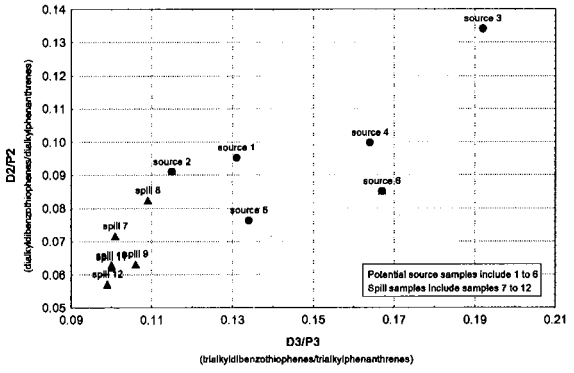


Figure 1. Double Ratio Plot



Report To:

GEI Consultants, Inc.
188 Norwich Ave.
Colchester, CT 06415

Report By:

META Environmental, Inc.
49 Clarendon Street
Watertown, MA 02472

January 7,2004

Identifying and allocating sources of pollutants in complex environments.

META Environmental, Inc.
ENGINEERING & CHEMISTRY

Final Laboratory Report

META Environmental, Inc.
49 Clarendon Street
Watertown, MA 02472

Phone: 617-923-4662
Fax: 617-923-4610
e-Mail: meta@metaenv.com

Certification

This certifies that this package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed herein. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Director and Quality Assurance Officer, as verified by the following signatures.

David R. Craig — Date: 1/7/04
Laboratory Director, META Environmental, Inc.

David M. Mauro — Date: 1/7/04
Quality Assurance Officer, META Environmental, Inc.

Sample Delivery Group Narrative

Project: Rockaway

Client: GEI Consultants, Inc.
188 Norwich Ave.
Colchester, CT 06415

Report Contact: Mr. Dan Burke

Dates of Receipt: 11/19/03

Sample Summary:

The samples received for this project are summarized in the attached sample login forms.

META Project Number: G04028-60

Chain of Custody

Samples were received in good condition. The internal temperatures of the shipment containers were as follows:

Samples received 11/19/2003 11.0°C

Internal chain of custody procedures were followed after sample receipt. Samples were stored in a locked refrigerator. A sample custody logbook contains the record of sample removal from the secure sample storage area to the sample preparation laboratory. The custody record for the sample extracts is present on the sample extraction logbook page.

The disposal of samples and extracts will be authorized 1 month after the release of this data report. Sample disposal will be documented.

Methods

The samples were prepared by solvent extraction using dichloromethane (DCM) (EPA 3570 Draft). The extracts were spiked with internal standard and analyzed by GC/FID (EPA 8100 mod.) and GC/MS (EPA 8260/8270 mod.).

Results

Sample results were presented in summary forms (CLP Form 1 equivalent) which follow this narrative.

Quality Control

Analyte Flags

The detection limits were determined as the sample equivalent of the lowest linear initial calibration standard. Analytes measured between 50% and 100% of the lowest standard were reported as "estimated" and flagged with the letter "J." No value was reported above the calibration range. Undetected analytes were flagged with the letter, "U." Analytes marked with a "B" were detected in the associated blank and should be reviewed for a possible positive bias. No deviations were thought significant enough to compromise the integrity of the reported values.

Holding Times

The samples were prepared within holding times. All samples and extracts were stored at 4°C ± 2°C prior to extraction and analysis. All extracts were analyzed within 40 days of sample preparation.

Blanks

No target analytes were present above the detection limit in the blank.

Internal Standards

Internal standards were recovered within acceptable QC limits (50%-200%) relative to the continuing calibration standards.

Interpretation

Sample RPSED03-01 (1-3)

This sample contained a pyrogenic substance (see definitions). The pyrogenic material is indicated by the pattern of mono- and poly-aromatic hydrocarbons (MAHs & PAHs) throughout the chromatogram. The ratios of fluoranthene to pyrene and dibenzofuran to fluorene (Table 1) suggest that this sample contains MGP residuals, probably from a carburetted water gas process. The reduced concentration of naphthalene relative to the other PAHs indicates that this sample has been subject to mild weathering.

Sample RPSED03-05 (3.8-4)

This sample also contained a pyrogenic substance. The PAH patterns and ratios Are consistent with residuals from a low temperature process and may be MGP waste that has been subject to mild weathering.

Discussion

Samples RPSED03-01 (1-3) and RPSED03-05 (3.8-4) both appear to contain MGP tarry residuals. The differences observed between the FID fingerprints (Appendix A), diagnostic ratios (Table 1), and ion signatures (Appendix E) may be indicative of separate sources or variations in generating conditions over time, however the statistical significance of these variations could not be evaluated with only two samples.

Definitions

Pyrogenic substances are complex mixtures of primarily hydrocarbons produced from organic matter subjected to high temperatures but with insufficient oxygen for complete combustion. Pyrogenic materials are produced by fires, internal combustion engines, and furnaces. They also are formed when coke or gas are produced from coal or oil. Coal-tar based products, such as roofing, pavement sealers, waterproofing, pesticides, and some shampoos contain pyrogenic materials.

Petrogenic substances include crude oil and crude oil derivatives such as gasoline, heating oil, and asphalt.

Pitch is the semi-solid or solid material consisting of high molecular weight hydrocarbons that remain following coal tar distillation.

References

1 "Chemical Source Attribution at Former MGP Sites," EPRI Report 1000728, December 2000.

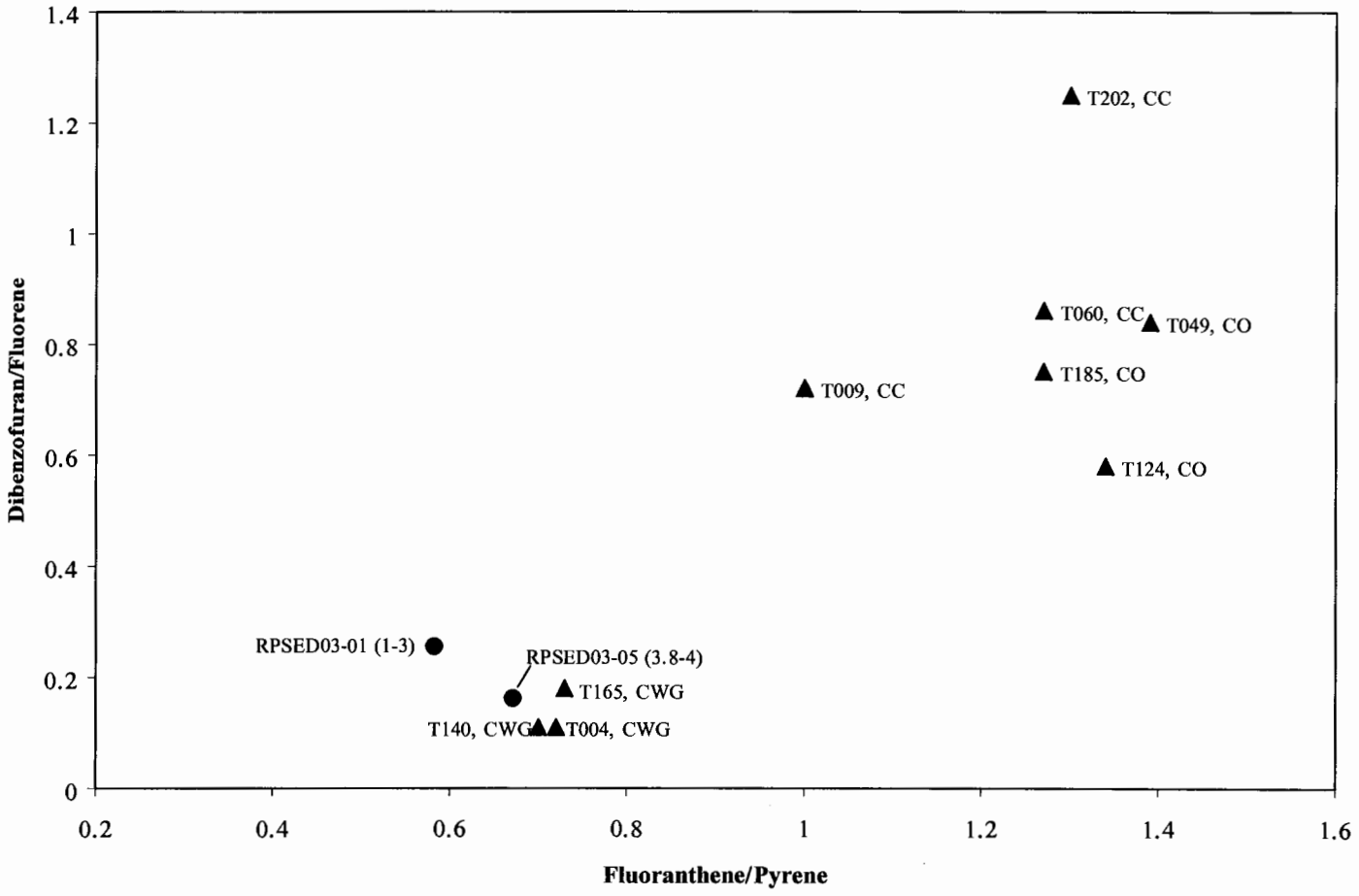
Table 1
Source and Weathering Ratios

Sample	Fl/Py	D/F	C17/Pris	C18/Phy	Pris/Phy	C3D/C3PA	C2D/C2PA
RPSED03-01 (1-3)	0.58	0.26	0.04	0.07	1.98	0.50	0.33
RPSED03-05 (3.8-4)	0.67	0.16	0.10	0.11	1.27	0.74	0.40

Ratios:

Fl/Py	fluoranthene/pyrene
D/F	dibenzofuran/fluorene
C17/Pris	septadecane/pristane
C18/Phy	octadecane/phytane
Pris/Phy	pristane/phytane
C3D/C3PA	trialkyldibenzothiophenes/trialkylphenanthrenes/anthracenes
C2D/C2PA	dialkyldibenzothiophenes/dialkylphenanthrenes/anthracenes

Figure 1
Selected Source Ratios



TXXX	Tar Sample From META's in house source library
CC	Coal Carbonization Tar
CO	Coke Oven Tar
CWG	Carburetted Water Gas Tar

Appendix A

Chains of Custody

META ENVIRONMENTAL SAMPLE RECEIPT

Lab ID	Field ID	Matrix	Analysis			Date Sampled	Date Received	Client/ Project	Container/ Storage	Comments/Logger
GI031119-01	RPSED03-01 (1-3)	Soil	2508/4007	4008		11/17/2003	11/19/2003	G04028-60	4 oz. jar	
GI031119-02	RPSED03-05 (3.8-4)	Soil	2508/4007	4008		11/17/2003	11/19/2003	G04028-60	4 oz. jar	

11/21/03

CHAIN OF CUSTODY RECORD

PROJECT NAME Rockaway Park Sediment Investigation
COMPANY GEI
ADDRESS 188 Norwich Ave
PHONE 860/537-0751 FAX 860/537-6347
EMAIL moneil@geiconsultants.com
SAMPLED BY Katie Amos (Print Name) (Signature)
Dan Burke (Print Name) (Signature)
(Print Name) (Signature)

META Environmental, Inc.
ENGINEERING & CHEMISTRY
45 Clarendon Street
Watertown, MA 02472
TEL: (617) 923-4662
FAX: (617) 923-4610
WWW.METAENV.COM

SAMPLE NO.	DATE	TIME	SAMPLER'S INITIALS	SAMPLE ID (SAMPLE LOCATION)	CONTAINER SIZE	CONTAINER GIP	GRAB	COMP	NO. OF CONTAINERS	SAMPLE MATRIX	PRESERVATIVE	ANALYSES: GC/FID Fingerprint mod. 8270		COMMENTS
1	11/17	1335	DDB	RPSED03-01 (1-3)	4oz	G		X	1	SED	cool	X	X	GI031119-01
2	11	1600	KEA	RPSED03-05 (3.8-4)	4oz	G		X	1	SED	cool	X	X	-02

Relinquished by	Date/Time	Relinquished by	Date/Time	Relinquished by	Date/Time
Katie Amos	11/18/03 1630				
Received by	**Date/Time**	**Received by**	**Date/Time**	**Received for Laboratory by**	**Date/Time**
				Brian Glynn	11/19/03 1000AM

Method of Shipment

Remarks

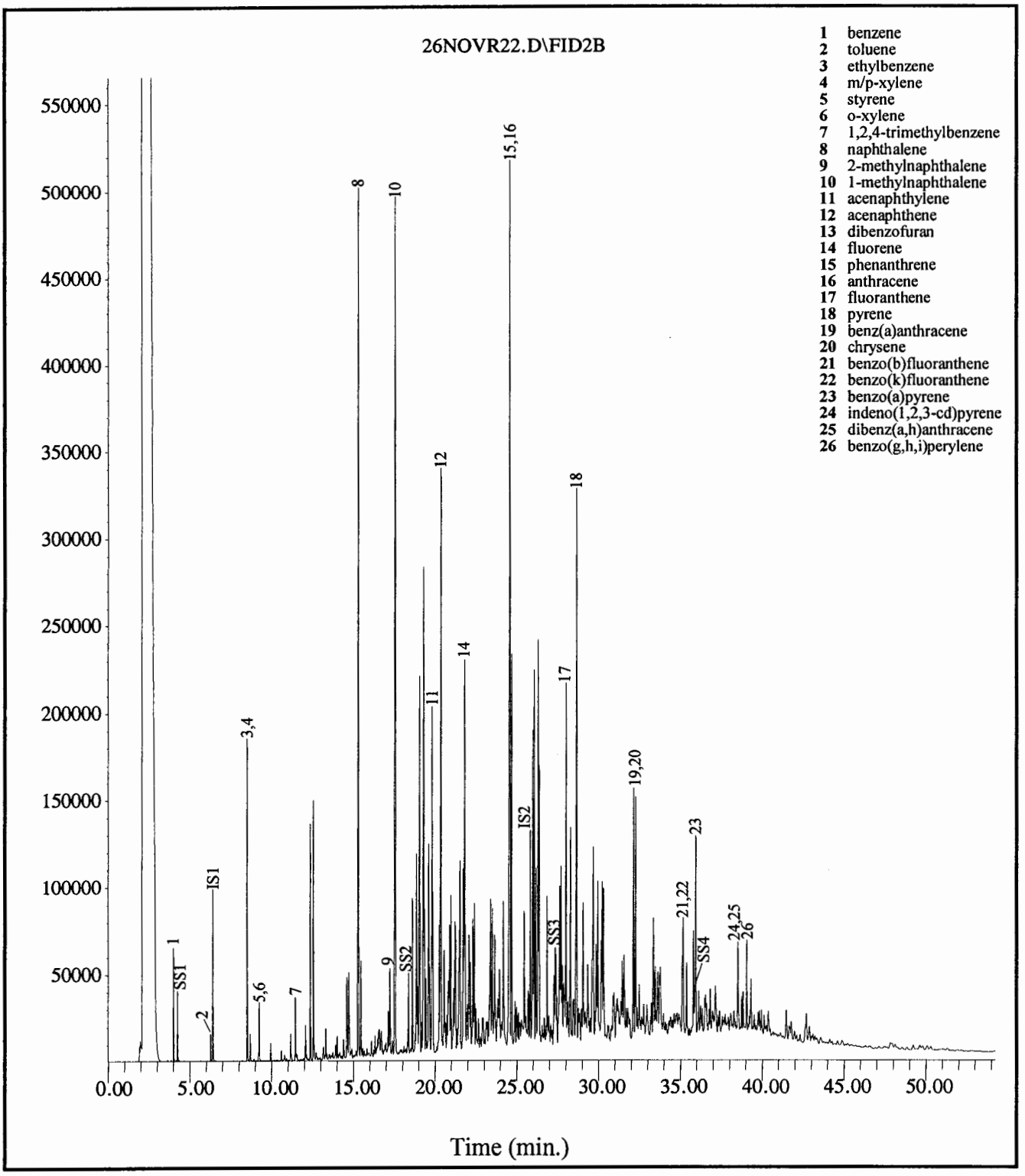
Temp. 11 °C

-04028-50

Appendix B

GC/FID Fingerprints

GC/FID Fingerprint

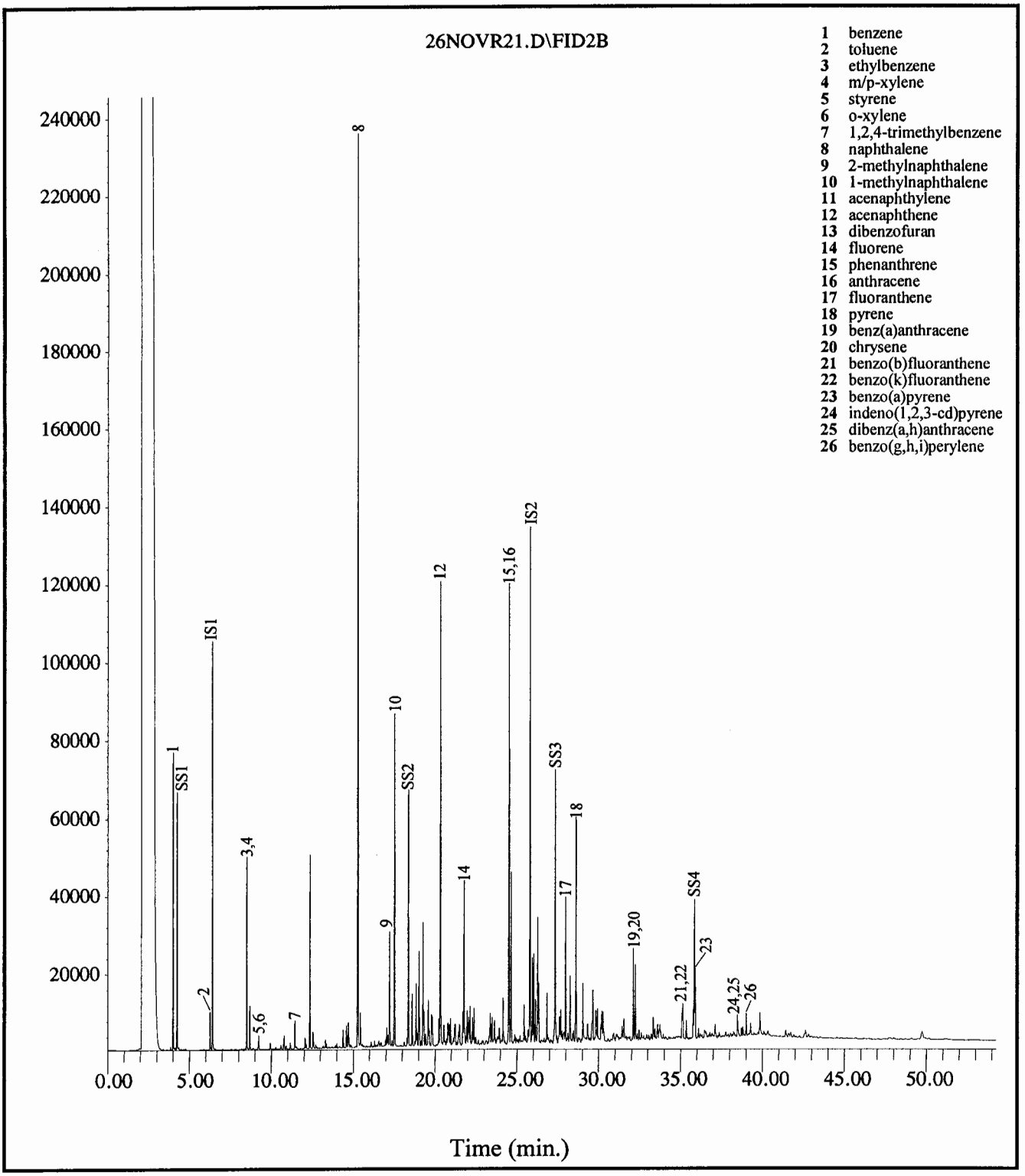


IS1 – 2,4-difluorotoluene
IS2 – o-terphenyl
SS1 – fluorobenzene
SS2 – 2-fluorobiphenyl
SS3 – 5α-androstane
SS4 – benzo(a)pyrene-d12

Field ID:	**RPSED03-01 (1-3)**
Laboratory ID:	GI031119-01
Method:	METR4007P

META

GC/FID Fingerprint



IS1 – 2,4-difluorotoluene
IS2 – o-terphenyl
SS1 – fluorobenzene
SS2 – 2-fluorobiphenyl
SS3 – 5α-androstane
SS4 – benzo(a)pyrene-d12

Field ID:	**RPSED03-05 (3.8-4)**
Laboratory ID:	GI031119-02
Method:	METR4007P

META

Appendix C

Chemical Concentrations

Analytical Results for Volatile and Semivolatile Organics
META Environmental, Inc.

Field ID: **RPSED03-01 (1-3)**

Client:	GEI	Preparation Method:	EPA3570
Project:	Rockaway	Cleanup Method(s):	
Lab ID:	GI031119-01	Analysis Method:	GC/MS (EPA 8270 Mod.)
File ID:	17DEC30.D	Matrix:	Soil
		Preservation:	None
Date Sampled:	11/17/2003	Decanted:	No
Date Received:	11/19/2003	Sample Size:	1.903 g
Date Prepared:	11/20/2003	%Solid:	83%
Date Cleanup:		Extract Volume:	2 mL
Date Analyzed:	19 Dec 2003 1:52 pm	Prep DF:	1
Instrument:	GC2-MS_59	Analysis DF:	1
Operator:	EC	Injection Volume:	0.001 mL
		Batch QC:	DR031120-SB

Analyte:	Concentration mg/kg	Q	RL mg/kg	EDL mg/kg	Comments
PAH COMPOUNDS:					
Benzene	37.9		0.13	0.06	
Toluene	11.1		0.13	0.06	
Ethylbenzene	121		0.13	0.06	
m/p-Xylenes	13.6		0.13	0.06	
Styrene	2.70		0.13	0.06	
o-Xylene	26.7		0.13	0.06	
1,2,4-Trimethylbenzene	8.72		0.13	0.06	
Naphthalene	261	D	0.13	0.06	
2-Methylnaphthalene	37.7		0.13	0.06	
1-Methylnaphthalene	278	D	0.13	0.06	
Acenaphthylene	104		0.13	0.06	
Acenaphthene	152	D	0.13	0.06	
Dibenzofuran	25.8		0.13	0.06	
Fluorene	101	D	0.13	0.06	
Phenanthrene	354	D	0.13	0.06	
Anthracene	97.7		0.13	0.06	
Fluoranthene	99.6	D	0.13	0.06	
Pyrene	171	D	0.13	0.06	
Benz[a]anthracene	91.8		0.13	0.06	
Chrysene	90.4		0.13	0.06	
Benzo[b]fluoranthene	21.5		0.13	0.06	
Benzo[k]fluoranthene	26.9		0.13	0.06	
Benzo(e)pyrene	14.6		0.13	0.06	
Benzo[a]pyrene	24.6		0.13	0.06	
Perylene	2.77		0.13	0.06	
Indeno[1,2,3-cd]pyrene	0.56		0.13	0.06	
Dibenz[a,h]anthracene	0.20		0.13	0.06	
Benzo[g,h,i]perylene	0.50		0.13	0.06	
ALKYLATED PAHs:					
C0 - Benzene	37.9		0.13	0.06	
C1 - Benzene	11.9		0.13	0.06	
C2 - Benzene	194		0.13	0.06	
C3 - Benzene	73.1		0.13	0.06	
C4 - Benzene	73.5		0.13	0.06	
C5 - Benzene	15.6		0.13	0.06	
C0 - Naphthalene	261	D	0.13	0.06	
C1 - Naphthalene	196	D	0.13	0.06	
C2 - Naphthalene	356		0.13	0.06	
C3- Naphthalene	115		0.13	0.06	
C4- Naphthalene	21.5		0.13	0.06	

Analytical Results for Volatile and Semivolatile Organics
META Environmental, Inc.

Field ID: **RPSED03-01 (1-3)**

Client:	GEI	Preparation Method:	EPA3570
Project:	Rockaway	Cleanup Method(s):	
		Analysis Method:	GC/MS (EPA 8270 Mod.)
Lab ID:	GI031119-01	Matrix:	Soil
File ID:	17DEC30.D	Preservation:	None
		Decanted:	No
Date Sampled:	11/17/2003	Sample Size:	1.903 g
Date Received:	11/19/2003	%Solid:	83%
Date Prepared:	11/20/2003	Extract Volume:	2 mL
Date Cleanup:		Prep DF:	1
Date Analyzed:	19 Dec 2003 1:52 pm	Analysis DF:	1
Instrument:	GC2-MS_59	Injection Volume:	0.001 mL
Operator:	EC	Batch QC:	DR031120-SB

Analyte:	Concentration mg/kg	Q	RL mg/kg	EDL mg/kg	Comments
C0 - Fluorene	101	D	0.13	0.06	
C1 - Fluorene	171		0.13	0.06	
C2 - Fluorene	41.8		0.13	0.06	
C3 - Fluorene	9.13		0.13	0.06	
C0 - Phenanthrene/Anthracene	461	D	0.13	0.06	
C1 - Phenanthrene/Anthracene	238		0.13	0.06	
C2 - Phenanthrene/Anthracene	85.4		0.13	0.06	
C3 - Phenanthrene/Anthracene	21.3		0.13	0.06	
C4 - Phenanthrene/Anthracene	3.82		0.13	0.06	
C0 - Dibenzothiophene	39.7		0.13	0.06	
C1 - Dibenzothiophene	43.6		0.13	0.06	
C2 - Dibenzothiophene	28.2		0.13	0.06	
C3 - Dibenzothiophene	10.7		0.13	0.06	
C0 - Fluoranthene/Pyrene	348	D	0.13	0.06	
C1 - Fluoranthene/Pyrene	168		0.13	0.06	
C2 - Fluoranthene/Pyrene	62.2		0.13	0.06	
C3 - Fluoranthene/Pyrene	12.8		0.13	0.06	
C0 - Benz(a)anthracene/Chrysene	182		0.13	0.06	
C1 - Benz(a)anthracene/Chrysene	84.3		0.13	0.06	
C2 - Benz(a)anthracene/Chrysene	24.1		0.13	0.06	
C3 - Benz(a)anthracene/Chrysene	2.53		0.13	0.06	
C4 - Benz(a)anthracene/Chrysene	0.30		0.13	0.06	

EXTRACTION SURROGATE COMPOUNDS:	%R	Min	Max
Fluorobenzene	96%	50%	150%
2-Fluorobiphenyl	125%	50%	120%
5a-Androstane	68%	50%	120%
Benzo(a)pyrene-d12	37%	50%	120%

Qualifiers:

B	Analyte detected in the blank
D	Analyte reported from a diluted extract
U	Undetected above the detection limit
J	Estimated value detected between the reporting and detection limits
E	Estimated value detected above calibration range
RL	Reporting limit is the sample equivalent of the lowest linear calibration concentration
EDL	Estimated detection limit is 50% of the RL

Analytical Results for Volatile and Semivolatile Organics
META Environmental, Inc.

Field ID: **RPSED03-05 (3.8-4)**

Client:	GEI	Preparation Method:	EPA3570
Project:	Rockaway	Cleanup Method(s):	
Lab ID:	GI031119-02	Analysis Method:	GC/MS (EPA 8270 Mod.)
File ID:	17DEC31.D	Matrix:	Soil
		Preservation:	None
Date Sampled:	11/17/2003	Decanted:	No
Date Received:	11/19/2003	Sample Size:	2.053 g
Date Prepared:	11/20/2003	%Solid:	83%
Date Cleanup:		Extract Volume:	1.4 mL
Date Analyzed:	19 Dec 2003 3:05 pm	Prep DF:	1
Instrument:	GC2-MS_59	Analysis DF:	1
Operator:	EC	Injection Volume:	0.001 mL
		Batch QC:	DR031120-SB

Analyte:	Concentration mg/kg	Q	RL mg/kg	EDL mg/kg	Comments
PAH COMPOUNDS:					
Benzene	19.1		0.08	0.04	
Toluene	2.92		0.08	0.04	
Ethylbenzene	15.9		0.08	0.04	
m/p-Xylenes	4.30		0.08	0.04	
Styrene	0.17		0.08	0.04	
o-Xylene	1.25		0.08	0.04	
1,2,4-Trimethylbenzene	0.58		0.08	0.04	
Naphthalene	74.7		0.08	0.04	
2-Methylnaphthalene	11.0		0.08	0.04	
1-Methylnaphthalene	30.0		0.08	0.04	
Acenaphthylene	1.90		0.08	0.04	
Acenaphthene	40.1		0.08	0.04	
Dibenzofuran	2.34		0.08	0.04	
Fluorene	14.5		0.08	0.04	
Phenanthrene	35.8		0.08	0.04	
Anthracene	13.3		0.08	0.04	
Fluoranthene	10.4		0.08	0.04	
Pyrene	15.5		0.08	0.04	
Benz[a]anthracene	5.90		0.08	0.04	
Chrysene	5.62		0.08	0.04	
Benzo[b]fluoranthene	2.37		0.08	0.04	
Benzo[k]fluoranthene	3.04		0.08	0.04	
Benzo(e)pyrene	2.76		0.08	0.04	
Benzo[a]pyrene	5.89		0.08	0.04	
Perylene	0.79		0.08	0.04	
Indeno[1,2,3-cd]pyrene	1.79		0.08	0.04	
Dibenz[a,h]anthracene	0.55		0.08	0.04	
Benzo[g,h,i]perylene	1.52		0.08	0.04	
ALKYLATED PAHs:					
C0 - Benzene	19.1		0.08	0.04	
C1 - Benzene	3.16		0.08	0.04	
C2 - Benzene	25.8		0.08	0.04	
C3 - Benzene	7.41		0.08	0.04	
C4 - Benzene	4.47		0.08	0.04	
C5 - Benzene	0.71		0.08	0.04	
C0 - Naphthalene	74.7		0.08	0.04	
C1 - Naphthalene	23.7		0.08	0.04	
C2 - Naphthalene	19.2		0.08	0.04	
C3- Naphthalene	4.71		0.08	0.04	
C4- Naphthalene	0.74		0.08	0.04	

Analytical Results for Volatile and Semivolatile Organics
META Environmental, Inc.

Field ID: **RPSED03-05 (3.8-4)**

Client:	GEI	Preparation Method:	EPA3570
Project:	Rockaway	Cleanup Method(s):	
Lab ID:	GI031119-02	Analysis Method:	GC/MS (EPA 8270 Mod.)
File ID:	17DEC31.D	Matrix:	Soil
		Preservation:	None
Date Sampled:	11/17/2003	Decanted:	No
Date Received:	11/19/2003	Sample Size:	2.053 g
Date Prepared:	11/20/2003	%Solid:	83%
Date Cleanup:		Extract Volume:	1.4 mL
Date Analyzed:	19 Dec 2003 3:05 pm	Prep DF:	1
Instrument:	GC2-MS_59	Analysis DF:	1
Operator:	EC	Injection Volume:	0.001 mL
		Batch QC:	DR031120-SB

Analyte:	Concentration mg/kg	Q	RL mg/kg	EDL mg/kg	Comments
C0 - Fluorene	14.5		0.08	0.04	
C1 - Fluorene	8.79		0.08	0.04	
C2 - Fluorene	1.89		0.08	0.04	
C3 - Fluorene	0.43		0.08	0.04	
C0 - Phenanthrene/Anthracene	49.2		0.08	0.04	
C1 - Phenanthrene/Anthracene	17.5		0.08	0.04	
C2 - Phenanthrene/Anthracene	4.15		0.08	0.04	
C3 - Phenanthrene/Anthracene	0.68		0.08	0.04	
C4 - Phenanthrene/Anthracene	0.11		0.08	0.04	
C0 - Dibenzothiophene	3.93		0.08	0.04	
C1 - Dibenzothiophene	3.45		0.08	0.04	
C2 - Dibenzothiophene	1.68		0.08	0.04	
C3 - Dibenzothiophene	0.50		0.08	0.04	
C0 - Fluoranthene/Pyrene	30.5		0.08	0.04	
C1 - Fluoranthene/Pyrene	10.8		0.08	0.04	
C2 - Fluoranthene/Pyrene	2.05		0.08	0.04	
C3 - Fluoranthene/Pyrene	0.21		0.08	0.04	
C0 - Benz(a)anthracene/Chrysene	11.4		0.08	0.04	
C1 - Benz(a)anthracene/Chrysene	2.63		0.08	0.04	
C2 - Benz(a)anthracene/Chrysene	0.60		0.08	0.04	
C3 - Benz(a)anthracene/Chrysene	0.09		0.08	0.04	
C4 - Benz(a)anthracene/Chrysene		U	0.08	0.04	

EXTRACTION SURROGATE COMPOUNDS:	%R	Min	Max
Fluorobenzene	72%	50%	150%
2-Fluorobiphenyl	87%	50%	120%
5a-Androstane	66%	50%	120%
Benzo(a)pyrene-d12	98%	50%	120%

Qualifiers:

B	Analyte detected in the blank
D	Analyte reported from a diluted extract
U	Undetected above the detection limit
J	Estimated value detected between the reporting and detection limits
E	Estimated value detected above calibration range
RL	Reporting limit is the sample equivalent of the lowest linear calibration concentration
EDL	Estimated detection limit is 50% of the RL

Analytical Results for Volatile and Semivolatile Organics
META Environmental, Inc.

Field ID: **SOIL BLANK**

Client:	Various	Preparation Method:	EPA3570
Project:	Various	Cleanup Method(s):	
Lab ID:	DR031120-SB	Analysis Method:	GC/MS (EPA 8270 Mod.)
File ID:	08DEC47.D	Matrix:	Soil
		Preservation:	None
Date Sampled:		Decanted:	No
Date Received:		Sample Size:	2 g
Date Prepared:	11/20/2003	%Solid:	100%
Date Cleanup:		Extract Volume:	1.6 mL
Date Analyzed:	10 Dec 2003 4:55 pm	Prep DF:	1
Instrument:	GC2-MS_59	Analysis DF:	1
Operator:	EC	Injection Volume:	0.001 mL
		Batch QC:	DR031120-SB

Analyte:	Concentration mg/kg	Q	RL mg/kg	EDL mg/kg	Comments
PAH COMPOUNDS:					
Benzene		U	0.08	0.04	
Toluene		U	0.08	0.04	
Ethylbenzene		U	0.08	0.04	
m/p-Xylenes		U	0.08	0.04	
Styrene		U	0.08	0.04	
o-Xylene		U	0.08	0.04	
1,2,4-Trimethylbenzene		U	0.08	0.04	
Naphthalene		U	0.08	0.04	
2-Methylnaphthalene		U	0.08	0.04	
1-Methylnaphthalene		U	0.08	0.04	
Acenaphthylene		U	0.08	0.04	
Acenaphthene		U	0.08	0.04	
Dibenzofuran		U	0.08	0.04	
Fluorene		U	0.08	0.04	
Phenanthrene		U	0.08	0.04	
Anthracene		U	0.08	0.04	
Fluoranthene		U	0.08	0.04	
Pyrene		U	0.08	0.04	
Benz[a]anthracene		U	0.08	0.04	
Chrysene		U	0.08	0.04	
Benzo[b]fluoranthene		U	0.08	0.04	
Benzo[k]fluoranthene		U	0.08	0.04	
Benzo(e)pyrene		U	0.08	0.04	
Benzo[a]pyrene		U	0.08	0.04	
Perylene		U	0.08	0.04	
Indeno[1,2,3-cd]pyrene		U	0.08	0.04	
Dibenz[a,h]anthracene		U	0.08	0.04	
Benzo[g,h,i]perylene		U	0.08	0.04	
ALKYLATED PAHs:					
C0 - Benzene		U	0.08	0.04	
C1 - Benzene		U	0.08	0.04	
C2 - Benzene		U	0.08	0.04	
C3 - Benzene		U	0.08	0.04	
C4 - Benzene		U	0.08	0.04	
C5 - Benzene		U	0.08	0.04	
C0 - Naphthalene		U	0.08	0.04	
C1 - Naphthalene		U	0.08	0.04	
C2 - Naphthalene		U	0.08	0.04	
C3- Naphthalene		U	0.08	0.04	
C4- Naphthalene		U	0.08	0.04	

Analytical Results for Volatile and Semivolatile Organics
META Environmental, Inc.

Field ID: **SOIL BLANK**

Client:	Various	Preparation Method:	EPA3570
Project:	Various	Cleanup Method(s):	
Lab ID:	DR031120-SB	Analysis Method:	GC/MS (EPA 8270 Mod.)
File ID:	08DEC47.D	Matrix:	Soil
		Preservation:	None
Date Sampled:		Decanted:	No
Date Received:		Sample Size:	2 g
Date Prepared:	11/20/2003	%Solid:	100%
Date Cleanup:		Extract Volume:	1.6 mL
Date Analyzed:	10 Dec 2003 4:55 pm	Prep DF:	1
Instrument:	GC2-MS_59	Analysis DF:	1
Operator:	EC	Injection Volume:	0.001 mL
		Batch QC:	DR031120-SB

Analyte:	Concentration mg/kg	Q	RL mg/kg	EDL mg/kg	Comments
C0 - Fluorene		U	0.08	0.04	
C1 - Fluorene		U	0.08	0.04	
C2 - Fluorene		U	0.08	0.04	
C3 - Fluorene		U	0.08	0.04	
C0 - Phenanthrene/Anthracene		U	0.08	0.04	
C1 - Phenanthrene/Anthracene		U	0.08	0.04	
C2 - Phenanthrene/Anthracene		U	0.08	0.04	
C3 - Phenanthrene/Anthracene		U	0.08	0.04	
C4 - Phenanthrene/Anthracene		U	0.08	0.04	
C0 - Dibenzothiophene		U	0.08	0.04	
C1 - Dibenzothiophene		U	0.08	0.04	
C2 - Dibenzothiophene		U	0.08	0.04	
C3 - Dibenzothiophene		U	0.08	0.04	
C0 - Fluoranthene/Pyrene		U	0.08	0.04	
C1 - Fluoranthene/Pyrene		U	0.08	0.04	
C2 - Fluoranthene/Pyrene		U	0.08	0.04	
C3 - Fluoranthene/Pyrene		U	0.08	0.04	
C0 - Benz(a)anthracene/Chrysene		U	0.08	0.04	
C1 - Benz(a)anthracene/Chrysene		U	0.08	0.04	
C2 - Benz(a)anthracene/Chrysene		U	0.08	0.04	
C3 - Benz(a)anthracene/Chrysene		U	0.08	0.04	
C4 - Benz(a)anthracene/Chrysene		U	0.08	0.04	

EXTRACTION SURROGATE COMPOUNDS:	%R	Min	Max
Fluorobenzene	81%	50%	150%
2-Fluorobiphenyl	80%	50%	120%
5a-Androstane	69%	50%	120%
Benzo(a)pyrene-d12	117%	50%	120%

Qualifiers:

B	Analyte detected in the blank
D	Analyte reported from a diluted extract
U	Undetected above the detection limit
J	Estimated value detected between the reporting and detection limits
E	Estimated value detected above calibration range
RL	Reporting limit is the sample equivalent of the lowest linear calibration concentration
EDL	Estimated detection limit is 50% of the RL

Analytical Results for Volatile and Semivolatile Organics
META Environmental, Inc.

Field ID: **SOIL BLANK SPIKE**

Client:	Various	Preparation Method:	EPA3570
Project:	Various	Cleanup Method(s):	
		Analysis Method:	GC/MS (EPA 8270 Mod.)
Lab ID:	DR031120-SBS	Matrix:	Soil
File ID:	08DEC48.D	Preservation:	None
		Decanted:	No
Date Sampled:		Sample Size:	2 g
Date Received:		%Solid:	100%
Date Prepared:	11/20/2003	Extract Volume:	1.4 mL
Date Cleanup:		Prep DF:	1
Date Analyzed:	10 Dec 2003 6:07 pm	Analysis DF:	1
Instrument:	GC2-MS_59	Injection Volume:	0.001 mL
Operator:	EC	Batch QC:	DR031120-SB

Analyte:	Concentration mg/kg	Q	RL mg/kg	EDL mg/kg	Comments
PAH COMPOUNDS:					
Benzene	18.1		0.07	0.04	72.4%
Toluene	19.7		0.07	0.04	78.8%
Ethylbenzene	20.2		0.07	0.04	80.8%
m/p-Xylenes	20.1		0.07	0.04	80.4%
Styrene	20.3		0.07	0.04	81.2%
o-Xylene	19.8		0.07	0.04	79.2%
1,2,4-Trimethylbenzene	20.2		0.07	0.04	80.8%
Naphthalene	21.1		0.07	0.04	84.4%
2-Methylnaphthalene	21.4		0.07	0.04	85.6%
1-Methylnaphthalene	20.7		0.07	0.04	82.8%
Acenaphthylene	21.0		0.07	0.04	84.0%
Acenaphthene	20.5		0.07	0.04	82.0%
Dibenzofuran	20.2		0.07	0.04	80.8%
Fluorene	20.3		0.07	0.04	81.2%
Phenanthrene	18.5		0.07	0.04	74.0%
Anthracene	18.2		0.07	0.04	72.8%
Fluoranthene	17.5		0.07	0.04	70.0%
Pyrene	17.3		0.07	0.04	69.2%
Benz[a]anthracene	19.6		0.07	0.04	78.4%
Chrysene	18.3		0.07	0.04	73.2%
Benzo[b]fluoranthene	26.5		0.07	0.04	106.0%
Benzo[k]fluoranthene	24.5		0.07	0.04	98.0%
Benzo(e)pyrene		U	0.07	0.04	
Benzo[a]pyrene	28.7		0.07	0.04	114.8%
Perylene		U	0.07	0.04	
Indeno[1,2,3-cd]pyrene	24.2		0.07	0.04	96.8%
Dibenz[a,h]anthracene	25.6		0.07	0.04	102.4%
Benzo[g,h,i]perylene	20.1		0.07	0.04	80.4%

EXTRACTION SURROGATE COMPOUNDS:	%R	Min	Max
Fluorobenzene	78%	50%	150%
2-Fluorobiphenyl	82%	50%	120%
5a-Androstane	69%	50%	120%
Benzo(a)pyrene-d12	126%	50%	120%

Qualifiers:

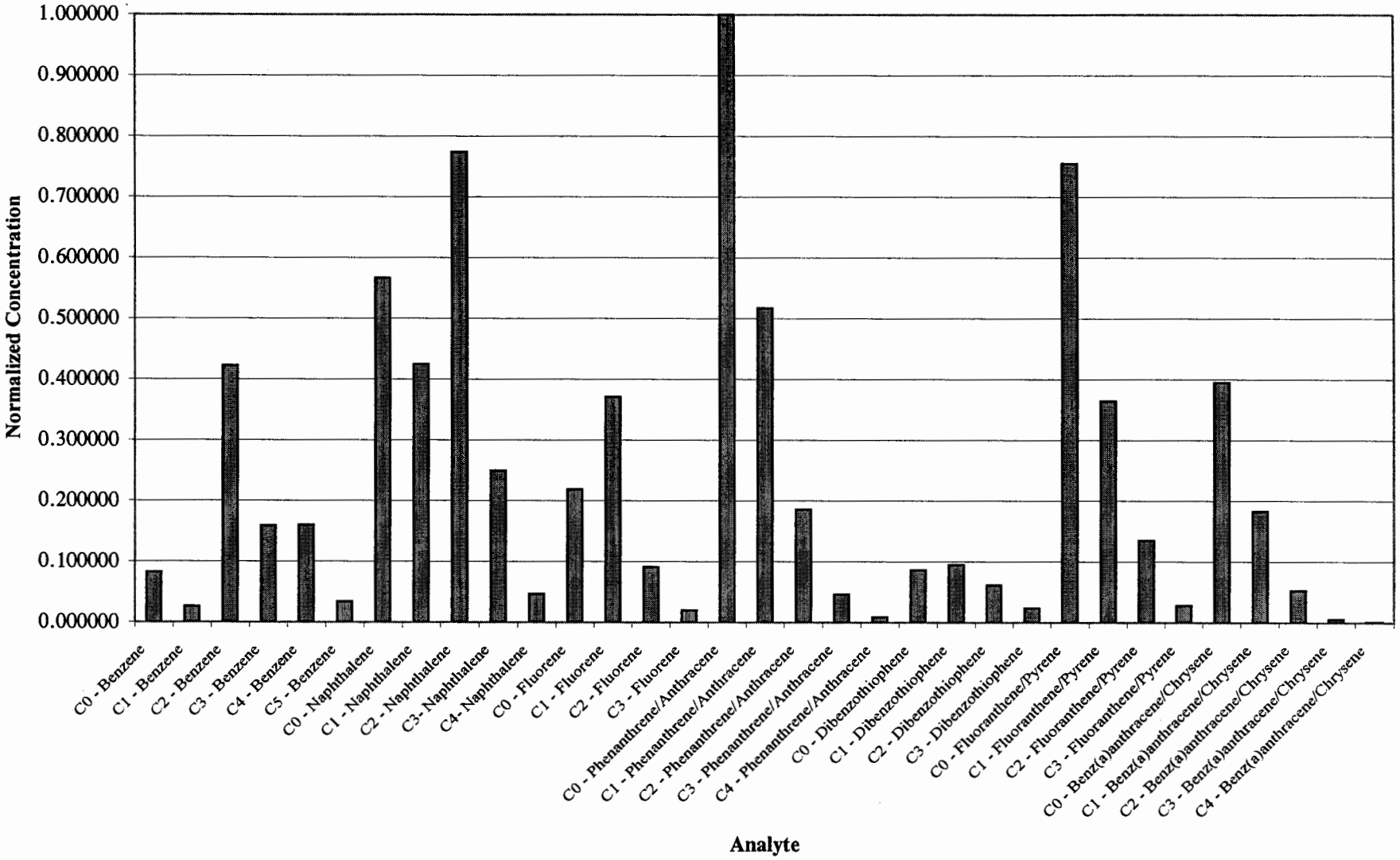
B	Analyte detected in the blank
D	Analyte reported from a diluted extract
U	Undetected above the detection limit
J	Estimated value detected between the reporting and detection limits
E	Estimated value detected above calibration range
RL	Reporting limit is the sample equivalent of the lowest linear calibration concentration
EDL	Estimated detection limit is 50% of the RL

META

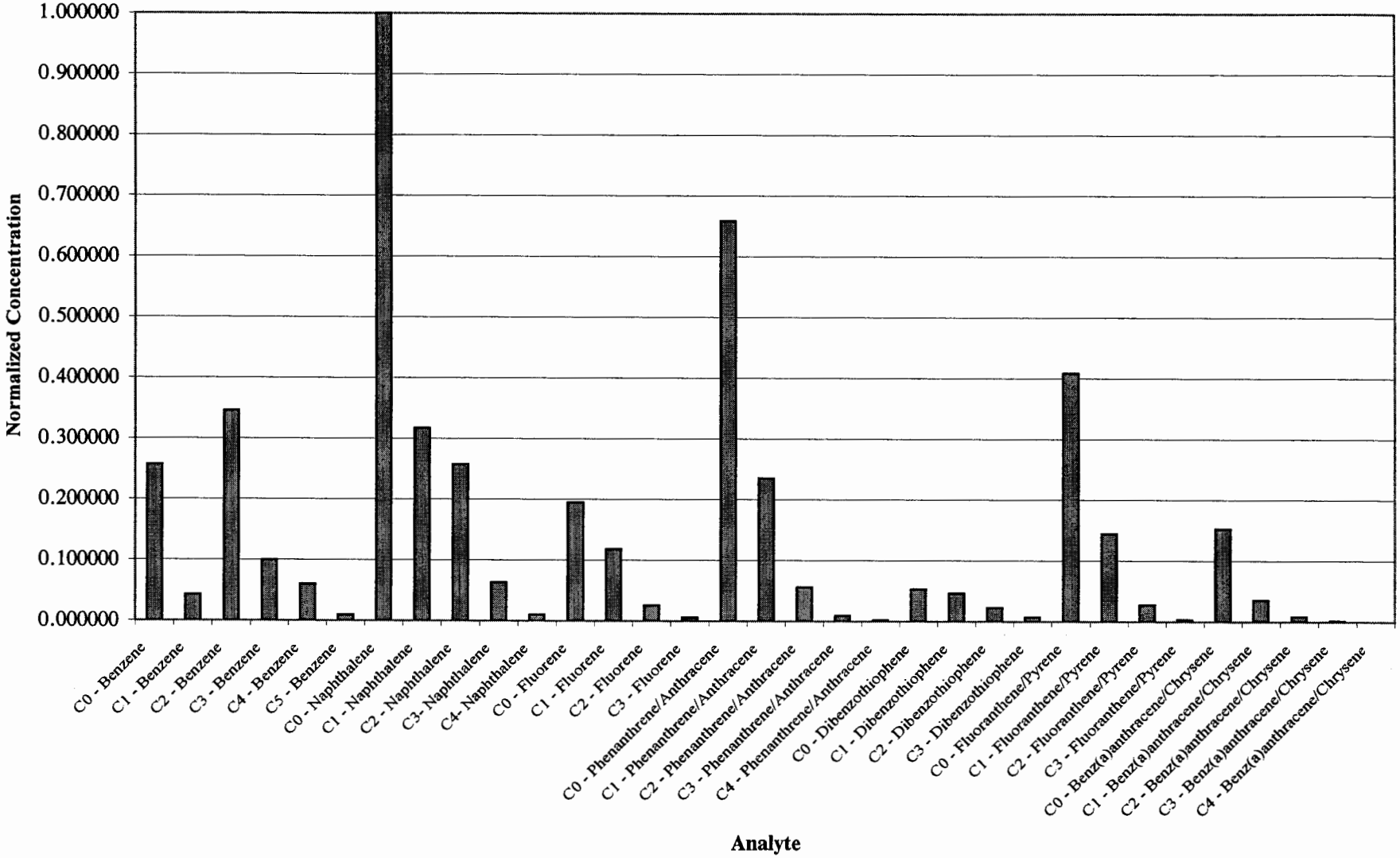
Appendix D

Extended PAH Profiles – Bar Graphs

RPSED03-01 (1-3)



RPSED03-05 (3.8-4)



META

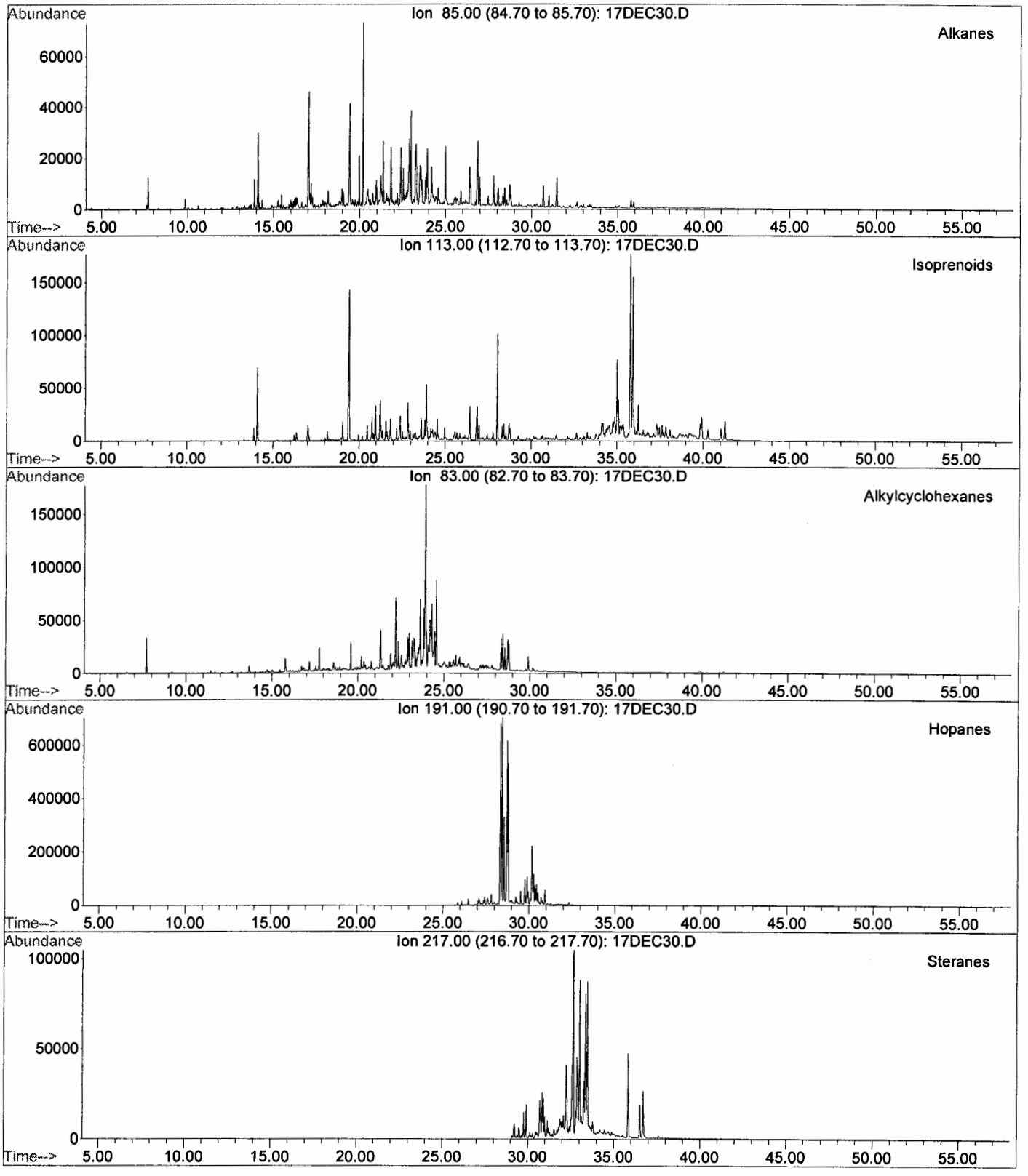
Appendix E

Extracted Ion Current Profiles (EICs)

Primary Ions for Target Compounds and Compound Groups

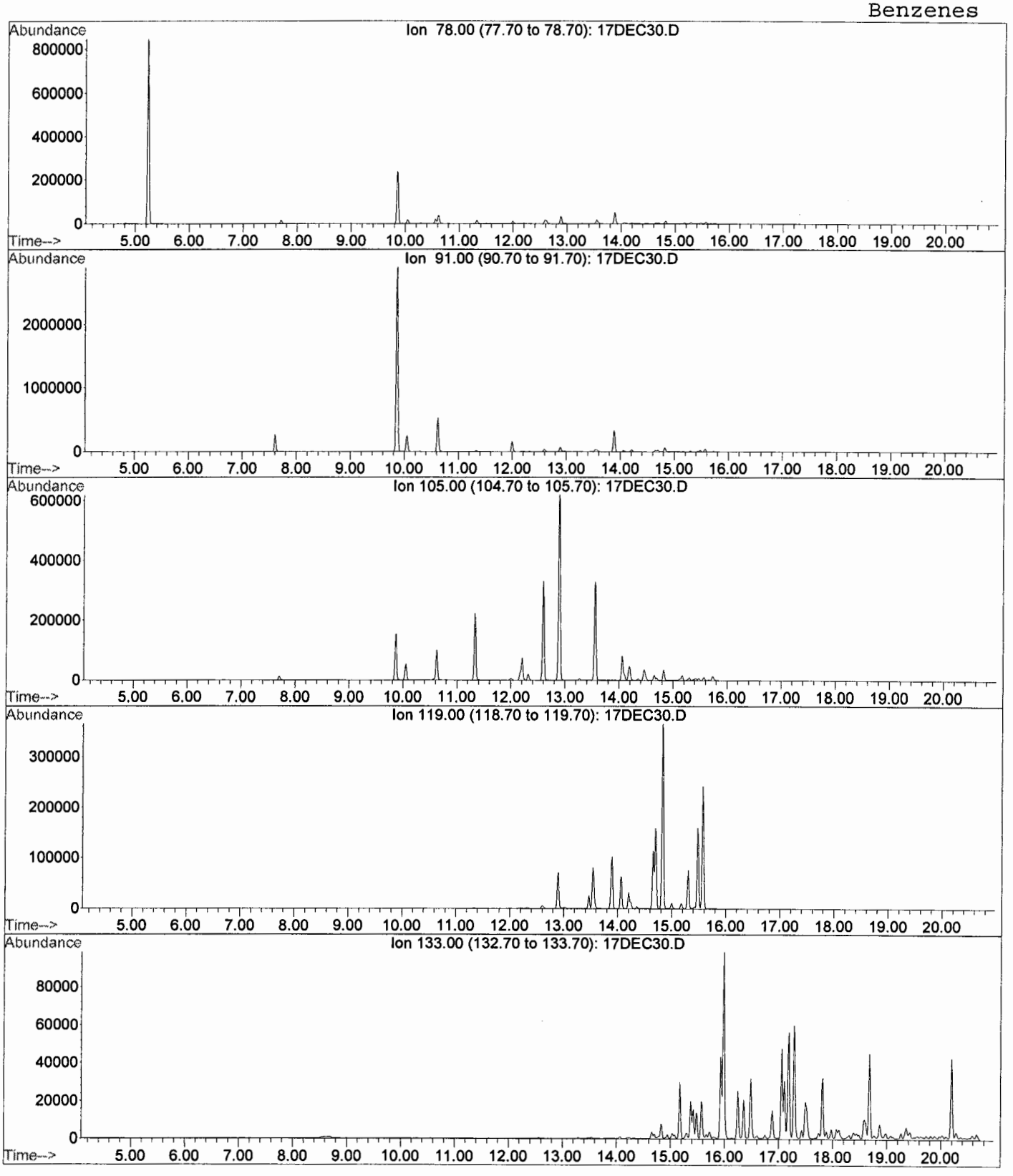
Target Compound or Group	Abbreviation	Ion
Alkylated cyclohexanes		83
Normal alkanes, pristane, phytane		85
Isoprenoid hydrocarbons, pristane, phytane		113
Olefins		115
Hopanes		191
Steranes		217
Benzene	B	78
Monoalkylbenzenes	C1B	91
Dialkylbenzenes	C2B	91
Trialkylbenzenes	C3B	105
Tetraalkylbenzenes	C4B	119
Pentaalkylbenzenes	C5B	133
Naphthalene	N	128
Monoalkylnaphthalenes	C1N	142
Dialkylnaphthalenes	C2N	156
Trialkylnaphthalenes	C3N	170
Tetraalkylnaphthalenes	C4N	184
Fluorene	F	166
Monoalkylfluorenes	C1F	180
Dialkylfluorenes	C2F	194
Trialkylfluorenes	C3F	208
Phenanthrene, anthracene	PA	178
Monoalkylphenanthrenes and anthracenes	C1PA	192
Dialkylphenanthrenes and anthracenes	C2PA	206
Trialkylphenanthrenes and anthracenes	C3PA	220
Tetraalkylphenanthrenes and anthracenes	C4PA	234
Dibenzothiophene	D	184
Monoalkyldibenzothiophenes	C1D	198
Dialkyldibenzothiophenes	C2D	212
Trialkyldibenzothiophenes	C3D	226
Fluoranthene, pyrene	FP	202
Monoalkylfluoranthenes and pyrenes	C1FP	216
Dialkylfluoranthenes and pyrenes	C2FP	230
Trialkyfluoranthenes and pyrenes	C3FP	244
Benz(a)anthracene, chrysene	BC	228
Monoalkylbenz(a)anthracenes and chrysenes	C1BC	242
Dialkylbenz(a)anthracenes and chrysenes	C2BC	256
Trialkylbenz(a)anthracenes and chrysenes	C3BC	270
Tetraalkylbenz(a)anthrancenes and chrysenes	C4BC	284

Field ID: RPSED03-01 (1-3)
Lab ID: GI031119-01
File: I:\2\DATA\031217\17DEC30.D
Acquired: 19 Dec 2003 1:52 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC



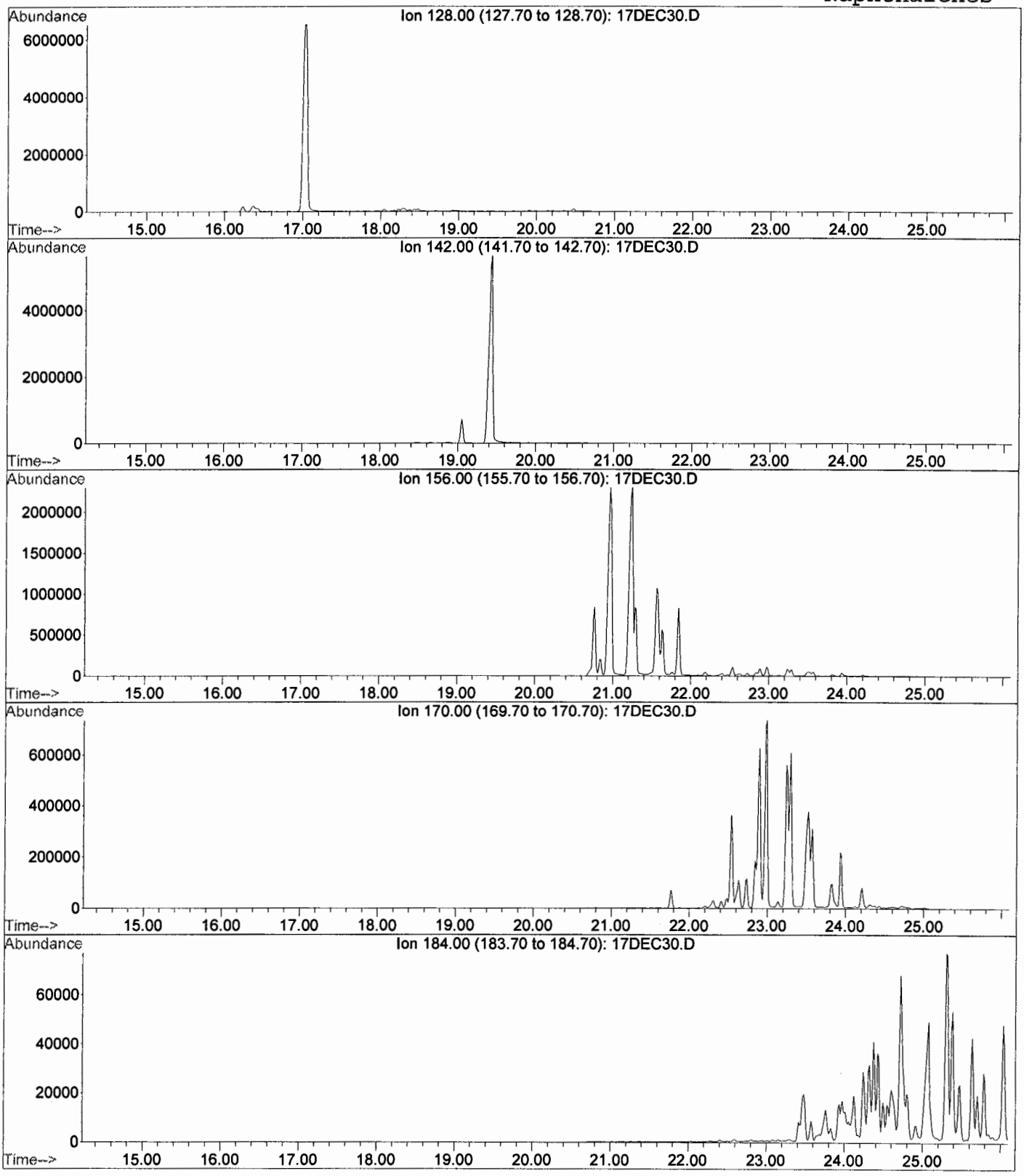
Field ID: RPSED03-01 (1-3)
Lab ID: GI031119-01
File: I:\2\DATA\031217\17DEC30.D
Acquired: 19 Dec 2003 1:52 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Benzenes



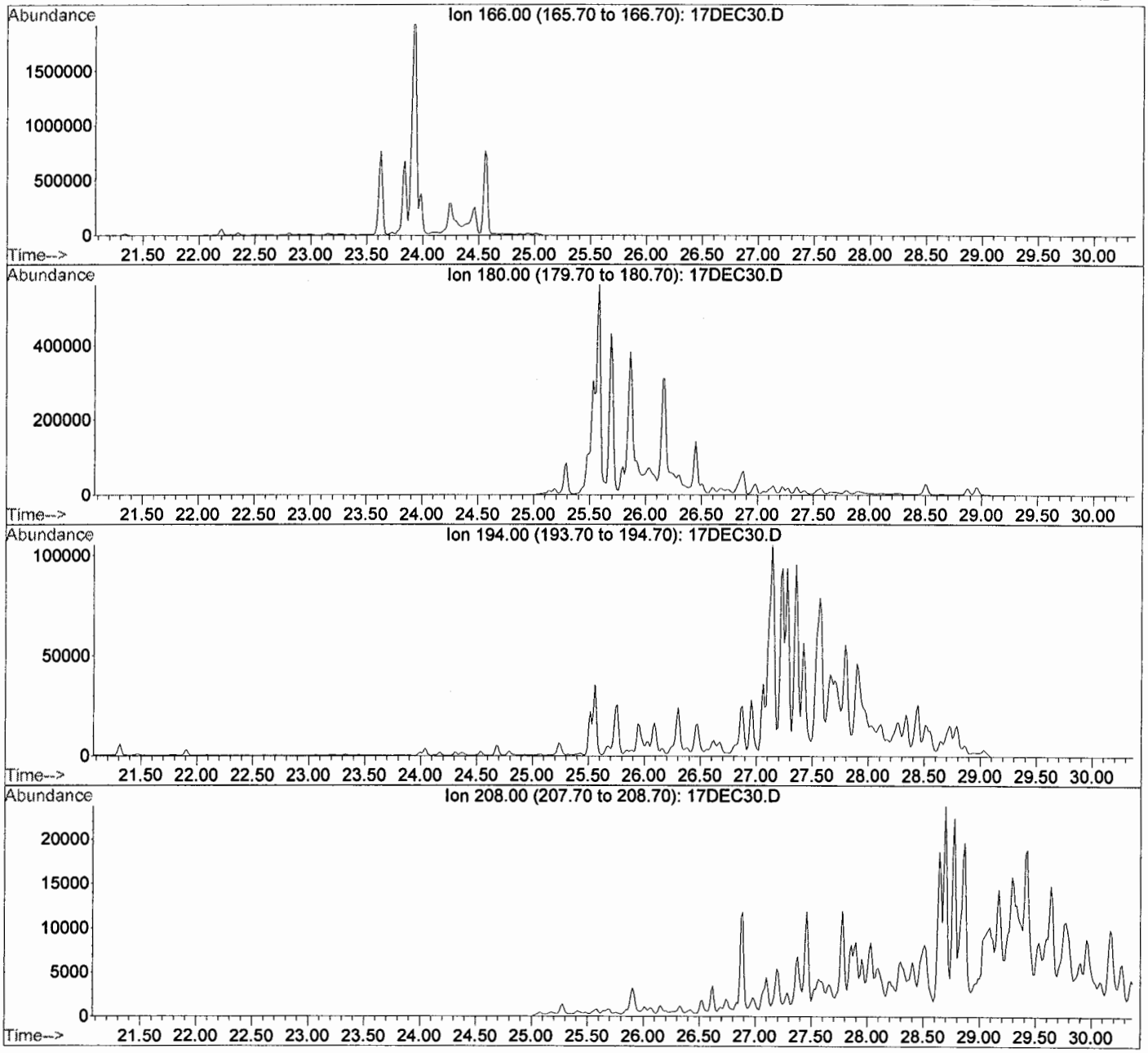
Field ID: RPSED03-01 (1-3)
Lab ID: GI031119-01
File: I:\2\DATA\031217\17DEC30.D
Acquired: 19 Dec 2003 1:52 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Naphthalenes



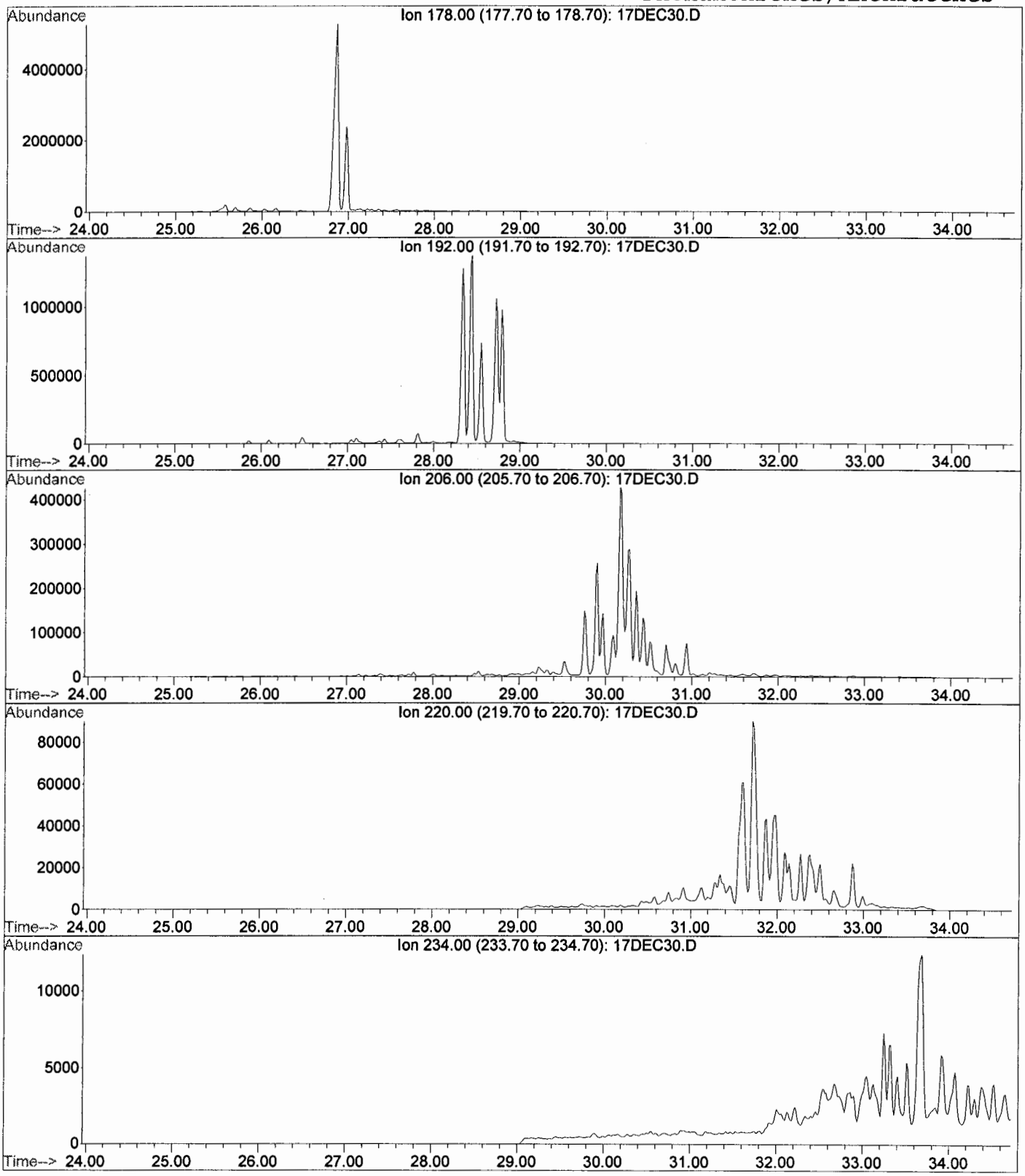
Field ID: RPSED03-01 (1-3)
Lab ID: GI031119-01
File: I:\2\DATA\031217\17DEC30.D
Acquired: 19 Dec 2003 1:52 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Fluorenes



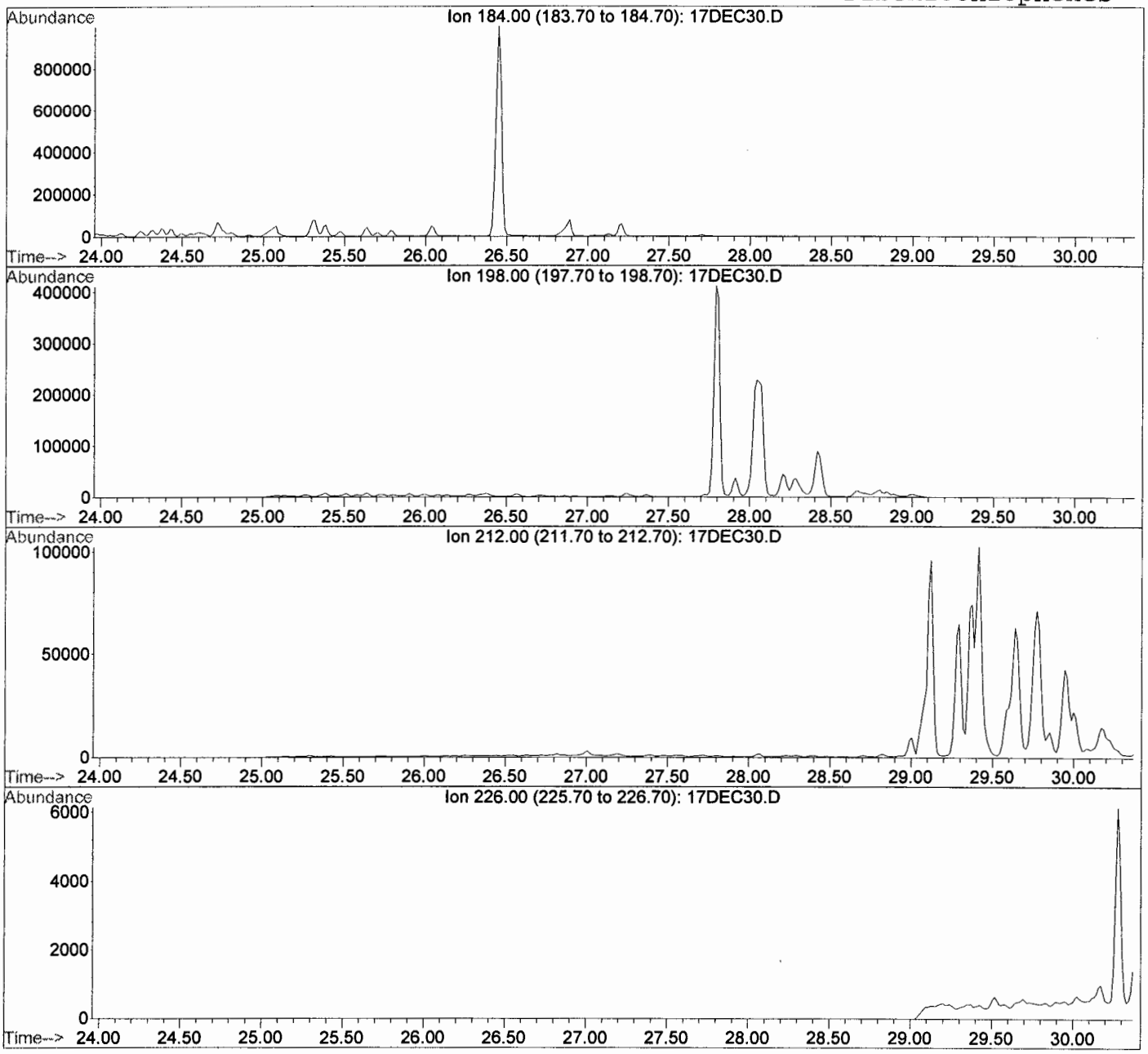
Field ID: RPSED03-01 (1-3)
Lab ID: GI031119-01
File: I:\2\DATA\031217\17DEC30.D
Acquired: 19 Dec 2003 1:52 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Phenanthrenes/Anthracenes



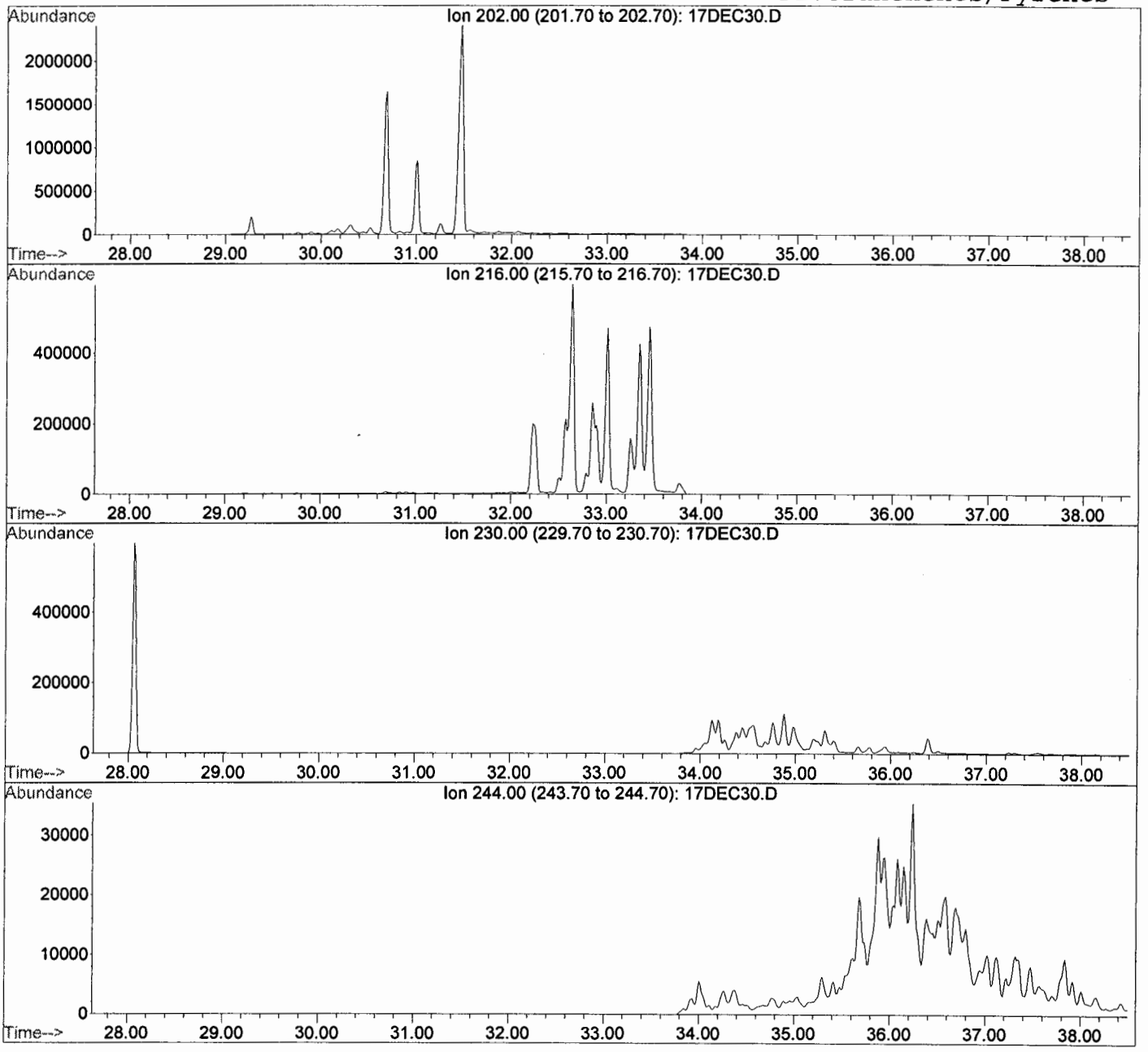
Field ID: RPSED03-01 (1-3)
Lab ID: GI031119-01
File: I:\2\DATA\031217\17DEC30.D
Acquired: 19 Dec 2003 1:52 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Dibenzothiophenes



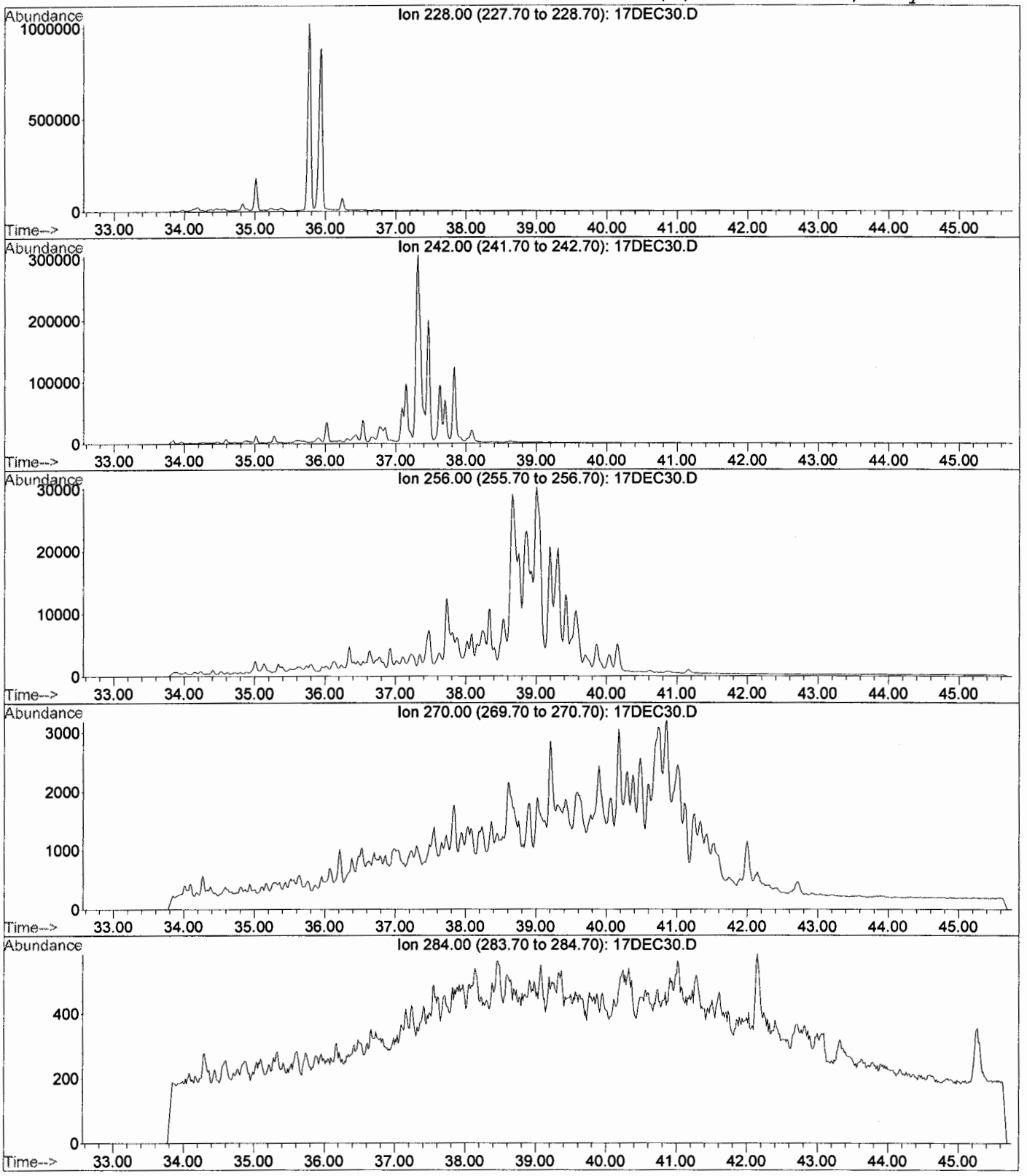
Field ID: RPSED03-01 (1-3)
Lab ID: GI031119-01
File: I:\2\DATA\031217\17DEC30.D
Acquired: 19 Dec 2003 1:52 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Fluoranthenes/Pyrenes

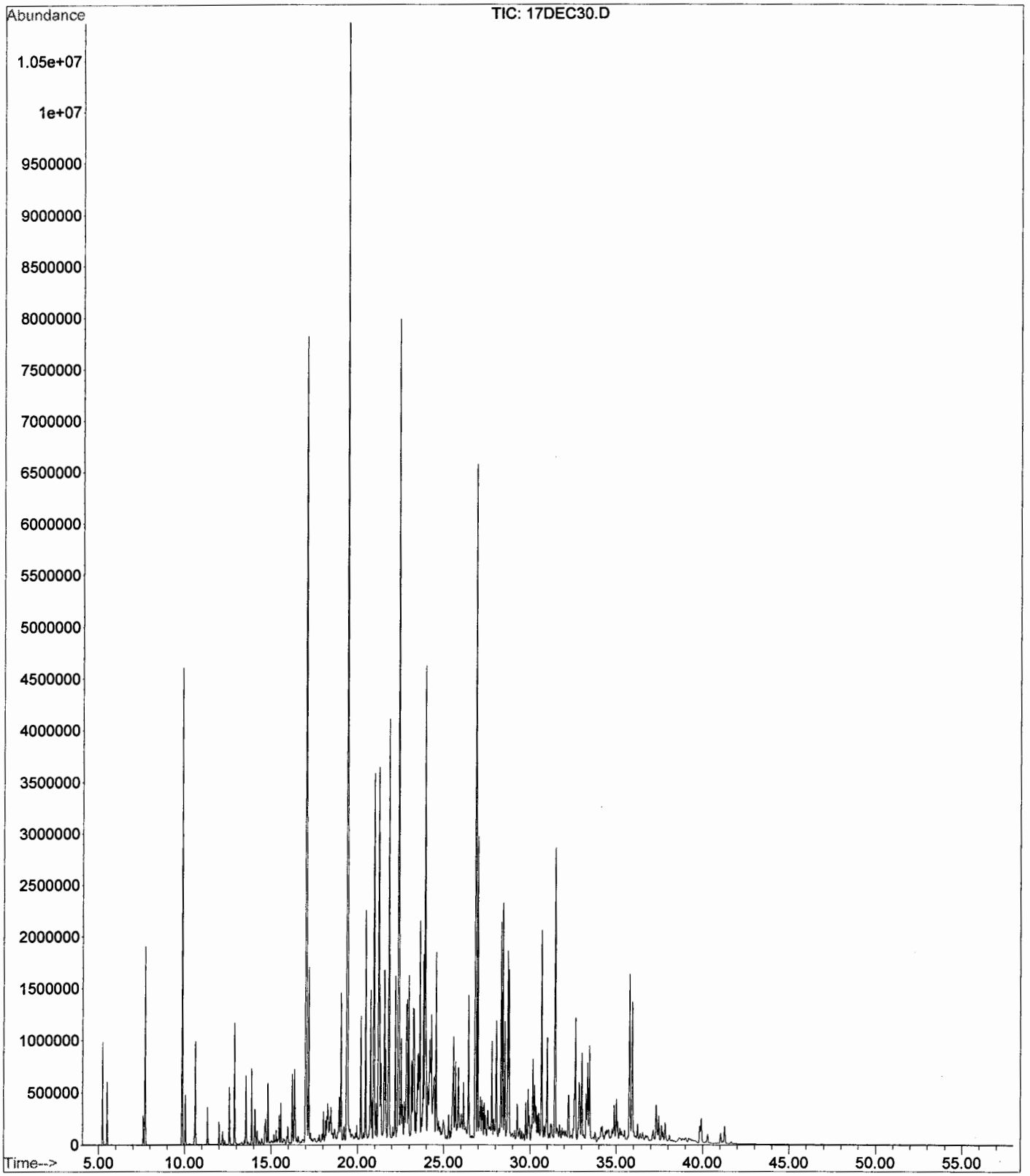


Field ID: RPSED03-01 (1-3)
Lab ID: GI031119-01
File: I:\2\DATA\031217\17DEC30.D
Acquired: 19 Dec 2003 1:52 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

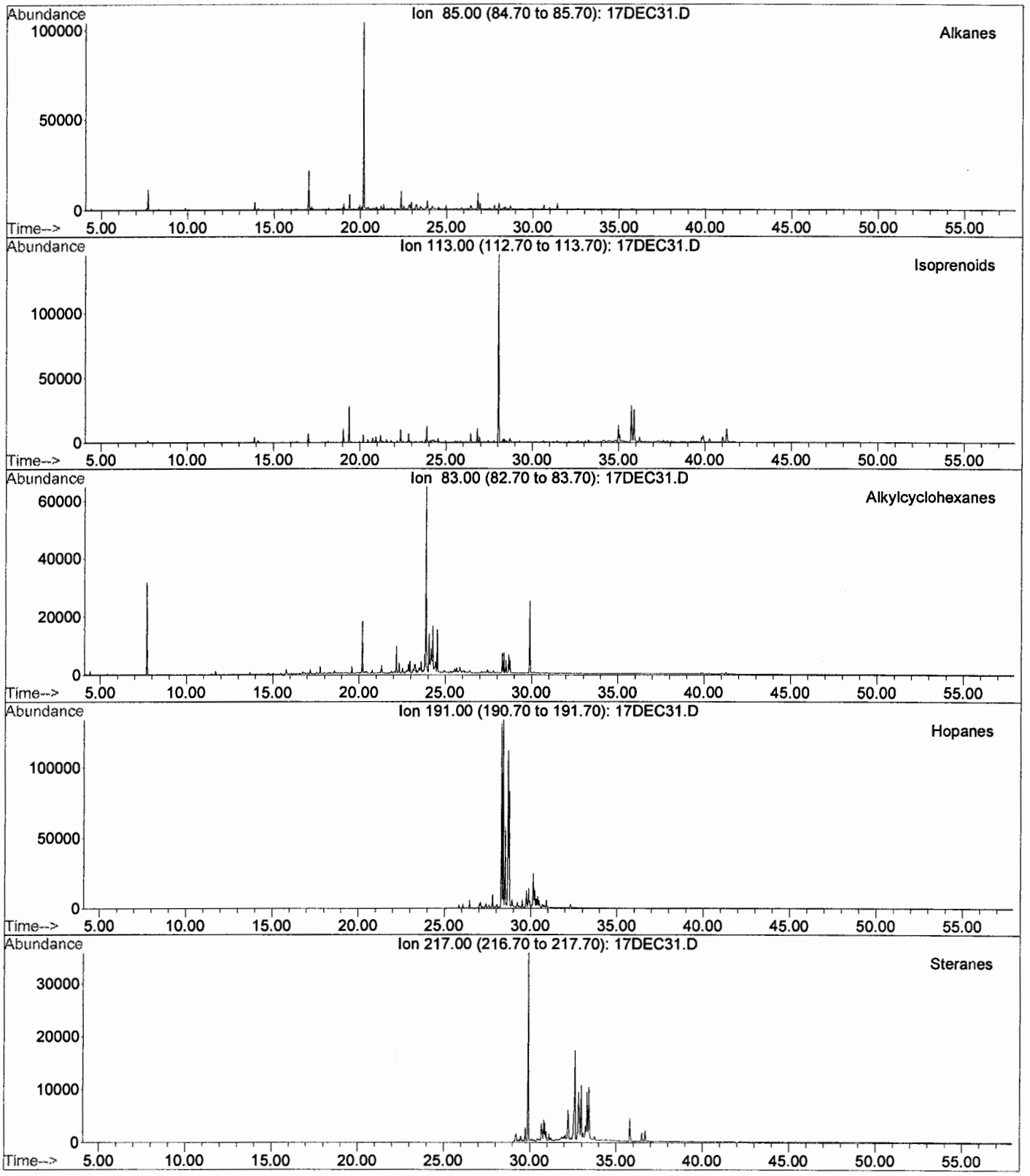
Benz(a)anthracenes/Chrysenes



Field ID: RPSED03-01 (1-3)
Lab ID: GI031119-01
File: I:\2\DATA\031217\17DEC30.D
Acquired: 19 Dec 2003 1:52 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

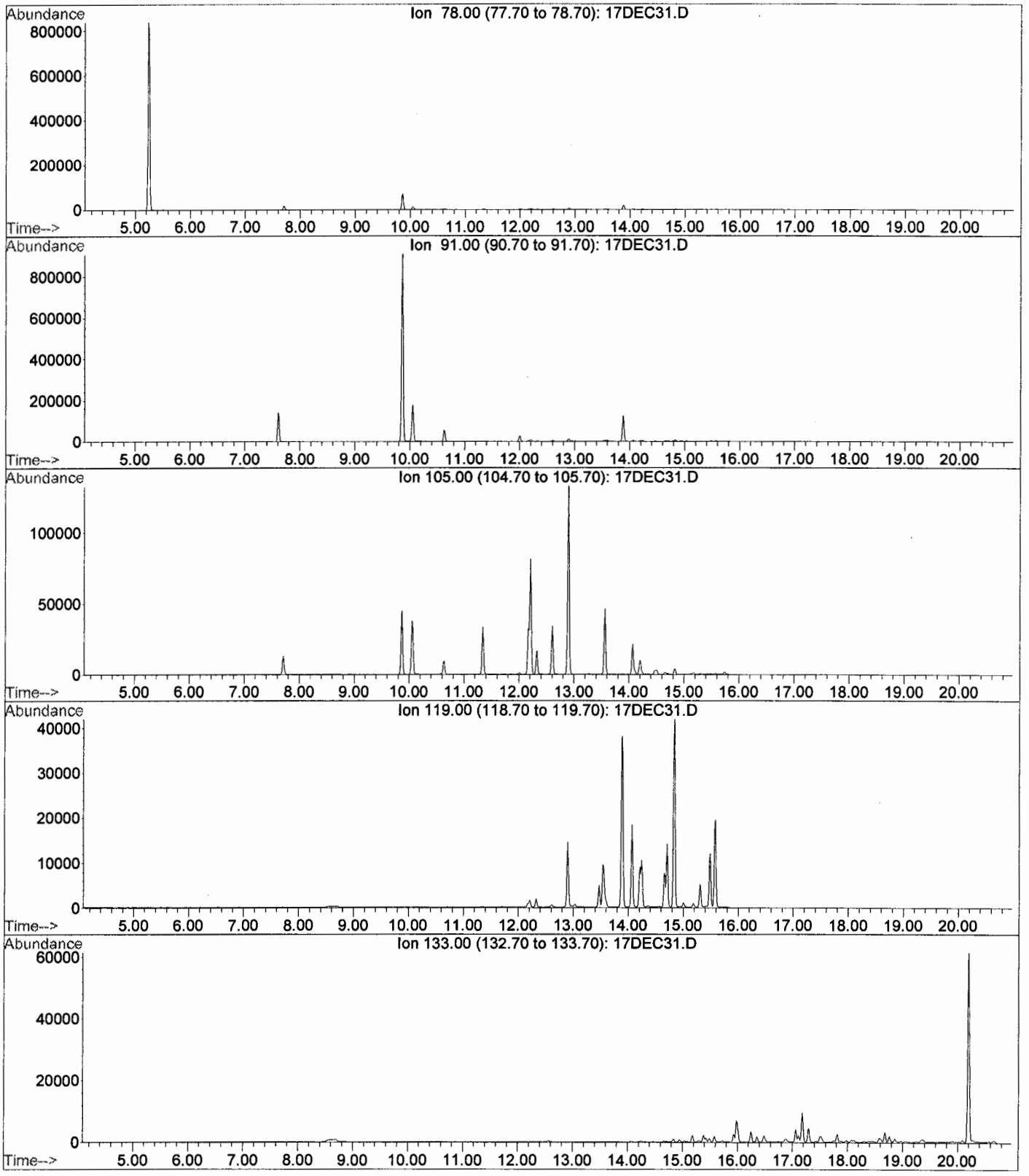


Field ID: RPSED03-05 (3.8-4)
Lab ID: GI031119-02
File: I:\2\DATA\031217\17DEC31.D
Acquired: 19 Dec 2003 3:05 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC



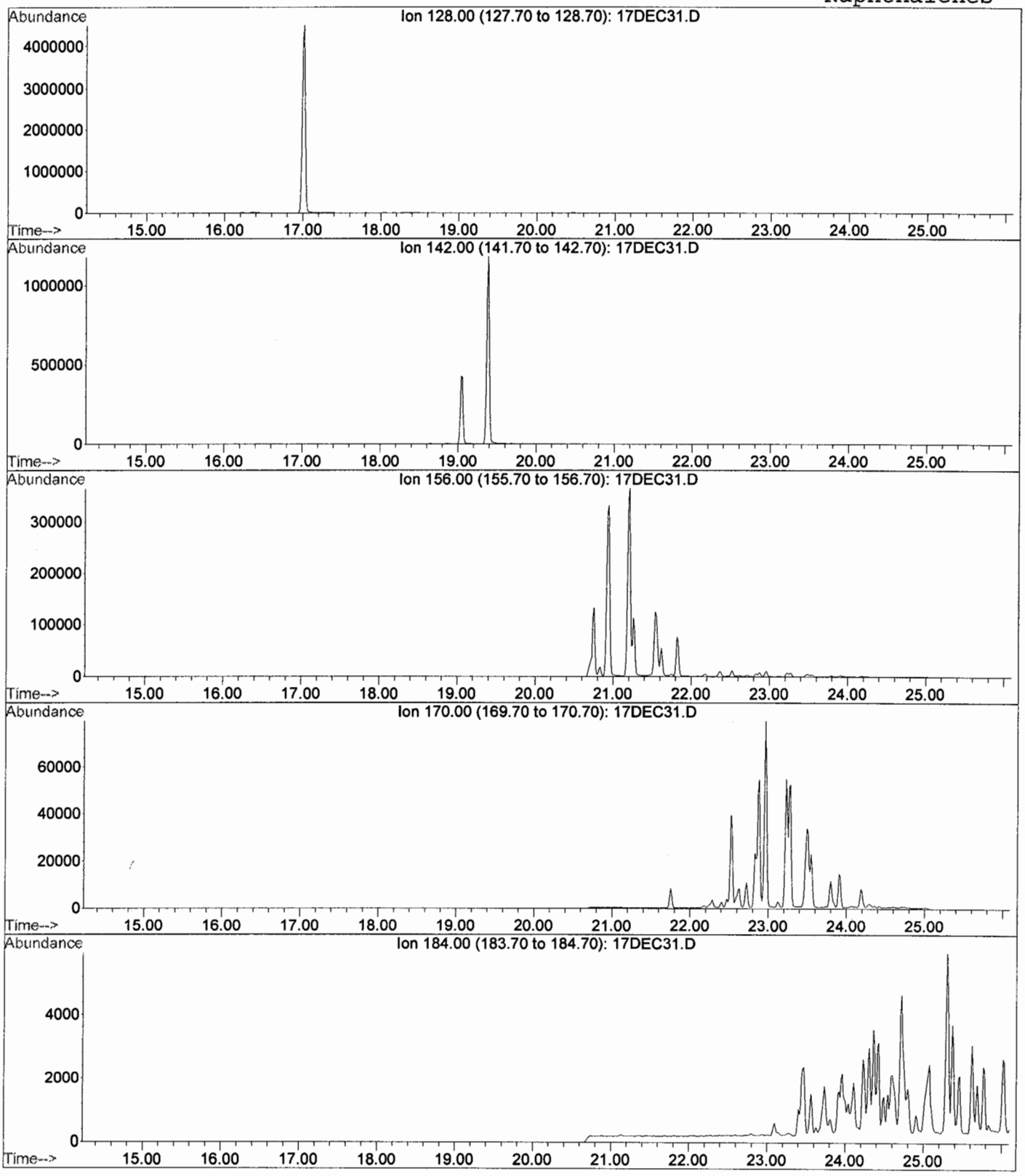
Field ID: RPSED03-05 (3.8-4)
Lab ID: GI031119-02
File: I:\2\DATA\031217\17DEC31.D
Acquired: 19 Dec 2003 3:05 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Benzenes



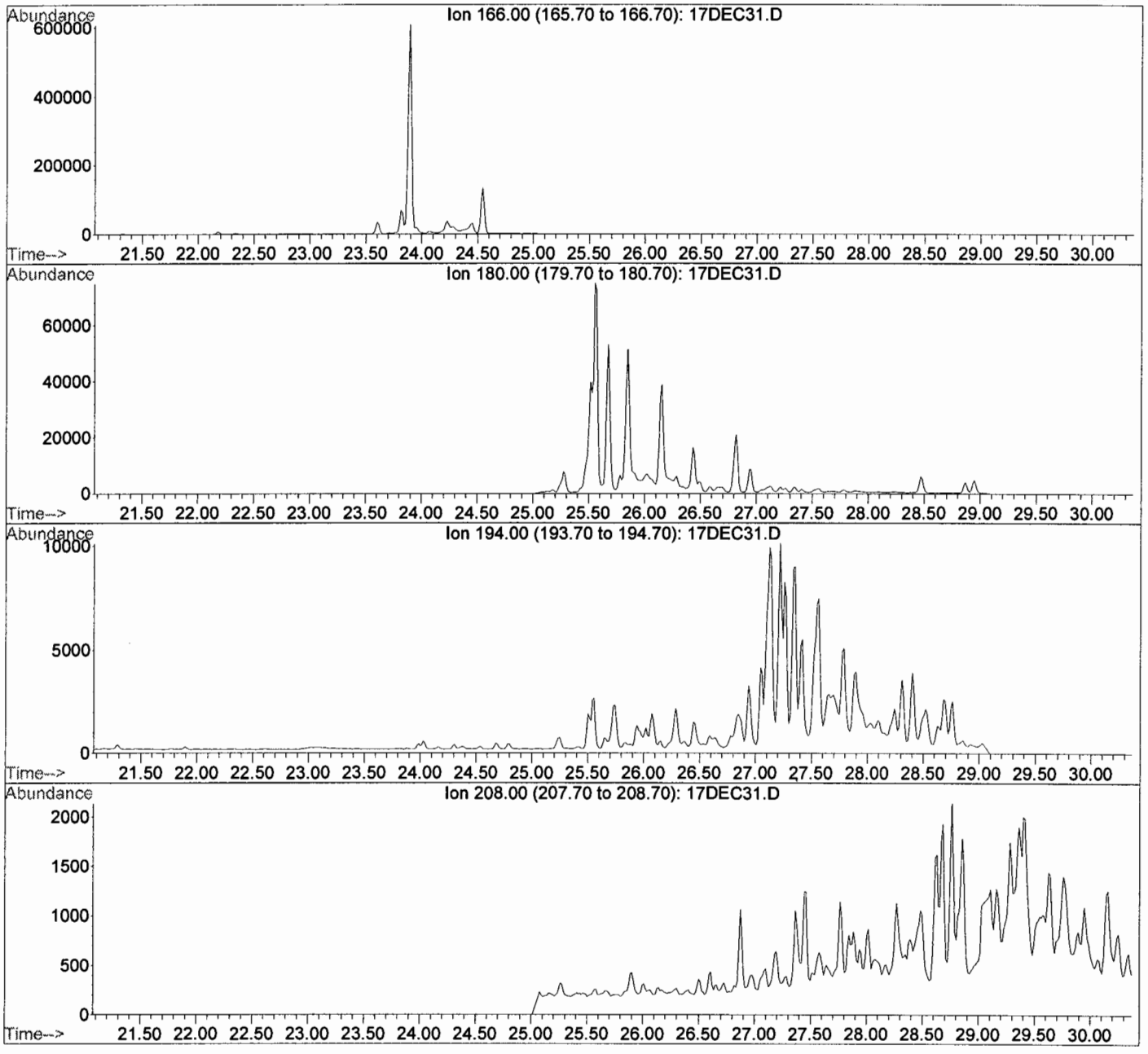
Field ID: RPSED03-05 (3.8-4)
Lab ID: GI031119-02
File: I:\2\DATA\031217\17DEC31.D
Acquired: 19 Dec 2003 3:05 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Naphthalenes



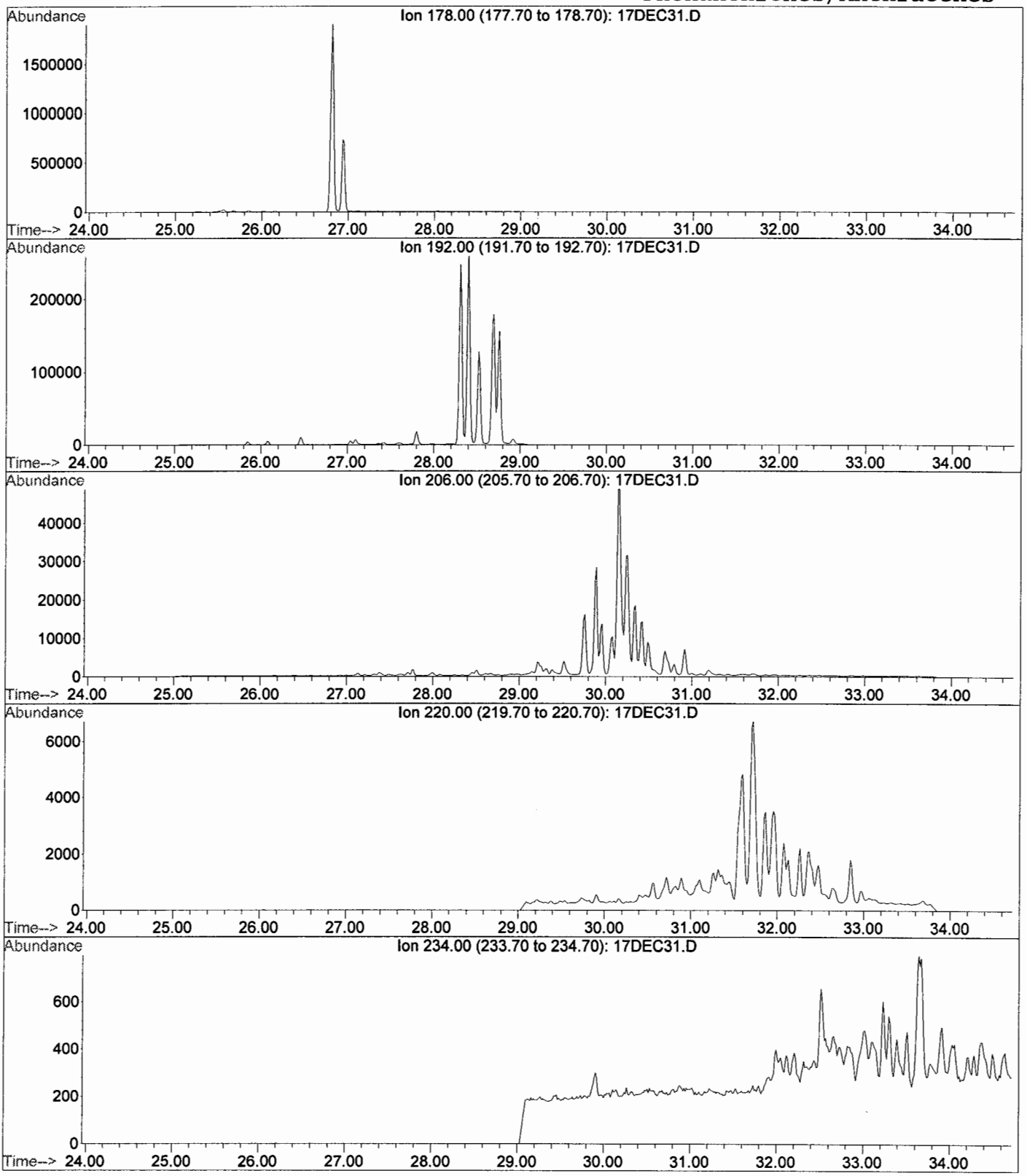
Field ID: RPSED03-05 (3.8-4)
Lab ID: GI031119-02
File: I:\2\DATA\031217\17DEC31.D
Acquired: 19 Dec 2003 3:05 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Fluorenes



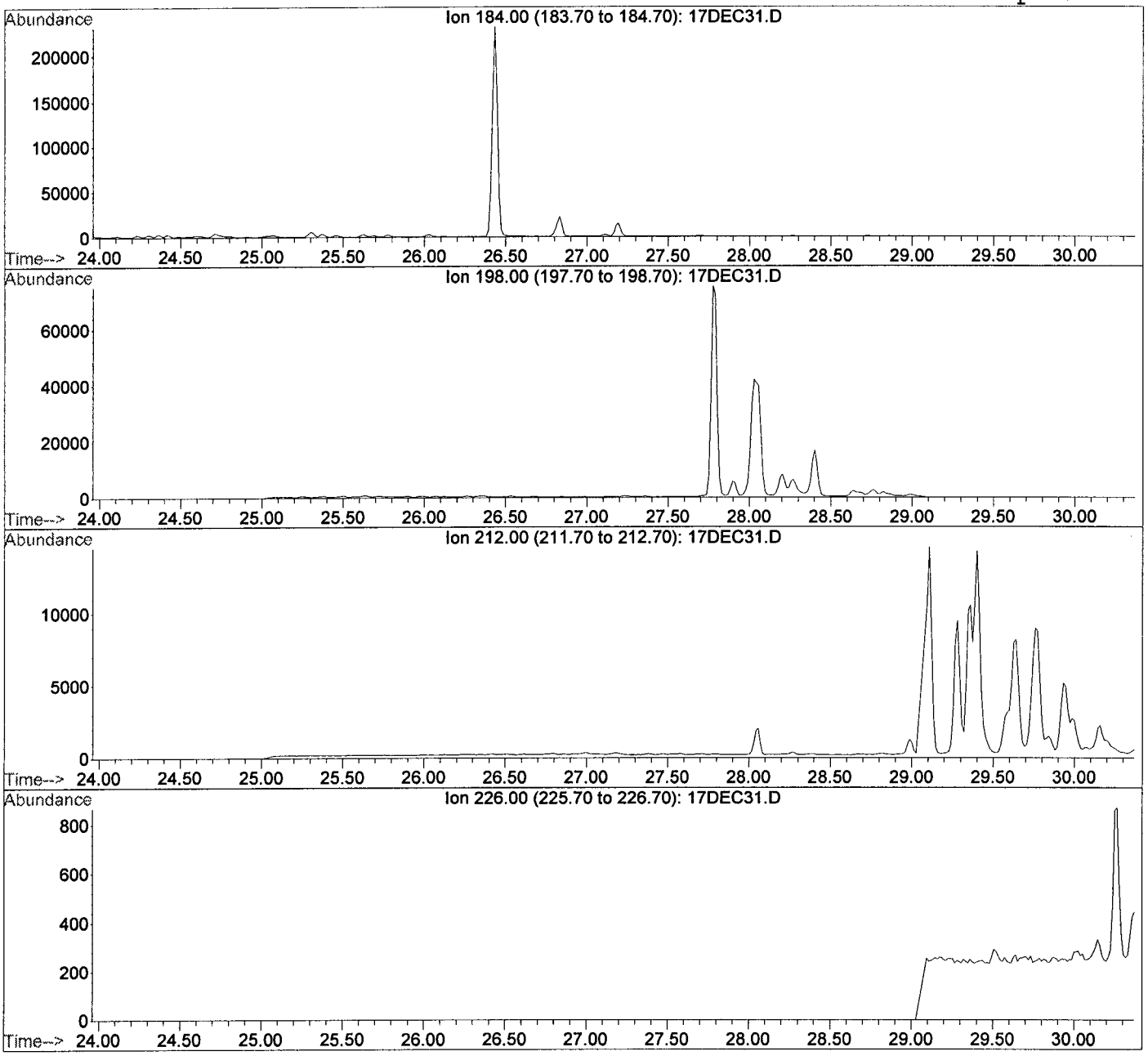
Field ID: RPSED03-05 (3.8-4)
Lab ID: GI031119-02
File: I:\2\DATA\031217\17DEC31.D
Acquired: 19 Dec 2003 3:05 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Phenanthrenes/Anthracenes



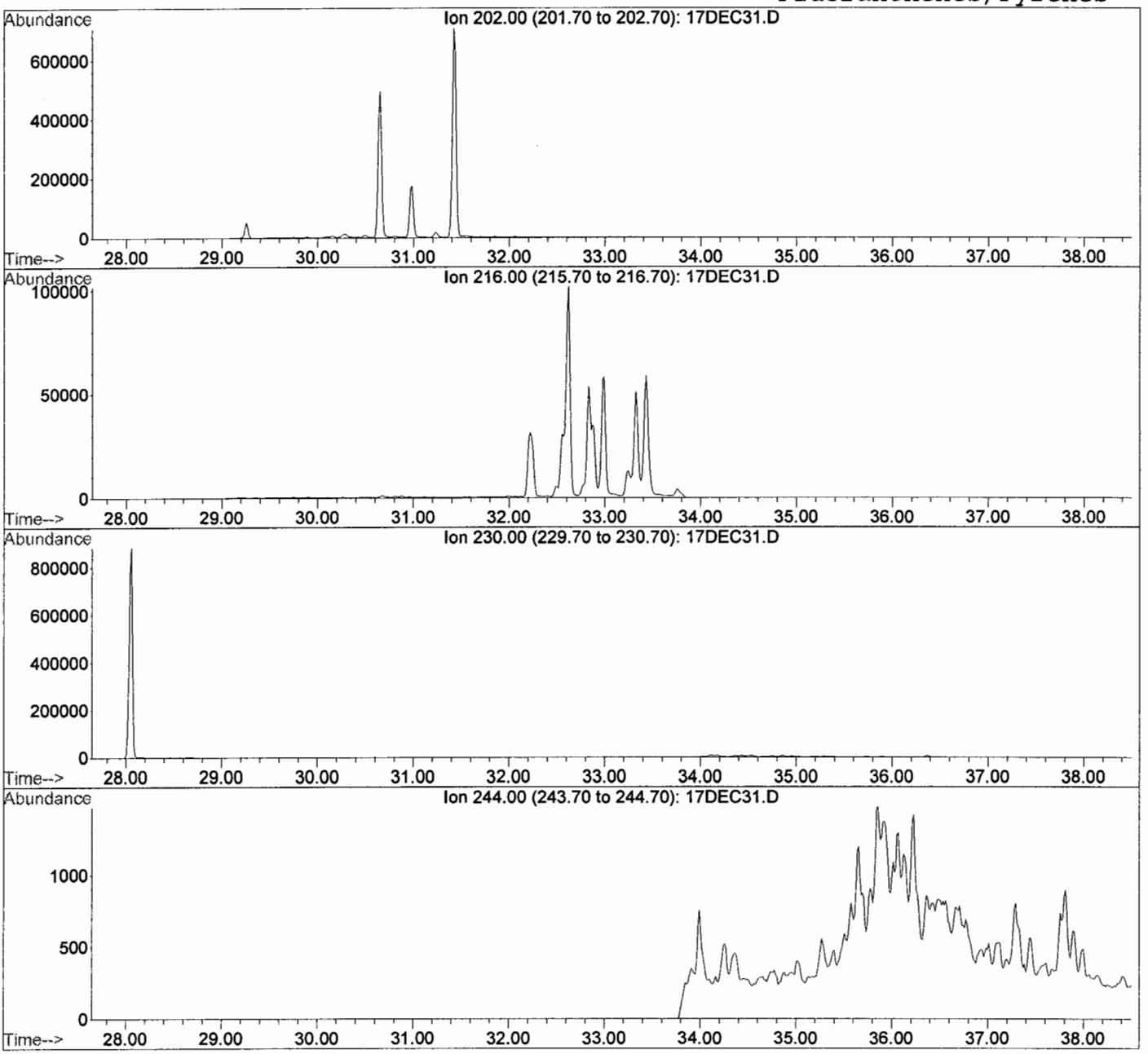
Field ID: RPSED03-05 (3.8-4)
Lab ID: GI031119-02
File: I:\2\DATA\031217\17DEC31.D
Acquired: 19 Dec 2003 3:05 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Dibenzothiophenes



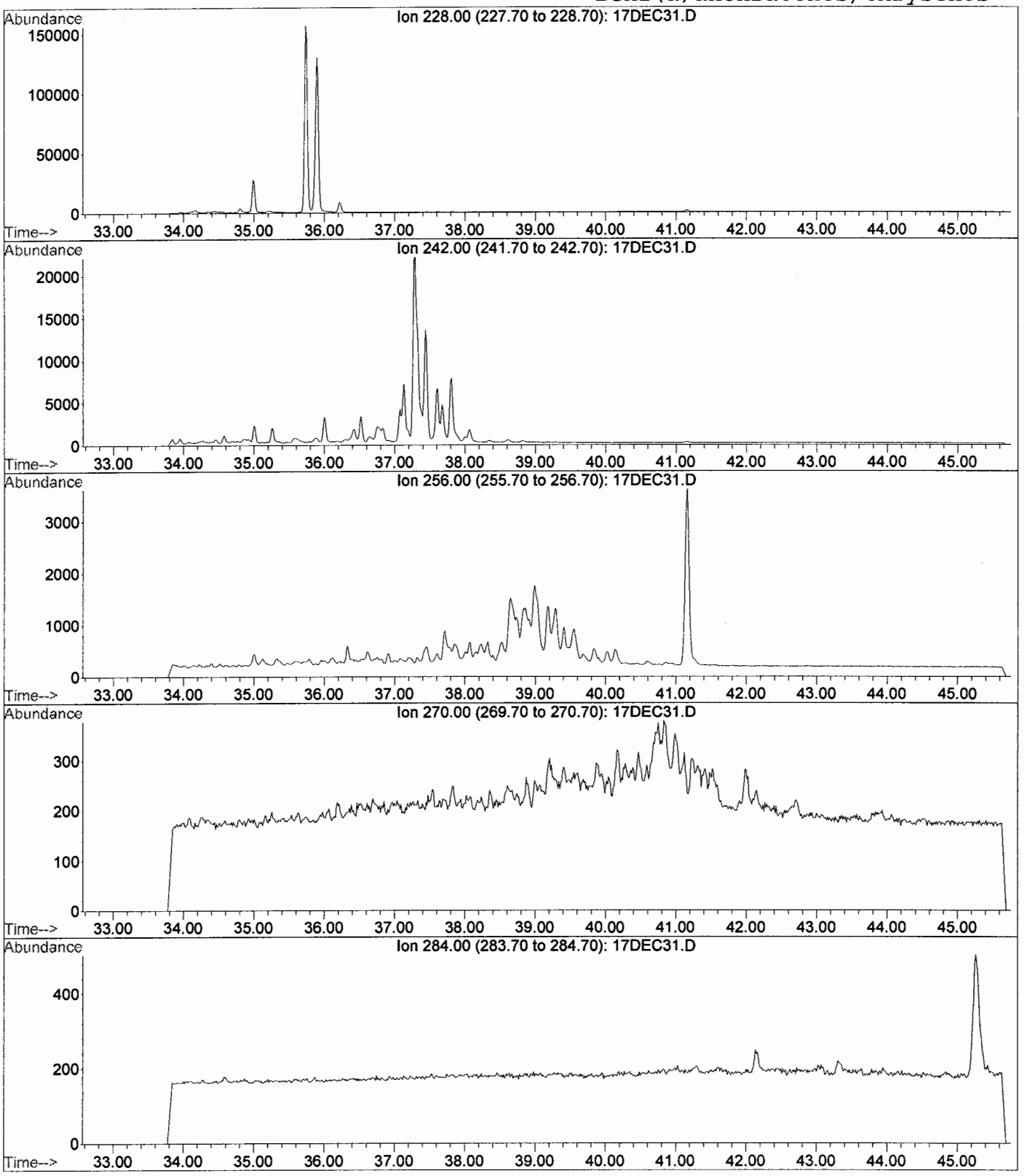
Field ID: RPSED03-05 (3.8-4)
Lab ID: GI031119-02
File: I:\2\DATA\031217\17DEC31.D
Acquired: 19 Dec 2003 3:05 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Fluoranthenes/Pyrenes

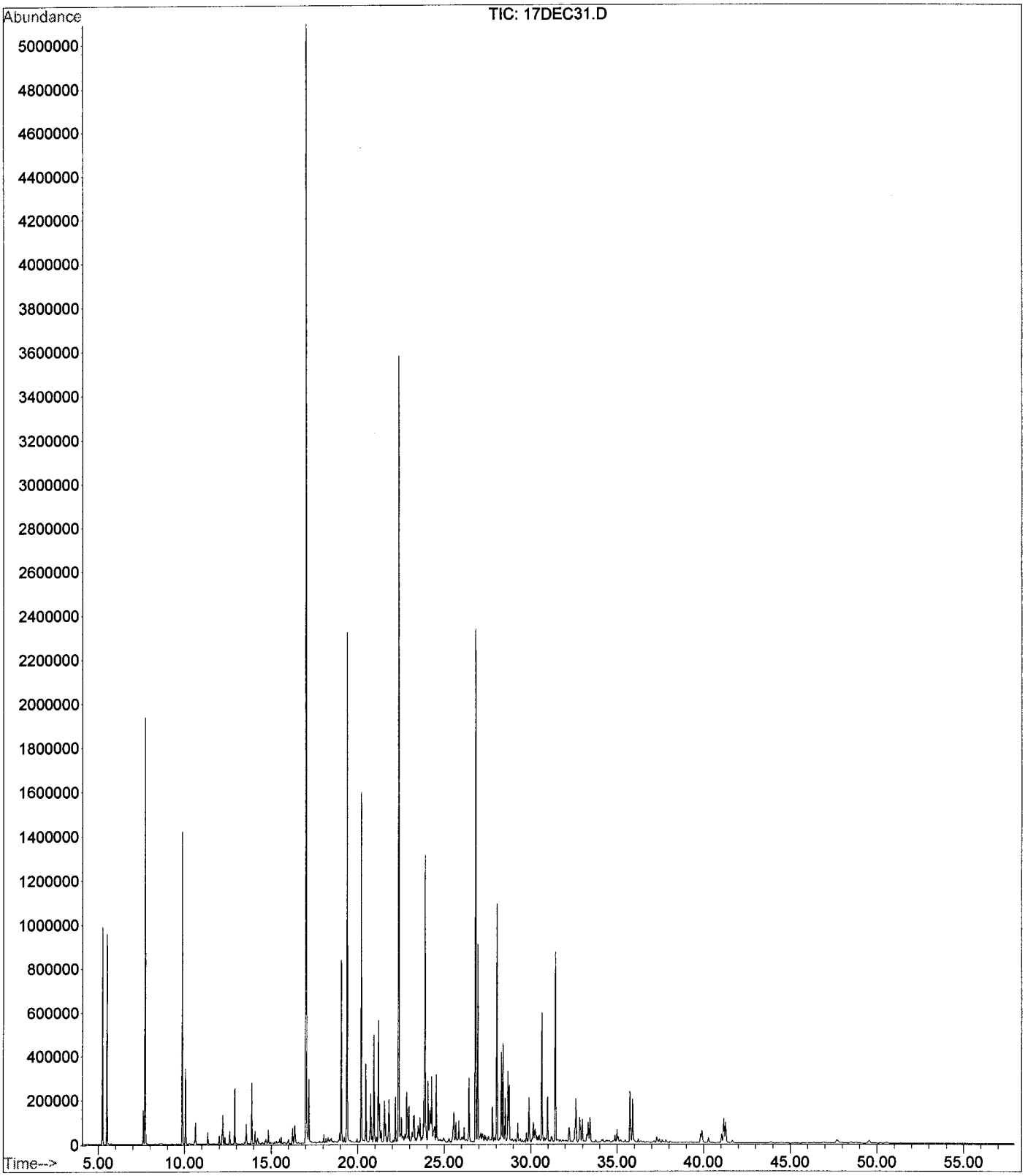


Field ID: RPSED03-05 (3.8-4)
Lab ID: GI031119-02
File: I:\2\DATA\031217\17DEC31.D
Acquired: 19 Dec 2003 3:05 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC

Benz(a)anthracenes/Chrysenes



Field ID: RPSED03-05 (3.8-4)
Lab ID: GI031119-02
File: I:\2\DATA\031217\17DEC31.D
Acquired: 19 Dec 2003 3:05 pm using AcqMethod MET4008Y
Instrument: GC2-MS_59 Operator: EC



Sediments

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED030113
SED03-01(1-3)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-01A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S4A3143

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 21 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/08/03

Injection Volume: 1.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	8300	U
111-44-4	bis(2-Chloroethyl)Ether	8300	U
95-57-8	2-Chlorophenol	8300	U
541-73-1	1,3-Dichlorobenzene	8300	U
106-46-7	1,4-Dichlorobenzene	8300	UJ9
95-50-1	1,2-Dichlorobenzene	8300	U
95-48-7	2-Methylphenol	8300	U
108-60-1	2,2'-oxybis(1-Chloropropane)	8300	U
106-44-5	4-Methylphenol	8300	U
621-64-7	N-Nitroso-di-n-propylamine	8300	U
67-72-1	Hexachloroethane	8300	U
98-95-3	Nitrobenzene	8300	U
78-59-1	Isophorone	8300	U
88-75-5	2-Nitrophenol	8300	U
105-67-9	2,4-Dimethylphenol	8300	U
120-83-2	2,4-Dichlorophenol	8300	U
120-82-1	1,2,4-Trichlorobenzene	8300	U
91-20-3	Naphthalene	66000	
106-47-8	4-Chloroaniline	8300	UJ9
111-91-1	bis(2-Chloroethoxy)methane	8300	U
87-68-3	Hexachlorobutadiene	8300	U
59-50-7	4-Chloro-3-Methylphenol	8300	U
91-57-6	2-Methylnaphthalene	2500	J5
77-47-4	Hexachlorocyclopentadiene	8300	UJ4
88-06-2	2,4,6-Trichlorophenol	8300	U
95-95-4	2,4,5-Trichlorophenol	17000	U
91-58-7	2-Chloronaphthalene	8300	U
88-74-4	2-Nitroaniline	17000	U
131-11-3	Dimethylphthalate	8300	U
208-96-8	Acenaphthylene	22000	
606-20-2	2,6-Dinitrotoluene	8300	U
99-09-2	3-Nitroaniline	17000	UJ9
83-32-9	Acenaphthene	37000	J3

Jm 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED030113
SED03-01(1-3)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-01A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S4A3143

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 21 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/08/03

Injection Volume: 1.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	17000	U
100-02-7	4-Nitrophenol	17000	U
132-64-9	Dibenzofuran	3200	J5
121-14-2	2,4-Dinitrotoluene	8300	U
84-66-2	Diethylphthalate	8300	U
7005-72-3	4-Chlorophenyl-phenylether	8300	U
86-73-7	Fluorene	24000	
100-01-6	4-Nitroaniline	17000	U
534-52-1	4,6-Dinitro-2-methylphenol	17000	U
86-30-6	N-Nitrosodiphenylamine (1)	8300	U
101-55-3	4-Bromophenyl-phenylether	8300	U
118-74-1	Hexachlorobenzene	8300	U
87-86-5	Pentachlorophenol	17000	U
85-01-8	Phenanthrene	100000	
120-12-7	Anthracene	25000	
86-74-8	Carbazole	1300	J5
84-74-2	Di-n-butylphthalate	8300	U
206-44-0	Fluoranthene	25000	
129-00-0	Pyrene	46000	
85-68-7	Butylbenzylphthalate	8300	U
91-94-1	3,3'-Dichlorobenzidine	8300	U
56-55-3	Benzo(a)anthracene	15000	
218-01-9	Chrysene	14000	
117-81-7	bis(2-Ethylhexyl)phthalate	8300	U
117-84-0	Di-n-octylphthalate	8300	U
205-99-2	Benzo(b)fluoranthene	8700	
207-08-9	Benzo(k)fluoranthene	2600	J5
50-32-8	Benzo(a)pyrene	11000	
193-39-5	Indeno(1,2,3-cd)pyrene	3900	J5
53-70-3	Dibenzo(a,h)anthracene	1500	J5
191-24-2	Benzo(g,h,i)perylene	5100	J5

(1) - Cannot be separated from Diphenylamine

Jam 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED030113
SED03-01(1-3)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-01A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S4A3143

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 21 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/08/03

Injection Volume: 1.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	1127-76-0	NAPHTHALENE, 1-ETHYL-	9.48	14000	NJ 18
2.	581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	9.54	36000	NJ
3.	581-40-8	NAPHTHALENE, 2,3-DIMETHYL-	9.61	42000	NJ
4.	573-98-8	NAPHTHALENE, 1,2-DIMETHYL-	9.71	21000	NJ
5.	2131-42-2	NAPHTHALENE, 1,4,6-TRIMETHYL	10.06	12000	NJ
6.		UNKNOWN	10.56	12000	J
7.	1430-97-3	9H-FLUORENE, 2-METHYL-	10.83	12000	NJ
8.	132-65-0	DIBENZOTHIOPHENE	11.08	12000	NJ
9.	779-02-2	ANTHRACENE, 9-METHYL-	11.59	24000	NJ
10.	613-12-7	ANTHRACENE, 2-METHYL-	11.62	25000	NJ
11.		UNKNOWN	11.66	12000	J
12.		UNKNOWN	11.69	47000	J
13.	781-43-1	9,10-DIMETHYLANTHRACENE	12.06	17000	NJ
14.		UNKNOWN	12.10	17000	J
15.	886-66-8	BENZENE, 1,1'-(1,3-BUTADIYNE	12.29	14000	NJ
16.	238-84-6	11H-BENZO[A]FLUORENE	12.67	13000	NJ
17.	243-17-4	11H-BENZO[B]FLUORENE	12.73	5600	NJ
18.	3442-78-2	PYRENE, 2-METHYL-	12.76	5500	NJ
19.	2381-21-7	PYRENE, 1-METHYL-	12.87	6800	NJ
20.	1705-84-6	TRIPHENYLENE, 2-METHYL-	13.92	6600	NJ
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam 1/15/04

Mitkem Corporation

Date: *19-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED030113 [SED03-01 (1-3)]
Lab ID: B1828-01

Project: Keyspan
Collection Date: 11/17/03 13:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	18000		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.4	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0010

1/15/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RPSEDXXXX
RPSEDXX-XX

DUPLICATE of RPSED03-04(1-3)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-17A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S4A3114

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 18 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	UJ9
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	UJ9
111-91-1	bis(2-Chloroethoxy)methane	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	110	J5
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	800	UJ9
83-32-9	Acenaphthene	400	U

JPM 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RPSEDXXXX

Lab Name: MITKEM CORPORATION Contract:

Duplicate of RPSED03-01(1-3)

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-17A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S4A3114

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 18 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	220	J5
120-12-7	Anthracene	140	J5
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	570	
129-00-0	Pyrene	1600	J10
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	510	
218-01-9	Chrysene	500	
117-81-7	bis(2-Ethylhexyl)phthalate	400 U6 ~~100~~	~~JB~~
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	370	J5
207-08-9	Benzo(k)fluoranthene	120	J5
50-32-8	Benzo(a)pyrene	400	
193-39-5	Indeno(1,2,3-cd)pyrene	160	J5
53-70-3	Dibenzo(a,h)anthracene	60	J5
191-24-2	Benzo(g,h,i)perylene	210	J5

(1) - Cannot be separated from Diphenylamine

11/5/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RPSEDXXXX

Lab Name: MITKEM CORPORATION Contract:

DUPLICATE OF RPSED03-01 (A-3)

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-17A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S4A3114

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 18 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 14

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	585-34-2	PHENOL, M-TERT-BUTYL-	8.90	1100	NJ 18
2.	610-48-0	ANTHRACENE, 1-METHYL-	11.62	320	NJ
3.	610-48-0	ANTHRACENE, 1-METHYL-	11.64	180	NJ
4.	613-12-7	ANTHRACENE, 2-METHYL-	11.68	240	NJ
5.		UNKNOWN	11.72	770	J
6.	781-43-1	9,10-DIMETHYLANTHRACENE	12.08	480	NJ
7.		UNKNOWN	12.60	160	J
8.	243-17-4	11H-BENZO[B]FLUORENE	12.70	490	NJ
9.	243-17-4	11H-BENZO[B]FLUORENE	12.75	220	NJ
10.	243-17-4	11H-BENZO[B]FLUORENE	12.79	220	NJ
11.	2381-21-7	PYRENE, 1-METHYL-	12.87	200	NJ
12.	2381-21-7	PYRENE, 1-METHYL-	12.90	420	NJ
13.		UNKNOWN	13.74	1100	J
14.	192-97-2	BENZO[E]PYRENE	15.33	320	NJ
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: RPSEDXXXX DUPLICATE of SED03-01 (1-3)
Lab ID: B1828-17

Project: Keyspan
Collection Date: 11/17/03 0:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	1100	J10	100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.2	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0026

Jam 1/15/04

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED030156
Sed03-01 (S6)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3104

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	UJ9
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	UJ9
111-91-1	bis(2-Chloroethoxy)methane	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	790	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	790	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	790	UJ9
83-32-9	Acenaphthene	390	U

Jan 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED030156
SED-03-01 (S-6)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3104

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	790	U
100-02-7	4-Nitrophenol	790	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	790	U
534-52-1	4,6-Dinitro-2-methylphenol	790	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	790	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	40	J 10, J5
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390 U 6 ~~72~~	~~JB~~
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) - Cannot be separated from Diphenylamine

Jam 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED030156
SED03-01 (6-6)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3104

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 16 decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	12.31	36	J 18
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam
1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED030156 [SED03-01 (5-6)]
Lab ID: B1828-02

Project: Keyspan
Collection Date: 11/17/03 13:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	230	J10	100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	7.8	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0011

Jan 1/15/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0302025
SED03-02(0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-03A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S4A3115

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 23 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2100	U
111-44-4	bis(2-Chloroethyl)Ether	2100	U
95-57-8	2-Chlorophenol	2100	U
541-73-1	1,3-Dichlorobenzene	2100	U
106-46-7	1,4-Dichlorobenzene	2100	UJ9
95-50-1	1,2-Dichlorobenzene	2100	U
95-48-7	2-Methylphenol	2100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2100	U
106-44-5	4-Methylphenol	2100	U
621-64-7	N-Nitroso-di-n-propylamine	2100	U
67-72-1	Hexachloroethane	2100	U
98-95-3	Nitrobenzene	2100	U
78-59-1	Isophorone	2100	U
88-75-5	2-Nitrophenol	2100	U
105-67-9	2,4-Dimethylphenol	2100	U
120-83-2	2,4-Dichlorophenol	2100	U
120-82-1	1,2,4-Trichlorobenzene	2100	U
91-20-3	Naphthalene	2100	U
106-47-8	4-Chloroaniline	2100	UJ9
111-91-1	bis(2-Chloroethoxy)methane	2100	U
87-68-3	Hexachlorobutadiene	2100	U
59-50-7	4-Chloro-3-Methylphenol	2100	U
91-57-6	2-Methylnaphthalene	2100	U
77-47-4	Hexachlorocyclopentadiene	2100	U
88-06-2	2,4,6-Trichlorophenol	2100	U
95-95-4	2,4,5-Trichlorophenol	4200	U
91-58-7	2-Chloronaphthalene	2100	U
88-74-4	2-Nitroaniline	4200	U
131-11-3	Dimethylphthalate	2100	U
208-96-8	Acenaphthylene	450	J5
606-20-2	2,6-Dinitrotoluene	2100	U
99-09-2	3-Nitroaniline	4200	UJ9
83-32-9	Acenaphthene	2100	U

JAM 1/15/04

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED0302025
SED03-02(0-025)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-03A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S4A3115

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 23 decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4200	U
100-02-7	4-Nitrophenol	4200	U
132-64-9	Dibenzofuran	2100	U
121-14-2	2,4-Dinitrotoluene	2100	U
84-66-2	Diethylphthalate	2100	U
7005-72-3	4-Chlorophenyl-phenylether	2100	U
86-73-7	Fluorene	2100	U
100-01-6	4-Nitroaniline	4200	U
534-52-1	4,6-Dinitro-2-methylphenol	4200	U
86-30-6	N-Nitrosodiphenylamine (1)	2100	U
101-55-3	4-Bromophenyl-phenylether	2100	U
118-74-1	Hexachlorobenzene	2100	U
87-86-5	Pentachlorophenol	4200	U
85-01-8	Phenanthrene	1000	J5
120-12-7	Anthracene	550	J5
86-74-8	Carbazole	2100	U
84-74-2	Di-n-butylphthalate	2100	U
206-44-0	Fluoranthene	2200	
129-00-0	Pyrene	5400	
85-68-7	Butylbenzylphthalate	2100	U
91-94-1	3,3'-Dichlorobenzidine	2100	U
56-55-3	Benzo(a)anthracene	2000	J5
218-01-9	Chrysene	2000	J5
117-81-7	bis(2-Ethylhexyl)phthalate	2100	U
117-84-0	Di-n-octylphthalate	2100	U
205-99-2	Benzo(b)fluoranthene	1700	J5
207-08-9	Benzo(k)fluoranthene	580	J5
50-32-8	Benzo(a)pyrene	1400	J5
193-39-5	Indeno(1,2,3-cd)pyrene	740	J5
53-70-3	Dibenzo(a,h)anthracene	320	J5
191-24-2	Benzo(g,h,i)perylene	960	J5

(1) - Cannot be separated from Diphenylamine

Jam 1/5/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED0302025
SED03-02(0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-03A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S4A3115

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 23 decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	832-64-4	PHENANTHRENE, 4-METHYL-	11.62	920	NJ 18
2.		UNKNOWN	11.72	2400	J
3.	3674-65-5	PHENANTHRENE, 2,3-DIMETHYL-	12.08	1300	NJ
4.		UNKNOWN	12.31	1000	J
5.	243-17-4	11H-BENZO[B]FLUORENE	12.70	1600	NJ
6.	198-55-0	PERYLENE	15.33	1700	NJ
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED0302025 [SED03-02 (0-0.25)]
Lab ID: B1828-03

Project: Keyspan
Collection Date: 11/17/03 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	2600		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.0	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0012
Jan 1/15/04

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED030245
Sed 03-02(4-5)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-04A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S4A3105

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 13 decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	UJ9
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	UJ9
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	UJ8
95-95-4	2,4,5-Trichlorophenol	760	UJ8
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	760	UJ8
131-11-3	Dimethylphthalate	370	UJ8
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	UJ8
99-09-2	3-Nitroaniline	760	UJ9
83-32-9	Acenaphthene	370	U

Jam 1/15/04

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED030245
SED03-02(4-5)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-04A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S4A3105

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	760	U
100-02-7	4-Nitrophenol	760	U
132-64-9	Dibenzofuran	370	UJ8
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	UJ8
7005-72-3	4-Chlorophenyl-phenylether	370	UJ8
86-73-7	Fluorene	370	UJ8
100-01-6	4-Nitroaniline	760	U
534-52-1	4,6-Dinitro-2-methylphenol	760	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	UJ8
118-74-1	Hexachlorobenzene	370	UJ8
87-86-5	Pentachlorophenol	760	U
85-01-8	Phenanthrene	370	UJ8
120-12-7	Anthracene	370	UJ8
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	UJ8
206-44-0	Fluoranthene	370	UJ8
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370U6, ~~64 JB~~	UJ8
117-84-0	Di-n-octylphthalate	370	UJ8
205-99-2	Benzo(b)fluoranthene	370	UJ8
207-08-9	Benzo(k)fluoranthene	370	UJ8
50-32-8	Benzo(a)pyrene	370	UJ8
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED030245
SED03-02(4-5)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-04A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S4A3105

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	12.31	220	J 18
2.		UNKNOWN	12.43	320	J
3.		UNKNOWN	12.91	170	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

JPM 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED030245 [SED03-02 (4-5)]
Lab ID: B1828-04

Project: Keyspan
Collection Date: 11/17/03 14:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	320		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.3	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0013

Jm 1/15/04

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED0303025
Sed03-03(0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-05A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S4A3113

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 21 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2000	U
111-44-4	bis(2-Chloroethyl)Ether	2000	U
95-57-8	2-Chlorophenol	2000	U
541-73-1	1,3-Dichlorobenzene	2000	U
106-46-7	1,4-Dichlorobenzene	2000	UJ9
95-50-1	1,2-Dichlorobenzene	2000	U
95-48-7	2-Methylphenol	2000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2000	U
106-44-5	4-Methylphenol	2000	U
621-64-7	N-Nitroso-di-n-propylamine	2000	U
67-72-1	Hexachloroethane	2000	U
98-95-3	Nitrobenzene	2000	U
78-59-1	Isophorone	2000	U
88-75-5	2-Nitrophenol	2000	U
105-67-9	2,4-Dimethylphenol	2000	U
120-83-2	2,4-Dichlorophenol	2000	U
120-82-1	1,2,4-Trichlorobenzene	2000	U
91-20-3	Naphthalene	2000	U
106-47-8	4-Chloroaniline	2000	UJ9
111-91-1	bis(2-Chloroethoxy)methane	2000	U
87-68-3	Hexachlorobutadiene	2000	U
59-50-7	4-Chloro-3-Methylphenol	2000	U
91-57-6	2-Methylnaphthalene	2000	U
77-47-4	Hexachlorocyclopentadiene	2000	U
88-06-2	2,4,6-Trichlorophenol	2000	U
95-95-4	2,4,5-Trichlorophenol	4200	U
91-58-7	2-Chloronaphthalene	2000	U
88-74-4	2-Nitroaniline	4200	U
131-11-3	Dimethylphthalate	2000	U
208-96-8	Acenaphthylene	1200	J5
606-20-2	2,6-Dinitrotoluene	2000	U
99-09-2	3-Nitroaniline	4200	UJ9
83-32-9	Acenaphthene	240	J3,J5

Jam 1/15/04

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED0303025
SED03-03(0-0.5)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-05A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S4A3113

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 21 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4200	U
100-02-7	4-Nitrophenol	4200	U
132-64-9	Dibenzofuran	2000	U
121-14-2	2,4-Dinitrotoluene	2000	U
84-66-2	Diethylphthalate	2000	U
7005-72-3	4-Chlorophenyl-phenylether	2000	U
86-73-7	Fluorene	590	J5
100-01-6	4-Nitroaniline	4200	U
534-52-1	4,6-Dinitro-2-methylphenol	4200	U
86-30-6	N-Nitrosodiphenylamine (1)	2000	U
101-55-3	4-Bromophenyl-phenylether	2000	U
118-74-1	Hexachlorobenzene	2000	U
87-86-5	Pentachlorophenol	4200	U
85-01-8	Phenanthrene	4900	
120-12-7	Anthracene	2800	
86-74-8	Carbazole	2000	U
84-74-2	Di-n-butylphthalate	2000	U
206-44-0	Fluoranthene	7100	
129-00-0	Pyrene	15000	
85-68-7	Butylbenzylphthalate	2000	U
91-94-1	3,3'-Dichlorobenzidine	2000	U
56-55-3	Benzo(a)anthracene	5300	
218-01-9	Chrysene	5100	
117-81-7	bis(2-Ethylhexyl)phthalate	2000	U
117-84-0	Di-n-octylphthalate	2000	U
205-99-2	Benzo(b)fluoranthene	2600	
207-08-9	Benzo(k)fluoranthene	1300	J5
50-32-8	Benzo(a)pyrene	4100	
193-39-5	Indeno(1,2,3-cd)pyrene	1400	J5
53-70-3	Dibenzo(a,h)anthracene	570	J5
191-24-2	Benzo(g,h,i)perylene	1800	J5

(1) - Cannot be separated from Diphenylamine

Jam 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED0303025
SED03-03(0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-05A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S4A3113

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 21 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	1730-37-6	9H-FLUORENE, 1-METHYL-	10.85	1800	NJ 18
2.	7372-88-5	DIBENZOTHIOPHENE, 4-METHYL-	11.47	1700	NJ
3.	613-12-7	ANTHRACENE, 2-METHYL-	11.62	5300	NJ
4.	613-12-7	ANTHRACENE, 2-METHYL-	11.64	3000	NJ
5.	832-69-9	PHENANTHRENE, 1-METHYL-	11.68	3000	NJ
6.		UNKNOWN	11.72	11000	J
7.	612-94-2	NAPHTHALENE, 2-PHENYL-	11.86	2400	NJ
8.	781-43-1	9,10-DIMETHYLANTHRACENE	12.08	4900	NJ
9.		UNKNOWN	12.12	4300	J
10.		UNKNOWN	12.17	1700	J
11.	886-66-8	BENZENE, 1,1'-(1,3-BUTADIYNE	12.31	3500	NJ
12.	243-17-4	11H-BENZO[B]FLUORENE	12.60	1200	NJ
13.	238-84-6	11H-BENZO[A]FLUORENE	12.70	3600	NJ
14.	243-17-4	11H-BENZO[B]FLUORENE	12.75	2000	NJ
15.	3442-78-2	PYRENE, 2-METHYL-	12.79	1600	NJ
16.	3353-12-6	PYRENE, 4-METHYL-	12.87	1500	NJ
17.	2381-21-7	PYRENE, 1-METHYL-	12.90	1800	NJ
18.	3697-24-3	CHRYSENE, 5-METHYL-	13.95	1900	NJ
19.	192-97-2	BENZO[E]PYRENE	15.33	2900	NJ
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED0303025 [SED03-03(0-0.25)]
Lab ID: B1828-05

Project: Keyspan
Collection Date: 11/17/03 14:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	1500		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.2	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RI - Reporting Limit

0014

Jam 1/15/04

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED030367
Sed 03-0316-1)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-06A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S4A3108

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 13 decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	UJ9
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	UJ9
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	760	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	760	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	760	UJ9
83-32-9	Acenaphthene	370	U

Jam 1/15/04

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED030367
SED03-03(6-7)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-06A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S4A3108

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	760	U
100-02-7	4-Nitrophenol	760	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	760	U
534-52-1	4,6-Dinitro-2-methylphenol	760	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	760	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370U6 ~~39~~ JB	
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

JAM 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED030367
SED03-03(6-7)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-06A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S4A3108

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 13 Decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	12.31	160	J 18
2.		UNKNOWN	12.44	380	J 18
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

JA 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED030367 [SED 03 -03 (6-7)]
Lab ID: B1828-06

Project: Keyspan
Collection Date: 11/17/03 14:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	ND		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.0	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0015

Jan 1/15/04

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED0304025
Sed03-04 (0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S4A3116

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2000	U
111-44-4	bis(2-Chloroethyl)Ether	2000	U
95-57-8	2-Chlorophenol	2000	U
541-73-1	1,3-Dichlorobenzene	2000	U
106-46-7	1,4-Dichlorobenzene	2000	UJ9
95-50-1	1,2-Dichlorobenzene	2000	U
95-48-7	2-Methylphenol	2000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2000	U
106-44-5	4-Methylphenol	2000	U
621-64-7	N-Nitroso-di-n-propylamine	2000	U
67-72-1	Hexachloroethane	2000	U
98-95-3	Nitrobenzene	2000	U
78-59-1	Isophorone	2000	U
88-75-5	2-Nitrophenol	2000	U
105-67-9	2,4-Dimethylphenol	2000	U
120-83-2	2,4-Dichlorophenol	2000	U
120-82-1	1,2,4-Trichlorobenzene	2000	U
91-20-3	Naphthalene	2000	U
106-47-8	4-Chloroaniline	2000	UJ9
111-91-1	bis(2-Chloroethoxy)methane	2000	U
87-68-3	Hexachlorobutadiene	2000	U
59-50-7	4-Chloro-3-Methylphenol	2000	U
91-57-6	2-Methylnaphthalene	2000	U
77-47-4	Hexachlorocyclopentadiene	2000	U
88-06-2	2,4,6-Trichlorophenol	2000	U
95-95-4	2,4,5-Trichlorophenol	4000	U
91-58-7	2-Chloronaphthalene	2000	U
88-74-4	2-Nitroaniline	4000	U
131-11-3	Dimethylphthalate	2000	U
208-96-8	Acenaphthylene	2000	U
606-20-2	2,6-Dinitrotoluene	2000	U
99-09-2	3-Nitroaniline	4000	UJ9
83-32-9	Acenaphthene	2000	U

Jmm 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0304025
SED03-04(0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S4A3116

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4000	U
100-02-7	4-Nitrophenol	4000	U
132-64-9	Dibenzofuran	2000	U
121-14-2	2,4-Dinitrotoluene	2000	U
84-66-2	Diethylphthalate	2000	U
7005-72-3	4-Chlorophenyl-phenylether	2000	U
86-73-7	Fluorene	2000	U
100-01-6	4-Nitroaniline	4000	U
534-52-1	4,6-Dinitro-2-methylphenol	4000	U
86-30-6	N-Nitrosodiphenylamine (1)	2000	U
101-55-3	4-Bromophenyl-phenylether	2000	U
118-74-1	Hexachlorobenzene	2000	U
87-86-5	Pentachlorophenol	4000	U
85-01-8	Phenanthrene	700	J5
120-12-7	Anthracene	320	J5
86-74-8	Carbazole	2000	U
84-74-2	Di-n-butylphthalate	2000	U
206-44-0	Fluoranthene	670	J5
129-00-0	Pyrene	1500	J5
85-68-7	Butylbenzylphthalate	2000	U
91-94-1	3,3'-Dichlorobenzidine	2000	U
56-55-3	Benzo(a)anthracene	590	J5
218-01-9	Chrysene	580	J5
117-81-7	bis(2-Ethylhexyl)phthalate	2000	U
117-84-0	Di-n-octylphthalate	2000	U
205-99-2	Benzo(b)fluoranthene	330	J5
207-08-9	Benzo(k)fluoranthene	2000	U
50-32-8	Benzo(a)pyrene	440	J5
193-39-5	Indeno(1,2,3-cd)pyrene	2000	U
53-70-3	Dibenzo(a,h)anthracene	2000	U
191-24-2	Benzo(g,h,i)perylene	220	J5

(1) - Cannot be separated from Diphenylamine

Jam 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED0304025
SED03-04(0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S4A3116

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 16 decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.72	1100	J 18
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED0304025 [SED 03-04 (0-0.25)]
Lab ID: B1828-07

Project: Keyspan
Collection Date: 11/17/03 15:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	620		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.2	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0016
Jan 1/15/04

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED030478
Scd03-04(7-8)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3109

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 14 decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	UJ9
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	UJ9
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	770	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	770	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	770	UJ9
83-32-9	Acenaphthene	380	U

Jam 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED030478
SED03-04 (7-8)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3109

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	770	U
100-02-7	4-Nitrophenol	770	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	770	U
534-52-1	4,6-Dinitro-2-methylphenol	770	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	770	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380U6 ~~60~~ ~~JB~~	
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

JPM 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED030478
SED 03-04 (7-8)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3109

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	12.31	220	J 18
2.		UNKNOWN	12.91	190	J 18
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED030478 [SED 03-04 (7-8)]
Lab ID: B1828-08

Project: Keyspan
Collection Date: 11/17/03 15:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	200		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	7.9	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

JAM 1/15/04

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED0305025
Sed 03-05 (0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-09A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S4A3118

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 26 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2200	U
111-44-4	bis(2-Chloroethyl)Ether	2200	U
95-57-8	2-Chlorophenol	2200	U
541-73-1	1,3-Dichlorobenzene	2200	U
106-46-7	1,4-Dichlorobenzene	2200	UJ9
95-50-1	1,2-Dichlorobenzene	2200	U
95-48-7	2-Methylphenol	2200	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2200	U
106-44-5	4-Methylphenol	2200	U
621-64-7	N-Nitroso-di-n-propylamine	2200	U
67-72-1	Hexachloroethane	2200	U
98-95-3	Nitrobenzene	2200	U
78-59-1	Isophorone	2200	U
88-75-5	2-Nitrophenol	2200	U
105-67-9	2,4-Dimethylphenol	2200	U
120-83-2	2,4-Dichlorophenol	2200	U
120-82-1	1,2,4-Trichlorobenzene	2200	U
91-20-3	Naphthalene	1100	J5
106-47-8	4-Chloroaniline	2200	UJ9
111-91-1	bis(2-Chloroethoxy)methane	2200	U
87-68-3	Hexachlorobutadiene	2200	U
59-50-7	4-Chloro-3-Methylphenol	2200	U
91-57-6	2-Methylnaphthalene	2200	U
77-47-4	Hexachlorocyclopentadiene	2200	U
88-06-2	2,4,6-Trichlorophenol	2200	U
95-95-4	2,4,5-Trichlorophenol	4500	U
91-58-7	2-Chloronaphthalene	2200	U
88-74-4	2-Nitroaniline	4500	U
131-11-3	Dimethylphthalate	2200	U
208-96-8	Acenaphthylene	240	J5
606-20-2	2,6-Dinitrotoluene	2200	U
99-09-2	3-Nitroaniline	4500	UJ9
83-32-9	Acenaphthene	1100	J3, J5

Jam 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0305025
SED03-05(0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-09A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S4A3118

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 26 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4500	U
100-02-7	4-Nitrophenol	4500	U
132-64-9	Dibenzofuran	2200	U
121-14-2	2,4-Dinitrotoluene	2200	U
84-66-2	Diethylphthalate	2200	U
7005-72-3	4-Chlorophenyl-phenylether	2200	U
86-73-7	Fluorene	450	J5
100-01-6	4-Nitroaniline	4500	U
534-52-1	4,6-Dinitro-2-methylphenol	4500	U
86-30-6	N-Nitrosodiphenylamine (1)	2200	U
101-55-3	4-Bromophenyl-phenylether	2200	U
118-74-1	Hexachlorobenzene	2200	U
87-86-5	Pentachlorophenol	4500	U
85-01-8	Phenanthrene	1500	J5
120-12-7	Anthracene	630	J5
86-74-8	Carbazole	2200	U
84-74-2	Di-n-butylphthalate	2200	U
206-44-0	Fluoranthene	1100	J5
129-00-0	Pyrene	1900	J5
85-68-7	Butylbenzylphthalate	2200	U
91-94-1	3,3'-Dichlorobenzidine	2200	U
56-55-3	Benzo(a)anthracene	780	J5
218-01-9	Chrysene	920	J5
117-81-7	bis(2-Ethylhexyl)phthalate	2200	U
117-84-0	Di-n-octylphthalate	2200	U
205-99-2	Benzo(b)fluoranthene	710	J5
207-08-9	Benzo(k)fluoranthene	330	J5
50-32-8	Benzo(a)pyrene	640	J5
193-39-5	Indeno(1,2,3-cd)pyrene	2200	U
53-70-3	Dibenzo(a,h)anthracene	2200	U
191-24-2	Benzo(g,h,i)perylene	420	J5

(1) - Cannot be separated from Diphenylamine

Jam 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED0305025
SED03-05(0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-09A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S4A3118

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 26 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2471-83-2	1H-INDENE, 1-ETHYLIDENE-	9.12	980	NJ18
2.		UNKNOWN	11.72	1100	J18
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jpm 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED0305025 [SED 03-05 (0-0.25)]
Lab ID: B1828-09

Project: Keyspan
Collection Date: 11/17/03 16:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	29000		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.4	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0018

Jam 1/15/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0305384
SCD03-05(3.8-4)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-10A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3119

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2000	U
111-44-4	bis(2-Chloroethyl)Ether	2000	U
95-57-8	2-Chlorophenol	2000	U
541-73-1	1,3-Dichlorobenzene	2000	U
106-46-7	1,4-Dichlorobenzene	2000	UJ9
95-50-1	1,2-Dichlorobenzene	2000	U
95-48-7	2-Methylphenol	2000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2000	U
106-44-5	4-Methylphenol	2000	U
621-64-7	N-Nitroso-di-n-propylamine	2000	U
67-72-1	Hexachloroethane	2000	U
98-95-3	Nitrobenzene	2000	U
78-59-1	Isophorone	2000	U
88-75-5	2-Nitrophenol	2000	U
105-67-9	2,4-Dimethylphenol	2000	U
120-83-2	2,4-Dichlorophenol	2000	U
120-82-1	1,2,4-Trichlorobenzene	2000	U
91-20-3	Naphthalene	~~86000~~	~~E~~ 190,000
106-47-8	4-Chloroaniline	2000	UJ9
111-91-1	bis(2-Chloroethoxy)methane	2000	U
87-68-3	Hexachlorobutadiene	2000	U
59-50-7	4-Chloro-3-Methylphenol	2000	U
91-57-6	2-Methylnaphthalene	12000	
77-47-4	Hexachlorocyclopentadiene	2000	U
88-06-2	2,4,6-Trichlorophenol	2000	U
95-95-4	2,4,5-Trichlorophenol	4100	U
91-58-7	2-Chloronaphthalene	2000	U
88-74-4	2-Nitroaniline	4100	U
131-11-3	Dimethylphthalate	2000	U
208-96-8	Acenaphthylene	8400	
606-20-2	2,6-Dinitrotoluene	2000	U
99-09-2	3-Nitroaniline	4100	UJ9
83-32-9	Acenaphthene	~~110000~~	~~E~~ 170000 J3

Jan 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0305384
SED03-05(38-4)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-10A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3119

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4100	U
100-02-7	4-Nitrophenol	4100	U
132-64-9	Dibenzofuran	6600	
121-14-2	2,4-Dinitrotoluene	2000	U
84-66-2	Diethylphthalate	2000	U
7005-72-3	4-Chlorophenyl-phenylether	2000	U
86-73-7	Fluorene	~~61000~~ E 50,000	
100-01-6	4-Nitroaniline	4100	U
534-52-1	4,6-Dinitro-2-methylphenol	4100	U
86-30-6	N-Nitrosodiphenylamine (1)	2000	U
101-55-3	4-Bromophenyl-phenylether	2000	U
118-74-1	Hexachlorobenzene	2000	U
87-86-5	Pentachlorophenol	4100	U
85-01-8	Phenanthrene	~~88000~~ E 200,000	
120-12-7	Anthracene	~~60000~~ E 63,000	
86-74-8	Carbazole	2600	
84-74-2	Di-n-butylphthalate	2000	U
206-44-0	Fluoranthene	~~51000~~ E 49,000	
129-00-0	Pyrene	~~59000~~ E 86,000	
85-68-7	Butylbenzylphthalate	2000	U
91-94-1	3,3'-Dichlorobenzidine	2000	U
56-55-3	Benzo(a)anthracene	28000	
218-01-9	Chrysene	24000	
117-81-7	bis(2-Ethylhexyl)phthalate	2000	U
117-84-0	Di-n-octylphthalate	2000	U
205-99-2	Benzo(b)fluoranthene	16000	
207-08-9	Benzo(k)fluoranthene	6200	
50-32-8	Benzo(a)pyrene	22000	
193-39-5	Indeno(1,2,3-cd)pyrene	6300	
53-70-3	Dibenzo(a,h)anthracene	2200	
191-24-2	Benzo(g,h,i)perylene	7700	

(1) - Cannot be separated from Diphenylamine

Jam 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED0305384
SED 03-05(384)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-10A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3119

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 19 decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	496-11-7	INDANE	7.46	38000	NJ 18
2.	2471-83-2	1H-INDENE, 1-ETHYLIDENE-	9.13	140000	NJ
3.	1127-76-0	NAPHTHALENE, 1-ETHYL-	9.51	21000	NJ
4.	575-37-1	NAPHTHALENE, 1,7-DIMETHYL-	9.57	49000	NJ
5.	575-41-7	NAPHTHALENE, 1,3-DIMETHYL-	9.64	60000	NJ
6.	573-98-8	NAPHTHALENE, 1,2-DIMETHYL-	9.74	26000	NJ
7.	1730-37-6	9H-FLUORENE, 1-METHYL-	10.86	18000	NJ
8.	132-65-0	DIBENZOTHIOPHENE	11.12	24000	NJ
9.		UNKNOWN	11.24	260000	J
10.	613-12-7	ANTHRACENE, 2-METHYL-	11.62	43000	NJ
11.	832-64-4	PHENANTHRENE, 4-METHYL-	11.65	49000	NJ
12.	610-48-0	ANTHRACENE, 1-METHYL-	11.69	19000	NJ
13.		UNKNOWN	11.73	12000	J
14.	35465-71-5	2-PHENYLNAPHTHALENE	11.86	2600	NJ
15.	781-43-1	9,10-DIMETHYLANTHRACENE	12.09	2200	NJ
16.	206-44-0	FLUORANTHENE	12.31	3400	NJ
17.	238-84-6	11H-BENZO[A]FLUORENE	12.70	4600	NJ
18.	243-17-4	11H-BENZO[B]FLUORENE	12.76	2600	NJ
19.	2381-21-7	PYRENE, 1-METHYL-	12.90	2000	NJ
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

JPM 1/15/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0305384DL
SED03-05(38-4)DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-10ADL

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3142

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/08/03

Injection Volume: 1.0(uL) Dilution Factor: 8.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	~~16000~~	~~U~~
111-44-4	bis(2-Chloroethyl)Ether	16000	U
95-57-8	2-Chlorophenol	16000	U
541-73-1	1,3-Dichlorobenzene	16000	U
106-46-7	1,4-Dichlorobenzene	16000	UJ9
95-50-1	1,2-Dichlorobenzene	16000	U
95-48-7	2-Methylphenol	16000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	16000	U
106-44-5	4-Methylphenol	16000	U
621-64-7	N-Nitroso-di-n-propylamine	16000	U
67-72-1	Hexachloroethane	16000	U
98-95-3	Nitrobenzene	16000	U
78-59-1	Isophorone	16000	U
88-75-5	2-Nitrophenol	16000	U
105-67-9	2,4-Dimethylphenol	16000	U
120-83-2	2,4-Dichlorophenol	16000	U
120-82-1	1,2,4-Trichlorobenzene	~~16000~~	~~U~~
91-20-3	Naphthalene	190000	D
106-47-8	4-Chloroaniline	~~16000~~	~~UJ9~~
111-91-1	bis(2-Chloroethoxy)methane	16000	U
87-68-3	Hexachlorobutadiene	16000	U
59-50-7	4-Chloro-3-Methylphenol	16000	U
91-57-6	2-Methylnaphthalene	11000	DJ
77-47-4	Hexachlorocyclopentadiene	16000	UJ4
88-06-2	2,4,6-Trichlorophenol	16000	U
95-95-4	2,4,5-Trichlorophenol	33000	U
91-58-7	2-Chloronaphthalene	16000	U
88-74-4	2-Nitroaniline	33000	U
131-11-3	Dimethylphthalate	16000	U
208-96-8	Acenaphthylene	9000	DJ5
606-20-2	2,6-Dinitrotoluene	16000	U
99-09-2	3-Nitroaniline	~~33000~~	~~UJ9~~
83-32-9	Acenaphthene	170000	D J3

reported only circled compounds from this diluted analysis

Jam 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0305384DL
SED03-05(38-4)a

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-10ADL

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3142

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/08/03

Injection Volume: 1.0(uL) Dilution Factor: 8.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	~~33000~~	~~U~~
100-02-7	4-Nitrophenol	33000	U
132-64-9	Dibenzofuran	5900	DJ5
121-14-2	2,4-Dinitrotoluene	16000	U
84-66-2	Diethylphthalate	16000	U
7005-72-3	4-Chlorophenyl-phenylether	~~16000~~	~~U~~
86-73-7	Fluorene	50000	D
100-01-6	4-Nitroaniline	~~33000~~	~~U~~
534-52-1	4,6-Dinitro-2-methylphenol	33000	U
86-30-6	N-Nitrosodiphenylamine (1)	16000	U
101-55-3	4-Bromophenyl-phenylether	16000	U
118-74-1	Hexachlorobenzene	16000	U
87-86-5	Pentachlorophenol	~~33000~~	~~U~~
85-01-8	Phenanthrene	200000	D
120-12-7	Anthracene	63000	D
86-74-8	Carbazole	~~2500~~	~~DJ~~
84-74-2	Di-n-butylphthalate	~~16000~~	~~U~~
206-44-0	Fluoranthene	49000	D
129-00-0	Pyrene	86000	D
85-68-7	Butylbenzylphthalate	~~16000~~	~~U~~
91-94-1	3,3'-Dichlorobenzidine	16000	U
56-55-3	Benzo(a)anthracene	26000	D
218-01-9	Chrysene	24000	D
117-81-7	bis(2-Ethylhexyl)phthalate	16000	U
117-84-0	Di-n-octylphthalate	16000	U
205-99-2	Benzo(b)fluoranthene	15000	DJ5
207-08-9	Benzo(k)fluoranthene	7500	DJ5
50-32-8	Benzo(a)pyrene	19000	D
193-39-5	Indeno(1,2,3-cd)pyrene	6400	DJ5
53-70-3	Dibenzo(a,h)anthracene	2900	DJ5
191-24-2	Benzo(g,h,i)perylene	6800	DJ5

(1) - Cannot be separated from Diphenylamine

jam 1/15/04

1F

EPA SAMPLE NO.

SED0305384DL
SED03-05(384)DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-10ADL

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S4A3142

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/08/03

Injection Volume: 1.0(uL) Dilution Factor: 8.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	496-11-7	INDANE	7.43	36000	NJD
2.	264-09-5	BENZOCYCLOHEPTATRIENE	9.10	120000	NJD
3.	939-27-5	NAPHTHALENE, 2-ETHYL-	9.48	18000	NJD
4.	571-61-9	NAPHTHALENE, 1,5-DIMETHYL-	9.54	40000	NJD
5.	571-61-9	NAPHTHALENE, 1,5-DIMETHYL-	9.61	46000	NJD
6.	575-41-7	NAPHTHALENE, 1,3-DIMETHYL-	9.71	22000	NJD
7.		UNKNOWN	10.06	18000	JD
8.	1430-97-3	9H-FLUORENE, 2-METHYL-	10.83	18000	NJD
9.	132-65-0	DIBENZOTHIOPHENE	11.09	20000	NJD
10.	779-02-2	ANTHRACENE, 9-METHYL-	11.59	32000	NJD
11.	779-02-2	ANTHRACENE, 9-METHYL-	11.62	34000	NJD
12.	613-12-7	ANTHRACENE, 2-METHYL-	11.66	16000	NJD
13.		UNKNOWN	11.70	70000	JD
14.	612-94-2	NAPHTHALENE, 2-PHENYL-	11.83	16000	NJD
15.		UNKNOWN	12.06	16000	JD
16.	886-66-8	BENZENE, 1,1'-(1,3-BUTADIYNE	12.29	23000	NJD
17.	243-17-4	11H-BENZO[B]FLUORENE	12.67	17000	NJD
18.	243-17-4	11H-BENZO[B]FLUORENE	12.73	12000	NJD
19.	243-17-4	11H-BENZO[B]FLUORENE	12.87	8600	NJD
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

JPM 11/5/04

Kitkem Corporation

Date: *19-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED0305384 [SED03-05 (3.8-4)]
Lab ID: B1828-10

Project: Keyspan
Collection Date: 11/17/03 16:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	730		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.3	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0019

Jam 1/15/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0305910
Sed03-05(9-10)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S4A3110

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	UJ9
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	UJ9
111-91-1	bis(2-Chloroethoxy)methane	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	800	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	800	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	800	UJ9
83-32-9	Acenaphthene	390	U

JAM 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0305910
SED03-05 (9-10)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S4A3110

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	800	U
100-02-7	4-Nitrophenol	800	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	800	U
534-52-1	4,6-Dinitro-2-methylphenol	800	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	800	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390U6 ~~80~~ JB	
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) - Cannot be separated from Diphenylamine

JPM 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED0305910
SED03-05(9-10)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S4A3110

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 16 decanted: (Y/N) N Date Extracted:11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	12.31	230	J 18
2.	123-95-5	OCTADECANOIC ACID, BUTYL EST	12.91	180	NJ 18
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED0305910 [SED 03-05 (9-10)]
Lab ID: B1828-11

Project: Keyspan
Collection Date: 11/17/03 16:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	280		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.2	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0020

Jan 1/15/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0306025
Scd-03-06 (0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-12A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S4A3117

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 25 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2200	U
111-44-4	bis(2-Chloroethyl)Ether	2200	U
95-57-8	2-Chlorophenol	2200	U
541-73-1	1,3-Dichlorobenzene	2200	U
106-46-7	1,4-Dichlorobenzene	2200	UJ9
95-50-1	1,2-Dichlorobenzene	2200	U
95-48-7	2-Methylphenol	2200	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2200	U
106-44-5	4-Methylphenol	2200	U
621-64-7	N-Nitroso-di-n-propylamine	2200	U
67-72-1	Hexachloroethane	2200	U
98-95-3	Nitrobenzene	2200	U
78-59-1	Isophorone	2200	U
88-75-5	2-Nitrophenol	2200	U
105-67-9	2,4-Dimethylphenol	2200	U
120-83-2	2,4-Dichlorophenol	2200	U
120-82-1	1,2,4-Trichlorobenzene	2200	U
91-20-3	Naphthalene	2200	U
106-47-8	4-Chloroaniline	2200	UJ9
111-91-1	bis(2-Chloroethoxy)methane	2200	U
87-68-3	Hexachlorobutadiene	2200	U
59-50-7	4-Chloro-3-Methylphenol	2200	U
91-57-6	2-Methylnaphthalene	2200	U
77-47-4	Hexachlorocyclopentadiene	2200	U
88-06-2	2,4,6-Trichlorophenol	2200	U
95-95-4	2,4,5-Trichlorophenol	4400	U
91-58-7	2-Chloronaphthalene	2200	U
88-74-4	2-Nitroaniline	4400	U
131-11-3	Dimethylphthalate	2200	U
208-96-8	Acenaphthylene	510	J5
606-20-2	2,6-Dinitrotoluene	2200	U
99-09-2	3-Nitroaniline	4400	UJ9
83-32-9	Acenaphthene	2200	U

jhm 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0306025
SED 03-06 (0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-12A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S4A3117

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 25 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4400	U
100-02-7	4-Nitrophenol	4400	U
132-64-9	Dibenzofuran	2200	U
121-14-2	2,4-Dinitrotoluene	2200	U
84-66-2	Diethylphthalate	2200	U
7005-72-3	4-Chlorophenyl-phenylether	2200	U
86-73-7	Fluorene	2200	U
100-01-6	4-Nitroaniline	4400	U
534-52-1	4,6-Dinitro-2-methylphenol	4400	U
86-30-6	N-Nitrosodiphenylamine (1)	2200	U
101-55-3	4-Bromophenyl-phenylether	2200	U
118-74-1	Hexachlorobenzene	2200	U
87-86-5	Pentachlorophenol	4400	U
85-01-8	Phenanthrene	770	J5
120-12-7	Anthracene	580	J5
86-74-8	Carbazole	2200	U
84-74-2	Di-n-butylphthalate	2200	U
206-44-0	Fluoranthene	2200	
129-00-0	Pyrene	5000	
85-68-7	Butylbenzylphthalate	2200	U
91-94-1	3,3'-Dichlorobenzidine	2200	U
56-55-3	Benzo(a)anthracene	1900	J5
218-01-9	Chrysene	1800	J5
117-81-7	bis(2-Ethylhexyl)phthalate	2200	U
117-84-0	Di-n-octylphthalate	2200	U
205-99-2	Benzo(b)fluoranthene	1300	J5
207-08-9	Benzo(k)fluoranthene	530	J5
50-32-8	Benzo(a)pyrene	1400	J5
193-39-5	Indeno(1,2,3-cd)pyrene	660	J5
53-70-3	Dibenzo(a,h)anthracene	240	J5
191-24-2	Benzo(g,h,i)perylene	820	J5

(1) - Cannot be separated from Diphenylamine

Jam 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED0306025
SED03-06 (0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-12A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S4A3117

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 25 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 12/06/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.62	1000	J 18
2.		UNKNOWN	11.72	2800	J
3.		UNKNOWN	12.08	1600	J
4.		UNKNOWN	12.31	1400	J
5.	243-17-4	11H-BENZO[B]FLUORENE	12.70	1700	NJ
6.	2381-21-7	PYRENE, 1-METHYL-	12.90	1100	NJ
7.	205-82-3	BENZO[J]FLUORANTHENE	15.33	1300	NJ
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED0306025 [SED03-06 (0-0.25)]
Lab ID: B1828-12

Project: Keyspan
Collection Date: 11/17/03 16:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	14000		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.3	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0021

Jam 1/15/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED030667
scd-03-06(6-7)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-13A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S4A3111

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	UJ9
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	UJ9
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	UJ9
83-32-9	Acenaphthene	360	U

Jam 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED030667
SED03-06 (6-7)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-13A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S4A3111

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	62	J5
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360U646 ~~JB~~	
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

Jam 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED030667
SED03-06(6-7)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-13A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S4A3111

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	0-00-0	BUTYL HEXADECANOATE	12.31	190	NJ
2.		UNKNOWN	12.46	150	J
3.		UNKNOWN	12.91	160	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED030667 [SED 03-06 (6-7)]
Lab ID: B1828-13

Project: Keyspan
Collection Date: 11/17/03 16:40

Analyses	Result	Qual	RL	Unit	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_1.K_TOC_S**			
Organic Carbon, Total	240		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	8.1	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0022

Jan 1/15/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0307025
SED-03-07 (0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-14A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S4A3120

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 40 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2700	U
111-44-4	bis(2-Chloroethyl)Ether	2700	U
95-57-8	2-Chlorophenol	2700	U
541-73-1	1,3-Dichlorobenzene	2700	U
106-46-7	1,4-Dichlorobenzene	2700	UJ9
95-50-1	1,2-Dichlorobenzene	2700	U
95-48-7	2-Methylphenol	2700	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2700	U
106-44-5	4-Methylphenol	2700	U
621-64-7	N-Nitroso-di-n-propylamine	2700	U
67-72-1	Hexachloroethane	2700	U
98-95-3	Nitrobenzene	2700	U
78-59-1	Isophorone	2700	U
88-75-5	2-Nitrophenol	2700	U
105-67-9	2,4-Dimethylphenol	2700	U
120-83-2	2,4-Dichlorophenol	2700	U
120-82-1	1,2,4-Trichlorobenzene	2700	U
91-20-3	Naphthalene	2700	U
106-47-8	4-Chloroaniline	2700	UJ9
111-91-1	bis(2-Chloroethoxy)methane	2700	U
87-68-3	Hexachlorobutadiene	2700	U
59-50-7	4-Chloro-3-Methylphenol	2700	U
91-57-6	2-Methylnaphthalene	2700	U
77-47-4	Hexachlorocyclopentadiene	2700	U
88-06-2	2,4,6-Trichlorophenol	2700	U
95-95-4	2,4,5-Trichlorophenol	5500	U
91-58-7	2-Chloronaphthalene	2700	U
88-74-4	2-Nitroaniline	5500	U
131-11-3	Dimethylphthalate	2700	U
208-96-8	Acenaphthylene	760	J5
606-20-2	2,6-Dinitrotoluene	2700	U
99-09-2	3-Nitroaniline	5500	UJ9
83-32-9	Acenaphthene	2700	U

Jam
1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED0307025
SED03-07(0-0.25)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-14A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S4A3120

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 40 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	5500	U
100-02-7	4-Nitrophenol	5500	U
132-64-9	Dibenzofuran	2700	U
121-14-2	2,4-Dinitrotoluene	2700	U
84-66-2	Diethylphthalate	2700	U
7005-72-3	4-Chlorophenyl-phenylether	2700	U
86-73-7	Fluorene	2700	U
100-01-6	4-Nitroaniline	5500	U
534-52-1	4,6-Dinitro-2-methylphenol	5500	U
86-30-6	N-Nitrosodiphenylamine (1)	2700	U
101-55-3	4-Bromophenyl-phenylether	2700	U
118-74-1	Hexachlorobenzene	2700	U
87-86-5	Pentachlorophenol	5500	U
85-01-8	Phenanthrene	2400	J5
120-12-7	Anthracene	1600	J5
86-74-8	Carbazole	2700	U
84-74-2	Di-n-butylphthalate	2700	U
206-44-0	Fluoranthene	3400	
129-00-0	Pyrene	6700	
85-68-7	Butylbenzylphthalate	2700	U
91-94-1	3,3'-Dichlorobenzidine	2700	U
56-55-3	Benzo(a)anthracene	2600	J5
218-01-9	Chrysene	2600	J5
117-81-7	bis(2-Ethylhexyl)phthalate	2700U6 ~~290~~ BJ	
117-84-0	Di-n-octylphthalate	2700	U
205-99-2	Benzo(b)fluoranthene	1600	J5
207-08-9	Benzo(k)fluoranthene	790	J5
50-32-8	Benzo(a)pyrene	2000	J5
193-39-5	Indeno(1,2,3-cd)pyrene	800	J5
53-70-3	Dibenzo(a,h)anthracene	320	J5
191-24-2	Benzo(g,h,i)perylene	960	J5

(1) - Cannot be separated from Diphenylamine

JPM 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED0307025
SED03-07(0-0.5)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-14A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S4A3120

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 40 Decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 12/06/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	613-12-7	ANTHRACENE, 2-METHYL-	11.62	2100	NJ 18
2.	610-48-0	ANTHRACENE, 1-METHYL-	11.64	1400	NJ
3.	610-48-0	ANTHRACENE, 1-METHYL-	11.68	1300	NJ
4.		UNKNOWN	11.72	5000	J
5.		UNKNOWN	11.86	1400	J
6.		UNKNOWN	12.08	1900	J
7.	2381-21-7	PYRENE, 1-METHYL-	12.70	2400	NJ
8.	3442-78-2	PYRENE, 2-METHYL-	12.79	1200	NJ
9.	243-17-4	11H-BENZO[B]FLUORENE	12.90	1300	NJ
10.	192-97-2	BENZO[E]PYRENE	15.33	1800	NJ
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jam 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED0307025 [SED03-07 (0-0.25)]
Lab ID: B1828-14

Project: Keyspan
Collection Date: 11/17/03 17:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	16000		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	7.8	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0023

Jam 1/15/04

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SED030756
Scd-03-07(5-6)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-15A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S4A3112

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	UJ9
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	UJ9
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	760	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	760	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	760	UJ9
83-32-9	Acenaphthene	370	U

Jm 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED030756
SED03-07(5-6)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-15A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S4A3112

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	760	U
100-02-7	4-Nitrophenol	760	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	760	U
534-52-1	4,6-Dinitro-2-methylphenol	760	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	760	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370 U6 ~~99 JB~~	
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

JPM 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SED030756
SED03-07(5-6)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) SOIL Lab Sample ID: B1828-15A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S4A3112

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 11/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	12.31	240	J 18
2.	123-95-5	OCTADECANOIC ACID, BUTYL EST	12.91	210	NJ 18
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Jan 1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: SED030756 (SED03-07 (5-6))
Lab ID: B1828-15

Project: Keyspan
Collection Date: 11/17/03 17:05

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415_LK_TOC_S**			
Organic Carbon, Total	350		100	mg/Kg	1	11/24/2003 9:44	10523
SOIL AND WASTE PH				**SW9045C_S**			
pH	7.9	J1	1.0	S.U.	1	11/25/2003 0:00	R4532

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanitiation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

1/15/04

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FB1118031

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) WATER Lab Sample ID: B1828-16D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D9026

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 12/09/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
108-95-2	Phenol	10	U	UJ1, UJ9
111-44-4	bis(2-Chloroethyl)Ether	10	U	
95-57-8	2-Chlorophenol	10	U	, UJ9
541-73-1	1,3-Dichlorobenzene	10	U	
106-46-7	1,4-Dichlorobenzene	10	U	, UJ9
95-50-1	1,2-Dichlorobenzene	10	U	, UJ9
95-48-7	2 Methylphenol	10	U	
108-60-1	2 2'-oxybis(1-Chloropropane)	10	U	
106-44-5	4 Methylphenol	10	U	
621-64-7	N-Nitroso-di-n-propylamine	10	U	
67-72-1	Hexachloroethane	10	U	, UJ9
98-95-3	Nitrobenzene	10	U	
78-59-1	Isophorone	10	U	
88-75-5	2-Nitrophenol	10	U	, UJ9
105-67-9	2,4-Dimethylphenol	10	U	
120-83-2	2,4-Dichlorophenol	10	U	, UJ9
120-82-1	1,2,4-Trichlorobenzene	10	U	
91-20-3	Naphthalene	10	U	
106-47-8	4-Chloroaniline	10	U	
111-91-1	bis(2-Chloroethoxy)methane	10	U	
87-68-3	Hexachlorobutadiene	10	U	, UJ9
59-50-7	4-Chloro-3-Methylphenol	10	U	
91-57-6	2-Methylnaphthalene	10	U	
77-47-4	Hexachlorocyclopentadiene	10	U	, UJ9, UJ4
88-06-2	2,4,6-Trichlorophenol	10	U	, UJ9
95-95-4	2,4,5-Trichlorophenol	20	U	, UJ9
91-58-7	2-Chloronaphthalene	10	U	
88-74-4	2-Nitroaniline	20	U	
131-11-3	Dimethylphthalate	10	U	
208-96-8	Acenaphthylene	10	U	
606-20-2	2,6-Dinitrotoluene	10	U	
99-09-2	3-Nitroaniline	20	U	, UJ9 UJ4
83-32-9	Acenaphthene	10	U	UJ1

Jan 1/15/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB1118031

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) WATER Lab Sample ID: B1828-16D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D9026

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/09/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	20	UJ1
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	20	U, ~~UJ1~~, UJ4
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U, ~~UJ1~~, UJ4
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U, UJ4
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	UJ1

(1) - Cannot be separated from Diphenylamine

Jam 1/15/04

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FB1118031

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B1828

Matrix: (soil/water) WATER Lab Sample ID: B1828-16D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D9026

Level: (low/med) LOW Date Received: 11/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:12/09/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 12/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1/15/04

Mitkem Corporation

Date: *18-Dec-03*

Client: GEI Consultants, Inc.
Client Sample ID: FB1118031
Lab ID: B1828-16

Project: Keyspan
Collection Date: 11/18/03 8:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
HARDNESS BY CALCULATION				**SM2340_W**			
Hardness, Ca/Mg (As CaCO3)	ND		4.0	mg/L CaCO3	1	12/09/2003 0:00	10765
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1_TOC_W**			
Organic Carbon, Total	ND	UJ9	6.0	mg/L	1	12/16/2003 9:00	10909
PH VALUE				**SM4500_H+**			
pH	5.2		1.0	S.U.	1	11/19/2003 16:30	R4449

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0025

1/15/04