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NS MAYPORT
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LETTER REPORT REGARDING OPERATION AND MAINTENANCE REPORT FOR SOLID WASTE MANAGEMENT UNIT 7 NS MAYPORT FL
8/25/1998
BECHTEL ENVIRONMENTAL

Bechtel

Quarters E, G Avenue
P.O. Box 171
Jacksonville, Florida 32215
Telephone: (904) 779-8900
Facsimile: (904) 779-8999

August 25, 1998

Commanding Officer
Southern Division
Naval Facilities Engineering Command
Attn: Adrienne Wilson
2155 Eagle Drive, P.O. Box 190010
North Charleston, SC 29419-9010

SUBJECT: Bechtel Job No. 22567
Department of the Navy Contract No. N62467-93-D-0936
DO 40: OPERATION AND MAINTENANCE REPORT FOR SWMU 7; BIOSLURPER/BIOVENTING SYSTEMS
NS MAYPORT, FLORIDA
Subject Code: 1250

Dear Ms. Wilson:

Enclosed you will find a copy of the Operation and Maintenance Report for SWMU 7, Mayport, Florida.

If you have any questions, please feel free to contact Dale Obenauer or myself at (904) 779-8900.

Sincerely,

Dale Obenauer /for

V. Hermann Bauer
Project Manager

VHB/alm
Encl.: As Stated.
A. Wilson
C. Mitchell
F. Lesesne
J. Cason
R. Bishop
M. Berry
T. Hansen

& 1 August 1999

14900-

Sub Job 000 **Rec Type** LT **Comm Date** 25-AUG-98 **Admin Rec** N **CCN-Item No.** 014900-1

Subject MAY - DO#0040; OPERATION AND MAINTENANCE REPORT FOR SWMU 7; BIOSLURPER/BIOVENTING SYSTEMS//TRANSMTL LTR TO A. WILSON W/ ATTACH.

From BAUER, H. **Org** BEI **To** WILSON, A. **Org** SDIV **File Loc** M **Closes CCN**

Comm Reference **Published** N

Cross Reference (Affected Doc) DO#0040 - NS MAYPORT **Field CCN**

Site Codes 254

Subject Codes 1250 **Film Reel**

Owed By **Org** **Due Date** **Closing CCN**

Owed To **Org** **Forecast Date** **Compl Date**

Comment/Action

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	V. H. BAUER	1							R. MEDDICK		
	R. J. COHOSE			F. Lesesne	1				B. GATES		
	L. M. SIMS								D. GASKINS		
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P.E.	D. OBENAUER	1							B. KIZER		
P.E.	R. HOEKSTRA			R. Bishop	1				D. PATRICK		
SITE SUPERINTENDENTS	E. NAJMOLA								G. TURNER		
	W. HEVRDEYS			M. Berry	1						
	G. RHODES										
	S. MOORE	1		T. Hansen	1						
{FIELD PDCC}	A. MASSEY										
DATA MGMT	L. DAVENPORT			S. Ross	1			ABB-ES			
S&H MANAGER	R. W. THOMPSON							ENSAFE			
ENVIR COMPLIANCE	R. ATWOOD			D. Cutshaw	1			BROWN & ROOT			
CONTRACT ADM MGR	TIM STONE							RUST ENVIR			
FIELD PROCUREMENT	S. WEINMAN										
PROJ CTRLS MGR	C. J. PERRY			REFERENCE LIBRARY				SUBCONTRACTORS:			
				75-YEAR RECORD FILE				GEL			
ACCTNG	E. FARMER/K. COURTNEY			SENSITIVE FILE				GTI			
FIELD QC MGR	J. A. GRISSETT			SUBMITTAL FILE				INCHCAPE			
PROJECT ADMINISTRATOR	L. LANDERS										
RECORDS MGMT	B. STOUT			PDCC FILE	1			MEI			

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA

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11/24/97

Quarterly Operations and Maintenance Report

for NS Mayport SWMU 7
2nd Quarter 1998

149003

Start Date: 3/30/98
End Date: 7/13/98
Report Date: 8/20/98

BIOSLURPER/BIOVENTING SYSTEM DESCRIPTION

The Interim Measures remediation system at SWMU 7 is designed to remove a Light Non-Aqueous Phase Liquid (LNAPL) plume from the subsurface at the site. Two bioslurper systems and a bioventing system were installed at the site during the period of November 1997 to January 1998.

A total of 110 wells were installed at the site for LNAPL extraction. LNAPL and groundwater is recovered from selected extraction wells and is routed to two separate, trailer-mounted bioslurper package systems. Each system includes an equalizing tank, a liquid ring vacuum pump assembly, a heat exchanger, an oil water surge tank assembly, manifold piping, and various system controls.

Groundwater and LNAPL that are recovered by the bioslurpers is initially discharged to two 20,000 gallon above-ground storage tanks (ASTs) located at the site. Weekly site visits were conducted during the monitoring period for the purpose of manually evacuating the ASTs to the NS Mayport oily water treatment plant (OWTP), which is capable of processing both LNAPL and petroleum contaminated ground water.

Soil vapors extracted from the extraction wells were initially passed through a dehumidifier, an induced draft blower, and two 1,000 pound granular activated carbon (GAC) units prior to discharge to the atmosphere. Based upon analytical results, all of the process air equipment and GAC units were by-passed on June 15, 1998, to allow extracted soil vapors to be discharged directly to the atmosphere.

In addition to the extraction system, a total of 35 of the extraction wells located in the sludge drying beds are connected to a separate, regenerative blower for bioventing purposes. The blower injects approximately 7 cubic feet per minute into each well to stimulate biological degradation of petroleum products below the sludge drying beds.

The south bioslurper system commenced operation on January 8, 1998. After a troubleshooting and adjustment period, the north bioslurper system was started up on February 5, 1998. The bioventing system was started up on January 15, 1998.

SUMMARY OF ACTIVITIES

Monitoring Activities

General system maintenance checks were performed weekly during the monitoring period. Liquid levels were measured in the extraction wells on April 27, May 21, June 17, June 30, and

July 13. Vacuum measurements were recorded in the active extraction wells on April 30 and June 23. The results from the measurement events are summarized in Attachment A.

Sampling Activities

Air samples were collected from pre- and post-GAC sample ports on April 8, April 14, and May 21. Based upon analytical results, the GAC units were by-passed on June 15, 1998, to allow extracted soil vapors to be discharged directly to the atmosphere. Air samples were subsequently collected from both the North Trailer and South Trailer discharge stacks on June 17, 1998. All of the air samples were analyzed for BTEX and total light petroleum hydrocarbons (TLPH) constituents by EPA Method 18 (TO-3). Analytical laboratory reports, including summary tables, for the air sampling events are provided in Attachment B. Results indicate that the discharge concentrations were less than 15% of the FDEP designated 15 pounds per day limit. A table which provides the pounds per day recovery and emissions rate for total VOCs based upon the analytical results is provided in Attachment C.

Groundwater and LNAPL recovered from selected extraction wells are currently being discharged to the OWTP. Effluent samples were collected on April 14, April 30, May 21, and June 25 for laboratory analyses of Volatile Halocarbons, BTEX, MTBE, PAH, TPH, Metals, COD, TSS, and pH by EPA Methods 601, 602, 610, 418.1, 200.7, 245.1, 410.4, 160.2, and 150.1. Based upon the results, the discharge piping will be rerouted to the base sanitary sewer instead of the OWTP during the next quarterly monitoring period, as a cost-saving measure. Subsequent to the discharge piping modifications, the effluent will be sampled monthly for one quarter, quarterly for the next three quarters and semiannually thereafter. Analytical laboratory reports and summary tables from the effluent sampling events are provided in Attachment D.

On April 28, April 29, June 2, and June 16, soil gas samples were collected from the monitoring points in the sludge drying beds for field analyses of TPH, carbon dioxide and oxygen. The results are provided in Attachment E.

SUMMARY OF REMEDIATION SYSTEM PERFORMANCE

Operating Efficiencies - South Bioslurper

The south bioslurper system was in operation approximately 38% (40 out of 105 days) of the time during the monitoring period. The system was out of service 47 days due to level fault conditions that were occurring in the recirculation tank. The recirculation tank discharges water recovered by the liquid ring pump from the bottom of the tank and air from the top of the tank. The level fault conditions were caused by vacuum pressure applied on the recirculation tank by the induced draft blower, which pulls vapor through the GAC units. The resulting vacuum was

causing the water from the recirculation tank to gravity discharge at a reduced flow rate. In an effort to reduce the vacuum, the effluent ball valve on the air discharge was adjusted. The adjustments were unsuccessful in alleviating the problem because it was impossible to adjust the ball valve to the exact setting which would prevent either a high or low level fault condition from eventually occurring. Several weeks of down time were due to level fault conditions that occurred during the period in which the valve adjustments were being performed. After it was determined that the adjustments would not solve the problem, an additional gravity flow line was installed on the recirculation tank, about 3 feet above the bottom discharge line. The theory was that when the water level increased to the level of the new discharge line, the additional drain line would increase the discharge rate and bring the water level in the tank back down. However, to prevent the added discharge line from creating untreated air emissions, it was necessary to seal the oil water surge tank, which caused a vapor lock and prevented the water from gravity feeding. As removal of the GAC units and the induced draft blower from the air stream would ultimately alleviate the level fault conditions in the recirculation tank, it was decided not to implement additional modifications to address this problem until air sample results were obtained. Subsequent to the elimination of the GAC units on June 15, the level fault conditions did not occur.

Thermal overloads of the liquid ring pump (LRP) motor, caused by scale and fouling of the LRP, caused ten days of downtime. Cleaning the LRP to remove scale build up is now a monthly maintenance item. An AST high level fault condition resulted in six days of down time, and two days of down time were the result of a malfunctioning probe in the recirculation tank, which was replaced.

Operating Efficiencies - North Bioslurper

The north bioslurper system was in operation approximately 21% (22 out of 105 days) of the time during the monitoring period. The most frequent cause of down time (60 days) was due to thermal overloads of the LRP motor. The thermal overload shut downs were initially thought to be caused by recirculation tank level fault conditions, because it is currently not possible to determine the difference between a level fault shut down and a thermal overload shut down unless the operator is actually present when the condition occurs. For this reason, several modifications were performed to alleviate the possibly non-existent level fault problem, before a thermal overload was actually witnessed at the site. These modifications included: 1) installing a LNAPL knock-out on the recirculation tank so that LNAPL would not come in contact with the level probes; 2) adjusting the height of the recirculation tank probes so that LNAPL could not enter the sight tube and foul the level probes; and 3) by-passing the oil water surge tank and relocating the oil water surge tank transfer pump to the recirculation tank to better regulate the water level in the recirculation tank.

After the GAC treatment was eliminated, thereby eliminating the possibility of level fault conditions, it was determined that thermal overloads were the cause of the LRP shut downs. The LRP was cleaned on three separate occasions to alleviate scale build-up which may have contributed to the problem. The cleanings temporarily reduced the frequency of the thermal overloads, but did not completely alleviate the problem. The 2-inch discharge piping was replaced with 4-inch piping in an effort to reduce the back pressure on the LRP, but the effects were negligible. The LRP running amps, which were monitored during operation, revealed that the LRP is drawing a normal amount of amps during normal vacuum, but amperage spikes occur when slugs of water are recovered. The equipment vendor recommended a flow control device, which was recently installed. The effectiveness of the device will be reported in the next quarterly report.

The remaining down time was due to an inadvertent manual shut down (4 days), a fouled level probe (13 days), and an AST high level fault condition (6 days).

Operating Efficiencies - Bioventing System

The bioventing system was in operation 82% (86 of 105 days) during the monitoring period. Seven days of down time were due to a malfunctioning starter coil, which was replaced. The remaining 12 days of down time were for routine servicing and to conduct LNAPL measurement and sampling.

LNAPL Removal

To date, based upon pre-discharge LNAPL thickness measurements in the ASTs, approximately 550 gallons of LNAPL have been recovered by the bioslurper system.

Quarterly Operations and Maintenance Report

for NS Mayport SWMU 7
2nd Quarter 1998

Start Date: 3/30/98
End Date: 7/13/98
Report Date: 8/20/98

Total Fluids Recovered (Gallons)

Time Period	North Bioslurper	South Bioslurper	TOTAL
3/30/98 - 7/13/98	38,930	41,800	80,730
To Date	54,943	153,454	208,397

On-Stream Performance

Time Period	North Bioslurper	South Bioslurper	Biovent Blower
3/30/98 - 7/13/98	21%	38%	82%
To Date	21%	55%	93%

Average Flow Rates in Gallons Per Minute During Periods of Operation (Based on Flow Meter and Hour Meter Readings)

Time Period	North Bioslurper	South Bioslurper
3/30/98 - 7/13/98	1.31	0.77
To Date	1.55	1.82

Estimated Total Volume of LNAPL Recovered (Based on Pre-Discharge LNAPL Thickness Measurements in the ASTs)

Time Period	Gallons
To Date	550

ATTACHMENTS

A. **Vacuum Pressure/Liquid Level Measurements**
B. **Analytical Laboratory Reports For Air Samples**
C. **Contaminant Mass Removal Tables**
D. **Analytical Laboratory Reports for Effluent Groundwater Samples**
E. **Summary Table for Field Analyses of Soil Gas Samples**

ATTACHMENT A

VACUUM PRESSURE/LIQUID LEVEL MEASUREMENTS

BIOSLURPER SYSTEM
VACUUM READINGS
AT ACTIVE EXTRACTION WELLS
SWMU7
NS MAYPORT

Well ID	1/29/98	2/18/98 - 2/19/98	4/30/98 (Group 1)	6/23/1998 (Group 3)
EW14	NA	NA	NA	8.4
EW27	10	NA	9	4.5
EW28	35	NA	19	8.4
EW30	35	NA	28	0
EW31	NA	NA	NA	0
EW47	12	NA	7	9
EW50	NA	NA	NA	8
EW62	25	NA	NA	NA
EW63	5	NA	NA	10.2
EW72	NA	11.5	NA	NA
EW73	NA	16	NA	NA
EW74	NA	24	NA	NA
EW75	NA	NA	1	10
EW76	12	38.5	6	6
EW77	12	9.5	13	7.2
EW78	NA	32	NA	NA
EW79	NA	14.5	NA	NA
EW97	50	21.5	12	NA
EW98	35	24	7	NA
EW100	NA	NA	NA	0
EW101	NA	5	NA	0.2
EW104	35	21.5	2	4.7
EW105	25	4.3	1	6
EW106	NA	28	NA	0.4
EW107	NA	NA	NA	6.4
EW108	55	NA	NA	4.8
EW109	15	21	NA	5.2
EW110	35	19.5	Note 1	5.8
EW111	NA	10	2	NA
EW112	30	NA	Note 1	NA
EW113	NA	21.5	NA	0
EW114	35	40.8	Note 1	NA
EW115	45	16	NA	NA
EW116	40	23.5	Note 1	NA
EW117	NA	7	Note 1	NA
EW118	NA	12.5	Note 1	0.2
EW119	NA	14	Note 1	NA
EW124	NA	5	NA	NA
EW125	NA	10.5	NA	NA
EW135	NA	5	NA	NA

BIOSLURPER SYSTEM
VACUUM READINGS
AT ACTIVE EXTRACTION WELLS
SWMU7
NS MAYPORT

Well ID	1/29/98	2/18/98 - 2/19/98	4/30/98 (Group 1)	6/23/1998 (Group 3)
EW138	NA	8.5	NA	NA
EW140	NA	7	NA	NA
TW1A	NA	NA	NA	18
TW2A	5	24	3	4.6
TW3A	NA	32	NA	4.3
TW8	NA	28.5	NA	4.2
TW11	NA	3.8	NA	5
MW11S	10	NA	1	NA
MW7S	NA	16	NA	12

Note 1: Extraction well is part of the Group 1 rotation but was shut down to increase vacuum at remaining Group 1 extraction wells.

All measurements shown in "H_2O.

NA = not active, extraction well was shut down

BIOSLURPER SYSTEM
LNAPL THICKNESS MEASUREMENTS
SWMU7
NS MAYPORT

Well ID	Baseline	8/21/97	9/4/97	9/16/97	11/12/97	12/4/97	1/5/98	2/18/98 - 2/19/98	3/16/98 - 3/17/98	4/27/98	5/21/98	6/17/98	6/30/98	7/13/98
EW1	0.01	0	0	0	0.01	0	0	0	0	0	0.01	0.01	NM	0.01
EW3	0.05	0	0	0	0	0.08	0.01	0	0	0.01	0.02	0.02	NM	0.28
EW7	0.01	0.01	NM	0	0	0	0.01	0	0.01	0.01	0.01	dry	NM	dry
EW9	0	0	0.07	0.04	0.02	0.19	0.01	0	0	0.05	0.02	EW	NM	0.03
EW10	0	0.01	0.01	0	0	0.19	0	0	0	0	0.12	0	NM	0
EW11	0	0.01	0	0	0	0	0.01	0	0	0.01	0.01	0.01	NM	0.01
EW14	0	0.01	0.03	0.01	0.05	0.01	0.01	0	0	0	0.01	EW	NM	0
EW15	0	0.01	0.03	0.01	0	0	0.01	0	0	0	0.01	0.01	NM	0
EW17	0.01	0.01	0.01	0	0	0	0.01	0	0	0	0.01	0.01	NM	0.01
EW19	0	0	0.01	0	0	0	0	0	0.01	0.01	0.01	NM	NM	0.01
EW20	0.01	0.01	0	0	0	0	0	0	0	0.01	0.01	0.01	NM	0.01
EW24	NM	0.01	0	0	0	0	0	0	0.01	0.01	0.01	dry	NM	0
EW25	0.08	0.01	0	0	0	0	0.05	0	0	0.04	0.11	0.12	NM	0
EW27	0.01	0.01	0	0	0.01	0.1	0.46	0	0	0.02	EW	EW	NM	0.01
EW28	0.01	0.1	0.05	0	0.55	0.46	0.52	0	0.02	0.10	EW	EW	NM	0.00
EW29	NM	0.01	0	0	0	0.01	0	0	0	0.01	0.01	0.01	NM	0.01
EW30	0.04	0.05	0.04	0.02	0.12	0.11	0	0	NM	0.22	EW	EW	NM	0.01
EW31	0.01	0.01	0	0	0.01	0	0	0	0.01	0.01	0.01	EW	NM	0.01
EW34	0.01	0.01	0.02	0	0	0	0	0	0.01	0	0	0.01	NM	NM
EW35	0.01	0.01	0	0	0	0	0.01	0	0.01	0	0	0.01	NM	0.01
EW36	NA	NA	NA	0	0	0	0	0	0.01	0.01	0.02	0.01	NM	0
EW37	0.02	0.01	0.01	0	0.01	0	0.01	0	NM	0	0.01	NM	NM	NM
EW40	0	0	0	0	0	0	0	0	0	0	0.01	0.01	NM	0.01
EW41	0	0	0	0	0	0	0.01	0	0	0.01	0.01	0	NM	0.01
EW42	NM	0	0.11	0.2	0.22	0.32	0.01	0	0	0.01	0	0.04	NM	0.02
EW43	0	0	0	0	0	0	0.01	0	0	NM	0.01	0.01	NM	0.01
EW47	0.02	0.25	0.5	0.2	0.26	0.26	0.02	0	0.15	0.17	EW	EW	NM	0.02
EW50	0	0	0	0	0	0.29	0	0	0.01	0	0	EW	NM	0.01
EW51	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	NM	dry
EW60	0.01	0	0	0	0	0	0.01	0	0.01	0	0.01	0.01	NM	0.01
EW61	0.01	0	0.01	0	0	0	0.01	0	0.03	0	0.01	0.01	NM	0.01
EW62	0.01	0	0.01	0	0.27	0	0	0	0	0.01	0	0.01	NM	0
EW63	0	0	0	0	0.01	0.25	0.24	0.80	0.85	0.07	0.45	EW	NM	0.01
EW64	0.01	0	0.02	0	0	0	0.25	0	0	0.01	0.02	0.01	NM	0.01
EW65	0.01	0	0.01	0	0.01	0.01	0.01	0	0	0.01	0.03	0	NM	0.01
EW66	0.01	0	0.01	0	0.06	0.04	0.01	0	0	0	0.01	0.02	NM	0.01
EW67	0	0	0	0	0.02	0.06	0.01	0	0	0	0.01	0.01	NM	0
EW68	0	0.01	0.01	0	0.01	0	0.01	0	0	0	0	0	NM	0.01
EW69	0	0	0	0	0	0	0	0	0	0	0	0	NM	0.01
EW70	0	0	0	0	0.01	0.1	0.01	0	0	0.04	0.01	0.01	NM	0.01

BIOSLURPER SYSTEM
LNAPL THICKNESS MEASUREMENTS
SWMU7
NS MAYPORT

Well ID	Baseline	8/21/97	9/4/97	9/16/97	11/12/97	12/4/97	1/5/98	2/18/98 - 2/19/98	3/16/98 - 3/17/98	4/27/98	5/21/98	6/17/98	6/30/98	7/13/98
EW71	0	0	0	0	0	0.01	0.28	0.17	0.32	0.33	0.50	0.30	NM	0.43
EW72	0	0	0	0	0.06	0.05	0.09	0.54	0.13	0.20	0.50	0.08	NM	0.05
EW73	0	0	0	0	0.36	0.28	1.07	0	0	0	0.01	0.01	NM	0.01
EW74	0	0	0	0	0.5	0.1	0.56	0	0.54	0.05	0	0.02	NM	0
EW75	0.01	0	0	0	0.01	0	0.4	0.04	0.25	0	EW	EW	NM	0
EW76	NM	0	0	0	0.4	0.39	0.64	0	0	0.01	EW	EW	NM	0.01
EW77	0.43	0	0.1	0.09	0.41	0.51	1.63	0	0	0.02	EW	EW	NM	0.01
EW78	0	0.01	0	0	0.43	0.2	0.91	0.75	1.59	0.54	0.5	0.39	NM	0.03
EW79	0	0.01	Broken	Broken	0.08	0.1	0.78	0	0	0.01	0.01	0.13	NM	0.03
EW80	0.005	0	0.01	0	0.01	0	0.01	0	0.01	0.01	0.02	0.01	NM	0.01
EW81	0	0	0	0	0.01	0	0.01	0	0.01	0	0.01	0.01	NM	0.01
EW82	0.01	0.01	0.02	0.01	0.02	0	0.01	0	0	0	0.04	0.01	NM	0.01
EW96	NM	0.02	0.02	0.02	0.02	0.01	0	0	0	0	0	0.01	0.01	0
EW97	0	0.01	0.03	0.02	0.01	0.08	0.01	0.01	0	0	NM	dry	NM	0
EW98	0.01	0.01	0.02	0.02	0	0.02	0.01	0.01	0	0.01	EW	0.01	NM	0.01
EW99	0	0.01	0	0	0	0	0.01	0	0	0.01	0.01	0.01	NM	0
EW100	0	0.01	0	0	0.01	0	0.01	0.01	0.01	0	0	0	NM	0.01
EW101	0	0.02	0.05	0.03	0	0	0	0	0.01	0	0.01	0	0.01	0.01
EW102	0.01	0	0	0	0	0.02	0	0.01	0	0.01	0.01	0.01	0.01	0
EW103	0	0.01	0.01	0	0	0	0.17	0.01	0.01	0	0.03	0.01	0.01	0.01
EW104	0.01	0.11	0.13	0.12	0	0.03	0.03	0.39	0	0	EW	0	0.01	0
EW105	0	0	0.01	0	0.04	0.04	0.14	0	0.01	0	EW	0.01	NM	0.01
EW106	NM	0.01	0.01	0	0.03	0	0.1	0	0.01	0.01	0.01	0.01	0.01	0.01
EW107	0	0	0	0	0.01	0	0.06	0.01	0.01	0	0.02	0.01	0.01	0.01
EW108	0	0.02	0.02	0.04	0.01	0.01	0.32	0	0.01	0	0.02	0.01	0.01	0.01
EW109	0.11	0.02	0.03	0.01	0.03	0.07	0.62	0	0.01	0.01	0.40	0.00	0.09	0.03
EW110	0.01	0.01	0	0	0.3	0.03	1.16	0	0.01	0	0	0.01	0.01	0.01
EW111	0	0.01	0	0	0.18	0.03	0.77	0	0	0	0.02	0.01	0	0.01
EW112	0	0.01	0	0	0.24	0.31	0.46	0	0	0	0.01	0	0	0
EW113	0.01	0.01	0	0	0.16	0.32	0.27	0	0.14	0	0.30	0.27	NM	0.07
EW114	0	0.03	0.02	0.01	1.16	1.45	2.38	0	0	0	0	0.01	0.01	0.01
EW115	NM	0.38	0.44	0.87	0.27	0.17	0.29	0.01	0	0	0	0	0.01	0
EW116	0.01	0.01	0.01	0.02	0.05	0.04	0.03	0	0	0	0.01	0.01	0.01	0.01
EW117	NM	NM	NM	0	0.39	0.24	0.77	0	0	0.01	0	0.01	0	0
EW118	0.01	0.02	0.01	0.02	0	0.33	0.61	0	0.07	0	0	0.01	0.02	0
EW119	0.01	0.03	0.02	0.04	0	0.1	0	0	0	0	0	0.01	0.01	0.05
EW120	0	0.01	0	0	0.01	0	0	0	0.01	0.01	0	0.01	NM	0
EW121	0	0.01	0.01	0.01	0	0	0	0	0.02	0	0	0.01	NM	0.01
EW122	0	NM	0.01	0	0	0	0	0	0	0	0	0	0.01	0.01
EW123	0	0.01	0	0	0	0	0	0	0	0	0	0.01	0	0

BIOSLURPER SYSTEM
LNAPL THICKNESS MEASUREMENTS
SWMU7
NS MAYPORT

Well ID	Baseline	8/21/97	9/4/97	9/16/97	11/12/97	12/4/97	1/5/98	2/18/98 - 2/19/98	3/16/98 - 3/17/98	4/27/98	5/21/98	6/17/98	6/30/98	7/13/98
EW124	0	0	0.01	0	0.06	0.03	0.1	0	0	0	0	0.01	0	0
EW125	0	0.01	0.02	0.02	0.01	0	0.01	0	0	0	0	0.01	0.01	0
EW126	0	0.01	0.02	0	0.01	0	0	0	0.01	0	0	0	0.01	0.01
EW127	0	0.01	0.02	0	0	0	0	0.01	0.01	0	0	0.01	0	0.01
EW128	0	0.02	0.01	0	0	0	0	0	0.01	0.01	0	0.01	0.05	0.01
EW129	0.01	0	0.01	0	0	0	0.01	0	0.01	0	0	0.01	0.01	0.01
EW130	NM	0	0	0	0.01	0.01	0.01	0	0.01	0	0	0.01	0.01	0.01
EW131	0	0.02	0.01	0	0	0	0	0.01	0	0	0.01	0.01	NM	0
EW132	0	0.01	0.01	0	0.01	0	0	0	0.01	0.01	0.02	0.01	0.01	0.01
EW133	0	0.01	0.01	0	0.04	0.07	0.01	0	0	0	0.03	0	0.02	0
EW134	0	0.02	0.01	0	0	0	0	0.01	0.01	0	0	0.01	0.01	0.01
EW135	0	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0	0	0.01	0	0.01	0
EW136	0	0.02	0.01	0	0	0	0.01	0	0.01	0	0	0.01	0.01	0.01
EW137	0	0.01	0.01	0	0	0	0.01	0	0.01	0.01	0	0	0.01	0.01
EW138	0	NM	0.01	0	0.04	0.06	1.03	0	0	0.01	0	0	0	0
EW139	0	0	0	0	0	0	0.01	0.01	0.01	0.01	0	0.01	0.01	0.01
EW140	0	0	0.01	0	0.03	0.09	0.02	0	0.04	0	0	0.01	0	0.01
EW141	0	0.01	0.01	0	0.01	0	0.01	0.01	0.01	0	0	0.01	NM	0.01
Sump 1	0.1	NM	NM	NM	NM	0.05	NM	0.03	0.06	0.03	NM	0.08	NM	0.01
Sump 2	0.22	NM	NM	NM	NM	0.1	NM	0.16	0.22	0.18	NM	0.15	NM	0.03
Sump 3	0.02	NM	NM	NM	NM	0.04	NM	0.10	0.13	0.10	NM	0.40	NM	0.07
Sump 4	0	NM	NM	NM	NM	0	NM	0.02	0	0.01	NM	0.01	NM	0.09
Sump 5	0	NM	NM	NM	NM	NM	NM	0.01	NM	NM	NM	NM	NM	0.03
TW4	0.4	NM	0.01		0.01	0	0.01	0	0	0	0	0.01	NM	0.01
TW1A	7.89	0.2	0.3	0.7	0.01	0.29	0.14	0	0.16	0.15	0.02	EW	NM	0.01
TW2A	NM	0	0.13	0.2	0.56	0.1	0.35	2.28	0.64	0.23	EW	EW	NM	dry
TW3A	0.08	dry	dry	dry	0	dry	dry	0.55	dry	dry	dry	dry	NM	dry
TW8	NM	0.02	0.04	0.03	0.03	0.25	0.44	2.85	2.50	0.02	0.04	EW	NM	0.04
TW10	NM	NM	NM	NM	0.14	0.11	0.01	NM	0	0	0	0.01	0.01	0
TW11	NM	NM	NM	NM	2.33	2.40	1.91	0.01	NM	0.46	0	0.20	0.06	0.02
MW15I	NM	NM	NM	NM	NM	0	NM	NM	NM	0	NM	EW	NM	NM
MW15S	NM	NM	NM	NM	NM	0	NM	NM	NM	0.01	NM	EW	NM	NM
MW16S	NM	NM	NM	NM	NM	0	NM	NM	NM	0	NM	NM	NM	NM
MW11S	NM	NM	NM	NM	NM	0.83	1.31	NM	0.03	0.42	EW	NM	NM	NM
MW7S	NM	NM	NM	NM	NM	1.29	0.99	NM	0.02	0	0.01	NM	NM	0

Shaded areas represent wells which are being biovented.

NM = not measured

EW = extraction well

LNAPL = Light Non-Aqueous Phase Liquid

ATTACHMENT B
ANALYTICAL LABORATORY REPORTS FOR AIR SAMPLES

ANALYTICAL RESULTS FROM PRETREATMENT AIR SAMPLES
TO-14 ANALYSES
BIOSLURPER SYSTEM
SWMU 7
NS MAYPORT

Compound	Sample MP06350 1/15/98	Sample MP06374 2/19/98	Sample MP6432 3/12/98
Propylene	52.30	4.78	1.68
Chlorodifluromethane	87.20	ND	2.91
Dichlorodifluoromethane	40.60	3.65	ND
Chloromethane	75.20	8.57	4.54
Freon 114	ND	ND	ND
Vinyl Chloride	ND	ND	ND
1, 3-Butadiene	351.00	ND	ND
Bromomethane	ND	ND	ND
Chloroethane	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND
Pentane	ND	ND	ND
1, 1-Dichloroethylene	ND	ND	ND
Methylene Chloride	110.00	ND	ND
3-Chloro-1-Propene	ND	ND	ND
Freon 113	57.60	ND	ND
Cis-1, 2-Dichloroethene	ND	ND	ND
1, 1-Dichloroethane	ND	ND	ND
2-Chloro-1, 3-Butadiene	ND	ND	ND
Trans-1, 2-Dichloroethene	ND	ND	ND
Hexane	21.10	ND	ND
Chloroform	ND	ND	ND
1, 2-Dichloroethane	ND	ND	ND
1, 1, 1-Trichloroethane	ND	ND	ND
Benzene	26.70	ND	ND
Carbon Tetrachloride	ND	ND	ND
1, 2-Dichloropropane	ND	ND	ND
Bromodichloromethane	ND	ND	ND
Trichloroethene	ND	ND	ND
Heptane	27.90	ND	ND
Cis-1, 3-Dichloropropene	ND	ND	ND
Trans-1, 3-Dichloropropene	ND	ND	ND
1, 1, 2-Trichloroethane	ND	ND	ND
Toluene	45.60	ND	ND
Dibromochloromethane	ND	ND	ND
1, 2-Dibromoethane	ND	ND	ND
Octane	66.00	ND	ND

ANALYTICAL RESULTS FROM PRETREATMENT AIR SAMPLES
TO-14 ANALYSES
BIOSLURPER SYSTEM
SWMU 7
NS MAYPORT

Compound	Sample MP06350 1/15/98	Sample MP06374 2/19/98	Sample MP6432 3/12/98
Tetrachloroethene	37.90	ND	ND
Chlorobenzene	ND	ND	ND
Ethylbenzene	73.20	ND	ND
M, P-Xylenes	151.00	2.69	ND
Bromoform	ND	ND	ND
Styrene	ND	ND	ND
1, 1, 2, 2-Tetrachloroethane	ND	ND	ND
O-Xylene	34.00	ND	ND
1, 3, 5-Trimethylbenzene	ND	3.05	4.90
Alpha-Methyl Styrene	ND	ND	ND
Benzyl Chloride	ND	ND	ND
1, 2, 4-Trimethylbenzene	1,260.00	14.70	18.50
1, 3-Dichlorobenzene	ND	ND	ND
1, 4-Dichlorobenzene	428.00	ND	ND
1, 2-Dichlorobenzene	ND	ND	ND
1, 2, 4-Trichlorobenzene	ND	4.15	ND
Hexachlorobutadiene	ND	ND	ND
Methanol	427.00	12.60	ND
Ethanol (Ethyl Alcohol)	246.00	ND	ND
Isopropyl Alcohol	155.00	ND	ND
1-Butanol	ND	ND	ND
Acetone	288.00	12.90	ND
Methyl Ethyl Ketone	ND	ND	ND
Methyl Isobut'Ketone	ND	ND	ND
2-Hexanone	ND	ND	ND
Cyclohexanone	ND	ND	ND
Acetophenone	ND	ND	ND
Acrolein	ND	ND	ND
Acetonitrile	ND	ND	ND
Acrylonitrile	ND	ND	ND
Propionitrile	ND	ND	ND
Methacrylonitrile	ND	ND	ND
Benzonitrile	ND	ND	ND
Ether	ND	ND	ND
Methyl Tert-Butyl Ether	ND	ND	ND
Ethyl Tert-Butyl Ether	ND	ND	ND

ANALYTICAL RESULTS FROM PRETREATMENT AIR SAMPLES
TO-14 ANALYSES
BIOSLURPER SYSTEM
SWMU 7
NS MAYPORT

Compound	Sample MP06350 1/15/98	Sample MP06374 2/19/98	Sample MP6432 3/12/98
Tetrahydrofuran	1,400.00	ND	ND
Vinyl Acetate	ND	ND	ND
1,4-Dioxane	ND	ND	ND
Ethyl Acrylate	ND	ND	ND
Methyl Methacylate	ND	ND	ND
2-Nitropropane	ND	ND	ND
Nitrobenzene	ND	ND	ND
Carbon Disulfide	ND	ND	ND
N-Butane	ND	ND	2.52
IsoButane	ND	5.20	ND
1-Butene	ND	5.34	2.21
Trans-2-Butene	ND	ND	ND
Cis-2-Butene	ND	ND	ND
3-Methyl-1-Butene	ND	ND	ND
Isopentane	69.60	1.56	ND
1-Pentene	ND	ND	ND
Isoprene	ND	ND	ND
Trans-2-Pentene	ND	ND	ND
Cis-2-Pentene	ND	ND	ND
2-Methyl-2-Butene	16.40	ND	ND
Cyclopentene	ND	ND	ND
4-Methyl-1-Pentene	ND	ND	ND
Cyclopentane	ND	ND	ND
2,2-Dimethylbutane	ND	ND	ND
2-Methyl Pentane	47.30	ND	ND
3-Methyl Pentane	42.60	ND	ND
2-Methyl-1-Pentene	ND	ND	ND
Cis-2-Hexene	ND	ND	ND
Trans-2-Hexene	ND	ND	ND
Methylcyclopentane	86.80	ND	ND
2, 3-Dimethylbutane	101.00	ND	ND
Cyclohexane	140.00	ND	ND
2-Methyl Hexane	23.40	ND	ND
2, 3-Dimethylpentane	88.80	ND	ND
3-Methyl Hexane	255.00	ND	ND
Isooctane	179.00	ND	ND

ANALYTICAL RESULTS FROM PRETREATMENT AIR SAMPLES
TO-14 ANALYSES

BIOSLURPER SYSTEM
SWMU 7
NS MAYPORT

Compound	Sample MP06350 1/15/98	Sample MP06374 2/19/98	Sample MP6432 3/12/98
Methylcyclohexane	1,160.00	ND	5.83
2, 3, 4-Trimethylpentane	143.00	ND	ND
2-Methyl Heptane	189.00	ND	ND
3-Methyl Heptane	556.00	ND	3.37
Nonane	60.20	ND	ND
Cumene	384.00	ND	3.45
N-Propylbenzene	855.00	8.45	10.20
Alph-Pinene	ND	ND	ND
Beta-Pinene	ND	ND	ND
TVOCs	**9,858.40**	**87.64**	**60.11**

Values in ug/m^3

ANALYTICAL RESULTS FROM POST-TREATMENT AIR SAMPLES
TO-14 ANALYSES
BIOSLURPER SYSTEM
SWMU 7
NS MAYPORT

Compound	Sample MP06351 1/15/98	Sample MP06375 2/19/98	Sample MP06431 3/12/98
Propylene	9.43	2.78	1.44
Chlorodifluromethane	0.50	ND	1.51
Dichlorodifluoromethane	0.66	ND	1.17
Chloromethane	3.12	2.59	0.95
Freon 114	ND	ND	ND
Vinyl Chloride	ND	ND	ND
1, 3-Butadiene	ND	ND	ND
Bromomethane	ND	ND	ND
Chloroethane	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND
Pentane	ND	ND	ND
1, 1-Dichloroethylene	ND	ND	ND
Methylene Chloride	ND	ND	ND
3-Chloro-1-Propene	ND	ND	ND
Freon 113	ND	ND	ND
Cis-1, 2-Dichloroethene	ND	ND	ND
1, 1-Dichloroethane	ND	ND	ND
2-Chloro-1, 3-Butadiene	ND	ND	ND
Trans-1, 2-Dichloroethene	ND	ND	ND
Hexane	ND	ND	ND
Chloroform	ND	ND	ND
1, 2-Dichloroethane	ND	ND	ND
1, 1, 1-Trichloroethane	ND	ND	ND
Benzene	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND
1, 2-Dichloropropane	ND	ND	ND
Bromodichloromethane	ND	ND	ND
Trichloroethene	ND	ND	ND
Heptane	ND	5.50	ND
Cis-1, 3-Dichloropropene	ND	ND	ND
Trans-1, 3-Dichloropropene	ND	ND	ND
1, 1, 2-Trichloroethane	ND	ND	ND
Toluene	ND	16.70	ND
Dibromochloromethane	ND	ND	ND
1, 2-Dibromoethane	ND	ND	ND
Octane	ND	5.84	ND

ANALYTICAL RESULTS FROM POST-TREATMENT AIR SAMPLES
TO-14 ANALYSES
BIOSLURPER SYSTEM
SWMU 7
NS MAYPORT

Compound	Sample MP06351 1/15/98	Sample MP06375 2/19/98	Sample MP06431 3/12/98
Tetrachloroethene	ND	ND	0.55
Chlorobenzene	ND	ND	ND
Ethylbenzene	ND	7.36	ND
M, P-Xylenes	ND	14.00	ND
Bromoform	ND	ND	ND
Styrene	ND	ND	ND
1, 1, 2, 2-Tetrachloroethane	ND	ND	ND
O-Xylene	ND	ND	ND
1, 3, 5-Trimethylbenzene	ND	19.40	ND
Alpha-Methyl Styrene	ND	ND	ND
Benzyl Chloride	ND	3.10	ND
1, 2, 4-Trimethylbenzene	ND	87.50	ND
1, 3-Dichlorobenzene	ND	ND	ND
1, 4-Dichlorobenzene	ND	ND	ND
1, 2-Dichlorobenzene	ND	ND	ND
1, 2, 4-Trichlorobenzene	ND	6.41	ND
Hexachlorobutadiene	ND	ND	ND
Methanol	55.90	18.00	4.55
Ethanol (Ethyl Alcohol)	6.66	ND	ND
Isopropyl Alcohol	6.37	ND	ND
1-Butanol	ND	ND	ND
Acetone	11.00	34.50	4.30
Methyl Ethyl Ketone	ND	22.50	ND
Methyl Isobut'Ketone	ND	ND	ND
2-Hexanone	ND	ND	ND
Cyclohexanone	ND	ND	ND
Acetophenone	ND	ND	ND
Acrolein	ND	ND	ND
Acetonitrile	ND	ND	ND
Acrylonitrile	ND	ND	ND
Propionitrile	ND	ND	ND
Methacrylonitrile	ND	ND	ND
Benzonitrile	ND	ND	ND
Ether	ND	ND	ND
Methyl Tert-Butyl Ether	ND	ND	ND
Ethyl Tert-Butyl Ether	ND	ND	ND

ANALYTICAL RESULTS FROM POST-TREATMENT AIR SAMPLES
TO-14 ANALYSES
BIOSLURPER SYSTEM
SWMU 7
NS MAYPORT

Compound	Sample MP06351 1/15/98	Sample MP06375 2/19/98	Sample MP06431 3/12/98
Tetrahydrofuran	ND	140.00	ND
Vinyl Acetate	ND	ND	ND
1,4-Dioxane	ND	ND	ND
Ethyl Acrylate	ND	ND	ND
Methyl Methacylate	ND	ND	ND
2-Nitropropane	ND	ND	ND
Nitrobenzene	ND	ND	ND
Carbon Disulfide	ND	ND	ND
N-Butane	1.89	5.42	0.15
IsoButane	ND	15.00	1.40
1-Butene	ND	16.40	0.82
Trans-2-Butene	ND	ND	ND
Cis-2-Butene	ND	ND	ND
3-Methyl-1-Butene	ND	ND	ND
Isopentane	2.03	4.80	ND
1-Pentene	0.83	ND	ND
Isoprene	ND	ND	ND
Trans-2-Pentene	ND	ND	ND
Cis-2-Pentene	ND	ND	ND
2-Methyl-2-Butene	ND	ND	ND
Cyclopentene	ND	ND	ND
4-Methyl-1-Pentene	ND	ND	ND
Cyclopentane	ND	ND	ND
2,2-Dimethylbutane	ND	ND	ND
2-Methyl Pentane	ND	2.76	ND
3-Methyl Pentane	ND	4.55	ND
2-Methyl-1-Pentene	ND	ND	ND
Cis-2-Hexene	ND	ND	ND
Trans-2-Hexene	ND	ND	ND
Methylcyclopentane	ND	2.66	ND
2, 3-Dimethylbutane	ND	2.15	ND
Cyclohexane	ND	2.73	ND
2-Methyl Hexane	ND	ND	ND
2, 3-Dimethylpentane	ND	ND	ND
3-Methyl Hexane	ND	7.34	ND
Isooctane	0.83	6.13	ND

ANALYTICAL RESULTS FROM POST-TREATMENT AIR SAMPLES
TO-14 ANALYSES

BIOSLURPER SYSTEM
SWMU 7
NS MAYPORT

Compound	Sample MP06351 1/15/98	Sample MP06375 2/19/98	Sample MP06431 3/12/98
Methylcyclohexane	ND	27.20	ND
2, 3, 4-Trimethylpentane	ND	6.08	ND
2-Methyl Heptane	ND	4.04	ND
3-Methyl Heptane	ND	7.36	ND
Nonane	ND	9.59	ND
Cumene	ND	28.00	ND
N-Propylbenzene	ND	76.50	ND
Alph-Pinene	ND	ND	ND
Beta-Pinene	ND	ND	ND
TVOCs	**99.22**	**614.89**	**16.84**

Values in ug/m^3

ANALYTICAL RESULTS FROM PRE- AND POST-TREATMENT AIR SAMPLES
TO-3 ANALYSES
BIOSLURPER SYSTEM
SWMU 7
NS MAYPORT

Sample Location	Date	BEI Sample ID	Benzene	Ethylbenzene	Toluene	Total Xylenes	Total VOA	TLPH
Pre-Dehumidifier	2/5/98	MP6364	<0.5	0.62	<0.5	3.31	3.93	170
North Trailer Discharge	6/17/98	MP6550	<0.5	<0.5	<0.5	<0.5	<2.5	55
South Trailer Discharge	6/17/98	MP6549	<0.5	<0.5	<0.5	0.53	0.53	120
ID Blower Outlet (Post-Dehumidifier)	2/5/98	MP6365	<0.5	<0.5	<0.5	2.14	2.14	130
	2/11/98	MP6367	1.3	<0.5	1.4	<1	2.70	69
	4/8/98	MP6360	<0.5	<0.5	<0.5	<1	<2.5	42
	4/14/98	MP6463	<0.5	<0.5	<0.5	<1	<2.5	33
	5/21/98	MP6507	<0.5	<0.5	<0.5	<1	<2.5	20
Carbon #2 Outlet	2/5/98	MP6366	<0.5	<0.5	<0.5	<1	<2.5	17
	2/11/98	MP6368	<0.5	<0.5	<0.5	<1	<2.5	<10
	4/8/98	MP6359	<0.5	<0.5	<0.5	<1	<2.5	<10
	4/14/98	MP6462	<0.5	<0.5	<0.5	<1	<2.5	<10
	5/21/98	MP6508	<0.5	<0.5	<0.5	<1	<2.5	<10

Notes: 1. All concentrations reported in milligrams per cubic meter.

2. In computing "Total" categories, all non-detected concentrations were assumed to be zero.

Total VOA = Sum of Benzene, Ethylbenzene, Toluene, and Total Xylenes constituents.

SVE = Soil Vapor Extraction

Thermox = Thermal Oxidizer

< = Analyte not detected at the detection level shown

14817

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ECO Laboratories

DHRS Certification No. E82277

CLIENT : Bechtel Environmental, Inc.
ADDRESS: NAS Cecil Field
P.O. Box 171
Jacksonville, FL 32215

REPORT # : JR1887
DATE SUBMITTED: June 18, 1998
DATE REPORTED : June 22, 1998

ATTENTION: Mr. Dane Cutshaw

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: NS MAYPORT/BEI

SWMU-7 Weekly

06/17/98

#1 - MP06550 @ 16:50
#2 - MP06549 @ 16:00

RECEIVED
JUL 27 1998
V. HERMANN BAUER

PROJECT MANAGER _____
Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1887
DATE REPORTED: June 22, 1998
REFERENCE : NS MAYPORT/BEI
PROJECT NAME : SWMU-7 Weekly

RESULTS OF ANALYSIS

PA METHOD 18 - VOLATILE AROMATICS IN AIR	MP06550	MP06549	Units
enzene	0.50 U	0.50 U	mg/m^3
oluene	0.50 U	0.50 U	mg/m^3
thylbenzene	0.50 U	0.50 U	mg/m^3
-Xylene & p-Xylene	0.50 U	0.50 U	mg/m^3
-Xylene	0.50 U	**0.53**	mg/m^3
urrogate:	% RECOV	% RECOV	LIMITS
romofluorobenzene	*	*	72-127
ate Analyzed	06/18/98	06/18/98	

PA METHOD 18 - IGHT PETR. HYDROCARBONS	MP06550	MP06549	Units
LPH	**55**	**120**	mg/m^3
urrogate:	% RECOV	% RECOV	LIMITS
romofluorobenzene	*	*	73-127
ate Analyzed	06/18/98	06/18/98	

= Surrogate recovery unavailable due to matrix interference.
= Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1887
DATE REPORTED: June 22, 1998
REFERENCE : NS MAYPORT/BEI
PROJECT NAME : SWMU-7 Weekly

RESULTS OF ANALYSIS

PA METHOD 18 - VOLATILE AROMATICS IN AIR	LAB BLANK	Units
enzene	0.50 U	mg/m^3
oluene	0.50 U	mg/m^3
Ethylbenzene	0.50 U	mg/m^3
-Xylene & p-Xylene	0.50 U	mg/m^3
-Xylene	0.50 U	mg/m^3
urrogate:	**% RECOV**	**LIMITS**
romofluorobenzene	106	72-127
ate Analyzed	06/18/98	

PA METHOD 18 - IGHT PETR. HYDROCARBONS	LAB BLANK	Units
LPH	10 U	mg/m^3
urrogate:	**% RECOV**	**LIMITS**
Bromofluorobenzene	106	73-127
ate Analyzed	06/18/98	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1887
DATE REPORTED: June 22, 1998
REFERENCE : NS MAYPORT/BEI
PROJECT NAME : SWMU-7 Weekly

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 18				
Benzene	98/ 98/109	83-123	<1	22
Toluene	92/ 90/107	89-110	2	11
Ethylbenzene	80/ 76/105	72-123	5	20
p-Xylene	76/ 70/105	90-110	8	28
EPA Method 18				
TPH	98/ 98/109	83-123	<1	49

Environmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

CHAIN OF CUSTODY RECORD

Page ___ of ___

Facility Name: NS Mayport / BEI
Site Name: SWMU 7
Delivery Order No.:
Cooler/Crate No.:
Sampling Event::

SEIR No.:
COC Number:
Lab:
Field Logbook No.:
Logbook Pg. No.:

Sampled by: Dane Cutshaw (Print) Dane Cutshaw (Sign) ___ (Print) ___ (Sign)

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
NT Effluent	~~MP06549~~ MP06550	ENV	AIR	6-17-98/1650	-01	—	NA	TO-3	5-Day	NA
ST Effluent	MP06549	ENV	AIR	6-17-98/1600	01	—	NA	TO-3	5-Day	NA

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
Dane Cutshaw	C. Cohen	6-18-98	11:50	Trans to Lab
C. Olsen	[illegible]	6-18-98	14:10	Login Lab

COMMENTS/INSTRUCTIONS

PO 254-CC-2596
JR187

CONTAMINATION	YES	NO
Radiological		
Chemical		

Shipper:

Ship to:

Airbill No. ___ Traffic Report No. ___

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s., UN2910.

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories
DHRS Certification No. E82277

CLIENT : Bechtel Environmental, Inc.
ADDRESS: NAS Cecil Field
P.O. Box 171
Jacksonville, FL 32215

REPORT # : JR1498
DATE SUBMITTED: May 21, 1998
DATE REPORTED : May 27, 1998

ATTENTION: Ms. Paula Wynn

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

SWMU 7

05/21/98

#1 - MP06507 @ 13:00
#2 - MP06508 @ 13:30

RECEIVED
JUN 17 1998
V. HERMANN

PROJECT MANAGER Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1498
DATE REPORTED: May 27, 1998
PROJECT NAME : SWMU 7

RESULTS OF ANALYSIS

EPA METHOD 18 - VOLATILE AROMATICS IN AIR	MP06507	MP06508	Units
Benzene	0.50 U	0.50 U	mg/m3
Toluene	0.50 U	0.50 U	mg/m3
Ethylbenzene	0.50 U	0.50 U	mg/m3
m-Xylene & p-Xylene	0.50 U	0.50 U	mg/m3
o-Xylene	0.50 U	0.50 U	mg/m3
Surrogate:	% RECOV	% RECOV	LIMITS
Bromofluorobenzene	112	88	72-127
Date Analyzed	05/22/98	05/22/98	

EPA METHOD 18 - LIGHT PETR. HYDROCARBONS	MP06507	MP06508	Units
TLPH	20	10 U	mg/m3
Surrogate:	% RECOV	% RECOV	LIMITS
Bromofluorobenzene	112	88	73-127
Date Analyzed	05/22/98	05/22/98	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1498
DATE REPORTED: May 27, 1998
PROJECT NAME : SWMU 7

RESULTS OF ANALYSIS

EPA METHOD 18 - VOLATILE AROMATICS IN AIR	LAB BLANK	Units
Benzene	0.50 U	mg/m3
Toluene	0.50 U	mg/m3
Ethylbenzene	0.50 U	mg/m3
m-Xylene & p-Xylene	0.50 U	mg/m3
o-Xylene	0.50 U	mg/m3
Surrogate:	**% RECOV**	**LIMITS**
Bromofluorobenzene	106	72-127
Date Analyzed	05/22/98	

EPA METHOD 18 - LIGHT PETR. HYDROCARBONS	LAB BLANK	Units
TLPH	10 U	mg/m3
Surrogate:	**% RECOV**	**LIMITS**
Bromofluorobenzene	106	73-127
Date Analyzed	05/22/98	

U = Compound was analyzed for but not detected to the level shown.

CHAIN OF CUSTODY RECORD

Page ___ of ___

BECHTEL

Facility Name: [illegible]
Site Name: [illegible]
Delivery Order No.:
Cooler/Crate No.:
Sampling Event::

SEIR No.:
COC Number: [illegible]
Lab:
Field Logbook No.:
Logbook Pg. No.:

Sampled by: [illegible] Print [illegible] Sign ___ Print ___ Sign

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
Pre GNC	MPC[illegible]	ENV	AIR	5-21-98 / [illegible]	01	—	NA	TO 3	5 Day	NA
Post GNC	MPC[illegible]	ENV	AIR	5-21-98 1330	01	—	NA	TO 3	5 Day	NA

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
[illegible]	C Kohn	5-21-98	16:30	Trans to Lab
C. Kohn	[illegible]	5-21-98	17:30	Log in lab

COMMENTS/INSTRUCTIONS

PO [illegible]
JN498

CONTAMINATION	YES	NO
Radiological		
Chemical		

Shipper:

Ship to:

Airbill No. ___ Traffic Report No. ___

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

ENCO LABORATORIES
REPORT # : JR1498
DATE REPORTED: May 27, 1998
PROJECT NAME : SWMU 7

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 18				
Benzene	95/ 99/107	83-123	4	22
Toluene	95/ 98/106	89-110	3	11
Ethylbenzene	86/ 90/106	72-123	4	20
o-Xylene	87/ 92/ 97	90-110	6	28
EPA Method 18				
TLPH	95/ 99/107	83-123	4	49

Environmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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14482-1

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories

DHRS Certification No. E82277

CLIENT : Bechtel Environmental, Inc.
ADDRESS: NAS Cecil Field
P.O. Box 171
Jacksonville, FL 32215

REPORT # : JR1005
DATE SUBMITTED: April 17, 1998
DATE REPORTED : April 20, 1998

ATTENTION: Dane Cutshaw

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

SWMU-7 Weekly Air Sampling

04/14/98

#1 - MP06462 @ 16:20
#2 - MP06463 @ 16:00

RECEIVED
APR 23 1998
V. HERMANN BAUER

PROJECT MANAGER Scott D. Martin
Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1005
DATE REPORTED: April 20, 1998
PROJECT NAME : SWMU-7 Weekly Air Sampling

RESULTS OF ANALYSIS

EPA METHOD 18 - VOLATILE AROMATICS IN AIR	MP06462	MP06463	Units
Benzene	0.50 U	0.50 U	mg/m3
Toluene	0.50 U	0.50 U	mg/m3
Ethylbenzene	0.50 U	0.50 U	mg/m3
m-Xylene & p-Xylene	0.50 U	0.50 U	mg/m3
o-Xylene	0.50 U	0.50 U	mg/m3
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Bromofluorobenzene	89	*	50-150
Date Analyzed	04/17/98	04/17/98	

EPA METHOD 18 - LIGHT PETR. HYDROCARBONS	MP06462	MP06463	Units
TLPH	10 U	33	mg/m3
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Bromofluorobenzene	89	*	65-135
Date Analyzed	04/17/98	04/17/98	

* = Surrogate recovery unavailable due to matrix interference.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1005
DATE REPORTED: April 20, 1998
PROJECT NAME : SWMU-7 Weekly Air Sampling

RESULTS OF ANALYSIS

EPA METHOD 18 - VOLATILE AROMATICS IN AIR	LAB BLANK	Units
Benzene	0.50 U	mg/m3
Toluene	0.50 U	mg/m3
Ethylbenzene	0.50 U	mg/m3
m-Xylene & p-Xylene	0.50 U	mg/m3
o-Xylene	0.50 U	mg/m3
Surrogate:	**% RECOV**	**LIMITS**
Bromofluorobenzene	101	50-150
Date Analyzed	04/17/98	

EPA METHOD 18 - LIGHT PETR. HYDROCARBONS	LAB BLANK	Units
TLPH	10 U	mg/m3
Surrogate:	**% RECOV**	**LIMITS**
Bromofluorobenzene	101	65-135
Date Analyzed	04/17/98	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1005
DATE REPORTED: April 20, 1998
PROJECT NAME : SWMU-7 Weekly Air Sampling

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 18				
Benzene	97/ 91/112	84-123	6	23
Toluene	92/ 93/110	91-110	1	12
Ethylbenzene	82/ 78/111	77-121	5	21
EPA Method 18				
TPH	97/ 91/112	50-150	6	23

Environmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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CHAIN OF CUSTODY RECORD

Page ___ of ___

BECHTEL

Facility Name: BEI / NS Mayport
Site Name: SWMU 7
Delivery Order No.:
Cooler/Crate No.:
Sampling Event:: Weekly Air Sampling

SEIR No.:
COC Number: MP087
Lab:
Field Logbook No.:
Logbook Pg. No.: 1

Sampled by: Dane Cutshaw (Print) Dane Cutshaw (Sign) ___ (Print) ___ (Sign)

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
SWMU 7	MP06462	ENV	Air	4-14-98/1620	01	—	NA	~~[illegible]~~ DC TO-3	5-Day	NA
SWMU 7	MP06463	ENV	Air	4-14-98/1600	01	—	NA	TO-3	5-Day	NA

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
Dane Cutshaw	C. Cohn	4/16/98	11:00	Trans. To Lab.
C. Cohn		4/17/98	1000	Login Lab

COMMENTS/INSTRUCTIONS

PO # 254-CC-2566

JR1005

CONTAMINATION	YES	NO
Radiological		
Chemical		

Shipper:

Ship to:

Airbill No. ___ Traffic Report No. ___

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s., UN2910

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

14479-1

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories

DHRS Certification No. E82277

CLIENT : Bechtel Environmental, Inc.
ADDRESS: NAS Cecil Field
P.O. Box 171
Jacksonville, FL 32215

REPORT # : JR9907
DATE SUBMITTED: April 10, 1998
DATE REPORTED : April 13, 1998

ATTENTION: Mr. Sam Ross

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: SWMU-7

Weekly Air Samples

04/08/98

#1 - MP06459 @ 16:45
#2 - MP06460 @ 17:00

RECEIVED
APR 16 1998
V. HERMANN BAUER

PROJECT MANAGER _____
Scott D. Martin

14479

ENCO LABORATORIES
REPORT # : JR9907
DATE REPORTED: April 13, 1998
REFERENCE : SWMU-7
PROJECT NAME : Weekly Air Samples

RESULTS OF ANALYSIS

EPA METHOD 18 - VOLATILE AROMATICS IN AIR	MP06459	MP06460	Units
Benzene	0.50 U	0.50 U	mg/m3
Toluene	0.50 U	0.50 U	mg/m3
Ethylbenzene	0.50 U	0.50 U	mg/m3
m-Xylene & p-Xylene	0.50 U	0.50 U	mg/m3
o-Xylene	0.50 U	0.50 U	mg/m3
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Bromofluorobenzene	108	*	50-150
Date Analyzed	04/10/98	04/10/98	

EPA METHOD 18 - LIGHT PETR. HYDROCARBONS	MP06459	MP06460	Units
TLPH	10 U	42	mg/m3
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Bromofluorobenzene	108	*	65-135
Date Analyzed	04/10/98	04/10/98	

* = Surrogate recovery unavailable due to matrix interference.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR9907
DATE REPORTED: April 13, 1998
REFERENCE : SWMU-7
PROJECT NAME : Weekly Air Samples

RESULTS OF ANALYSIS

EPA METHOD 18 - VOLATILE AROMATICS IN AIR	LAB BLANK	Units
Benzene	0.50 U	mg/m3
Toluene	0.50 U	mg/m3
Ethylbenzene	0.50 U	mg/m3
m-Xylene & p-Xylene	0.50 U	mg/m3
o-Xylene	0.50 U	mg/m3
Surrogate:	**% RECOV**	**LIMITS**
Bromofluorobenzene	77	50-150
Date Analyzed	04/10/98	

EPA METHOD 18 - LIGHT PETR. HYDROCARBONS	LAB BLANK	Units
TLPH	10 U	mg/m3
Surrogate:	**% RECOV**	**LIMITS**
Bromofluorobenzene	77	65-135
Date Analyzed	04/10/98	

RECEIVED
APR 16 1998
V. HERMANN BAUER

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR9907
DATE REPORTED: April 13, 1998
REFERENCE : SWMU-7
PROJECT NAME : Weekly Air Samples

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 18				
Benzene	114/115/126	84-123	<1	23
Toluene	112/113/127	91-110	<1	12
Ethylbenzene	102/105/131	77-121	3	21
EPA Method 18				
TLPH	114/115/126	50-150	<1	23

Environmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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CHAIN OF CUSTODY RECORD

14478

Facility Name: BEI Mayport NS
Site Name: SWMU 7
Delivery Order No.:
Cooler/Crate No.:
Sampling Event:: Weekly Air Samples

SEIR No.:
COC Number: MP-085
Lab:
Field Logbook No.:
Logbook Pg. No.:

Sampled by: Dane Cutshaw (Print) Dane Cutshaw (Sign) _____ (Print) _____ (Sign)

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
SWMU 7	~~MP0259~~ DC MP06459	ENV	Air	4-8-98/ 1645	C1	—	NA	TO-3	5-Day	NA
SWMU7	MP06460	ENV	Air	4-8-98/ 1700	C1	—	NA	TO-3	5-Day	NA

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
Dane Cutshaw	C. Cole	4-9-98	1630	TRANS TO LAB
C. Dick	[illegible]	4-10-98	09:00	Login Lab

COMMENTS/INSTRUCTIONS

PO 254-CC-2566

JR9907

CONTAMINATION	YES	NO
Radiological		
Chemical		

Shipper:

Ship to:

Airbill No. _____ Traffic Report No. _____

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s., UN2910.

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

ATTACHMENT C

CONTAMINANT MASS REMOVAL TABLES

BIOSLURPER
PRE/POST AIR TREATMENT MASS LOADING RATES
SWMU 7
NS MAYPORT

Location	Date	Active Bioslurper	Total Flow Rate (scfm)	Flow Rate from EWs (scfm)	Total TO-14 Constituents	TLPH	Total TO-14 Constituents Loading Rate (lb/day)	TLPH Loading Rate (lb/day)
Pre-Dehumidifier	2/5/98	N & S	140	140	NA	170	NA	2.1
North Trailer Discharge	6/17/98	---	130	120	NA	55	NA	0.6
South Trailer Discharge	6/17/98	---	100	100	NA	120	NA	1.1
ID Blower Outlet (Post Dehumdifier)	1/15/98	N & S	150[1]	150[1]	9.858	NA	0.133	NA
	2/5/98	N & S	140	140	NA	130	NA	1.6
	2/11/98	N & S	160	160	NA	69	NA	1.0
	2/19/98	N & S	70	70	0.087	NA	0.001	NA
	3/12/98	N	100	100	0.060	NA	0.001	NA
	4/8/98	N & S	150	150	NA	42	NA	0.57
	4/14/98	N & S	150	150	NA	33	NA	0.45
	5/21/98	N & S	180	160	NA	20	NA	0.29
Carbon #2 Outlet	1/15/98	N & S	150[1]	150[1]	0.099	NA	0.001	NA
	2/5/98	N & S	140	140	NA	17	NA	0.2
	2/11/98	N & S	160	160	NA	<10	NA	<0.1
	2/19/98	N & S	70	70	0.614	NA	0.004	NA
	3/12/98	N	100	100	0.016	NA	0.0001	NA
	4/8/98	N & S	150[1]	150[1]	NA	<10	NA	<0.1
	4/14/98	N & S	150[1]	150[1]	NA	<10	NA	<0.1
	5/21/98	N & S	180	160	NA	<10	NA	<0.1

Notes: 1. Estimated value, actual flow rate not recorded at time of sample.

2. All concentrations reported in milligrams per cubic meter.

3. In computing Total VOA, all non-detected concentrations were assumed to be zero.

N & S = North and South Bioslurper

TLPH = Total Light Petroleum Hydrocarbons

scfm = standard cubic feet per minute

lb/day = pound per day

ATTACHMENT D

ANALYTICAL LABORATORY REPORTS FOR EFFLUENT GROUNDWATER SAMPLES

BIOSLURPER
EFFLUENT ANALYTICAL RESULTS
SWMU 7
NS MAYPORT

Sample Location	Date	BEI Sample ID	Benzene	Ethylbenzene	Toluene	Total Xylenes	Total VOA	MTBE	TPH (ppm)	Naphthalene	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	TSS (ppm)	pH (s.u.)	COD (ppm)
AST 1 Effluent	1/20/98	MP6348	<1	<1	1	<2	1	<2	64	<50	<10	<100	2	<10	<5	<0.2	<10	<10	18	7.2	470
AST 2 Effluent	1/20/98	MP6349	<1	<1	<1	<2	<5	<2	200	<50	<10	<100	3	<10	35	<0.2	<10	<10	310	7.5	750
AST 1/2 Composite	2/4/98	MP6363	<1	<1	<1	<2	<5	<2	5,800	<200	<10	<100	3	<10	<5	<0.2	<10	<10	38	7.9	1300
	2/19/98	MP6373	<1	<1	<1	<2	<5	<2	440	<1,000	20	<100	<1	<10	78	<0.2	24	<10	28	7.2	410
	2/26/98	MP6400	<1	<1	<1	<2	<5	<2	2,000	<6,800	<10	<100	<1	<10	<6	<2	15	<10	63	8.1	40
	4/14/98	MP6461	<1	<1	<1	<2	<5	<2	410	<500	NM	NM	NM	NM	NM	NM	NM	NM	26	7.0	640
	4/30/98	MP6491	<1	<1	<1	<2	<5	<2	490	<100	<10	<100	<1	<10	<5	<0.2	<10	<10	6	7.1	270
	5/21/98	MP6509	<1	<1	<1	1.3	1.3	<2	160	<200	<10	<100	<1	<10	<5	<0.2	<10	<10	10	6.6	160
	6/25/98	MP6551	1	<1	<1	6.9	7.9	<2	49	<100	<10	<100	<1	<10	8	<0.2	<10	<10	32	7.4	240
South Bioslurper Effluent	2/12/98	MP6369	<1	<1	<1	<2	<5	<2	410	<1,000	10	<100	1	<10	9	<0.2	12	<10	110	7.7	1500
North Bioslurper Effluent	2/12/98	MP6370	<1	<1	<1	<2	<5	<2	320	<100	<10	<100	<1	<10	<5	<0.2	10	<100	35	7.6	260

Notes: 1. All values reported in parts per billion, except as noted.

2. In computing Total VOA, all non-detected concentrations were assumed to be zero.

Total VOA = Sum of Benzene, Ethylbenzene, Toluene, and Total Xylenes constituents

MTBE = Methyl Tert-Butyl Ether

< = Analyte not detected at the detection level shown

ppm = parts per million

s.u. = standard units

14825

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210
www.encolabs.com

ENCO Laboratories

DHRS Certification No. E82277

LIENT : Bechtel Environmental, Inc.
ADDRESS: NAS Cecil Field
P.O. Box 171
Jacksonville, FL 32215

REPORT # : JR2006
DATE SUBMITTED: June 25, 1998
DATE REPORTED : July 15, 1998

TTENTION: Ms. Paula Wynn

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: SWMU-7

Monthly Effluent Water

06/25/98

#1 - MP06551 @ 09:30

RECEIVED
JUL 29 1998
V. HI

ROJECT MANAGER Scott D Mart
Scott D. Martin

14825

ENCO LABORATORIES
REPORT # : JR2006
DATE REPORTED: July 15, 1998
REFERENCE : SWMU-7
PROJECT NAME : Monthly Effluent Water

RESULTS OF ANALYSIS

PA METHOD 601 - OLATILE HALOCARBONS	MP06551	LAB BLANK	Units
ichlorodifluoromethane	1.0 U	1.0 U	µg/L
hloromethane	2.0 U	2.0 U	µg/L
inyl Chloride	1.0 U	1.0 U	µg/L
romomethane	1.0 U	1.0 U	µg/L
hloroethane	2.0 U	2.0 U	µg/L
richlorofluoromethane	2.0 U	2.0 U	µg/L
,1-Dichloroethene	1.0 U	1.0 U	µg/L
ethylene Chloride	2.0 U	2.0 U	µg/L
-1,2-Dichloroethene	1.0 U	1.0 U	µg/L
,1-Dichloroethane	1.0 U	1.0 U	µg/L
-1,2-Dichloroethene	1.0 U	1.0 U	µg/L
hloroform	1.0 U	1.0 U	µg/L
,1,1-Trichloroethane	1.0 U	1.0 U	µg/L
arbon Tetrachloride	1.0 U	1.0 U	µg/L
,2-Dichloroethane	1.0 U	1.0 U	µg/L
richloroethene	1.0 U	1.0 U	µg/L
,2-Dichloropropane	1.0 U	1.0 U	µg/L
romodichloromethane	1.0 U	1.0 U	µg/L
-1,3-Dichloropropene	1.0 U	1.0 U	µg/L
-1,3-Dichloropropene	1.0 U	1.0 U	µg/L
,1,2-Trichloroethane	1.0 U	1.0 U	µg/L
etrachloroethene	1.0 U	1.0 U	µg/L
ibromochloromethane	1.0 U	1.0 U	µg/L
hlorobenzene	1.0 U	1.0 U	µg/L
romoform	1.0 U	1.0 U	µg/L
,1,2,2-Tetrachloroethane	1.0 U	1.0 U	µg/L
,3-Dichlorobenzene	1.0 U	1.0 U	µg/L
,4-Dichlorobenzene	1.0 U	1.0 U	µg/L
,2-Dichlorobenzene	1.0 U	1.0 U	µg/L
urrogate:	**% RECOV**	**% RECOV**	**LIMITS**
romofluorobenzene	86	71	37-161
ate Analyzed	07/01/98	06/30/98	

= Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR2006
DATE REPORTED: July 15, 1998
REFERENCE : SWMU-7
PROJECT NAME : Monthly Effluent Water

RESULTS OF ANALYSIS

PA METHOD 602 - OLATILE AROMATICS	MP06551	LAB BLANK	Units
ethyl tert-butyl ether	2.0 U	2.0 U	µg/L
enzene	**1.0**	1.0 U	µg/L
oluene	1.0 U	1.0 U	µg/L
hlorobenzene	1.0 U	1.0 U	µg/L
thylbenzene	1.0 U	1.0 U	µg/L
-Xylene & p-Xylene	**3.6**	1.0 U	µg/L
-Xylene	**3.3**	1.0 U	µg/L
,3-Dichlorobenzene	1.0 U	1.0 U	µg/L
,4-Dichlorobenzene	1.0 U	1.0 U	µg/L
,2-Dichlorobenzene	1.0 U	1.0 U	µg/L
urrogate:	% RECOV	% RECOV	LIMITS
romofluorobenzene	102	101	59-132
ate Analyzed	07/01/98	06/30/98	

= Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR2006
DATE REPORTED: July 15, 1998
REFERENCE : SWMU-7
PROJECT NAME : Monthly Effluent Water

RESULTS OF ANALYSIS

PA METHOD 610 - OLY AROMATIC HYDROCARBONS	MP06551		LAB BLANK	Units
aphthalene	100 U	D1	10 U	µg/L
-Methylnaphthalene	100 U	D1	10 U	µg/L
-Methylnaphthalene	100 U	D1	10 U	µg/L
enaphthylene	100 U	D1	10 U	µg/L
enaphthene	100 U	D1	10 U	µg/L
luorene	100 U	D1	10 U	µg/L
henanthrene	100 U	D1	10 U	µg/L
nthracene	100 U	D1	10 U	µg/L
luoranthene	100 U	D1	10 U	µg/L
yrene	100 U	D1	10 U	µg/L
hrysene	10 U		10 U	µg/L
enzo(a)anthracene	10 U		10 U	µg/L
enzo(b)fluoranthene	10 U		10 U	µg/L
enzo(k)fluoranthene	10 U		10 U	µg/L
enzo(a)pyrene	10 U		10 U	µg/L
ndeno(1,2,3-cd)pyrene	10 U		10 U	µg/L
ibenzo(a,h)anthracene	10 U		10 U	µg/L
enzo(g,h,i)perylene	10 U		10 U	µg/L
urrogate:	% RECOV		% RECOV	LIMITS
-Fluorobiphenyl	*		28	14-146
ate Extracted	06/28/98		06/28/98	
ate Analyzed	07/01/98		07/01/98	

= Surrogate recovery unavailable due to matrix interference.
= Compound was analyzed for but not detected to the level shown.
1 = Analyte value determined from a 1:10 dilution.

ENCO LABORATORIES
REPORT # : JR2006
DATE REPORTED: July 15, 1998
REFERENCE : SWMU-7
PROJECT NAME : Monthly Effluent Water

RESULTS OF ANALYSIS

TOTAL METALS	METHOD	MP06551	LAB BLANK	Units
Arsenic	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		07/13/98	07/13/98	
Barium	200.7	0.10 U	0.10 U	mg/L
Date Analyzed		07/02/98	07/02/98	
Cadmium	200.7	0.0010 U	0.0010 U	mg/L
Date Analyzed		07/02/98	07/02/98	
Chromium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		07/02/98	07/02/98	
Lead	200.7	**0.0080** I	0.0050 U	mg/L
Date Analyzed		07/02/98	07/02/98	
Mercury	245.1	0.00020 U	0.00020 U	mg/L
Date Analyzed		07/08/98	07/08/98	
Selenium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		07/02/98	07/02/98	
Silver	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		07/02/98	07/02/98	

U = Compound was analyzed for but not detected to the level shown.
I = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL).

ENCO LABORATORIES
REPORT # : JR2006
DATE REPORTED: July 15, 1998
REFERENCE : SWMU-7
PROJECT NAME : Monthly Effluent Water

QUALITY CONTROL DATA

arameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
btal Metals				
rsenic, 200.7	106/105/104	64-126	<1	12
arium, 200.7	98/ 99/ 96	74-119	1	11
admium, 200.7	97/ 98/ 95	68-121	1	12
hromium, 200.7	100/101/ 98	73-120	<1	10
ead, 200.7	99/ 99/ 97	68-126	<1	19
ercury, 245.1	103/101/102	70-136	2	12
elenium, 200.7	103/103/101	65-129	<1	10
ilver, 200.7	99/101/ 94	69-121	2	12
ETROL. RESIDUAL ORG.				
ydrocarbons (C8-C40)	53/ 64/ 56	50-150	19	25
iscellaneous				
H, 150.1	NA/ NA/100	-	NA	
OD, 410.4	109/107/110	82-124	2	8
otal Susp. Solids, 160.2	NA/ NA/100	-	NA	

nvironmental Conservation Laboratories Comprehensive QA Plan #960038

= Less Than
S = Matrix Spike
SD = Matrix Spike Duplicate
CS = Laboratory Control Standard
PD = Relative Percent Difference

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CHAIN OF CUSTODY RECORD

Page ___ of ___

BECHTEL

Facility Name: NSMayport / BEI
Site Name: Sewer 7
Delivery Order No.:
Cooler/Crate No.:
Sampling Event:: Monthly effluent water

SEIR No.:
COC Number: MP 109
Lab:
Field Logbook No.:
Logbook Pg. No.:

Sampled by: Dane Cutshaw (Print) Dane Cutshaw (Sign) ___ (Print) ___ (Sign)

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
effluent	MP06551	ENV	GWT	6-25-98 / 0930	07:08	HCl	NA	601/602	5-Day	NA
↓	↓	↓	↓	↓	06:05	H_2SO_4	↓	COD	↓	↓
↓	↓	↓	↓	↓		—	↓	610	↓	↓
↓	↓	↓	↓	↓		HCl	↓	FL PRO	↓	↓
↓	↓	↓	↓	↓		HNO_3	↓	8RCRAMetals	↓	↓
↓	↓	↓	↓	↓		—	↓	TSS/pH	↓	↓

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
Dane Cutshaw	[signature]	6-24-98	13:25	

COMMENTS/INSTRUCTIONS

Note: Date on bottles 6-24-98 should be 6-25-98

PO # 254-CC-2596

JR2016

CONTAMINATION	YES	NO
Radiological		
Chemical		

Shipper:

Ship to:

Airbill No. ___ Traffic Report No. ___

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s., UN2910.

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 296-3007
Fax 904 / 296-6210

Laboratories

DHRS Certification No. E82277

IENT : Bechtel Environmental, Inc.
DRESS: NAS Cecil Field
P.O. Box 171
Jacksonville, FL 32215

REPORT # : JR1499
DATE SUBMITTED: May 21, 1998
DATE REPORTED : June 2, 1998

TTENTION: Mr. Sam Ross

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

SWMU-7 Monthly Water

05/21/98

#1 - MP06509 @ 14:00

RECEIVED
JUN 17 19
V. HERI

PROJECT MANAGER Scott D Martin
Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1499
DATE REPORTED: June 2, 1998
PROJECT NAME : SWMU-7 Monthly Water

RESULTS OF ANALYSIS

EPA METHOD 610 - POLY AROMATIC HYDROCARBONS	MP06509	LAB BLANK	Units
Naphthalene	200 U D1	10 U	µg/L
2-Methylnaphthalene	200 U D1	10 U	µg/L
1-Methylnaphthalene	200 U D1	10 U	µg/L
Acenaphthylene	200 U D1	10 U	µg/L
Acenaphthene	200 U D1	10 U	µg/L
Fluorene	200 U D1	10 U	µg/L
Phenanthrene	200 U D1	10 U	µg/L
Anthracene	200 U D1	10 U	µg/L
Fluoranthene	200 U D1	10 U	µg/L
Pyrene	200 U D1	10 U	µg/L
Chrysene	200 U D1	10 U	µg/L
Benzo(a)anthracene	200 U D1	10 U	µg/L
Benzo(b)fluoranthene	200 U D1	10 U	µg/L
Benzo(k)fluoranthene	200 U D1	10 U	µg/L
Benzo(a)pyrene	200 U D1	10 U	µg/L
Indeno(1,2,3-cd)pyrene	200 U D1	10 U	µg/L
Dibenzo(a,h)anthracene	200 U D1	10 U	µg/L
Benzo(g,h,i)perylene	200 U D1	10 U	µg/L
Surrogate:	% RECOV	% RECOV	LIMITS
2-Fluorobiphenyl	*	56	14-146
Date Extracted	05/27/98	05/27/98	
Date Analyzed	06/01/98	05/29/98	

EPA METHOD 418.1 - TOTAL PETR. HYDROCARBONS	MP06509	LAB BLANK	Units
Total Petr. Hydrocarbons	160	1.0 U	mg/L
Date Analyzed	05/27/98	05/27/98	

* = Surrogate recovery unavailable dur to matrix interference.
U = Compound was analyzed for but not detected to the level shown.
D1 = Analyte value determined from a 1:20 dilution.

ENCO LABORATORIES
REPORT # : JR1499
DATE REPORTED: June 2, 1998
PROJECT NAME : SWMU-7 Monthly Water

RESULTS OF ANALYSIS

TOTAL METALS	METHOD	MP06509	LAB BLANK	Units
Arsenic	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		05/27/98	05/27/98	
Barium	200.7	0.10 U	0.10 U	mg/L
Date Analyzed		05/27/98	05/27/98	
Cadmium	200.7	0.0010 U	0.0010 U	mg/L
Date Analyzed		05/27/98	05/27/98	
Chromium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		05/27/98	05/27/98	
Lead	200.7	0.0050 U	0.0050 U	mg/L
Date Analyzed		05/31/98	05/29/98	
Mercury	245.1	0.00020 U	0.00020 U	mg/L
Date Analyzed		05/28/98	05/28/98	
Selenium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/02/98	05/29/98	
Silver	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		05/27/98	05/27/98	

U = Compound was analyzed for but not detected to the level shown.
NR = Analysis not requested for this sample.

ENCO LABORATORIES
REPORT # : JR1499
DATE REPORTED: June 2, 1998
PROJECT NAME : SWMU-7 Monthly Water

RESULTS OF ANALYSIS

MISCELLANEOUS	METHOD	MP06509	LAB BLANK	Units
COD	410.4	**180**	10 U	mg/L
Date Analyzed		05/27/98	05/27/98	
Total Susp. Solids	160.2	**10**	4.0 U	mg/L
Date Analyzed		05/26/98	05/26/98	
pH	150.1	**6.6**	NR	S.U.
Date Analyzed		05/22/98		

ENCO LABORATORIES
REPORT # : JR1499
DATE REPORTED: June 2, 1998
PROJECT NAME : SWMU-7 Monthly Water

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 601				
Methylene Chloride	97/100/105	46-155	3	25
Chloroform	104/102/113	60-147	2	17
Carbon Tetrachloride	112/103/111	60-146	8	21
Trichloroethene	95/ 94/103	51-142	1	23
Tetrachloroethene	95/ 92/101	58-147	3	21
Chlorobenzene	86/ 93/104	59-142	8	18
EPA Method 602				
Benzene	82/ 86/ 96	60-138	5	17
Toluene	93/ 96/106	57-138	3	16
Ethylbenzene	96/100/109	49-144	4	17
o-Xylene	104/111/119	50-151	6	17
EPA Method 610				
2-Methylnaphthalene	49/ 51/ 82	22-141	4	28
1-Methylnaphthalene	53/ 56/ 90	20-152	6	29
Acenaphthylene	54/ 59/ 83	29-145	9	20
Fluorene	54/ 62/ 81	38-151	14	18
Pyrene	57/ 66/ 84	45-166	15	19

Environmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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ENCO LABORATORIES
REPORT # : JR1499
DATE REPORTED: June 2, 1998
PROJECT NAME : SWMU-7 Monthly Water

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 418.1				
Total Petr. Hydrocarbons	115/117/103	63-126	2	16
Total Metals				
Arsenic, 200.7	98/ 98/ 98	64-126	<1	12
Barium, 200.7	95/ 95/ 95	74-119	<1	11
Cadmium, 200.7	94/ 95/ 94	68-121	1	12
Chromium, 200.7	96/ 96/ 96	73-120	<1	10
Lead, 200.7	93/ 93/ 92	68-126	<1	19
Mercury, 245.1	102/102/ 99	70-136	<1	12
Selenium, 200.7	89/ 89/ 89	65-129	<1	10
Silver, 200.7	94/ 94/ 87	69-121	<1	12
Miscellaneous				
COD, 410.4	91/ 92/106	82-124	1	8
Total Susp. Solids, 160.2	NA/ NA/ 97	-	NA	
pH, 150.1	NA/ NA/100	-	NA	

Environmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

CHAIN OF CUSTODY RECORD

Page 1 of 1

BECHTEL

Facility Name: NS Mayport / BEI
Site Name: Site 7
Delivery Order No.:
Cooler/Crate No.:
Sampling Event:: Monthly Water

SEIR No.:
COC Number: MP 0 75
Lab:
Field Logbook No.:
Logbook Pg. No.:

Sampled by: Dave Cobban (Print) Dave Cobban (Sign) (Print) (Sign)

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
EC Water	MPC3C7	ENV	GWT	5-21-98 / 1400		~~TSS pH~~	NA	TSS pH	5 Day	NA
						HNO3	NA	Sulfide	5 Day	NA
						~~HCl~~ HCl		Cl/Br		
						H2SO4		COD		
						—		O&G		
						H2SO4		Nitr.		

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
Dave Cobban	C. Kohn	5-21-98	1630	TRANS. to Lab
C. Kohn	[illegible]	5-21-98	7:30	Log-in

COMMENTS/INSTRUCTIONS

PO 234-CC 21,41
JR1499

CONTAMINATION	YES	NO
Radiological		
Chemical		

Shipper:

Ship to

Airbill No Traffic Report No.

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

14531 -

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories

DHRS Certification No. E82277

CLIENT : Bechtel Environmental, Inc.
ADDRESS: NAS Cecil Field
P.O. Box 171
Jacksonville, FL 32215

REPORT # : JR1180
DATE SUBMITTED: May 1, 1998
DATE REPORTED : May 8, 1998

ATTENTION: Mr. Sam Ross

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: SWMU-7

Effluent Water

04/30/98

#1 - MP06491 @ 10:30

PROJECT MANAGER Scott D. Martin
Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1180
DATE REPORTED: May 8, 1998
REFERENCE : SWMU-7
PROJECT NAME : Effluent Water

RESULTS OF ANALYSIS

EPA METHOD 601 - VOLATILE HALOCARBONS	MP06491	LAB BLANK	Units
Dichlorodifluoromethane	1.0 U	1.0 U	µg/L
Chloromethane	2.0 U	2.0 U	µg/L
Vinyl Chloride	1.0 U	1.0 U	µg/L
Bromomethane	1.0 U	1.0 U	µg/L
Chloroethane	2.0 U	2.0 U	µg/L
Trichlorofluoromethane	2.0 U	2.0 U	µg/L
1,1-Dichloroethene	1.0 U	1.0 U	µg/L
Methylene Chloride	2.0 U	2.0 U	µg/L
t-1,2-Dichloroethene	1.0 U	1.0 U	µg/L
1,1-Dichloroethane	1.0 U	1.0 U	µg/L
c-1,2-Dichloroethene	1.0 U	1.0 U	µg/L
Chloroform	1.0 U	1.0 U	µg/L
1,1,1-Trichloroethane	1.0 U	1.0 U	µg/L
Carbon Tetrachloride	1.0 U	1.0 U	µg/L
1,2-Dichloroethane	1.0 U	1.0 U	µg/L
Trichloroethene	1.0 U	1.0 U	µg/L
1,2-Dichloropropane	1.0 U	1.0 U	µg/L
Bromodichloromethane	1.0 U	1.0 U	µg/L
c-1,3-Dichloropropene	1.0 U	1.0 U	µg/L
t-1,3-Dichloropropene	1.0 U	1.0 U	µg/L
1,1,2-Trichloroethane	1.0 U	1.0 U	µg/L
Tetrachloroethene	1.0 U	1.0 U	µg/L
Dibromochloromethane	1.0 U	1.0 U	µg/L
Chlorobenzene	1.0 U	1.0 U	µg/L
Bromoform	1.0 U	1.0 U	µg/L
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	µg/L
1,3-Dichlorobenzene	1.0 U	1.0 U	µg/L
1,4-Dichlorobenzene	1.0 U	1.0 U	µg/L
1,2-Dichlorobenzene	1.0 U	1.0 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Bromofluorobenzene	65	65	37-161
Date Analyzed	05/07/98	05/06/98	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1180
DATE REPORTED: May 8, 1998
REFERENCE : SWMU-7
PROJECT NAME : Effluent Water

RESULTS OF ANALYSIS

EPA METHOD 602 - VOLATILE AROMATICS	MP06491	LAB BLANK	Units
Methyl tert-butyl ether	2.0 U	2.0 U	µg/L
Benzene	1.0 U	1.0 U	µg/L
Toluene	1.0 U	1.0 U	µg/L
Chlorobenzene	1.0 U	1.0 U	µg/L
Ethylbenzene	1.0 U	1.0 U	µg/L
m-Xylene & p-Xylene	1.0 U	1.0 U	µg/L
o-Xylene	1.0 U	1.0 U	µg/L
1,3-Dichlorobenzene	1.0 U	1.0 U	µg/L
1,4-Dichlorobenzene	1.0 U	1.0 U	µg/L
1,2-Dichlorobenzene	1.0 U	1.0 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Bromofluorobenzene	85	80	59-132
Date Analyzed	05/07/98	05/06/98	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1180
DATE REPORTED: May 8, 1998
REFERENCE : SWMU-7
PROJECT NAME : Effluent Water

RESULTS OF ANALYSIS

EPA METHOD 610 - POLY AROMATIC HYDROCARBONS	MP06491	LAB BLANK	Units
Naphthalene	100 U D1	10 U	µg/L
2-Methylnaphthalene	100 U D1	10 U	µg/L
1-Methylnaphthalene	100 U D1	10 U	µg/L
Acenaphthylene	100 U D1	10 U	µg/L
Acenaphthene	100 U D1	10 U	µg/L
Fluorene	100 U D1	10 U	µg/L
Phenanthrene	100 U D1	10 U	µg/L
Anthracene	100 U D1	10 U	µg/L
Fluoranthene	100 U D1	10 U	µg/L
Pyrene	100 U D1	10 U	µg/L
Chrysene	100 U D1	10 U	µg/L
Benzo(a)anthracene	100 U D1	10 U	µg/L
Benzo(b)fluoranthene	100 U D1	10 U	µg/L
Benzo(k)fluoranthene	100 U D1	10 U	µg/L
Benzo(a)pyrene	100 U D1	10 U	µg/L
Indeno(1,2,3-cd)pyrene	100 U D1	10 U	µg/L
Dibenzo(a,h)anthracene	100 U D1	10 U	µg/L
Benzo(g,h,i)perylene	100 U D1	10 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
2-Fluorobiphenyl	*	70	14-146
Date Extracted	05/03/98	05/03/98	
Date Analyzed	05/05/98	05/05/98	

EPA METHOD 418.1 - TOTAL PETR. HYDROCARBONS	MP06491	LAB BLANK	Units
Total Petr. Hydrocarbons	**490**	1.0 U	mg/L
Date Analyzed	05/04/98	05/04/98	

* = Surrogate recovery unavailable due to matrix interference.
U = Compound was analyzed for but not detected to the level shown.
D1 = Analyte value determined from a 1:10 dilution.

ENCO LABORATORIES
REPORT # : JR1180
DATE REPORTED: May 8, 1998
REFERENCE : SWMU-7
PROJECT NAME : Effluent Water

RESULTS OF ANALYSIS

TOTAL METALS	METHOD	MP06491	LAB BLANK	Units
Arsenic	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		05/04/98	05/04/98	
Barium	200.7	0.10 U	0.10 U	mg/L
Date Analyzed		05/04/98	05/04/98	
Cadmium	200.7	0.0010 U	0.0010 U	mg/L
Date Analyzed		05/04/98	05/04/98	
Chromium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		05/04/98	05/04/98	
Lead	200.7	0.0050 U	0.0050 U	mg/L
Date Analyzed		05/04/98	05/04/98	
Mercury	245.1	0.00020 U	0.00020 U	mg/L
Date Analyzed		05/04/98	05/04/98	
Selenium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		05/05/98	05/05/98	
Silver	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		05/06/98	05/06/98	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1180
DATE REPORTED: May 8, 1998
REFERENCE : SWMU-7
PROJECT NAME : Effluent Water

RESULTS OF ANALYSIS

MISCELLANEOUS	METHOD	MP06491	LAB BLANK	Units
COD	410.4	**270**	10 U	mg/L
Date Analyzed		05/02/98	05/02/98	
pH	150.1	**7.1**	NR	S.U.
Date Analyzed		05/01/98		
Total Susp. Solids	160.2	**6.0**	4.0 U	mg/L
Date Analyzed		05/02/98	05/02/98	

U = Compound was analyzed for but not detected to the level shown.
NR = Analysis not requested for this sample.

ENCO LABORATORIES
REPORT # : JR1180
DATE REPORTED: May 8, 1998
REFERENCE : SWMU-7
PROJECT NAME : Effluent Water

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 601				
Methylene Chloride	70/ 80/ 75	46-155	13	25
Chloroform	85/100/ 90	60-147	16	17
Carbon Tetrachloride	80/ 85/ 80	60-146	6	21
Trichloroethene	75/ 80/ 75	51-142	6	23
Tetrachloroethene	80/ 85/ 80	58-147	6	21
Chlorobenzene	85/ 95/ 88	59-142	11	18
EPA Method 602				
Benzene	85/ 90/ 85	60-138	6	17
Toluene	90/ 90/ 90	57-138	<1	16
Ethylbenzene	100/105/ 85	49-144	5	17
o-Xylene	95/ 95/ 90	50-151	<1	17
EPA Method 610				
2-Methylnaphthalene	85/ 90/ 54	22-141	6	28
1-Methylnaphthalene	89/ 94/ 59	20-152	5	29
Acenaphthylene	88/ 94/ 66	29-145	6	20
Fluorene	90/100/ 67	38-151	10	18
Pyrene	93/109/ 71	45-166	16	19
EPA Method 418.1				
Total Petr. Hydrocarbons	115/117/103	63-126	2	16

Environmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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ENCO LABORATORIES
REPORT # : JR1180
DATE REPORTED: May 8, 1998
REFERENCE : SWMU-7
PROJECT NAME : Effluent Water

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
Total Metals				
Arsenic, 200.7	105/105/101	64-126	<1	12
Barium, 200.7	91/ 92/ 98	74-119	1	11
Cadmium, 200.7	94/ 93/ 98	68-121	1	12
Chromium, 200.7	94/ 94/ 97	73-120	<1	10
Lead, 200.7	90/ 90/ 96	68-126	<1	19
Mercury, 245.1	103/101/103	70-136	2	12
Selenium, 200.7	95/ 94/ 93	65-129	1	10
Silver, 200.7	106/104/105	69-121	2	12
Miscellaneous				
COD, 410.4	109/107/109	82-124	2	8
pH, 150.1	NA/ NA/100	-	NA	
Total Susp. Solids, 160.2	NA/ NA/ 97	-	NA	

Environmental Conservation Laboratories Comprehensive QA Plan #960038

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LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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CHAIN OF CUSTODY RECORD

Page ___ of ___

BECHTEL

Facility Name: BEI / NS Mayport
Site Name: Sumter 1
Delivery Order No.:
Cooler/Crate No.:
Sampling Event:: Effluent Water

SEIR No.:
COC Number: MPC-13
Lab:
Field Logbook No.:
Logbook Pg. No.: 26 A & B

Sampled by: Dave Cutshaw (Print) Dave Cutshaw (Sign) ___ (Print) ___ (Sign)

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate, Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
Effluent Water	MPC2441	ENV	GWT	4-30-98/1030	01/02	HCl	NA	601/602	5 Day	NA
↓	↓	↓	↓	↓	04/03	H_2SO_4	↓	COD	↓	↓
					05	H_2SO_4		418.1		
					06	—		610		
					07	—		TSS/pH		
					08	HNO_3		RCRA Metals		

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
Dave Cutshaw		4-30-98		
	Scott W. [illegible]	5/1/98	0800	

COMMENTS/INSTRUCTIONS

PO # 254-CC-2596

JR 11/98

CONTAMINATION	YES	NO
Radiological		
Chemical		

Shipper:

Ship to:

Airbill No. ___ Traffic Report No. ___

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s., UN2910.

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories

DHRS Certification No. E82277

CLIENT : Bechtel Environmental, Inc.
ADDRESS: NAS Cecil Field
P.O. Box 171
Jacksonville, FL 32215

REPORT # : JR9966
DATE SUBMITTED: April 15, 1998
DATE REPORTED : April 22, 1998

ATTENTION: Mr. Sam Ross

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: SWMU-7

Water Sampling (Eff)

04/14/98

#1 - MP06461 @ 15:45

PROJECT MANAGER Scott D Martin
Scott D. Martin

ENCO LABORATORIES
REPORT # : JR9966
DATE REPORTED: April 22, 1998
REFERENCE : SWMU-7
PROJECT NAME : Water Sampling (Eff)

RESULTS OF ANALYSIS

PA METHOD 601 - VOLATILE HALOCARBONS	MP06461	LAB BLANK	Units
ichlorodifluoromethane	1.0 U	1.0 U	µg/L
hloromethane	2.0 U	2.0 U	µg/L
Vinyl Chloride	1.0 U	1.0 U	µg/L
romomethane	1.0 U	1.0 U	µg/L
hloroethane	2.0 U	2.0 U	µg/L
Trichlorofluoromethane	2.0 U	2.0 U	µg/L
1,1-Dichloroethene	1.0 U	1.0 U	µg/L
ethylene Chloride	2.0 U	2.0 U	µg/L
-1,2-Dichloroethene	1.0 U	1.0 U	µg/L
1,1-Dichloroethane	1.0 U	1.0 U	µg/L
-1,2-Dichloroethene	1.0 U	1.0 U	µg/L
loroform	1.0 U	1.0 U	µg/L
1,1,1-Trichloroethane	1.0 U	1.0 U	µg/L
arbon Tetrachloride	1.0 U	1.0 U	µg/L
,2-Dichloroethane	1.0 U	1.0 U	µg/L
Trichloroethene	1.0 U	1.0 U	µg/L
,2-Dichloropropane	1.0 U	1.0 U	µg/L
romodichloromethane	1.0 U	1.0 U	µg/L
-1,3-Dichloropropene	1.0 U	1.0 U	µg/L
-1,3-Dichloropropene	1.0 U	1.0 U	µg/L
,1,2-Trichloroethane	1.0 U	1.0 U	µg/L
etrachloroethene	1.0 U	1.0 U	µg/L
ibromochloromethane	1.0 U	1.0 U	µg/L
hlorobenzene	1.0 U	1.0 U	µg/L
romoform	1.0 U	1.0 U	µg/L
,1,2,2-Tetrachloroethane	1.0 U	1.0 U	µg/L
,3-Dichlorobenzene	1.0 U	1.0 U	µg/L
,4-Dichlorobenzene	1.0 U	1.0 U	µg/L
,2-Dichlorobenzene	1.0 U	1.0 U	µg/L
urrogate:	**% RECOV**	**% RECOV**	**LIMITS**
romofluorobenzene	118	87	37-161
ate Analyzed	04/17/98	04/17/98	

= Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR9966
DATE REPORTED: April 22, 1998
REFERENCE : SWMU-7
PROJECT NAME : Water Sampling (Eff)

RESULTS OF ANALYSIS

PA METHOD 602 - OLATILE AROMATICS	MP06461	LAB BLANK	Units
ethyl tert-butyl ether	2.0 U	1.0 U	µg/L
enzene	1.0 U	1.0 U	µg/L
oluene	1.0 U	1.0 U	µg/L
hlorobenzene	1.0 U	1.0 U	µg/L
thylbenzene	1.0 U	1.0 U	µg/L
-Xylene & p-Xylene	1.0 U	1.0 U	µg/L
-Xylene	1.0 U	1.0 U	µg/L
,3-Dichlorobenzene	1.0 U	1.0 U	µg/L
,4-Dichlorobenzene	1.0 U	1.0 U	µg/L
,2-Dichlorobenzene	1.0 U	1.0 U	µg/L
rrogate:	% RECOV	% RECOV	LIMITS
romofluorobenzene	139	89	59-132
ate Analyzed	04/17/98	04/17/98	

= Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR9966
DATE REPORTED: April 22, 1998
REFERENCE : SWMU-7
PROJECT NAME : Water Sampling (Eff)

RESULTS OF ANALYSIS

PA METHOD 610 - OLY AROMATIC HYDROCARBONS	MP06461		LAB BLANK	Units
aphthalene	500 U	D1	10 U	µg/L
-Methylnaphthalene	500 U	D1	10 U	µg/L
1-Methylnaphthalene	500 U	D1	10 U	µg/L
cenaphthylene	500 U	D1	10 U	µg/L
cenaphthene	500 U	D1	10 U	µg/L
luorene	500 U	D1	10 U	µg/L
henanthrene	500 U	D1	10 U	µg/L
nthracene	500 U	D1	10 U	µg/L
luoranthene	500 U	D1	10 U	µg/L
yrene	500 U	D1	10 U	µg/L
hrysene	500 U	D1	10 U	µg/L
enzo(a)anthracene	500 U	D1	10 U	µg/L
enzo(b)fluoranthene	500 U	D1	10 U	µg/L
enzo(k)fluoranthene	500 U	D1	10 U	µg/L
enzo(a)pyrene	500 U	D1	10 U	µg/L
ndeno(1,2,3-cd)pyrene	500 U	D1	10 U	µg/L
ibenzo(a,h)anthracene	500 U	D1	10 U	µg/L
enzo(g,h,i)perylene	500 U	D1	10 U	µg/L
urrogate:	**% RECOV**		**% RECOV**	**LIMITS**
-Fluorobiphenyl	*		55	14-146
ate Extracted	04/16/98		04/16/98	
ate Analyzed	04/21/98		04/20/98	

= Surrogate recovery unavailable due to high dilution.
= Compound was analyzed for but not detected to the level shown.
1 = Analyte value determined from a 1:5 dilution.

ENCO LABORATORIES
REPORT # : JR9966
DATE REPORTED: April 22, 1998
REFERENCE : SWMU-7
PROJECT NAME : Water Sampling (Eff)

RESULTS OF ANALYSIS

PA METHOD 418.1 - .OTAL PETR. HYDROCARBONS	MP06461	LAB BLANK	Units
otal Petr. Hydrocarbons	**410**	1.0 U	mg/L
ate Analyzed	04/20/98	04/20/98	

ISCELLANEOUS	METHOD	MP06461	LAB BLANK	Units
OD	410.4	**640**	10 U	mg/L
ate Analyzed		04/18/98	04/18/98	
otal Susp. Solids	160.2	**26**	4.0 U	mg/L
ate Analyzed		04/16/98	04/16/98	
H	150.1	**7.0**	NR	S.U.
ate Analyzed		04/15/98		

= Compound was analyzed for but not detected to the level shown.
R = Analysis not requested for this sample.

ENCO LABORATORIES
REPORT # : JR9966
DATE REPORTED: April 22, 1998
REFERENCE : SWMU-7
PROJECT NAME : Water Sampling (Eff)

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
PA Method 601				
ethylene Chloride	104/ 99/118	46-155	5	25
Chloroform	105/105/124	60-147	<1	17
arbon Tetrachloride	115/117/134	60-146	2	21
richloroethene	104/103/124	51-142	<1	23
Tetrachloroethene	90/ 74/122	58-147	20	21
hlorobenzene	94/ 89/107	59-142	5	18
PA Method 602				
Benzene	82/ 86/ 91	60-138	5	17
oluene	82/ 84/ 90	57-138	2	16
hylbenzene	85/ 89/102	49-144	4	17
o-Xylene	85/ 88/102	50-151	3	17
PA Method 610				
Acenaphthylene	127/109/ 56	29-145	15	20
Fluorene	130/112/ 59	38-151	15	18
yrene	133/116/ 65	45-166	14	19

nvironmental Conservation Laboratories Comprehensive QA Plan #960038

< = Less Than
S = Matrix Spike
SD = Matrix Spike Duplicate
CS = Laboratory Control Standard
PD = Relative Percent Difference

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ENCO LABORATORIES
REPORT # : JR9966
DATE REPORTED: April 22, 1998
REFERENCE : SWMU-7
PROJECT NAME : Water Sampling (Eff)

QUALITY CONTROL DATA

arameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
PA Method 418.1				
otal Petr. Hydrocarbons	104/103/105	63-126	<1	16
iscellaneous				
OD, 410.4	99/100/108	82-124	1	8
otal Susp. Solids, 160.2	NA/ NA/100	-	NA	
H, 150.1	NA/ NA/100	-	NA	

nvironmental Conservation Laboratories Comprehensive QA Plan #960038

= Less Than
S = Matrix Spike
SD = Matrix Spike Duplicate
CS = Laboratory Control Standard
PD = Relative Percent Difference

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CHAIN OF CUSTODY RECORD

Page ___ of ___

Facility Name: BEI / NS Mayport
Site Name: SWMU 7
Delivery Order No.:
Cooler/Crate No.:
Sampling Event:: Water Sampling (Eff.)

SEIR No.:
COC Number: MP086
Lab:
Field Logbook No.:
Logbook Pg. No.:

Sampled by: Dane Cutshaw (Print) Dane Cutshaw (Sign) ___ (Print) ___ (Sign)

Legend — SAMPLE TYPE

PSB	Preservative Blank	BLS	Blind Spike
FDP	Field Duplicate	BLB	Blink Blank
ENV	Environmental	PTS	Point Source
FDB	Field Blank	FRP	Field Replicate
GEO	Geotechnical Sample	RSB	Rinsate Blank
MXD	Matrix Spike Duplicate	SPL	Split
MXS	Matrix Spike	TPB	Trip Blank

MATRIX

AIR	Air	SBS	Subsurface Soil (>6")	PBS	Post Burn Soil
FLO	Flora	SED	Sediment	PTW	Potable Water
FAU	Fauna	SFS	Surface Soil (0-6")	SEP	Seeps
GWT	Groundwater	SPW	Surface Water	SOL	Solid
LCH	Leachate	SLG	Sludge	WWT	Waste Water
OIL	Oil	SLW	Solid Waste	SST	Surface Water Storm Event
DIW	Deionized Water	OFW	Organic Free Water		
DFW	Deionized Organic Free Water				

QC LEVELS

- C Sample results and QC reported
- D Sample results, QC and raw data reported
- E Sample results, blanks, and calibration reported
- S Screening level analysis; sample results and as reported

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Code
SWMU-7	MP06461	ENV	Water	4-14-98/1545	01	H_2SO_4	NA	COD	5-Day	NA
					02	H_2SO_4		COD		
					03	Hcl		601/602		
					04	Hcl		601/602		
					05	—		610		
					06	H_2SO_4		TPH 418.1		

RELINQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR TRANSFER
Dane Cutshaw	J. R.	4/15/98	8:00am	Hold for Pick-up
[illegible]	[illegible]	4-15-98	9:45	

COMMENTS/INSTRUCTIONS

Bill to Sam Ross B-Card.
Questions Call 779-8900
JR9966

CONTAMINATION	YES	NO
Radiological		
Chemical		

Shipper:

Ship to:

Airbill No. ___ Traffic Report No. ___

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s. UN2910

This package conforms to the conditions and limitations specified in 49 CFR 173.421 for excepted radioactive material, limited quantity, n.o.s., UN2910.

CHAIN OF CUSTODY RECORD (Continued)

Station ID	BEI Sample ID	Sample Type	Matrix Code	Collection Date/Time	Container ID	Preservative	Pay Item	Parameter	Priority	QC Level
SWMU-7	MP06461	ENV	Water	4-14-98/1545	07	—	NA	TSS, pH	5-Day	NA

ATTACHMENT E

SUMMARY TABLE FOR FIELD ANALYSES OF SOIL GAS SAMPLES

BIOSLURPER SYSTEM
SOIL GAS READINGS
SWMU7
NS MAYPORT

MP ID	Date	OVA (ppm)	CO_2	O_2
MP1	1/6/98	NA	0.05	20.5
	3/24/98	11	0	21.1
	4/28/98	383	0	21
MP2	3/24/98	3	0	21.0
	4/28/98	986	0.3	20.3
MP3	3/24/98	3	0	21.0
	4/28/98	5,853	1.5	18.0
MP4	3/24/98	19	0	21.0
	4/28/98	394	0.2	19.5
MP5	1/6/98	>100,000	5	0
	1/15/98	>100,000	2.3	3
	3/24/98	3	0	21.0
	4/28/98	209	0.1	20.4
MP6	1/6/98	>100,000	4	0.15
	1/15/98	>100,000	5	0.5
	3/24/98	659	0	21.0
	4/28/98	315	0.6	20.0
MP7	1/15/98	300	1.5	15
	3/24/98	70	0	21.1
	4/28/98	36	0	20.2
MP8	3/24/98	4,480	0	21.0
	4/28/98	6,025	3.2	16.3
MP9	3/24/98	2	0	21.1
	4/28/98	238	0	20.5
	7/21/98	4.73	0.5	20.5
MP10	3/24/98	20	0	21.1
	4/28/98	920	3.2	15.6
	6/2/98	1,430	5.3	13.9
MP11	3/24/98	4	0	21.0
	4/28/98	17	0.2	20.6
	6/2/98	372	3.9	15.5
MP12	3/24/98	3	0	21.0
	4/28/98	5	0	20.3
	6/2/98	2,850	0.2	20.1
MP14	3/24/98	7	0	21.0
	4/28/98	7	0	20.8
MP15	3/24/98	4	0	21.0
	4/28/98	5	0	20.5
	6/2/98	147	0	21.5
MP16S	1/6/98	1,000	4.5	8.0

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MP ID	Date	OVA (ppm)	CO_2	O_2
MP16D	1/6/98	1,500	6.5	0.0
MP17	3/24/98	3	0	21.1
	4/28/98	5	0	21.0
MP18	3/24/98	22	0	21.0
	4/28/98	11.5	0	20.5
	6/2/98	870	1.6	18.3
MP19	1/6/98	>100,000	2.1	0.5
	3/24/98	158	0	21.2
	6/2/98	925	0.2	20.1
MP20S	1/6/98	900	5.5	5.5
MP21S	1/6/98	>100,000	7	0
	6/2/98	1,258	5.2	18.8
MP21D	1/6/98	>100,000	7	0
	6/2/98	123	5.1	18.8
MP22S	1/6/98	700	5	8
	6/2/98	2	4	18.1
MP22D	1/6/98	880	5.7	5
	6/2/98	2	3.5	19.6
MP23S	1/6/98	600	2.8	14.5
	6/2/98	9	1.9	18.9
MP23D	1/6/98	1,000	3.2	5.7
	6/2/98	2	1.7	22
MP24S	1/6/98	1,200	1.8	17
	6/2/98	2	1.7	21
MP24D	1/6/98	1,200	2	17
	6/2/98	2	1.5	21.6
MP25S	1/6/98	280	1	18
MP25D	1/6/98	300	1.3	18
MP26S	1/6/98	800	2.5	14.5
	6/2/98	105	2.2	21.9
MP26D	1/6/98	1,200	3.7	11.5
	6/2/98	1	2.4	21.8
MP27S	1/6/98	>100,000	6	0.9
	1/15/98	8,000	5	5
	4/29/98	3	1.4	18.2
	6/16/98	85	0.9	26
MP27D	1/6/98	>100,000	6.1	0.9
	1/15/98	>100,000	6.5	0
	4/29/98	194	2.9	16
	6/16/98	3	0.8	26

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MP ID	Date	OVA (ppm)	CO_2	O_2
MP28S	1/6/98	>100,000	7.5	0
	1/15/98	5,200	2	17
	4/29/98	8	2.4	15.9
	6/16/98	57	0.6	22
MP28D	4/29/98	5	0	20.3
	6/16/98	9	0.3	22
MP29S	1/6/98	1,000	1.5	18
	1/15/98	0	1.5	18
	4/29/98	4	0.4	19.8
	6/2/98	76	0.7	21.4
	6/16/98	6	0.1	22.0
MP29D	1/6/98	1,200	1.5	17.5
	1/15/98	58,000	2	17.5
	4/29/98	2	0.3	20
	6/2/98	50	0.2	20.2
	6/16/98	6	0.2	23
MP30S	1/6/98	80	1.5	19
	6/2/98	3	0	23.9
MP30D	1/6/98	40	1.3	19
	6/2/98	2	0	24.9
MP31S	1/6/98	290	3.5	15
	6/2/98	100	0.8	21
MP31D	1/6/98	3,600	6.7	0
	6/2/98	110	1.9	20.7
MP32S	1/6/98	1,600	0.7	18.5
	4/29/98	2	0.1	20.3
MP32D	1/6/98	700	0.5	19
	4/29/98	2	0	20.3
MP33S	1/6/98	3,800	1.3	18
	1/15/98	NA	1	19
	4/29/98	602	0.6	19.5
	6/16/98	317	0.5	21
MP33D	1/6/98	>100,000	7	0
	1/15/98	NA	7.5	0.5
	1/15/98	NA	7.5	0.5
	4/29/98	NA	4.7	15.2
	6/16/98	1	0.9	25

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MP ID	Date	OVA (ppm)	CO_2	O_2
MP34S	1/6/98	>100,000	7	0.5
	1/15/98	380	3	18.5
	4/29/98	4	2.4	16
	6/16/98	5	0	24
MP34D	1/6/98	>100,000	7	0
	1/15/98	24,000	6	8
	4/29/98	262	4.5	13.6
	6/16/98	3	0	24
MP35S	1/6/98	>100,000	7	0
	1/15/98	0	4	12
	4/29/98	4	3.2	16.2
	6/16/98	4	0	25
MP35D	1/6/98	>100,000	7	0
	1/15/98	840	7	0
	4/29/98	2,745	4.3	14.8
	6/16/98	6	0	25
MP36S	1/6/98	3,200	7	0
	1/15/98	700	5	3
	4/29/98	0	3.6	16.4
	6/16/98	408	3.3	22
MP36D	1/6/98	1,000	5.5	4.5
	1/15/98	5,800	7	0
	4/29/98	241	2.7	17.2
	6/16/98	66	2.7	22
MP37S	1/6/98	NA	3	13
MP37D	1/6/98	NA	3.3	12
MP38S	1/6/98	740	13.8	7
MP38D	1/6/98	10,000	15.5	0.7
MP39S	1/6/98	1,800	1.5	17
MP40S	6/2/98	11	0.1	21.9
	6/17/98	5.57	0	19.6
MP40D	6/2/98	2	0	22.2
	6/17/98	3.21	0	17.6
MP41S	1/6/98	1,200	4.5	7.7
	6/2/98	2	0	20
	6/17/98	3.2	0	21.2
MP41D	6/2/98	2	0	15
	6/17/98	2.95	0	17.3
MP42S	6/17/98	2.91	0	18
MP42D	6/17/98	3.01	0	20.6

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MP ID	Date	OVA (ppm)	CO_2	O_2
MP44S	1/6/98	99,000	5	0.5
	1/15/98	750	3.25	11.5
	4/28/98	28	0	20.8
	6/17/98	>1,000	2.5	16.4
MP44D	4/28/98	2.5	0	20.8
	6/17/98	257	5.2	13.3
MP45S	4/28/98	1,714	4.4	14.7
	6/17/98	76.50	1.7	18.2
MP45D	4/28/98	9	0	20.7
	6/17/98	NM	2.5	13.7
MP46S	1/6/98	2,200	1.5	16
	1/15/98	320	1	17.5
	4/28/98	65	3.3	16.1
	6/17/98	11.27	0	20.7
MP46D	4/28/98	5	0	20.3
	6/17/98	7.69	0.9	19.7
MP47S	1/6/98	600	4	9
	1/15/98	380	3	12.5
MP47D	1/6/98	4,000	6	0.5
	1/15/98	1,000	6	0
MP48S	1/6/98	2,000	4.7	8.5
	1/15/98	100	0.5	19.5
	4/28/98	2	0.6	19.3
	6/17/98	5.46	0	20.7
MP48D	1/6/98	10,000	6.8	1.5
	1/15/98	300	2	16
	4/28/98	37	1.9	17.4
	6/17/98	4.74	0	20.9
MP49S	1/6/98	2,400	5	6.5
MP49D	1/6/98	3,700	6.5	0.5
MP50S	1/6/98	500	3.3	13
MP50D	1/6/98	42,000	7	0
MP51S	1/6/98	900	5	7.5
MP51D	1/6/98	4,200	7	0
MP52S	1/6/98	420	2.5	15
MP52D	1/6/98	9,200	6.8	0
MP53S	1/6/98	280	2.5	14.5

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SOIL GAS READINGS
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MP ID	Date	OVA (ppm)	CO_2	O_2
MP53D	1/6/98	1,000	5.5	2.5
MP55S	1/6/98	80	0.8	13
MP55D	1/6/98	4,200	2	6
MP56S	1/6/98	500	2.7	12.3
MP56D	1/6/98	1,500	4.5	5.5
MP57S	1/6/98	900	4.5	9.5
	6/2/98	1	4.7	15.3
MP57D	1/6/98	1,000	5.5	6.5
	6/2/98	2	4.3	16
MP58S	1/6/98	0	0.05	20.5
MP58D	1/6/98	0	0.05	20.5
MP59S	1/6/98	980	6	6
	6/2/98	64	5.2	14.4
MP59D	1/6/98	1,800	7	4
	6/2/98	3	4.1	15.1
MP60S	1/6/98	60,000	7	1
MP60D	1/6/98	74,000	7.3	0
MP61S	1/6/98	42,000	6	2
	6/16/98	6	0.1	23
MP61D	1/6/98	52,000	6	2
	6/16/98	5	2	20
MP62S	1/6/98	>100,000	7	1.5
	1/15/98	1,400	3	17
MP62D	1/6/98	>100,000	7.5	0
	1/15/98	18,500	6.5	0.25
MP63S	1/6/98	3,000	3.5	10.5
	1/15/98	0	0.25	20.25
	4/28/98	0	0.6	19.7
	6/17/98	3.32	0	20.7
MP63D	1/6/98	48,000	6	4
	1/15/98	7,600	6	0
	4/28/98	630	2.9	16.6
	6/17/98	3.22	0	20.8
MP64S	1/6/98	800	1	18
MP64D	1/6/98	42,000	2.8	0
MP65S	1/6/98	1,200	6.3	1
MP65D	1/6/98	20,000	6.5	0