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Transmitted via Federal Express

June 13, 2005

Mr. James M. DiLorenzo
U.S. Environmental Protection Agency
EPA New England
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Completion of Stage 1 of the Bench-Scale Study for Silver Lake Sediments

The General Electric Company (GE) has recently completed Stage 1 of the Silver Lake sediments bench-scale study. All Stage 1 activities were performed in accordance with the *Bench-Scale Study Work Plan* (Work Plan; BBL, 2005), as conditionally approved by EPA by letter dated February 25, 2005. As requested by the EPA during a June 8, 2005 conference call, this memo has been prepared to present the Stage 1 results and provide GE's recommendations regarding proposed modifications to the next stage of the bench study activities.

Stage 1 Activities

Core Collection and Consolidation Tests

On March 8, 2005, five sediment cores were collected from Silver Lake for use as trial columns to test potential cap material placement rates prior to initiating the Stage 1 tests. The trial tests included cap material placement rates which ranged from 12 inches over a 4 day period to 12 inches in 1 minute. During these pre-Stage 1 tests, significant cap material/sediment mixing was not observed in any of the trial cores. Based on the above, the Work Plan-recommended placement rate of 3 inches per day over a 4 day period was selected for the Stage 1 testing.

As described in the Work Plan, and in the EPA conditional approval letter, the Stage 1 cores were collected on March 21, 2005 from six locations within Silver Lake and transferred to the GE facility for cap placement and consolidation testing. Core collection locations, labeled A through F, are displayed on Figure 1. Approximately twelve inches of cap material were added to each core over the course of four days and consolidation of the sediment was monitored over time until consolidation was observed to be complete. In total, the consolidation tests ran for 45 days. Results of the Stage 1 consolidation tests are presented in Table 1. Consolidation profiles, illustrating the total consolidation in each core with respect to time are displayed on Figure 2.

Sample Analysis

Following completion of the Stage 1 consolidation tests, the test cores were sectioned for chemical analysis. Five samples, representing the top six inches of sediment and four successive intervals of cap material were taken from each core. Each sample was analyzed for polychlorinated biphenyls (PCB), total organic carbon (TOC), and total petroleum hydrocarbons (TPH) in accordance with the Work Plan. Analytical results are presented in Table 2. Figures 3 through 8 illustrate the PCB and TOC results for each respective core.

Analytical Results and Discussion

The following observations are made regarding the results and the behavior of Silver Lake sediments in Stage 1 of the Bench-Scale study;

- No mixing zone was observed in any of the 6 test cores. As shown in the attached photo (Figure 9), distinct separation between cap material and the underlying sediment was noted in each of the 6 cores.
- Core D experienced the longest duration and greatest amount of total consolidation, with approximately 4 inches of consolidation observed over the course of the study.
- In four of the six cores, PCBs were not detected in any of the cap samples. In the remaining two cores, PCBs that were detected were at or near the detection limit.
- In all six cores, TPH were not observed in any of the cap samples.

As described in Section 3.3.2 of the Work Plan, Stage 2 of the Bench-Scale Study would involve picking one sampling location in the lake, collecting a number of cores, and then adding various potential cap configurations at various rates in order to observe consolidation rates and to collect additional chemical data. Given the potential placement rates tested and the physical and chemical results from Stage 1 of the study, as summarized above, GE believes that the objectives for Stage 2 have essentially been satisfied. Observations of consolidation rates under various potential capping configurations would be collected during Stage 3 activities.

Therefore, GE proposes that Stage 2 of the Bench-Scale study be eliminated and Stage 3 of the study be conducted with the following modifications:

- As required in the conditional approval letter for the Work Plan, GE will add a fifth column to the Stage 3 consolidation tests. The fifth column will not have a geotextile layer, and in addition to the 12 inches of cap material will include additional weight (e.g., gravel) to simulate the added weight of a potential cap armoring layer.
- As can be seen in Table 1 and on Figure 2, Core D experienced the longest duration and greatest amount of total consolidation. Additionally, as can be seen in Table 2, the sediment sample from Core D had the highest PCB detection (250 ppm), and the second highest TPH result (2,500 ppm). These Stage 1 results indicate that core location D is the most appropriate location for cores to be collected for use in Stage 3 consolidation tests.
- GE recommends that TPH analysis be eliminated from Stage 3 of the Bench-Scale study as TPH concentrations were not observed during Stage 1 in any of the cap material samples thus indicating that mixing or consolidation-driven migration of TPH is not a factor in the design of the cap.

Please feel free to contact me with any additional questions.

Sincerely,

Andrew T. Silfer, P.E. GE Project Coordinator

ATS/dmn

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Public Information Repositories

GE Internal Repositories

TABLE 1 STAGE 1 CORE CONSOLIDATION DATA

BENCH-SCALE STUDY FOR SILVER LAKE SEDIMENTS GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

		Sediment Thickness (inches)					
Date	Day #	Core A	Core B	Core C	re C Core D C		Core F
3/21/2005	0	31.20	40.80	33.60	34.8	37.2	36.00
3/22/2005	1	31.80	41.40	34.20	35.4	37.8	36.60
3/23/2005	2	30.60	40.68	33.60	34.8	37.2	35.40
3/24/2005	3	30.96	40.80	33.12	34.56	37.2	34.80
3/25/2005	4						
3/26/2005	5						
3/27/2005	6						
3/28/2005	7	30.84	40.44	32.76	34.2	36.72	34.80
3/29/2005	8						
3/30/2005	9	30.38	40.44	32.64	34.2	36.72	34.80
3/31/2005	10	30.25	39.875	32.00	33.625	36.25	34.00
4/1/2005	11	30.25	39.875	31.88	33.5	36.125	33.88
4/2/2005	12						
4/3/2005	13						
4/4/2005	14	30.125	39.750	31.625	33.25	35.875	33.750
4/5/2005	15	30.125	39.750	31.625	33.125	35.875	33.625
4/6/2005	16	30.125	39.625	31.500	33.123	35.875	33.625
4/7/2005	17	30.125	39.625	31.500	33	35.875	33.625
4/8/2005	18	30.125	39.625	31.500	32.875	35.75	33.625
4/9/2005	19	50.125	33.023		52.075		33.023
4/10/2005	20						
4/11/2005	21	30.125	39.500	31 250	32.25	35.5	33.375
4/11/2005	22	30.125	39.500	31.250 31.250	32.25	35.5	33.375
4/13/2005	23	30.125	39.500	31.250	32.125	35.5	
4/14/2005	24	30.250	39.500	31.250	32.125	35.625	33.375
4/15/2005	25	30.230	39.300	31.230	32.123	33.023	33.300
4/16/2005	26						
4/17/2005	27						
4/18/2005	28	30.125	39.500	31.125	31.625	35.5	33.375
4/19/2005	29	30.125	39.500	31.125	31.5	35.5	33.375
4/20/2005	30		39.500				33.375
4/21/2005	31	30.125		31.125	31.5	35.5	
4/22/2005	32	30.125	39.500	31.125	31.5	35.5	33.375
4/23/2005	33	30.125	39.375	30.750	31.125	35.375	33.250
4/24/2005	34						
	35	20.125	20.250	20.750	31.125	2F 27F	22.250
4/25/2005		30.125	39.250	30.750		35.375	33.250
4/26/2005	36	30.125	39.250	30.750	31.25	35.25	33.250
4/27/2005	37	30.125	39.250	30.750	31.25	35.25	33.250
4/28/2005	38	30.125	39.250	30.750	31.25	35.25	33.250
4/29/2005	39	30.125	39.250	30.750	31.25	35.25	33.250
4/30/2005	40						
5/1/2005	41	20.425	20.250	20.025		 25.05	22.250
5/2/2005	42	30.125	39.250	30.625	31.25	35.25	33.250
5/3/2005	43	30.125	39.250	30.625	31.125	35.25	33.250
5/4/2005	44	30.125 30.125	39.250 39.250	30.625 30.625	31.125 31.125	35.25 35.25	33.250 33.250

Parameter	Sample ID: Sample Depth(Inches): Date Collected:	SL-BS-SE-A3-SED 0-6 05/05/05	SL-BS-SE-A3-CAP 0-2 05/05/05	SL-BS-SE-A3-CAP 2-4 05/05/05	SL-BS-SE-A3-CAP 4-6 05/05/05	SL-BS-SE-A3-CAP 6-9.75 05/05/05
PCBs		03.00.00	5.11.03.100	03/03/03	53,53,55	30,70,70
Aroclor-1221		ND(5.0)	ND(0.060)	ND(0.061)	ND(0.059)	ND(0.060)
Aroclor-1248		ND(5.0)	ND(0.060)	ND(0.061)	ND(0.059)	ND(0.060)
Aroclor-1254		86 AF	ND(0.060)	ND(0.061)	ND(0.059)	ND(0.060)
Aroclor-1260		110 AG	ND(0.060)	ND(0.061)	ND(0.059)	ND(0.060)
Total PCBs		196	ND(0.060)	ND(0.061)	ND(0.059)	ND(0.060)
Extractable P	etroleum Hydrocarbons					
C11-C22 Aron	natic Hydrocarbons	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)
C19-C36 Aliph	atic Hydrocarbons	1900	ND(500)	ND(500)	ND(500)	ND(500)
C9-C18 Alipha	tic Hydrocarbons	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
Volatile Petro	leum Hydrocarbons					
C5-C8 Aliphati	c Hydrocarbons	41	ND(100)	ND(100)	ND(100)	ND(100)
C9-C10 Aroma	atic Hydrocarbons	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)
C9-C12 Alipha	tic Hydrocarbons	190	ND(100)	ND(100)	ND(100)	ND(100)
Total Petroleur	m Hydrocarbons	2600	ND(500)	ND(500)	ND(500)	ND(500)
Total Organic	Carbon					
TOC - Replica	te 1	120000	8100	11000	10000	9700
TOC - Replica		140000	9800	12000	12000	12000
TOC - Replica	te 3	150000	8100	8000	9900	12000
TOC - Replicate 4		NA	NA	NA	NA	NA
TOC - Average	Э	140000	8700	10000	11000	11000
TOC - % RSD		10	11	21	8.1	13

	Sample ID:	SL-BS-SE-B3-SED	SL-BS-SE-B3-CAP	SL-BS-SE-B3-CAP	SL-BS-SE-B3-CAP	SL-BS-SE-B3-CAP
	Sample Depth(Inches):	0-6	0-2	2-4	4-6	6-10.25
Parameter	Date Collected:	05/05/05	05/05/05	05/05/05	05/05/05	05/05/05
PCBs						
Aroclor-1221		ND(5.6)	ND(0.061) [ND(0.060)]	ND(0.064)	ND(0.065)	ND(0.060)
Aroclor-1248		ND(5.6)	ND(0.061) [ND(0.060)]	ND(0.064)	ND(0.065)	ND(0.060)
Aroclor-1254		120 AF	0.11 AF [0.12 AF]	ND(0.064)	0.090 AF	0.17 AF
Aroclor-1260		110 AG	ND(0.061) [0.063 AG]	ND(0.064)	ND(0.065)	0.066 AG
Total PCBs		230	0.11 [0.18]	ND(0.064)	0.090	0.24
Extractable P	etroleum Hydrocarbons					
C11-C22 Aron	natic Hydrocarbons	ND(200)	ND(200) [ND(200)]	ND(200)	ND(200)	ND(200)
C19-C36 Aliph	atic Hydrocarbons	ND(500)	ND(500) [ND(500)]	ND(500)	ND(500)	ND(500)
C9-C18 Alipha	tic Hydrocarbons	ND(500)	ND(500) [ND(500)]	ND(500)	ND(500)	ND(500)
Volatile Petro	leum Hydrocarbons					
C5-C8 Aliphati	c Hydrocarbons	12 J	ND(100) [ND(100)]	ND(100)	ND(100)	ND(100)
C9-C10 Aroma	atic Hydrocarbons	ND(100)	ND(100) [ND(100)]	ND(100)	ND(100)	ND(100)
C9-C12 Alipha	tic Hydrocarbons	300	ND(100) [ND(100)]	ND(100)	ND(100)	ND(100)
Total Petroleui	m Hydrocarbons	ND(500)	ND(500) [ND(500)]	ND(500)	ND(500)	ND(500)
Total Organic	Carbon					
TOC - Replica	te 1	110000	8800 [11000]	7500	8100	11000
TOC - Replica	te 2	110000	13000 [7800]	6400	9700	12000
TOC - Replica	te 3	110000	41000 [9200]	20000	12000	15000
TOC - Replica	te 4	NA	7000	14000	NA	NA
TOC - Average	е	110000	17000 [9400]	12000	10000	13000
TOC - % RSD		2.4	92 [19]	54	22	19

	Sample ID:	SL-BS-SE-C8-SED	SL-BS-SE-C8-CAP	SL-BS-SE-C8-CAP	SL-BS-SE-C8-CAP	SL-BS-SE-C8-CAP
	Sample Depth(Inches):	0-6	0-2	2-4	4-6	6-10.5
Parameter	Date Collected:	05/05/05	05/05/05	05/05/05	05/05/05	05/05/05
PCBs						
Aroclor-1221		ND(4.6)	ND(0.059)	ND(0.060)	ND(0.058)	ND(0.058)
Aroclor-1248		ND(4.6)	ND(0.059)	ND(0.060)	ND(0.058)	ND(0.058)
Aroclor-1254		62 AF	ND(0.059)	ND(0.060)	ND(0.058)	ND(0.058)
Aroclor-1260		40 AG	ND(0.059)	ND(0.060)	ND(0.058)	ND(0.058)
Total PCBs		105	ND(0.059)	ND(0.060)	ND(0.058)	ND(0.058)
Extractable P	etroleum Hydrocarbons					
C11-C22 Aron	natic Hydrocarbons	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)
C19-C36 Aliph	natic Hydrocarbons	ND(620)	ND(500)	ND(500)	ND(500)	ND(500)
C9-C18 Alipha	atic Hydrocarbons	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
Volatile Petro	leum Hydrocarbons					
C5-C8 Aliphat	ic Hydrocarbons	7.2 J	ND(100)	ND(100)	ND(100)	ND(100)
C9-C10 Aroma	atic Hydrocarbons	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)
C9-C12 Alipha	atic Hydrocarbons	100	ND(100)	ND(100)	ND(100)	ND(100)
Total Petroleu	m Hydrocarbons	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
Total Organic	: Carbon					
TOC - Replica	te 1	95000	7600	18000	18000	8900
TOC - Replica	te 2	95000	11000	18000	17000	8100
TOC - Replica	te 3	96000	7600	7900	7800	11000
TOC - Replica	te 4	NA	NA	23000	23000	NA
TOC - Average		95000	8800	17000	16000	9200
TOC - % RSD		0.66	23	38	38	14

Sample ID: Sample Depth(Inches):	SL-BS-SE-D3-SED 0-6	SL-BS-SE-D3-CAP 0-2	SL-BS-SE-D3-CAP 2-4	SL-BS-SE-D3-CAP 4-6	SL-BS-SE-D3-CAP 6-10
Parameter Date Collected:	05/05/05	05/05/05	05/05/05	05/05/05	05/05/05
PCBs	03/03/03	03/03/03	03/03/03	03/03/03	03/03/03
Aroclor-1221	ND(7.3)	ND(0.061)	ND(0.061)	ND(0.062)	ND(0.062)
Aroclor-1221 Aroclor-1248	ND(7.3)	ND(0.061)	ND(0.061)	ND(0.062)	
Aroclor-1246 Aroclor-1254	150 AF		\ /		ND(0.062)
		ND(0.061)	ND(0.061)	ND(0.062)	ND(0.062)
Aroclor-1260	100 AG	ND(0.061)	ND(0.061)	ND(0.062)	ND(0.062)
Total PCBs	250	ND(0.061)	ND(0.061)	ND(0.062)	ND(0.062)
Extractable Petroleum Hydrocarbons					
C11-C22 Aromatic Hydrocarbons	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)
C19-C36 Aliphatic Hydrocarbons	1900	ND(500)	ND(500)	ND(500)	ND(500)
C9-C18 Aliphatic Hydrocarbons	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
Volatile Petroleum Hydrocarbons					
C5-C8 Aliphatic Hydrocarbons	12 J	ND(100)	ND(100)	ND(100)	ND(100)
C9-C10 Aromatic Hydrocarbons	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)
C9-C12 Aliphatic Hydrocarbons	310	ND(100)	ND(100)	ND(100)	ND(100)
Total Petroleum Hydrocarbons	2500	ND(500)	ND(500)	ND(500)	ND(500)
Total Organic Carbon					
TOC - Replicate 1	130000	9000	7500	8800	12000
TOC - Replicate 2	120000	12000	4800	12000	8700
TOC - Replicate 3	130000	8700	14000	8700	9300
TOC - Replicate 4	NA	NA	7300	NA	NA
TOC - Average	130000	9900	8500	9800	9900
TOC - % RSD	3.6	19	48	19	16

	Sample ID:	SL-BS-SE-E3-SED	SL-BS-SE-E3-CAP	SL-BS-SE-E3-CAP	SL-BS-SE-E3-CAP	SL-BS-SE-E3-CAP
	Sample Depth(Inches):	0-6	0-2	2-4	4-6	6-10.75
Parameter	Date Collected:	05/05/05	05/05/05	05/05/05	05/05/05	05/05/05
PCBs						
Aroclor-1221		ND(0.78)	ND(0.058) [ND(0.060)]	ND(0.058)	ND(0.060)	ND(0.060)
Aroclor-1248		ND(0.78)	ND(0.058) [ND(0.060)]	ND(0.058)	ND(0.060)	ND(0.060)
Aroclor-1254		16 AF	ND(0.058) [ND(0.060)]	ND(0.058)	ND(0.060)	ND(0.060)
Aroclor-1260		9.7 AG	ND(0.058) [ND(0.060)]	ND(0.058)	ND(0.060)	ND(0.060)
Total PCBs		26.1	ND(0.058) [ND(0.060)]	ND(0.058)	ND(0.060)	ND(0.060)
Extractable P	etroleum Hydrocarbons					
C11-C22 Aron	natic Hydrocarbons	ND(200)	ND(200) [ND(200)]	ND(200)	ND(200)	ND(200)
C19-C36 Aliph	natic Hydrocarbons	ND(500)	ND(500) [ND(500)]	ND(500)	ND(500)	ND(500)
C9-C18 Alipha	tic Hydrocarbons	ND(500)	ND(500) [ND(500)]	ND(500)	ND(500)	ND(500)
Volatile Petro	leum Hydrocarbons					
C5-C8 Aliphat	ic Hydrocarbons	ND(100)	ND(100) [ND(100)]	ND(100)	ND(100)	ND(100)
C9-C10 Aroma	atic Hydrocarbons	ND(100)	ND(100) [ND(100)]	ND(100)	ND(100)	ND(100)
C9-C12 Alipha	atic Hydrocarbons	21 J	ND(100) [ND(100)]	ND(100)	ND(100)	ND(100)
Total Petroleu	m Hydrocarbons	ND(500)	ND(500) [ND(500)]	ND(500)	ND(500)	ND(500)
Total Organic	Carbon					
TOC - Replica	te 1	84000	8200 [12000]	8100	16000	8600
TOC - Replica	te 2	82000	15000 [8500]	6800	12000	8900
TOC - Replica	te 3	83000	19000 [8500]	10000	9800	12000
TOC - Replica	te 4	NA	9800	NA	NA	NA
TOC - Average	е	83000	13000 [9600]	8300	13000	10000
TOC - % RSD		1.1	38 [20]	19	24	21

BENCH-SCALE STUDY FOR SILVER LAKE SEDIMENTS GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

(Results are presented in dry weight parts per million, ppm)

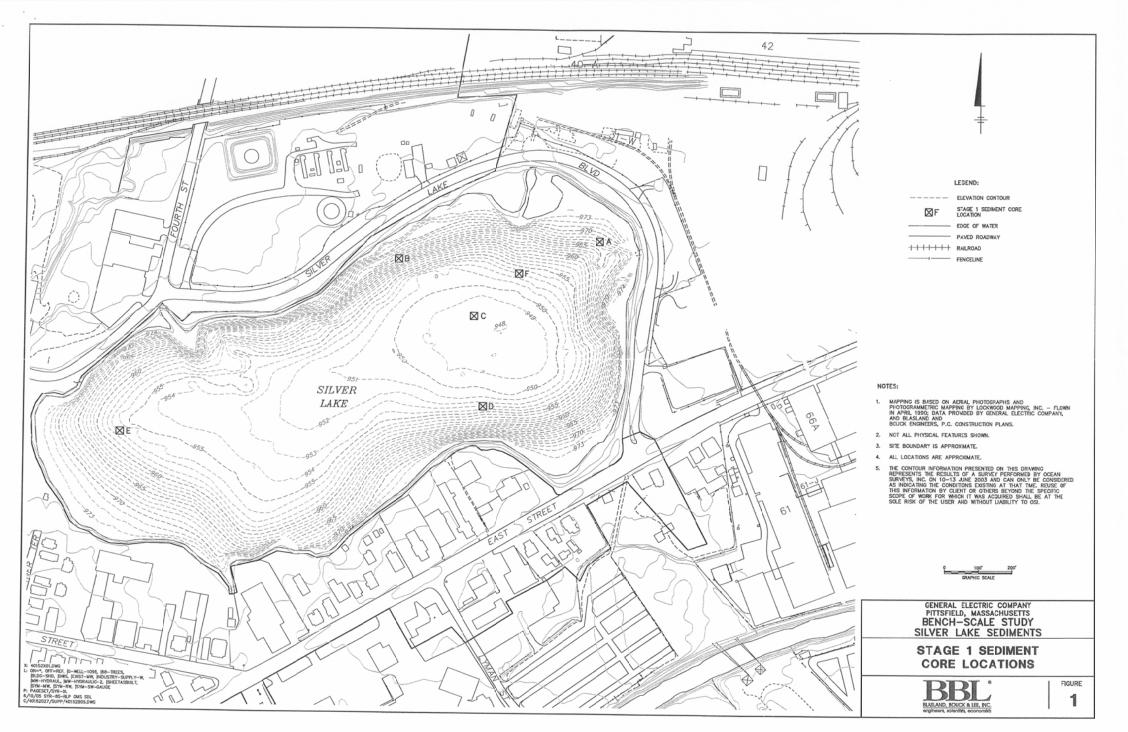
Sample ID: Sample Depth(Inches):		SL-BS-SE-F3-CAP 0-2	SL-BS-SE-F3-CAP 2-4	SL-BS-SE-F3-CAP 4-6	SL-BS-SE-F3-CAP 6-10.75
Parameter Date Collected:		05/05/05	05/05/05	05/05/05	05/05/05
PCBs					
Aroclor-1221	ND(6.3)	ND(0.062)	ND(0.63)	ND(0.060)	ND(0.063)
Aroclor-1248	ND(6.3)	ND(0.062)	ND(0.63)	ND(0.060)	ND(0.063)
Aroclor-1254	100 AF	0.15 AF	0.29 AF	ND(0.060)	ND(0.063)
Aroclor-1260	13 AG	ND(0.062)	0.076 AG	ND(0.060)	ND(0.063)
Total PCBs	113	0.15	0.37	ND(0.060)	ND(0.063)
Extractable Petroleum Hydrocarbons					
C11-C22 Aromatic Hydrocarbons	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)
C19-C36 Aliphatic Hydrocarbons	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
C9-C18 Aliphatic Hydrocarbons	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
Volatile Petroleum Hydrocarbons					
C5-C8 Aliphatic Hydrocarbons	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)
C9-C10 Aromatic Hydrocarbons	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)
C9-C12 Aliphatic Hydrocarbons	19 J	ND(100)	ND(100)	ND(100)	ND(100)
Total Petroleum Hydrocarbons	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
Total Organic Carbon					
TOC - Replicate 1	53000	19000	8800	9800	15000
TOC - Replicate 2	55000	13000	16000	25000	7400
TOC - Replicate 3	58000	20000	13000	12000	8600
TOC - Replicate 4	NA	NA	15000	9700	14000
TOC - Average	55000	17000	13000	14000	11000
TOC - % RSD	4.6	22	23	50	34

Notes:

- Samples were collected by Blasland, Bouck & Lee, Inc., and submitted to Northeast Analytical, Inc. for analysis of PCBs, total organic carbon (TOC) and EPH/VPH.
- 2. % RSD Percent relative standard deviation.
- 3. NA Not Analyzed TOC Replicate 4 is only analyzed and reported by laboratory when the % RSD of Replicate 1
- 4. thru Replicate 3 is greater than 25%.
- Field duplicate sample results are presented in brackets.With the exception of EPH/VPH and TOC only those constituents detected in one or more samples are summarized.

Data Qualifiers:

AF - Aroclor 1254 is being reported as the best Aroclor match. The sample exhibits an altered PCB pattern. AG - Aroclor 1260 is being reported as the best Aroclor match. The sample exhibits an altered PCB pattern.



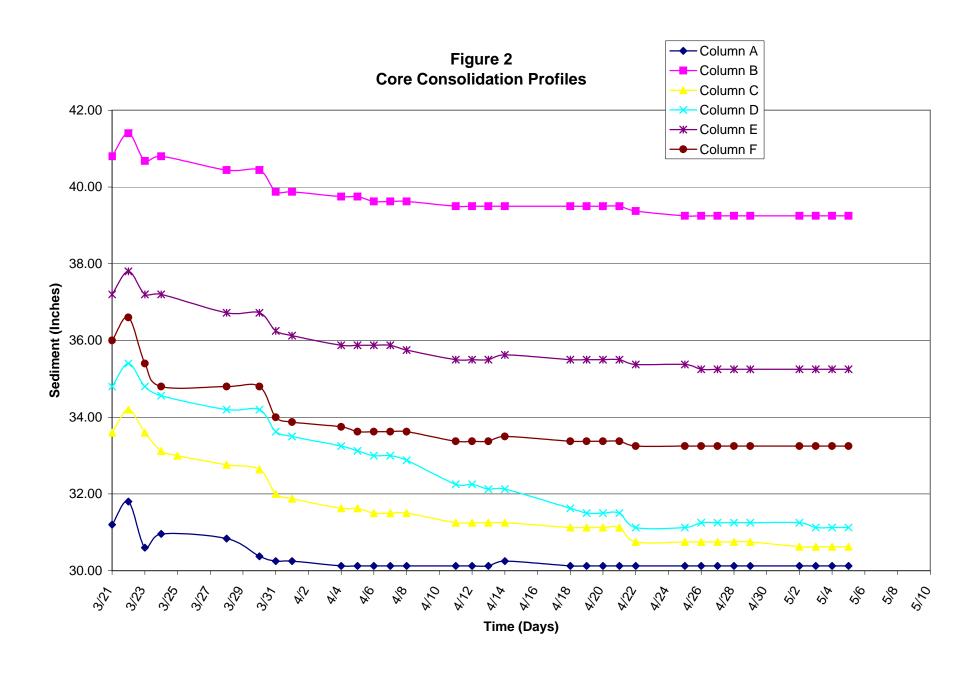


Figure 3
Core A: PCB and TOC Results

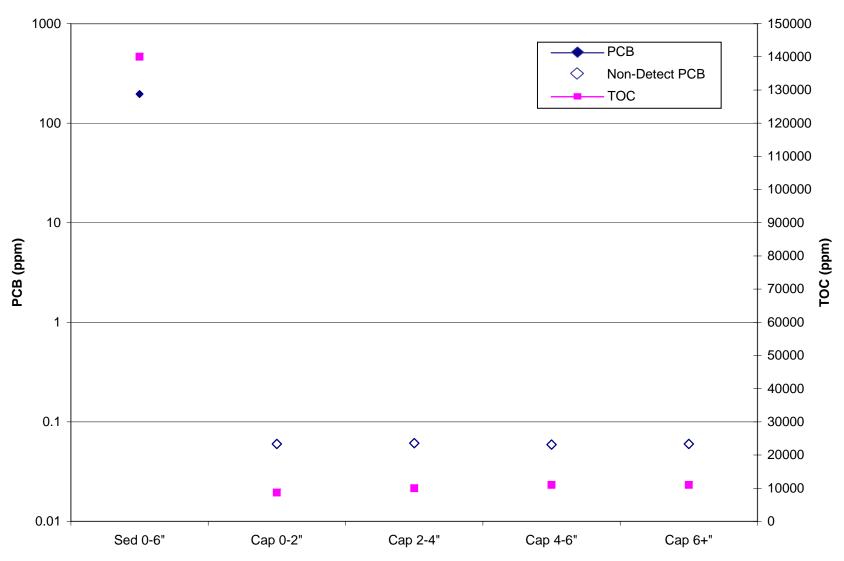


Figure 4
Core B: PCB and TOC Results

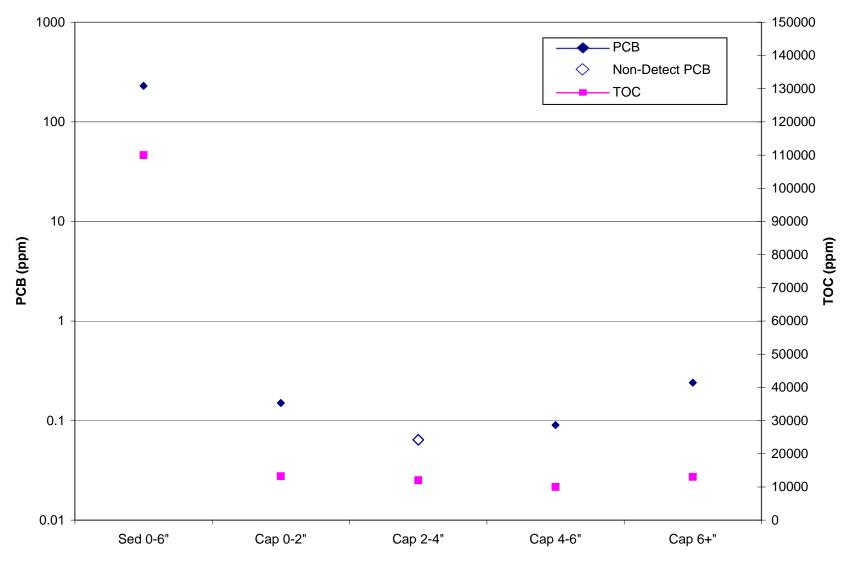


Figure 5
Core C: PCB and TOC Results

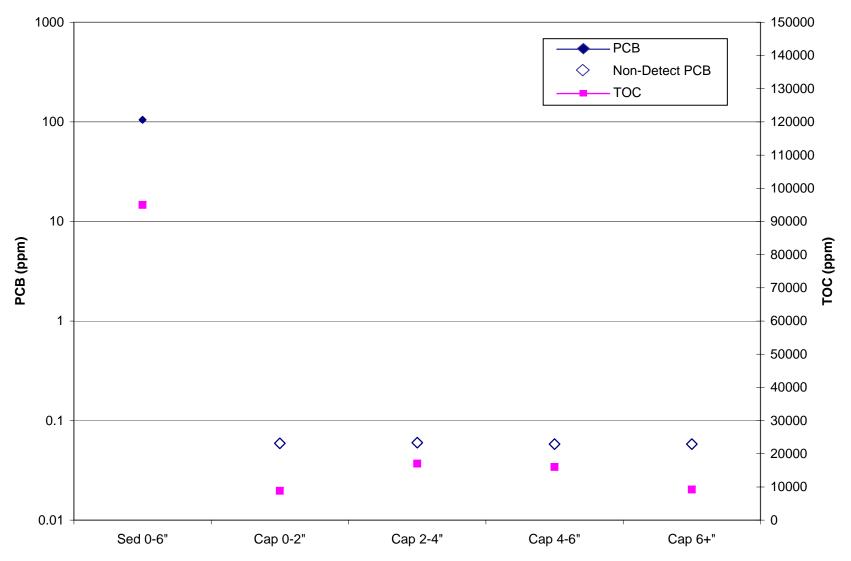


Figure 6
Core D: PCB and TOC Results

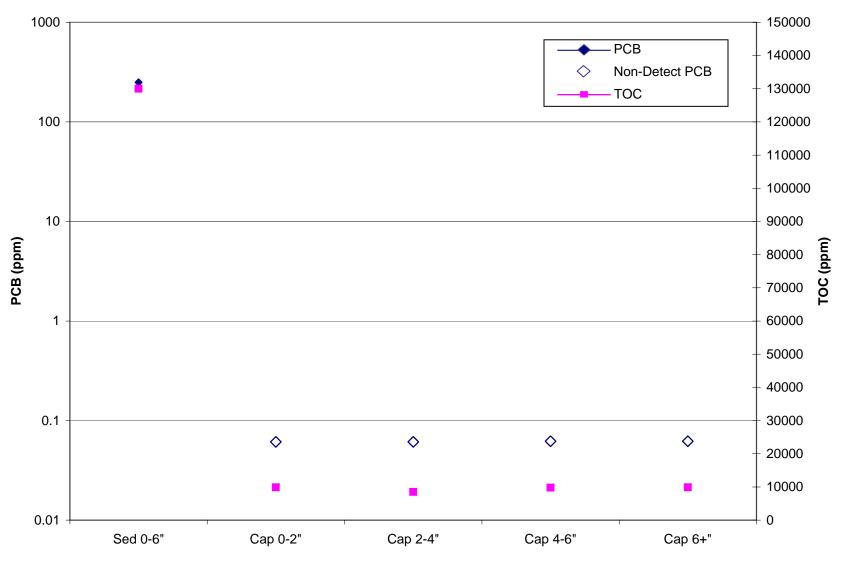


Figure 7
Core E: PCB and TOC Results

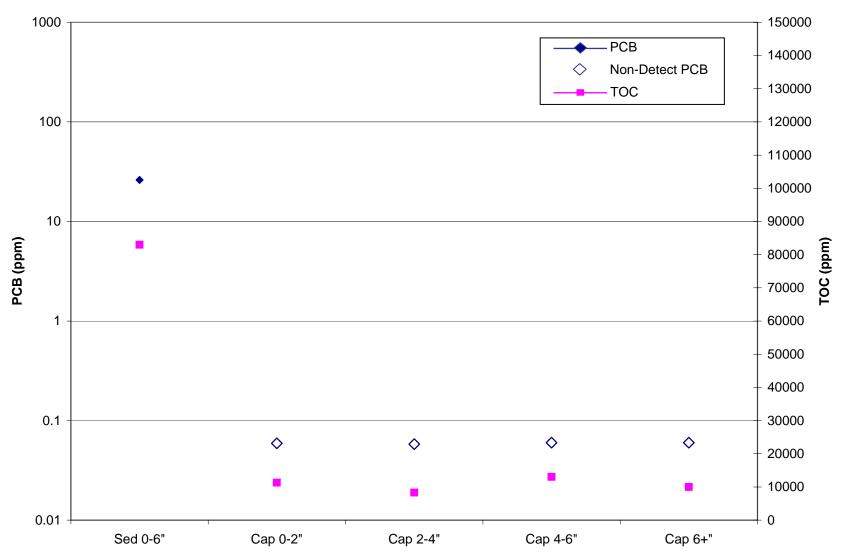


Figure 8
Core F: PCB and TOC Results

