

LABORATORY REPORT

Prepared For: MWH-San Diego/Boeing
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 8 - SSPN
1891263

Sampled: 02/16/07
Received: 02/16/07
Issued: 03/11/07 17:43

NELAP #01108CA California ELAP#1197 CSDLAC #10256

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 16°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: Enclosed are complete final results. The results for the Mercury were added.

LABORATORY ID	CLIENT ID	MATRIX
IQB1822-01	ESBS0019S02	Soil
IQB1822-02	ESBS0014S02	Soil
IQB1822-03	ESBS0007S01	Soil
IQB1822-04	ESBS0007S02	Soil
IQB1822-05	ESBS0006S01	Soil
IQB1822-06	ESBS0006S02	Soil

Reviewed By:

TestAmerica - Irvine, CA
Michele Chamberlin
Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1822

Sampled: 02/16/07
 Received: 02/16/07

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: ESBS0019S02 (IQB1822-01) - Soil EPA 9045C	1	02/16/2007 09:20	02/16/2007 17:50	02/17/2007 09:55	02/17/2007 11:35
Sample ID: ESBS0014S02 (IQB1822-02) - Soil EPA 9045C	1	02/16/2007 10:00	02/16/2007 17:50	02/17/2007 09:55	02/17/2007 11:35
Sample ID: ESBS0007S01 (IQB1822-03) - Soil EPA 9045C	1	02/16/2007 10:20	02/16/2007 17:50	02/17/2007 09:55	02/17/2007 11:35
Sample ID: ESBS0007S02 (IQB1822-04) - Soil EPA 9045C	1	02/16/2007 10:50	02/16/2007 17:50	02/17/2007 09:55	02/17/2007 11:35
Sample ID: ESBS0006S01 (IQB1822-05) - Soil EPA 9045C	1	02/16/2007 11:25	02/16/2007 17:50	02/17/2007 09:55	02/17/2007 11:35
Sample ID: ESBS0006S02 (IQB1822-06) - Soil EPA 9045C	1	02/16/2007 11:40	02/16/2007 17:50	02/17/2007 09:55	02/17/2007 11:35

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1822

Sampled: 02/16/07
 Received: 02/16/07

METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7B20072 Extracted: 02/20/07											
Blank Analyzed: 02/20/2007 (7B20072-BLK1)											
EFH (C8 - C30)	ND	5.0	3.5	mg/kg wet							
EFH (C8 - C11)	ND	5.0	3.5	mg/kg wet							
EFH (C12 - C14)	ND	5.0	3.5	mg/kg wet							
EFH (C15 - C20)	ND	5.0	3.5	mg/kg wet							
EFH (C21 - C30)	ND	5.0	3.5	mg/kg wet							
Surrogate: n-Octacosane	4.22			mg/kg wet	6.67		63	40-125			
LCS Analyzed: 02/20/2007 (7B20072-BS1)											
EFH (C8 - C30)	26.3	5.0	3.5	mg/kg wet	33.3		79	40-115			
Surrogate: n-Octacosane	4.37			mg/kg wet	6.67		66	40-125			
Matrix Spike Analyzed: 02/20/2007 (7B20072-MS1) Source: IQB1815-03											
EFH (C8 - C30)	31.5	5.6	4.0	mg/kg dry	37.7	ND	84	40-120			
Surrogate: n-Octacosane	5.23			mg/kg dry	7.53		69	40-125			
Matrix Spike Dup Analyzed: 02/20/2007 (7B20072-MSD1) Source: IQB1815-03											
EFH (C8 - C30)	30.8	5.6	4.0	mg/kg dry	37.7	ND	82	40-120	2	30	
Surrogate: n-Octacosane	5.26			mg/kg dry	7.53		70	40-125			

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1822

Sampled: 02/16/07
 Received: 02/16/07

METHOD BLANK/QC DATA

POLYCHLORINATED BIPHENYLS (EPA 3545/8082)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
---------	--------	-----------------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------------

Batch: 7B23106 Extracted: 02/23/07

Blank Analyzed: 02/23/2007 (7B23106-BLK1)

Aroclor 1016	ND	50	15	ug/kg wet							
Aroclor 1221	ND	50	15	ug/kg wet							
Aroclor 1232	ND	50	10	ug/kg wet							
Aroclor 1242	ND	50	10	ug/kg wet							
Aroclor 1248	ND	50	10	ug/kg wet							
Aroclor 1254	ND	50	10	ug/kg wet							
Aroclor 1260	ND	50	10	ug/kg wet							
Surrogate: Decachlorobiphenyl	31.2			ug/kg wet	33.3		94	45-120			

LCS Analyzed: 02/23/2007 (7B23106-BS2)

Aroclor 1016	269	50	15	ug/kg wet	267		101	60-115			
Aroclor 1260	287	50	10	ug/kg wet	267		107	60-115			
Surrogate: Decachlorobiphenyl	36.4			ug/kg wet	33.3		109	45-120			

Matrix Spike Analyzed: 02/24/2007 (7B23106-MS2)

Source: IQB1815-03

Aroclor 1016	317	56	17	ug/kg dry	301	ND	105	45-120			
Aroclor 1260	330	56	11	ug/kg dry	301	ND	110	45-120			
Surrogate: Decachlorobiphenyl	42.6			ug/kg dry	37.7		113	45-120			

Matrix Spike Dup Analyzed: 02/24/2007 (7B23106-MSD2)

Source: IQB1815-03

Aroclor 1016	292	56	17	ug/kg dry	301	ND	97	45-120	8	30	
Aroclor 1260	317	56	11	ug/kg dry	301	ND	105	45-120	4	30	
Surrogate: Decachlorobiphenyl	40.0			ug/kg dry	37.6		106	45-120			

Batch: 7B26083 Extracted: 02/26/07

Blank Analyzed: 02/26/2007 (7B26083-BLK1)

Aroclor 1016	ND	50	15	ug/kg wet							
Aroclor 1221	ND	50	15	ug/kg wet							
Aroclor 1232	ND	50	10	ug/kg wet							
Aroclor 1242	ND	50	10	ug/kg wet							
Aroclor 1248	ND	50	10	ug/kg wet							
Aroclor 1254	ND	50	10	ug/kg wet							
Aroclor 1260	ND	50	10	ug/kg wet							
Surrogate: Decachlorobiphenyl	32.2			ug/kg wet	33.3		97	45-120			

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1822

Sampled: 02/16/07
 Received: 02/16/07

METHOD BLANK/QC DATA

POLYCHLORINATED BIPHENYLS (EPA 3545/8082)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7B26083 Extracted: 02/26/07											
LCS Analyzed: 02/26/2007 (7B26083-BS2)											
Aroclor 1016	265	50	15	ug/kg wet	267		99	60-115			
Aroclor 1260	271	50	10	ug/kg wet	267		101	60-115			
Surrogate: Decachlorobiphenyl	35.0			ug/kg wet	33.3		105	45-120			
Matrix Spike Analyzed: 02/27/2007 (7B26083-MS2)											
						Source: IQB1140-15RE2					
Aroclor 1016	463	50	15	ug/kg wet	266	ND	174	45-120			MI
Aroclor 1260	282	50	10	ug/kg wet	266	ND	106	45-120			
Surrogate: Decachlorobiphenyl	19.5			ug/kg wet	33.2		59	45-120			
Matrix Spike Dup Analyzed: 02/27/2007 (7B26083-MSD2)											
						Source: IQB1140-15RE2					
Aroclor 1016	440	50	15	ug/kg wet	267	ND	165	45-120	5	30	MI
Aroclor 1260	244	50	10	ug/kg wet	267	ND	91	45-120	14	30	
Surrogate: Decachlorobiphenyl	17.2			ug/kg wet	33.3		52	45-120			

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1822

Sampled: 02/16/07
 Received: 02/16/07

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 7B22114 Extracted: 02/22/07											
Blank Analyzed: 02/22/2007 (7B22114-BLK1)											
Antimony	ND	1.0	0.030	mg/kg wet							
Arsenic	ND	0.50	0.25	mg/kg wet							
Barium	ND	0.50	0.080	mg/kg wet							
Beryllium	ND	0.30	0.040	mg/kg wet							
Cadmium	ND	0.50	0.025	mg/kg wet							
Chromium	ND	1.0	0.35	mg/kg wet							
Cobalt	ND	0.50	0.080	mg/kg wet							
Copper	ND	1.0	0.20	mg/kg wet							
Lead	ND	0.50	0.050	mg/kg wet							
Molybdenum	ND	1.0	0.10	mg/kg wet							
Nickel	ND	1.0	0.45	mg/kg wet							
Selenium	ND	1.0	0.20	mg/kg wet							
Silver	ND	0.50	0.050	mg/kg wet							
Thallium	ND	0.50	0.10	mg/kg wet							
Vanadium	ND	1.0	0.40	mg/kg wet							
Zinc	ND	10	1.3	mg/kg wet							
LCS Analyzed: 02/22/2007 (7B22114-BS1)											
Antimony	42.6	1.0	0.030	mg/kg wet	50.0		85	80-120			
Arsenic	42.2	0.50	0.25	mg/kg wet	50.0		84	80-120			
Barium	43.1	0.50	0.080	mg/kg wet	50.0		86	80-120			
Beryllium	44.9	0.30	0.040	mg/kg wet	50.0		90	80-120			
Cadmium	43.1	0.50	0.025	mg/kg wet	50.0		86	80-120			
Chromium	43.4	1.0	0.35	mg/kg wet	50.0		87	80-120			
Cobalt	43.6	0.50	0.080	mg/kg wet	50.0		87	80-120			
Copper	45.0	1.0	0.20	mg/kg wet	50.0		90	80-120			
Lead	42.3	0.50	0.050	mg/kg wet	50.0		85	80-120			
Molybdenum	42.3	1.0	0.10	mg/kg wet	50.0		85	80-120			
Nickel	43.6	1.0	0.45	mg/kg wet	50.0		87	80-120			
Selenium	41.0	1.0	0.20	mg/kg wet	50.0		82	80-120			
Silver	22.4	0.50	0.050	mg/kg wet	25.0		90	80-120			
Thallium	42.9	0.50	0.10	mg/kg wet	50.0		86	80-120			
Vanadium	42.6	1.0	0.40	mg/kg wet	50.0		85	80-120			
Zinc	43.7	10	1.3	mg/kg wet	50.0		87	80-120			

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1822

Sampled: 02/16/07
 Received: 02/16/07

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7B22114 Extracted: 02/22/07											
Matrix Spike Analyzed: 02/22/2007 (7B22114-MS1)						Source: IQB2309-02					
Antimony	12.5	1.1	0.032	mg/kg dry	53.6	0.086	23	75-125			M2
Arsenic	40.4	0.54	0.27	mg/kg dry	53.6	1.9	72	75-125			M2
Barium	113	0.54	0.086	mg/kg dry	53.6	83	56	75-125			M2
Beryllium	41.3	0.32	0.043	mg/kg dry	53.6	0.53	76	75-125			
Cadmium	39.0	0.54	0.027	mg/kg dry	53.6	0.12	73	75-125			M2
Chromium	54.8	1.1	0.38	mg/kg dry	53.6	14	76	75-125			
Cobalt	45.3	0.54	0.086	mg/kg dry	53.6	5.3	75	75-125			
Copper	46.5	1.1	0.21	mg/kg dry	53.6	9.8	68	75-125			M2
Lead	48.2	0.54	0.054	mg/kg dry	53.6	6.6	78	75-125			
Molybdenum	38.1	1.1	0.11	mg/kg dry	53.6	0.33	70	75-125			M2
Nickel	48.4	1.1	0.48	mg/kg dry	53.6	9.3	73	75-125			M2
Selenium	37.4	1.1	0.21	mg/kg dry	53.6	ND	70	75-125			M2
Silver	20.1	0.54	0.054	mg/kg dry	26.8	0.064	75	75-125			
Thallium	43.6	0.54	0.11	mg/kg dry	53.6	0.23	81	75-125			
Vanadium	67.4	1.1	0.43	mg/kg dry	53.6	27	75	75-125			
Zinc	75.6	11	1.4	mg/kg dry	53.6	41	65	75-125			M2
Matrix Spike Dup Analyzed: 02/22/2007 (7B22114-MSD1)						Source: IQB2309-02					
Antimony	12.8	1.1	0.032	mg/kg dry	53.6	0.086	24	75-125	2	20	M2
Arsenic	42.5	0.54	0.27	mg/kg dry	53.6	1.9	76	75-125	5	20	
Barium	124	0.54	0.086	mg/kg dry	53.6	83	76	75-125	9	20	
Beryllium	43.3	0.32	0.043	mg/kg dry	53.6	0.53	80	75-125	5	20	
Cadmium	41.3	0.54	0.027	mg/kg dry	53.6	0.12	77	75-125	6	20	
Chromium	57.7	1.1	0.38	mg/kg dry	53.6	14	82	75-125	5	20	
Cobalt	47.9	0.54	0.086	mg/kg dry	53.6	5.3	79	75-125	6	20	
Copper	49.2	1.1	0.21	mg/kg dry	53.6	9.8	74	75-125	6	20	M2
Lead	52.4	0.54	0.054	mg/kg dry	53.6	6.6	85	75-125	8	20	
Molybdenum	40.6	1.1	0.11	mg/kg dry	53.6	0.33	75	75-125	6	20	
Nickel	51.9	1.1	0.48	mg/kg dry	53.6	9.3	79	75-125	7	20	
Selenium	39.4	1.1	0.21	mg/kg dry	53.6	ND	74	75-125	5	20	M2
Silver	21.0	0.54	0.054	mg/kg dry	26.8	0.064	78	75-125	4	20	
Thallium	46.5	0.54	0.11	mg/kg dry	53.6	0.23	86	75-125	6	20	
Vanadium	70.6	1.1	0.43	mg/kg dry	53.6	27	81	75-125	5	20	
Zinc	81.5	11	1.4	mg/kg dry	53.6	41	76	75-125	8	20	

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1822

Sampled: 02/16/07
 Received: 02/16/07

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7B22115 Extracted: 02/22/07											
Blank Analyzed: 02/23/2007 (7B22115-BLK1)											
Aluminum	ND	10	5.0	mg/kg wet							
Boron	ND	5.0	1.0	mg/kg wet							
Lithium	ND	6.3	3.8	mg/kg wet							
Potassium	ND	50	19	mg/kg wet							
Sodium	ND	50	24	mg/kg wet							
Zirconium	ND	25	1.5	mg/kg wet							
LCS Analyzed: 02/23/2007 (7B22115-BS1)											
Aluminum	45.3	10	5.0	mg/kg wet	50.0		91	80-120			
Boron	47.3	5.0	1.0	mg/kg wet	50.0		95	80-120			
Lithium	48.4	6.3	3.8	mg/kg wet	50.0		97	80-120			
Potassium	516	50	19	mg/kg wet	500		103	80-120			
Sodium	496	50	24	mg/kg wet	500		99	80-120			
Zirconium	52.4	25	1.5	mg/kg wet	50.0		105	80-120			
Matrix Spike Analyzed: 02/23/2007 (7B22115-MS1) Source: IQB2309-02											
Aluminum	17000	11	5.4	mg/kg dry	53.6	14000	5597	75-125			MHA
Boron	45.6	5.4	1.1	mg/kg dry	53.6	1.1	83	75-125			
Lithium	64.1	6.8	4.1	mg/kg dry	53.6	17	88	75-125			
Potassium	3350	54	20	mg/kg dry	536	2900	84	75-125			
Sodium	606	54	26	mg/kg dry	536	84	97	75-125			
Zirconium	42.9	27	1.6	mg/kg dry	53.6	2.6	75	75-125			
Matrix Spike Dup Analyzed: 02/23/2007 (7B22115-MSD1) Source: IQB2309-02											
Aluminum	17600	11	5.4	mg/kg dry	53.6	14000	6716	75-125	3	20	MHA
Boron	46.1	5.4	1.1	mg/kg dry	53.6	1.1	84	75-125	1	20	
Lithium	64.8	6.8	4.1	mg/kg dry	53.6	17	89	75-125	1	20	
Potassium	3450	54	20	mg/kg dry	536	2900	103	75-125	3	20	
Sodium	601	54	26	mg/kg dry	536	84	96	75-125	1	20	
Zirconium	41.5	27	1.6	mg/kg dry	53.6	2.6	73	75-125	3	20	M2

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1822

Sampled: 02/16/07
 Received: 02/16/07

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 7B17034 Extracted: 02/17/07</u>											
Duplicate Analyzed: 02/17/2007 (7B17034-DUP1)											
pH	7.31	NA	0.00	pH Units		7.22			1	5	
Duplicate Analyzed: 02/17/2007 (7B17034-DUP2)											
pH	7.57	NA	0.00	pH Units		7.54			0	5	
<u>Batch: 7B20135 Extracted: 02/20/07</u>											
Blank Analyzed: 02/21/2007 (7B20135-BLK1)											
Percent Solids	ND	0.10	0.10	%							
Duplicate Analyzed: 02/21/2007 (7B20135-DUP1)											
Percent Solids	4.20	0.10	0.10	%		4.2			0	20	

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
1891263
Report Number: IQB1822

Sampled: 02/16/07
Received: 02/16/07

DATA QUALIFIERS AND DEFINITIONS

- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- MHA** Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

TestAmerica - Irvine, CA
Michele Chamberlin
Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1822

Sampled: 02/16/07
 Received: 02/16/07

Certification Summary

TestAmerica - Irvine, CA

Method	Matrix	Nelac	California
EPA 160.3 MOD	Soil	N/A	N/A
EPA 3545/8081A	Soil	X	X
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 8015B	Soil	X	X
EPA 8082	Soil	X	X
EPA 9045C	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Calscience-SUB *California Cert #1230*

7440 Lincoln Way - Garden Grove, CA 92841

Analysis Performed: 8270C (SIM)
 Samples: IQB1822-03, IQB1822-05

Analysis Performed: Dry Wt
 Samples: IQB1822-03, IQB1822-05

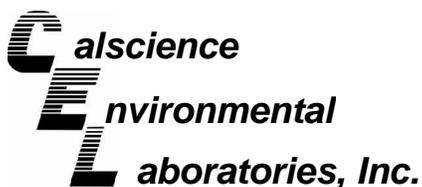
Weck Laboratories, Inc

14859 E. Clark Avenue - City of Industry, CA 91745

Analysis Performed: Mercury-7471 (dry wt)
 Samples: IQB1822-03, IQB1822-05

TestAmerica - Irvine, CA

Michele Chamberlin
 Project Manager



February 27, 2007

Michele Chamberlin
TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Subject: **CalScience Work Order No.: 07-02-1178**
Client Reference: IQB1822

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/19/2007 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard CalScience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, which appears to read 'Steven L. Lane for', is enclosed in a hand-drawn oval.

CalScience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Case Narrative for 07-02-1178

Sample Condition on Receipt

Four soil samples were received as part of this Work Order on February 19, 2007. The sample was transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (3.1°C) of the samples was measured upon arrival in the laboratory and were within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times

All holding time requirements were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

The method blank data showed non-detectable levels for all constituents.

Matrix Spikes

Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits, with the exception of specific analytes by EPA Method 8270C SIM. Please see Table A for details.



Case Narrative for 07-02-1178

Table A: Matrix Spike / Matrix Spike Duplicate outside acceptable limits	
EPA Method 8270C SIM	
Batch #	Analytes(s)
070219S05	2-Nitrophenol [*] , 4-Chloro-3-Methylphenol [*] , Di-n-Butyl Phthalate [*] & Dimethyl Phthalate [*]

*The relative percent difference (RPD) are outside acceptable limits. These recoveries have been flagged with a "4" qualifier.

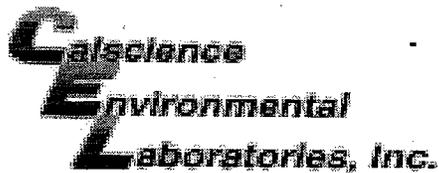
Laboratory Control Samples

The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

Surrogates

Surrogate recoveries for all samples were within acceptable control limits.





WORK ORDER #: 07 - 0 2 - 1 1 7 8

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: TEST AMERICA

DATE: 2-19-07

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

Chilled, cooler with temperature blank provided.

Chilled, cooler without temperature blank.

Chilled and placed in cooler with wet ice.

Ambient and placed in cooler with wet ice.

Ambient temperature.

°C Temperature blank.

LABORATORY (Other than Calscience Courier):

°C Temperature blank.

3.1 °C IR thermometer.

Ambient temperature.

Initial: WB

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Present:

Initial: WB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sampler's name indicated on COC.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample container label(s) consistent with custody papers.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers and volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on sample label(s).....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VOA vial(s) free of headspace.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Initial: WB

COMMENTS:



07-02-1178

SUBCONTRACT ORDER - PROJECT # IQB1822

SENDING LABORATORY:	RECEIVING LABORATORY:
TestAmerica - Irvine, CA 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 260-3297 Project Manager: Michele Chamberlin	Calscience-SUB 7440 Lincoln Way Garden Grove, CA 92841 Phone :714-895-5494 Fax: 714-894-7501 Project Location: California

Work Order Comments: Level 4 QC. Boeing EDD, Report to MDL w/ J flags, report in dry weight, 2 week TAT.

Standard TAT is requested unless specific due date is requested => Due Date: _____ Initials: _____

Analysis	Expiration	Comments
Sample ID: IQB1822-03 Soil Sampled: 02/16/07 10:20		
8270C (SIM)-OUT	03/02/07 10:20	NDMA+PAHS+phthltes(1 run).Sub=Calsci,calc w/ sx wt % solids, sub to Calscience, \$10/sample Sub to Calscience,TA Lvl IV,EDD=Boeing
Dry Wt-OUT	03/16/07 10:20	
Level 3 Data Package - Out	03/16/07 10:20	
Containers Supplied: 2 oz jar (IQB1822-03D)		
<hr/>		
Sample ID: IQB1822-04 Soil Sampled: 02/16/07 10:50		
Extract/Hold-8270C-SIM-OUT	03/02/07 10:50	Sub to Calscience
Containers Supplied: 2 oz jar (IQB1822-04C)		
<hr/>		
Sample ID: IQB1822-05 Soil Sampled: 02/16/07 11:25		
8270C (SIM)-OUT	03/02/07 11:25	NDMA+PAHS+phthltes(1 run).Sub=Calsci,calc w/ sx wt % solids, sub to Calscience, \$10/sample Sub to Calscience,TA Lvl IV,EDD=Boeing
Dry Wt-OUT	03/16/07 11:25	
Level 3 Data Package - Out	03/16/07 11:25	
Containers Supplied: 2 oz jar (IQB1822-05D)		
<hr/>		
Sample ID: IQB1822-06 Soil Sampled: 02/16/07 11:40		
Extract/Hold-8270C-SIM-OUT	03/02/07 11:40	Sub to Calscience
Containers Supplied: 2 oz jar (IQB1822-06C)		

SAMPLE INTEGRITY:					
All containers intact:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Sample labels/COC agree:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Custody Seals Present:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Samples Preserved Properly:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
			Samples Received On Ice:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
			Samples Received at (temp):	_____	

Released By	Date	Time	Received By	Date	Time
-------------	------	------	-------------	------	------

Released By	Date	Time	Received By	Date	Time
-------------	------	------	-------------	------	------

1178

SUBCONTRACT ORDER - PROJECT # IQB1822

SENDING LABORATORY:
 TestAmerica - Irvine, CA
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614
 Phone: (949) 261-1022
 Fax: (949) 260-3297
 Project Manager: Michele Chamberlin

RECEIVING LABORATORY:
 Calscience-SUB
 7440 Lincoln Way
 Garden Grove, CA 92841
 Phone :714-895-5494
 Fax: 714-894-7501
 Project Location: California

Work Order Comments: Level 4 QC. Boeing EDD, Report to MDL w/ J flags, report in dry weight, 2 week TAT.

Standard TAT is requested unless specific due date is requested => Due Date: _____ **Initials:** _____

Analysis	Expiration	Comments
Sample ID: IQB1822-03 Soil 8270C (SIM)-OUT	Sampled: 02/16/07 10:20 03/02/07 10:20	NDMA+PAHS+phtlhtes(1 run).Sub=Calsci,calc w/ sx wt
Level 3 Data Package - Out	03/16/07 10:20	Sub to Calscience,TA Lvl IV,EDD=Boeing
Containers Supplied: 2 oz jar (IQB1822-03D)		
Sample ID: IQB1822-04 Soil Extract/Hold-8270C-SIM-OUT	Sampled: 02/16/07 10:50 03/02/07 10:50	Sub to Calscience
Containers Supplied: 2 oz jar (IQB1822-04C)		
Sample ID: IQB1822-05 Soil 8270C (SIM)-OUT	Sampled: 02/16/07 11:25 03/02/07 11:25	NDMA+PAHS+phtlhtes(1 run).Sub=Calsci,calc w/ sx wt
Level 3 Data Package - Out	03/16/07 11:25	Sub to Calscience,TA Lvl IV,EDD=Boeing
Containers Supplied: 2 oz jar (IQB1822-05D)		
Sample ID: IQB1822-06 Soil Extract/Hold-8270C-SIM-OUT	Sampled: 02/16/07 11:40 03/02/07 11:40	Sub to Calscience
Containers Supplied: 2 oz jar (IQB1822-06C)		

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

Released By: Evan K Date: 2/19/07 Time: 0900 Received By: [Signature] Date: 2/19/07 Time: 0900
 Released By: [Signature] Date: 2/19/07 Time: 0950 Received By: Wobahn CJ Date: 2/19/07 Time: 0950

Analytical Report



TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 02/19/07
Work Order No: 07-02-1178
Preparation: EPA 3545
Method: EPA 8270C SIM
Units: mg/kg

Project: IQB1822

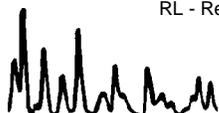
Page 2 of 2

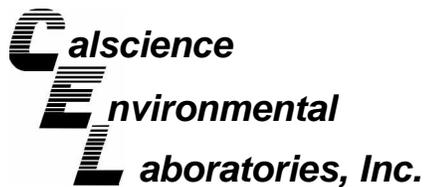
Client Sample Number	Lab Sample Number	Date Collected	Matrix	Instrument	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	099-12-413-26	N/A	Solid	GC/MS N	02/19/07	02/22/07	070219L05

Comment(s): -Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
1-Methylnaphthalene	ND	0.020	0.0018	1		Chrysene	ND	0.020	0.0020	1	
2-Methylnaphthalene	ND	0.020	0.0018	1		Di-n-Butyl Phthalate	ND	0.020	0.0021	1	
Acenaphthene	ND	0.020	0.0018	1		Dibenz (a,h) Anthracene	ND	0.020	0.0020	1	
Acenaphthylene	ND	0.020	0.0016	1		Diethyl Phthalate	ND	0.020	0.0020	1	
Anthracene	ND	0.020	0.0018	1		Fluoranthene	ND	0.020	0.0019	1	
Benzo (a) Anthracene	ND	0.020	0.0022	1		Fluorene	ND	0.020	0.0018	1	
Benzo (a) Pyrene	ND	0.020	0.0018	1		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0018	1	
Benzo (b) Fluoranthene	ND	0.020	0.0018	1		N-Nitrosodimethylamine	ND	0.020	0.0020	1	
Benzo (g,h,i) Perylene	ND	0.020	0.0018	1		Naphthalene	ND	0.020	0.0018	1	
Benzo (k) Fluoranthene	ND	0.020	0.0025	1		Phenanthrene	ND	0.020	0.0019	1	
Bis(2-Ethylhexyl) Phthalate	ND	0.020	0.0031	1		Pyrene	ND	0.020	0.0025	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>
2,4,6-Tribromophenol	82	32-143				2-Fluorobiphenyl	95	14-146			
2-Fluorophenol	99	15-138				Nitrobenzene-d5	118	18-162			
p-Terphenyl-d14	106	34-148				Phenol-d6	99	17-141			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers





Quality Control - Duplicate



TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

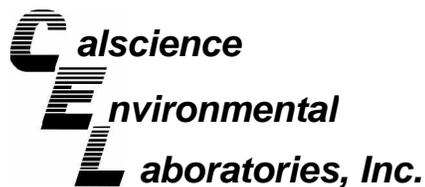
Date Received: 02/19/07
Work Order No: 07-02-1178
Preparation: N/A
Method: EPA 160.3

Project: IQB1822

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
IQB1822-06	Solid	N/A	N/A	02/21/07	70221TSD1

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total	84.7	84.5	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

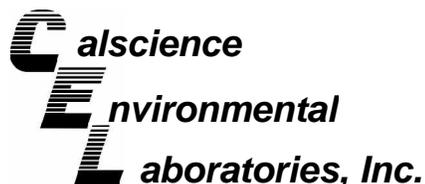
Date Received: 02/19/07
Work Order No: 07-02-1178
Preparation: EPA 3545
Method: EPA 8270C SIM

Project IQB1822

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
07-02-1177-3	Solid	GC/MS N	02/19/07	02/22/07	070219S05

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	73	88	40-160	19	0-20	
2,4-Dichlorophenol	74	90	40-160	20	0-20	
2-Methylphenol	78	89	40-160	13	0-20	
2-Nitrophenol	92	117	40-160	24	0-20	4
4-Chloro-3-Methylphenol	82	101	40-160	21	0-20	4
Acenaphthene	88	106	40-106	18	0-20	
Benzo (a) Pyrene	93	112	17-163	19	0-20	
Chrysene	93	107	17-168	14	0-20	
Di-n-Butyl Phthalate	101	130	40-160	24	0-20	4
Dimethyl Phthalate	86	111	40-160	25	0-20	4
Fluoranthene	93	112	26-137	18	0-20	
Fluorene	90	109	59-121	19	0-20	
N-Nitrosodimethylamine	92	112	40-160	19	0-20	
Naphthalene	89	103	21-133	14	0-20	
Phenanthrene	86	102	54-120	18	0-20	
Phenol	75	91	40-160	19	0-20	
Pyrene	90	113	6-156	23	0-46	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: N/A
Work Order No: 07-02-1178
Preparation: EPA 3545
Method: EPA 8270C SIM

Project: IQB1822

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-413-26	Solid	GC/MS N	02/16/07	02/23/07	070219L05

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	76	76	40-160	0	0-20	
2,4-Dichlorophenol	74	74	40-160	1	0-20	
2-Methylphenol	85	85	40-160	0	0-20	
2-Nitrophenol	88	91	40-160	4	0-20	
4-Chloro-3-Methylphenol	88	87	40-160	1	0-20	
Acenaphthene	84	83	48-108	1	0-11	
Benzo (a) Pyrene	89	89	17-163	1	0-20	
Chrysene	84	83	17-168	1	0-20	
Di-n-Butyl Phthalate	90	91	40-160	1	0-20	
Dimethyl Phthalate	87	86	40-160	1	0-20	
Fluoranthene	88	87	26-137	1	0-20	
Fluorene	85	84	59-121	1	0-20	
N-Nitrosodimethylamine	88	84	40-160	4	0-20	
Naphthalene	83	83	21-133	0	0-20	
Phenanthrene	82	82	54-120	0	0-20	
Phenol	77	78	40-160	2	0-20	
Pyrene	93	95	28-106	2	0-16	

RPD - Relative Percent Difference , CL - Control Limit

Work Order Number: 07-02-1178

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.



7022008

SUBCONTRACT ORDER - PROJECT # IQB1822

SENDING LABORATORY:	RECEIVING LABORATORY:
TestAmerica - Irvine, CA 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 260-3297 Project Manager: Michele Chamberlin	Weck Laboratories, Inc 14859 E. Clark Avenue City of Industry, CA 91745 Phone : (626) 336-2139 Fax: (626) 336-2634 Project Location: California

Work Order Comments: Level 4 QC. Boeing EDD, Report to MDL w/ J flags, report in dry weight, 2 week TAT.

Standard TAT is requested unless specific due date is requested => Due Date: _____ Initials: _____

Analysis	Expiration	Comments
Sample ID: IQB1822-03 Soil	Sampled: 02/16/07 10:20	
Level 4 Data Package - Weck	03/16/07 10:20	sub to Weck, provide Element transfer EDD
Mercury-7471 (dry wt)-OUT	03/16/07 10:20	J & B flag, sub to Weck, 9 day TAT

Containers Supplied:
2 oz jar (IQB1822-03C)

Sample ID: IQB1822-05 Soil	Sampled: 02/16/07 11:25	
Level 4 Data Package - Weck	03/16/07 11:25	sub to Weck, provide Element transfer EDD
Mercury-7471 (dry wt)-OUT	03/16/07 11:25	J & B flag, sub to Weck, 9 day TAT

Containers Supplied:
2 oz jar (IQB1822-05C)

SAMPLE INTEGRITY:

All containers intact: Yes No
 Custody Seals Present: Yes No
 Sample labels/COC agree: Yes No
 Samples Preserved Properly: Yes No
 Samples Received On Ice: Yes No
 Samples Received at (temp): 4.1

Released By: <u>[Signature]</u>	Date: <u>2-16-07</u>	Time: <u>8:45</u>	Received By: <u>[Signature]</u>	Date: <u>2-16-07</u>	Time: <u>7:00</u>
Released By: <u>[Signature]</u>	Date: <u>2-16-07</u>	Time: <u>8:45</u>	Received By: <u>[Signature]</u>	Date: <u>2/28/07</u>	Time: <u>8:45</u>



CERTIFICATE OF ANALYSIS

Client: TestAmerica, Inc. - Irvine
17461 Derian Ave, Suite 100
Irvine, CA 92614
Attention: Michele Chamberlin

Phone: (949) 261-1022

Fax: (949) 260-3297

Report Date: 03/06/07 15:04

Received Date: 02/20/07 08:45

Turn Around: Normal

Work Order #: 7022008

Client Project: IQB1822

NELAP #04229CA ELAP#1132 NEVADA #CA211 HAWAII LACSD #10143

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. Weck Laboratories, Inc. certifies that the test results meet all NELAC requirements unless noted in the case narrative. This analytical report is confidential and is only intended for the use of Weck Laboratories, Inc. and its client. This report contains the Chain of Custody document, which is an integral part of it, and can only be reproduced in full with the authorization of Weck Laboratories, Inc.

Dear Michele Chamberlin :

Enclosed are the results of analyses for samples received 02/20/07 08:45 with the Chain of Custody document. The samples were received in good condition, at 4.1 °C and on ice. All analysis met the method criteria except as noted below or in the report with data qualifiers.

Reviewed by:

Taylor Maligmat

Taylor Maligmat

Project Manager

Page 1 of 7





Weck Laboratories, Inc.
14859 E. Clark Ave.
Industry, CA 91745
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine
17461 Derian Ave, Suite 100
Irvine CA, 92614

Report ID: 7022008
Project ID: IQB1822

Date Received: 02/20/07 08:45
Date Reported: 03/06/07 15:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Sampled by:	Sample Comments	Laboratory	Matrix	Date Sampled
IQB1822-03	client		7022008-01	Solid	02/16/07 10:20
IQB1822-05	client		7022008-02	Solid	02/16/07 11:25



Weck Laboratories, Inc.
14859 E. Clark Ave.
Industry, CA 91745
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine
17461 Derian Ave, Suite 100
Irvine CA, 92614

Report ID: 7022008
Project ID: IQB1822

Date Received: 02/20/07 08:45
Date Reported: 03/06/07 15:04

QUALITY CONTROL SECTION



Weck Laboratories, Inc.
 14859 E. Clark Ave.
 Industry, CA 91745
 Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine
 17461 Derian Ave, Suite 100
 Irvine CA, 92614

Report ID: 7022008
 Project ID: IQB1822

Date Received: 02/20/07 08:45
 Date Reported: 03/06/07 15:04

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch W7B0833 - EPA 7471A										
Blank (W7B0833-BLK1)										
Analyzed: 02/22/07										
Mercury, Total	0.000902	0.010	mg/kg wet							J
LCS (W7B0833-BS1)										
Analyzed: 02/22/07										
Mercury, Total	0.0806	0.010	mg/kg wet	0.0833		96.8	80-120			
Matrix Spike (W7B0833-MS1)										
Source: 7022010-03										
Analyzed: 02/22/07										
Mercury, Total	2.20	0.44	mg/kg dry	0.0876	2.2	0.00	70-130			QM-02
Matrix Spike Dup (W7B0833-MSD1)										
Source: 7022010-03										
Analyzed: 02/22/07										
Mercury, Total	2.31	0.44	mg/kg dry	0.0905	2.2	122	70-130	4.88	25	QM-02



TestAmerica, Inc. - Irvine
17461 Derian Ave, Suite 100
Irvine CA, 92614

Report ID: 7022008
Project ID: IQB1822

Date Received: 02/20/07 08:45
Date Reported: 03/06/07 15:04

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
ND	NOT DETECTED at or above the Reporting Limit. If J-value reported, then NOT DETECTED at or above the Method Detection Limit (MDL)
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Sub	Subcontracted analysis, original report available upon request
MDL	Method Detection Limit
MDA	Minimum Detectable Activity

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California Department of Health Services.

The Reporting Limit (RL) is referenced as the Laboratory's Practical Quantitation Limit (PQL) or the Detection Limit for Reporting Purposes (DLR).

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

CHAIN OF CUSTODY RECORD

COC #:

ER
1900

Customer Information			Project Information			Project Information			
Site:	SSFL	Boeing	Collector:	Shelby Valenzuela	Boeing PM:				
Company:	MVH	Group 8 Data Gaps-Soil	Contact #:						
Report to:	Lisa Tucker	1891263	Requested Analyses Legend: Numerical values for analyses equate to turn around time in days H - Hold EH - Extended Hold						
Address:	9444 Farnham Street	Diana Buchanan							
	Suite 300	(626) 568-6897							
	San Diego								
	CA								
	92123	Test America, Inc.							
	boingeds@ch2m.com	Michele Chamberlin							
Email:	Lisa.Tucker@mwhglobal.com	17461 Derian Ave, Suite 100							
		Irvine, CA 92606							
		(949) 261-1022							
Sample Name	Matrix	Date	Time	No. of Containers					Comments
ESBS0019S02	Soil	2/16/2007	9:20	2	% Solids - Soil	H			Hold all analysis except for pH
ESBS0014S02	Soil	2/16/2007	10:00	2	TPH by SW8015BM - Soil	10			
ESBS0007S01	Soil	2/16/2007	10:20	2	SVOCs by SW8270C SIM - Soil	10	10	10	
ESBS0007S02	Soil	2/16/2007	10:50	2	pH by SW9045C - Soil	10	10	10	Hold all analysis except for pH
ESBS0006S01	Soil	2/16/2007	11:25	2	PCB by SW8082 - Soil	10	10	10	
ESBS0006S02	Soil	2/16/2007	11:40	2	Metals 7471A Soil Mercury	H	EH	EH	
					Metals 6020 Soil Lead	H			
					Metals 6010B/6020 Soil Group 8	H	H	H	

1. Relinquished by:	Date: 2-16-07	2. Received by: <i>[Signature]</i>	Date: 2/16/07
Company: MVH	Time: 1730	Company:	Time: 1750
3. Relinquished by: _____ Date: _____ 4. Received by: _____ Date: _____			
Comments: <i>infect</i> Geotracker EDF <input type="checkbox"/> Data Validation Package <input checked="" type="checkbox"/> Level IV			

16021505

LABORATORY REPORT

Prepared For: MWH-San Diego/Boeing
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project: SSFL Group 8 - SSPN
1891263

Sampled: 02/14/07
Received: 02/15/07
Issued: 03/05/07 13:37

NELAP #01108CA California ELAP#1197 CSDLAC #10256

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: Enclosed are complete final results. The results for Mercury were added.

LABORATORY ID	CLIENT ID	MATRIX
IQB1681-01	ESBS0012S01	Soil
IQB1681-02	ESBS0012S02	Soil
IQB1681-03	ESBS0009S01	Soil
IQB1681-04	ESBS0009S02	Soil
IQB1681-05	ESBS0019S01	Soil

Reviewed By:



TestAmerica - Irvine, CA
Michele Chamberlin
Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1681

Sampled: 02/14/07
 Received: 02/15/07

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: ESBS0012S01 (IQB1681-01) - Soil EPA 9045C	1	02/14/2007 11:15	02/15/2007 19:20	02/16/2007 09:50	02/16/2007 11:30
Sample ID: ESBS0012S02 (IQB1681-02) - Soil EPA 9045C	1	02/14/2007 11:30	02/15/2007 19:20	02/16/2007 09:50	02/16/2007 11:30
Sample ID: ESBS0009S01 (IQB1681-03) - Soil EPA 9045C	1	02/14/2007 13:10	02/15/2007 19:20	02/16/2007 09:50	02/16/2007 11:30
Sample ID: ESBS0009S02 (IQB1681-04) - Soil EPA 9045C	1	02/14/2007 13:30	02/15/2007 19:20	02/16/2007 09:50	02/16/2007 11:30
Sample ID: ESBS0019S01 (IQB1681-05) - Soil EPA 9045C	1	02/14/2007 14:50	02/15/2007 19:20	02/16/2007 09:50	02/16/2007 11:30

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1681

Sampled: 02/14/07
 Received: 02/15/07

METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7B16067 Extracted: 02/16/07											
Blank Analyzed: 02/17/2007 (7B16067-BLK1)											
EFH (C8 - C30)	ND	5.0	3.5	mg/kg wet							
EFH (C8 - C11)	ND	5.0	3.5	mg/kg wet							
EFH (C12 - C14)	ND	5.0	3.5	mg/kg wet							
EFH (C15 - C20)	ND	5.0	3.5	mg/kg wet							
EFH (C21 - C30)	ND	5.0	3.5	mg/kg wet							
Surrogate: n-Octacosane	5.92			mg/kg wet	6.67		89	40-125			
LCS Analyzed: 02/17/2007 (7B16067-BS1)											
EFH (C8 - C30)	24.6	5.0	3.5	mg/kg wet	33.3		74	40-115			
Surrogate: n-Octacosane	5.70			mg/kg wet	6.67		85	40-125			
Matrix Spike Analyzed: 02/17/2007 (7B16067-MS1) Source: IQB1173-01											
EFH (C8 - C30)	25.3	5.0	3.5	mg/kg wet	33.3	ND	76	40-120			
Surrogate: n-Octacosane	5.72			mg/kg wet	6.66		86	40-125			
Matrix Spike Dup Analyzed: 02/17/2007 (7B16067-MSD1) Source: IQB1173-01											
EFH (C8 - C30)	26.0	5.0	3.5	mg/kg wet	33.3	ND	78	40-120	3	30	
Surrogate: n-Octacosane	5.78			mg/kg wet	6.67		87	40-125			

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1681

Sampled: 02/14/07
 Received: 02/15/07

METHOD BLANK/QC DATA

POLYCHLORINATED BIPHENYLS (EPA 3545/8082)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7B22125 Extracted: 02/22/07											
Blank Analyzed: 02/23/2007 (7B22125-BLK1)											
Aroclor 1016	ND	50	15	ug/kg wet							
Aroclor 1221	ND	50	15	ug/kg wet							
Aroclor 1232	ND	50	10	ug/kg wet							
Aroclor 1242	ND	50	10	ug/kg wet							
Aroclor 1248	ND	50	10	ug/kg wet							
Aroclor 1254	ND	50	10	ug/kg wet							
Aroclor 1260	ND	50	10	ug/kg wet							
Surrogate: Decachlorobiphenyl	35.1			ug/kg wet	33.3		105	45-120			
LCS Analyzed: 02/23/2007 (7B22125-BS1)											
Aroclor 1016	255	50	15	ug/kg wet	267		96	60-115			
Aroclor 1260	267	50	10	ug/kg wet	267		100	60-115			
Surrogate: Decachlorobiphenyl	35.0			ug/kg wet	33.3		105	45-120			
Matrix Spike Analyzed: 02/23/2007 (7B22125-MS1) Source: IQB2290-03											
Aroclor 1016	940	150	45	ug/kg wet	267	ND	352	45-120			MI
Aroclor 1260	527	150	30	ug/kg wet	267	ND	197	45-120			MI
Surrogate: Decachlorobiphenyl	15.3			ug/kg wet	33.3		46	45-120			
Matrix Spike Dup Analyzed: 02/23/2007 (7B22125-MSD1) Source: IQB2290-03											
Aroclor 1016	973	150	45	ug/kg wet	267	ND	364	45-120	3	30	MI
Aroclor 1260	423	150	30	ug/kg wet	267	ND	158	45-120	22	30	MI
Surrogate: Decachlorobiphenyl	15.5			ug/kg wet	33.3		47	45-120			

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1681

Sampled: 02/14/07
 Received: 02/15/07

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 7B16102 Extracted: 02/16/07											
Blank Analyzed: 02/16/2007 (7B16102-BLK1)											
Antimony	ND	1.0	0.030	mg/kg wet							
Arsenic	ND	0.50	0.25	mg/kg wet							
Barium	ND	0.50	0.080	mg/kg wet							
Beryllium	ND	0.30	0.040	mg/kg wet							
Cadmium	ND	0.50	0.025	mg/kg wet							
Chromium	ND	1.0	0.35	mg/kg wet							
Cobalt	ND	0.50	0.080	mg/kg wet							
Copper	0.278	1.0	0.20	mg/kg wet							J
Lead	ND	0.50	0.050	mg/kg wet							
Molybdenum	0.120	1.0	0.10	mg/kg wet							J
Nickel	ND	1.0	0.45	mg/kg wet							
Selenium	ND	1.0	0.20	mg/kg wet							
Silver	ND	0.50	0.050	mg/kg wet							
Thallium	ND	0.50	0.10	mg/kg wet							
Vanadium	ND	1.0	0.40	mg/kg wet							
Zinc	ND	10	1.3	mg/kg wet							
LCS Analyzed: 02/16/2007 (7B16102-BS1)											
Antimony	51.2	1.0	0.030	mg/kg wet	50.0		102	80-120			
Arsenic	47.3	0.50	0.25	mg/kg wet	50.0		95	80-120			
Barium	52.2	0.50	0.080	mg/kg wet	50.0		104	80-120			
Beryllium	49.6	0.30	0.040	mg/kg wet	50.0		99	80-120			
Cadmium	50.4	0.50	0.025	mg/kg wet	50.0		101	80-120			
Chromium	48.6	1.0	0.35	mg/kg wet	50.0		97	80-120			
Cobalt	50.7	0.50	0.080	mg/kg wet	50.0		101	80-120			
Copper	51.6	1.0	0.20	mg/kg wet	50.0		103	80-120			
Lead	49.2	0.50	0.050	mg/kg wet	50.0		98	80-120			
Molybdenum	50.8	1.0	0.10	mg/kg wet	50.0		102	80-120			
Nickel	50.9	1.0	0.45	mg/kg wet	50.0		102	80-120			
Selenium	43.5	1.0	0.20	mg/kg wet	50.0		87	80-120			
Silver	26.8	0.50	0.050	mg/kg wet	25.0		107	80-120			
Thallium	48.4	0.50	0.10	mg/kg wet	50.0		97	80-120			
Vanadium	46.7	1.0	0.40	mg/kg wet	50.0		93	80-120			
Zinc	47.3	10	1.3	mg/kg wet	50.0		95	80-120			

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1681

Sampled: 02/14/07
 Received: 02/15/07

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7B16102 Extracted: 02/16/07											
Matrix Spike Analyzed: 02/16/2007 (7B16102-MS1)						Source: IQB1648-01					
Antimony	12.4	1.0	0.030	mg/kg wet	50.0	0.24	24	75-125			M2
Arsenic	40.8	0.50	0.25	mg/kg wet	50.0	2.2	77	75-125			
Barium	177	0.50	0.080	mg/kg wet	50.0	140	74	75-125			M2
Beryllium	36.8	0.30	0.040	mg/kg wet	50.0	0.37	73	75-125			M2
Cadmium	39.9	0.50	0.025	mg/kg wet	50.0	0.26	79	75-125			
Chromium	58.6	1.0	0.35	mg/kg wet	50.0	20	77	75-125			
Cobalt	45.8	0.50	0.080	mg/kg wet	50.0	9.7	72	75-125			M2
Copper	57.0	1.0	0.20	mg/kg wet	50.0	22	70	75-125			M2
Lead	59.1	0.50	0.050	mg/kg wet	50.0	10	98	75-125			
Molybdenum	40.8	1.0	0.10	mg/kg wet	50.0	0.91	80	75-125			
Nickel	48.7	1.0	0.45	mg/kg wet	50.0	14	69	75-125			M2
Selenium	37.9	1.0	0.20	mg/kg wet	50.0	0.27	75	75-125			
Silver	20.2	0.50	0.050	mg/kg wet	25.0	0.056	81	75-125			
Thallium	46.6	0.50	0.10	mg/kg wet	50.0	0.29	93	75-125			
Vanadium	79.9	1.0	0.40	mg/kg wet	50.0	43	74	75-125			M2
Zinc	114	10	1.3	mg/kg wet	50.0	72	84	75-125			
Matrix Spike Dup Analyzed: 02/16/2007 (7B16102-MSD1)						Source: IQB1648-01					
Antimony	12.0	1.0	0.030	mg/kg wet	50.0	0.24	24	75-125	3	20	M2
Arsenic	37.2	0.50	0.25	mg/kg wet	50.0	2.2	70	75-125	9	20	M2
Barium	158	0.50	0.080	mg/kg wet	50.0	140	36	75-125	11	20	M2
Beryllium	33.4	0.30	0.040	mg/kg wet	50.0	0.37	66	75-125	10	20	M2
Cadmium	35.7	0.50	0.025	mg/kg wet	50.0	0.26	71	75-125	11	20	M2
Chromium	53.9	1.0	0.35	mg/kg wet	50.0	20	68	75-125	8	20	M2
Cobalt	41.9	0.50	0.080	mg/kg wet	50.0	9.7	64	75-125	9	20	M2
Copper	60.0	1.0	0.20	mg/kg wet	50.0	22	76	75-125	5	20	
Lead	56.5	0.50	0.050	mg/kg wet	50.0	10	93	75-125	4	20	
Molybdenum	37.2	1.0	0.10	mg/kg wet	50.0	0.91	73	75-125	9	20	M2
Nickel	44.7	1.0	0.45	mg/kg wet	50.0	14	61	75-125	9	20	M2
Selenium	34.3	1.0	0.20	mg/kg wet	50.0	0.27	68	75-125	10	20	M2
Silver	18.2	0.50	0.050	mg/kg wet	25.0	0.056	73	75-125	10	20	M2
Thallium	41.8	0.50	0.10	mg/kg wet	50.0	0.29	83	75-125	11	20	
Vanadium	68.4	1.0	0.40	mg/kg wet	50.0	43	51	75-125	16	20	M2
Zinc	109	10	1.3	mg/kg wet	50.0	72	74	75-125	4	20	M2

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1681

Sampled: 02/14/07
 Received: 02/15/07

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 7B16104 Extracted: 02/16/07											
Blank Analyzed: 02/16/2007 (7B16104-BLK1)											
Aluminum	5.58	10	5.0	mg/kg wet							J
Boron	2.41	5.0	1.0	mg/kg wet							J
Lithium	ND	6.3	3.8	mg/kg wet							
Potassium	ND	50	19	mg/kg wet							
Sodium	ND	50	24	mg/kg wet							
LCS Analyzed: 02/16/2007 (7B16104-BS1)											
Aluminum	50.3	10	5.0	mg/kg wet	50.0		101	80-120			
Boron	46.3	5.0	1.0	mg/kg wet	50.0		93	80-120			
Lithium	49.0	6.3	3.8	mg/kg wet	50.0		98	80-120			
Potassium	458	50	19	mg/kg wet	500		92	80-120			
Sodium	477	50	24	mg/kg wet	500		95	80-120			
Matrix Spike Analyzed: 02/16/2007 (7B16104-MS1) Source: IQB1648-01											
Aluminum	18000	10	5.0	mg/kg wet	50.0	17000	2000	75-125			MHA
Boron	49.0	5.0	1.0	mg/kg wet	50.0	7.3	83	75-125			
Lithium	65.7	6.3	3.8	mg/kg wet	50.0	21	89	75-125			
Potassium	5950	50	19	mg/kg wet	500	5600	70	75-125			MHA
Sodium	921	50	24	mg/kg wet	500	430	98	75-125			
Matrix Spike Dup Analyzed: 02/16/2007 (7B16104-MSD1) Source: IQB1648-01											
Aluminum	17200	10	5.0	mg/kg wet	50.0	17000	400	75-125	5	20	MHA
Boron	50.1	5.0	1.0	mg/kg wet	50.0	7.3	86	75-125	2	20	
Lithium	67.1	6.3	3.8	mg/kg wet	50.0	21	92	75-125	2	20	
Potassium	5720	50	19	mg/kg wet	500	5600	24	75-125	4	20	MHA
Sodium	927	50	24	mg/kg wet	500	430	99	75-125	1	20	

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1681

Sampled: 02/14/07
 Received: 02/15/07

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7B16119 Extracted: 02/16/07											
Blank Analyzed: 02/16/2007 (7B16119-BLK1)											
Zirconium	ND	25	1.5	mg/kg wet							
LCS Analyzed: 02/16/2007 (7B16119-BS1)											
Zirconium	47.8	25	1.5	mg/kg wet	50.0		96	80-120			
Matrix Spike Analyzed: 02/16/2007 (7B16119-MS1)											
Zirconium	29.9	28	1.7	mg/kg dry	56.3	1.7	50	75-125			M2
Matrix Spike Dup Analyzed: 02/16/2007 (7B16119-MSD1)											
Zirconium	29.1	28	1.7	mg/kg dry	56.3	1.7	49	75-125	3	20	M2

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1681

Sampled: 02/14/07
 Received: 02/15/07

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 7B16073 Extracted: 02/16/07											
Duplicate Analyzed: 02/16/2007 (7B16073-DUP1)											
pH	7.56	NA	0.00	pH Units		7.55			0	5	
Batch: 7B16117 Extracted: 02/16/07											
Blank Analyzed: 02/19/2007 (7B16117-BLK1)											
Percent Solids	ND	0.10	0.10	%							
Duplicate Analyzed: 02/19/2007 (7B16117-DUP1)											
Percent Solids	18.0	0.10	0.10	%		18			0	20	
Duplicate Analyzed: 02/19/2007 (7B16117-DUP2)											
Percent Solids	19.9	0.10	0.10	%		20			1	20	

TestAmerica - Irvine, CA
 Michele Chamberlin
 Project Manager

MWH-San Diego/Boeing
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
1891263
Report Number: IQB1681

Sampled: 02/14/07
Received: 02/15/07

DATA QUALIFIERS AND DEFINITIONS

- B** Analyte was detected in the associated Method Blank.
- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- MHA** Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

TestAmerica - Irvine, CA
Michele Chamberlin
Project Manager

MWH-San Diego/Boeing
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - SSPN
 1891263
 Report Number: IQB1681

Sampled: 02/14/07
 Received: 02/15/07

Certification Summary

TestAmerica - Irvine, CA

Method	Matrix	Nelac	California
EPA 160.3 MOD	Soil	N/A	N/A
EPA 3545/8081A	Soil	X	X
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 8015B	Soil	X	X
EPA 8082	Soil	X	X
EPA 9045C	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Calscience-SUB *California Cert #1230*

7440 Lincoln Way - Garden Grove, CA 92841

Analysis Performed: 8270C (SIM)
 Samples: IQB1681-01, IQB1681-03

Analysis Performed: Dry Wt
 Samples: IQB1681-01, IQB1681-03

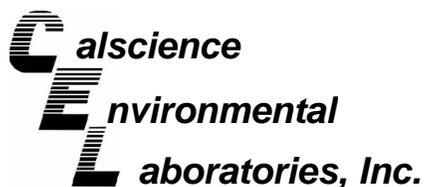
Weck Laboratories, Inc

14859 E. Clark Avenue - City of Industry, CA 91745

Analysis Performed: Mercury-7471 (dry wt)
 Samples: IQB1681-01, IQB1681-03

TestAmerica - Irvine, CA

Michele Chamberlin
 Project Manager



February 26, 2007

Michele Chamberlin
TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Subject: **CalScience Work Order No.: 07-02-1063**
Client Reference: IQB1681

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/16/2007 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard CalScience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, which appears to read 'Steven L. Lane for', is enclosed in a hand-drawn oval.

CalScience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Case Narrative for 07-02-1063

Sample Condition on Receipt

Four soil samples were received as part of this Work Order on February 16, 2007. The sample was transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (3.8°C) of the samples was measured upon arrival in the laboratory and were within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times

All holding time requirements were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

The method blank data showed non-detectable levels for all constituents.

Matrix Spikes

Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits, with the exception of specific analytes by EPA Method 8270C SIM. Please see Table A for details.



Case Narrative for 07-02-1063

Table A: Matrix Spike / Matrix Spike Duplicate outside acceptable limits	
EPA Method 8270C SIM	
Batch #	Analytes(s)
070219S05	2-Nitrophenol [*] , 4-Chloro-3-Methylphenol [*] , Di-n-Butyl Phthalate [*] & Dimethyl Phthalate [*]

*The relative percent difference (RPD) are outside acceptable limits. These recoveries have been flagged with a "4" qualifier.

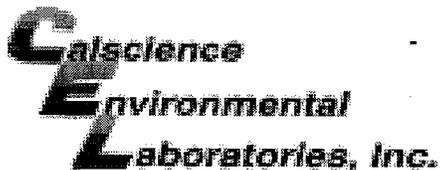
Laboratory Control Samples

The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

Surrogates

Surrogate recoveries for all samples were within acceptable control limits.





WORK ORDER #: 07 - 02 - 1063

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Test America

DATE: 02-14-07

TEMPERATURE - SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- Chilled, cooler with temperature blank provided.
Chilled, cooler without temperature blank.
Chilled and placed in cooler with wet ice.
Ambient and placed in cooler with wet ice.
Ambient temperature.
C Temperature blank.

LABORATORY (Other than CalScience Courier):

- C Temperature blank.
3.8 C IR thermometer.
Ambient temperature.

Initial: [Signature]

CUSTODY SEAL INTACT:

Sample(s): Cooler: No (Not Intact): Not Present: Initial: [Signature]

SAMPLE CONDITION:

Table with 4 columns: Description, Yes, No, N/A. Rows include Chain-Of-Custody document(s), Sampler's name, Sample container label(s), Sample container(s) intact, Correct containers and volume, Proper preservation, VOA vial(s) free of headspace, Tedlar bag(s) free of condensation.

Initial: [Signature]

COMMENTS:

Blank lines for handwritten comments.

1063



SUBCONTRACT ORDER - PROJECT # IQB1681

SENDING LABORATORY:
 TestAmerica - Irvine, CA
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614
 Phone: (949) 261-1022
 Fax: (949) 260-3297
 Project Manager: Michele Chamberlin

RECEIVING LABORATORY:
 Calscience-SUB
 7440 Lincoln Way
 Garden Grove, CA 92841
 Phone :714-895-5494
 Fax: 714-894-7501
 Project Location: California

Work Order Comments: Level 4 QC. Boeing EDD, Report to MDL w/ J flags, report in dry weight, 2 week TAT.

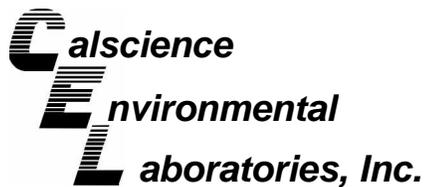
Standard TAT is requested unless specific due date is requested => Due Date: _____ **Initials:** _____

Analysis	Expiration	Comments
Sample ID: IQB1681-01 Soil	Sampled: 02/14/07 11:15	
8270C (SIM)-OUT	02/28/07 11:15	NDMA+PAHS+phtltes(1 run).Sub=Calsci,calc w/ sx wt
Level 3 Data Package - Out	03/14/07 11:15	Sub to Calscience,TA Lvl IV,EDD=Boeing
Containers Supplied: 2 oz jar (IQB1681-01C)		
Sample ID: IQB1681-02 Soil	Sampled: 02/14/07 11:30	
Extract/Hold-8270C-SIM-OUT	02/28/07 11:30	Sub to Calscience
Containers Supplied: 2 oz jar (IQB1681-02C)		
Sample ID: IQB1681-03 Soil	Sampled: 02/14/07 13:10	
8270C (SIM)-OUT	02/28/07 13:10	NDMA+PAHS+phtltes(1 run).Sub=Calsci,calc w/ sx wt
Level 3 Data Package - Out	03/14/07 13:10	Sub to Calscience,TA Lvl IV,EDD=Boeing
Containers Supplied: 2 oz jar (IQB1681-03C)		
Sample ID: IQB1681-04 Soil	Sampled: 02/14/07 13:30	
Extract/Hold-8270C-SIM-OUT	02/28/07 13:30	Sub to Calscience
Containers Supplied: 2 oz jar (IQB1681-04C)		

SAMPLE INTEGRITY:

All containers intact: Yes No Sample labels/COC agree: Yes No Samples Received On Ice:: Yes No
 Custody Seals Present: Yes No Samples Preserved Properly: Yes No Samples Received at (temp): _____

<i>[Signature]</i>			<i>[Signature]</i>	2-16-07	7:00
Released By	Date	Time	Received By	Date	Time
<i>[Signature]</i>	2-16-07	7:44	<i>[Signature]</i>	2/16/07	07:44
Released By	Date	Time	Received By	Date	Time



Quality Control - Duplicate



TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

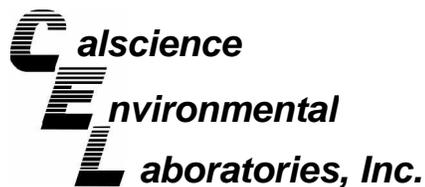
Date Received: 02/16/07
Work Order No: 07-02-1063
Preparation: N/A
Method: EPA 160.3

Project: IQB1681

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
IQB1681-03	Solid	N/A	N/A	02/20/07	70220TSD1

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total	89.4	89.6	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

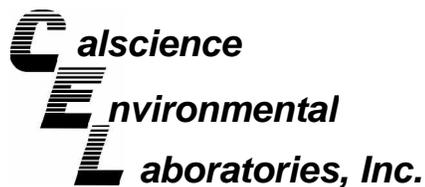
Date Received: 02/16/07
Work Order No: 07-02-1063
Preparation: EPA 3545
Method: EPA 8270C SIM

Project IQB1681

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
07-02-1177-3	Solid	GC/MS N	02/19/07	02/22/07	070219S05

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	73	88	40-160	19	0-20	
2,4-Dichlorophenol	74	90	40-160	20	0-20	
2-Methylphenol	78	89	40-160	13	0-20	
2-Nitrophenol	92	117	40-160	24	0-20	4
4-Chloro-3-Methylphenol	82	101	40-160	21	0-20	4
Acenaphthene	88	106	40-106	18	0-20	
Benzo (a) Pyrene	93	112	17-163	19	0-20	
Chrysene	93	107	17-168	14	0-20	
Di-n-Butyl Phthalate	101	130	40-160	24	0-20	4
Dimethyl Phthalate	86	111	40-160	25	0-20	4
Fluoranthene	93	112	26-137	18	0-20	
Fluorene	90	109	59-121	19	0-20	
N-Nitrosodimethylamine	92	112	40-160	19	0-20	
Naphthalene	89	103	21-133	14	0-20	
Phenanthrene	86	102	54-120	18	0-20	
Phenol	75	91	40-160	19	0-20	
Pyrene	90	113	6-156	23	0-46	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: N/A
Work Order No: 07-02-1063
Preparation: EPA 3545
Method: EPA 8270C SIM

Project: IQB1681

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-413-26	Solid	GC/MS N	02/16/07	02/23/07	070219L05

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	76	76	40-160	0	0-20	
2,4-Dichlorophenol	74	74	40-160	1	0-20	
2-Methylphenol	85	85	40-160	0	0-20	
2-Nitrophenol	88	91	40-160	4	0-20	
4-Chloro-3-Methylphenol	88	87	40-160	1	0-20	
Acenaphthene	84	83	48-108	1	0-11	
Benzo (a) Pyrene	89	89	17-163	1	0-20	
Chrysene	84	83	17-168	1	0-20	
Di-n-Butyl Phthalate	90	91	40-160	1	0-20	
Dimethyl Phthalate	87	86	40-160	1	0-20	
Fluoranthene	88	87	26-137	1	0-20	
Fluorene	85	84	59-121	1	0-20	
N-Nitrosodimethylamine	88	84	40-160	4	0-20	
Naphthalene	83	83	21-133	0	0-20	
Phenanthrene	82	82	54-120	0	0-20	
Phenol	77	78	40-160	2	0-20	
Pyrene	93	95	28-106	2	0-16	

RPD - Relative Percent Difference , CL - Control Limit

Work Order Number: 07-02-1063

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.





CERTIFICATE OF ANALYSIS

Client: TestAmerica, Inc. - Irvine
17461 Derian Ave, Suite 100
Irvine, CA 92614
Attention: Michele Chamberlin

Phone: (949) 261-1022

Fax: (949) 260-3297

Report Date: 03/02/07 16:56

Received Date: 02/16/07 11:18

Turn Around: Normal

Work Order #: 7021614

Client Project: IQB1681

NELAP #04229CA ELAP#1132 NEVADA #CA211 HAWAII LACSD #10143

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. Weck Laboratories, Inc. certifies that the test results meet all NELAC requirements unless noted in the case narrative. This analytical report is confidential and is only intended for the use of Weck Laboratories, Inc. and its client. This report contains the Chain of Custody document, which is an integral part of it, and can only be reproduced in full with the authorization of Weck Laboratories, Inc.

Dear Michele Chamberlin :

Enclosed are the results of analyses for samples received 02/16/07 11:18 with the Chain of Custody document. The samples were received in good condition, at 3.2 °C and on ice. All analysis met the method criteria except as noted below or in the report with data qualifiers.

Reviewed by:

Taylor Maligmat

Taylor Maligmat

Project Manager

Page 1 of 7





Weck Laboratories, Inc.
14859 E. Clark Ave.
Industry, CA 91745
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine
17461 Derian Ave, Suite 100
Irvine CA, 92614

Report ID: 7021614
Project ID: IQB1681

Date Received: 02/16/07 11:18
Date Reported: 03/02/07 16:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Sampled by:	Sample Comments	Laboratory	Matrix	Date Sampled
IQB1681-01	client		7021614-01	Solid	02/14/07 11:15
IQB1681-03	client		7021614-02	Solid	02/14/07 13:10



Weck Laboratories, Inc.
14859 E. Clark Ave.
Industry, CA 91745
Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine
17461 Derian Ave, Suite 100
Irvine CA, 92614

Report ID: 7021614
Project ID: IQB1681

Date Received: 02/16/07 11:18
Date Reported: 03/02/07 16:56

QUALITY CONTROL SECTION



Weck Laboratories, Inc.
 14859 E. Clark Ave.
 Industry, CA 91745
 Phone 626.336.2139 Fax 626.336.2634

TestAmerica, Inc. - Irvine
 17461 Derian Ave, Suite 100
 Irvine CA, 92614

Report ID: 7021614
 Project ID: IQB1681

Date Received: 02/16/07 11:18
 Date Reported: 03/02/07 16:56

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch W7B0833 - EPA 7471A										
Blank (W7B0833-BLK1)										
Analyzed: 02/22/07										
Mercury, Total	0.000902	0.010	mg/kg wet							J
LCS (W7B0833-BS1)										
Analyzed: 02/22/07										
Mercury, Total	0.0806	0.010	mg/kg wet	0.0833		96.8	80-120			
Matrix Spike (W7B0833-MS1)										
Source: 7022010-03										
Analyzed: 02/22/07										
Mercury, Total	2.20	0.44	mg/kg dry	0.0876	2.2	0.00	70-130			QM-02
Matrix Spike Dup (W7B0833-MSD1)										
Source: 7022010-03										
Analyzed: 02/22/07										
Mercury, Total	2.31	0.44	mg/kg dry	0.0905	2.2	122	70-130	4.88	25	QM-02



TestAmerica, Inc. - Irvine
17461 Derian Ave, Suite 100
Irvine CA, 92614

Report ID: 7021614
Project ID: IQB1681

Date Received: 02/16/07 11:18
Date Reported: 03/02/07 16:56

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
ND	NOT DETECTED at or above the Reporting Limit. If J-value reported, then NOT DETECTED at or above the Method Detection Limit (MDL)
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
% Rec	Percent Recovery
Sub	Subcontracted analysis, original report available upon request
MDL	Method Detection Limit
MDA	Minimum Detectable Activity

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

An Absence of Total Coliform meets the drinking water standards as established by the California Department of Health Services.

The Reporting Limit (RL) is referenced as the Laboratory's Practical Quantitation Limit (PQL) or the Detection Limit for Reporting Purposes (DLR).

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.



STL Sacramento
880 Riverside Parkway
West Sacramento, CA 95605

Tel: 916 373 5600
Fax: 916 372 1059
www.stl-inc.com

April 20, 2007

STL SACRAMENTO PROJECT NUMBER: G7D060344
PO/CONTRACT: Task Order 102606

Lisa Tucker
MWH Americas, Inc.
9444 Farnham Street Suite 300
San Diego, CA 92123

Dear Ms. Tucker,

This report contains the analytical results for the sample received under chain of custody by STL Sacramento on April 6, 2007. This sample is associated with your 1891263 project.

The test results in this report meet all NELAC requirements for parameters that accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916) 374-4433.

Sincerely,

Robert Hrabak
Project Manager

CC: Patti Meeks - MECX

TABLE OF CONTENTS

STL SACRAMENTO PROJECT NUMBER G7D060344

Case Narrative

STL Sacramento Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

SOLID, 6020

Sample: 1

Sample Data Sheet

Method Blank Report

Laboratory QC Reports

General Chemistry - Various Methods

Samples: 1

Sample Data Sheet

Method Blank Report

Laboratory QC Reports

Full Raw Data Report

CASE NARRATIVE

STL SACRAMENTO PROJECT NUMBER G7D060344

General Comments

The sample was received at 17°C.

There were no anomalies associated with this project.

STL Sacramento Certifications/Accreditations

Certifying State	Certificate #	Certifying State	Certificate #
Alaska	UST-055	Oregon*	CA 200005
Arizona	AZ0616	Pennsylvania	68-1272
Arkansas	04-067-0	South Carolina	87014002
California*	01119CA	Texas	TX 270-2004A
Colorado	NA	Utah*	QUANI
Connecticut	PH-0691	Virginia	00178
Florida*	E87570	Washington	C087
Georgia	960	West Virginia	9930C, 334
Hawaii	NA	Wisconsin	998204680
Louisiana*	01944	NFESC	NA
Michigan	9947	USACE	NA
Nevada	CA44	USDA Foreign Plant	37-82605
New Jersey*	CA005	USDA Foreign Soil	S-46613
New York*	11666		

*NELAP accredited. A more detailed parameter list is available upon request. Update 1/27/05

QC Parameter Definitions

QC Batch: The QC batch consists of a set of up to 20 field samples that behave similarly (i.e., same matrix) and are processed using the same procedures, reagents, and standards at the same time.

Method Blank: An analytical control consisting of all reagents, which may include internal standards and surrogates, and is carried through the entire analytical procedure. The method blank is used to define the level of laboratory background contamination.

Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD): An aliquot of blank matrix spiked with known amounts of representative target analytes. The LCS (and LCSD as required) is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. If an LCSD is performed, it may also be used to evaluate the precision of the process.

Duplicate Sample (DU): Different aliquots of the same sample are analyzed to evaluate the precision of an analysis.

Surrogates: Organic compounds not expected to be detected in field samples, which behave similarly to target analytes. These are added to every sample within a batch at a known concentration to determine the efficiency of the sample preparation and analytical process.

Matrix Spike and Matrix Spike Duplicate (MS/MSD): An MS is an aliquot of a matrix fortified with known quantities of specific compounds and subjected to an entire analytical procedure in order to indicate the appropriateness of the method for a particular matrix. The percent recovery for the respective compound(s) is then calculated. The MSD is a second aliquot of the same matrix as the matrix spike, also spiked, in order to determine the precision of the method.

Isotope Dilution: For isotope dilution methods, isotopically labeled analogs (internal standards) of the native target analytes are spiked into the sample at time of extraction. These internal standards are used for quantitation, and monitor and correct for matrix effects. Since matrix effects on method performance can be judged by the recovery of these analogs, there is little added benefit of performing MS/MSD for these methods. MS/MSD are only performed for client or QAPP requirements.

Control Limits: The reported control limits are either based on laboratory historical data, method requirements, or project data quality objectives. The control limits represent the estimated uncertainty of the test results.

Sample Summary

G7D060344

<u>WO#</u>	<u>Sample #</u>	<u>Client Sample ID</u>	<u>Sampling Date</u>	<u>Received Date</u>
JTHQ7	1	ESBS0034S01SP	4/3/2007 02:00 PM	4/6/2007 09:15 AM

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight

Lot
ID:

G7D060344

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOA*	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
VOAh*	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
AGB																				
AGBs																				
250AGB																				
250AGBs																				
250AGBn																				
500AGB																				
___AGJ																				
500AGJ																				
250AGJ																				
125AGJ																				
___CGJ																				
500CGJ																				
250CGJ																				
125CGJ																				
PJ																				
PJn																				
500PJ																				
500PJn																				
500PJna																				
500PJzn/na																				
250PJ																				
250PJn																				
250PJna																				
250PJzn/na																				
Acetate Tube																				
6"CT	1																			
Encore																				
Folder/filter																				
PUF																				
Petri/Filter																				
XAD Trap																				
Ziploc																				

1 = hydrochloric acid s = sulfuric acid na = sodium hydroxide n = nitric acid zn = zinc acetate

Number of VOAs with air bubbles present / total number of VOA's

ANALYTICAL RESULTS

Prepared for:

MECX, LLC
12269 East Vassar Drive
Aurora CO 80014

720-535-5502

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425**SAMPLE GROUP**

The sample group for this submittal is 1026673. Samples arrived at the laboratory on Friday, February 23, 2007.

Client DescriptionESBS0005S01SP Proficiency Soil Sample
ESBS0005S01SP Proficiency Soil Sample**Lancaster Labs Number**4989246
4989247**METHODOLOGY**

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

ELECTRONIC COPY TO	MECX, LLC	Attn: Elizabeth Wessling
1 COPY TO	Montgomery Watson Harza	Attn: Lisa Tucker
ELECTRONIC COPY TO	MECX, LLC	Attn: Kim Schultz
1 COPY TO	Data Package Group	

Questions? Contact your Client Services Representative
Kay G Hower at (717) 656-2300

Respectfully Submitted,

Quality Control Summary

 Client Name: MECX, LLC
 Reported: 03/09/07 at 09:59 AM

Group Number: 1026673

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank LOQ**</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 07054820002B	Sample number(s): 4989246-4989247								
Moisture					100		99-101		
Moisture					100		99-101		
Batch number: 070550004A	Sample number(s): 4989246								
C8-C11	N.D.	12.	4.0	mg/kg					
C12-C14	N.D.	12.	4.0	mg/kg					
C15-C20	N.D.	12.	4.0	mg/kg					
C21-C30	N.D.	12.	4.0	mg/kg					
Total TPH	N.D.	12.	4.0	mg/kg	78	84	68-115	7	20
Batch number: 070570002A	Sample number(s): 4989246								
PCB-1016	N.D.	17.	3.3	ug/kg	87		72-120		
PCB-1221	N.D.	17.	5.2	ug/kg					
PCB-1232	N.D.	17.	3.3	ug/kg					
PCB-1242	N.D.	17.	3.3	ug/kg					
PCB-1248	N.D.	17.	3.3	ug/kg					
PCB-1254	N.D.	17.	3.3	ug/kg					
PCB-1260	N.D.	17.	3.3	ug/kg	94		76-122		
Batch number: 07057039401A	Sample number(s): 4989247								
pH					100		99-101		
Batch number: 070595708001	Sample number(s): 4989247								
Aluminum	N.D.	20.0	3.35	mg/kg	101		85-115		
Potassium	N.D.	50.0	3.31	mg/kg	109		73-127		
Sodium	42.2 J	100.	34.8	mg/kg	113		64-136		
Barium	0.0590 J	0.500	0.0230	mg/kg	100		83-117		
Cobalt	N.D.	0.500	0.130	mg/kg	102		82-118		
Molybdenum	N.D.	1.00	0.410	mg/kg	106		80-120		
Silver	N.D.	0.500	0.170	mg/kg	103		66-134		
Vanadium	N.D.	0.500	0.160	mg/kg	108		68-132		
Zinc	N.D.	2.00	0.655	mg/kg	102		79-121		
Boron	1.13 J	5.00	0.570	mg/kg	110		64-136		
Batch number: 070595711001	Sample number(s): 4989247								
Mercury	N.D.	0.100	0.0105	mg/kg	81		66-133		
Batch number: 070596150001A	Sample number(s): 4989247								
Antimony	0.0095 J	0.100	0.0050	mg/kg	53		0-264		
Arsenic	N.D.	0.200	0.0170	mg/kg	82		66-101		
Beryllium	N.D.	0.0200	0.0028	mg/kg	102		80-120		
Chromium	0.0876 J	0.200	0.0310	mg/kg	101		73-127		
Copper	0.0389 J	0.100	0.0350	mg/kg	104		82-118		
Lead	0.0324 J	0.100	0.0150	mg/kg	100		82-118		
Nickel	N.D.	0.200	0.0500	mg/kg	102		82-118		
Selenium	N.D.	0.200	0.0370	mg/kg	97		74-126		

*- Outside of specification

**-This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

Quality Control Summary

 Client Name: MECX, LLC
 Reported: 03/09/07 at 09:59 AM

Group Number: 1026673

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank LOQ**</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Thallium	N.D.	0.0500	0.00094	mg/kg	102		78-122		
Batch number: 070596150001C	Sample number(s): 4989247								
Cadmium	N.D.	0.0250	0.0038	mg/kg	102		81-119		
Batch number: 07066SLC026	Sample number(s): 4989246								
Naphthalene	N.D.	3.	1.	ug/kg	102	100	63-116	2	30
2-Methylnaphthalene	N.D.	2.	0.7	ug/kg	98	95	64-119	2	30
1-Methylnaphthalene	N.D.	3.	2.	ug/kg	94	92	66-105	2	30
Acenaphthylene	N.D.	2.	0.3	ug/kg	86	84	61-109	2	30
Acenaphthene	N.D.	2.	0.7	ug/kg	103	101	65-120	2	30
Fluorene	N.D.	2.	0.7	ug/kg	99	97	66-122	3	30
Phenanthrene	N.D.	2.	0.7	ug/kg	99	98	64-118	1	30
Anthracene	N.D.	2.	0.3	ug/kg	92	90	52-128	2	30
Fluoranthene	N.D.	2.	0.7	ug/kg	103	102	57-128	0	30
Pyrene	N.D.	2.	0.7	ug/kg	105	104	65-127	0	30
Benzo(a)anthracene	N.D.	2.	0.7	ug/kg	101	101	59-134	0	30
Chrysene	N.D.	2.	0.3	ug/kg	104	104	57-122	0	30
Benzo(b)fluoranthene	N.D.	2.	1.	ug/kg	97	99	53-146	2	30
Benzo(k)fluoranthene	N.D.	2.	1.	ug/kg	96	96	62-128	0	30
Benzo(a)pyrene	N.D.	2.	0.7	ug/kg	91	91	59-126	0	30
Indeno(1,2,3-cd)pyrene	N.D.	2.	1.	ug/kg	91	92	64-138	1	30
Dibenz(a,h)anthracene	N.D.	2.	1.	ug/kg	76	76	51-143	0	30
Benzo(g,h,i)perylene	N.D.	2.	1.	ug/kg	93	94	62-135	1	30

Sample Matrix Quality Control

 Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>BKG MAX</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 07054820002B	Sample number(s): 4989246-4989247 BKG: P989175							
Moisture					14.1	14.8	5	15
Moisture					14.1	14.8	5	15
Batch number: 070550004A	Sample number(s): 4989246 UNSPK: 4989246							
Total TPH	75		60-116					
Batch number: 070570002A	Sample number(s): 4989246 UNSPK: P990763							
PCB-1016	88	84	45-125	5	50			
PCB-1260	83	83	62-130	0	50			
Batch number: 07057039401A	Sample number(s): 4989247 BKG: P987064							
pH					12.0	12.0	0	1
Batch number: 070595708001	Sample number(s): 4989247 UNSPK: 4989247 BKG: 4989247							
Aluminum	(2)	(2)	75-125	3	20	26,200.	7	20
Potassium	(2)	(2)	75-125	7	20	2,470.	5	20
Sodium	108	106	75-125	1	20	382.	4 (1)	20
Barium	101	101	75-125	0	20	107.	3	20
Cobalt	100	104	81-110	3	20	8.07	8	20

*- Outside of specification

**-This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

Quality Control Summary

Client Name: MECX, LLC
Reported: 03/09/07 at 09:59 AM

Group Number: 1026673

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS	MSD	MS/MSD	RPD	BKG	DUP	DUP	Dup
	%REC	%REC	Limits	RPD	MAX	Conc	Conc	RPD
Molybdenum	95	96	77-110	1	20	0.817 J	N.D.	200* (1)
Silver	103	104	75-125	0	20	0.398 J	0.448 J	12 (1)
Vanadium	103	100	75-125	1	20	54.6	55.1	1
Zinc	110	87	75-125	10	20	63.6	61.6	3
Boron	100	100	80-110	0	20	5.30	5.16	3 (1)
Batch number: 070595711001 Sample number(s): 4989247 UNSPK: 4989247 BKG: 4989247								
Mercury	106	101	80-120	4	20	0.0195 J	0.0170 J	14 (1)
Batch number: 070596150001A Sample number(s): 4989247 UNSPK: 4989247 BKG: 4989247								
Antimony	16*	15*	75-125	2	20	0.0394 J	0.0402 J	2 (1)
Arsenic	(2)	(2)	70-130	6	20	4.60	4.36	5 (1)
Beryllium	82	92	75-125	4	20	0.726	0.705	3
Chromium	(2)	(2)	75-125	1	20	27.7	25.5	8
Copper	81	91	75-125	3	20	11.5	11.1	3
Lead	(2)	(2)	75-125	14	20	7.42	7.70	4
Nickel	68*	94	75-125	7	20	14.3	13.9	2
Selenium	92	83	75-130	7	20	0.388 J	N.D.	200* (1)
Thallium	90	97	75-125	4	20	0.230	0.229	1 (1)
Batch number: 070596150001C Sample number(s): 4989247 UNSPK: 4989247 BKG: 4989247								
Cadmium	97	106	75-125	5	20	0.261	0.272	4

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Custom TPH with Ranges (soil)
Batch number: 070550004A

	Chlorobenzene	Orthoterphenyl
4989246	62	75
Blank	85	100
LCS	70	98
LCSD	74	99
MS	79	97
Limits:	10-159	27-139

Analysis Name: PCBs in Solids
Batch number: 070570002A

	Tetrachloro-m-xylene	Decachlorobiphenyl
4989246	97	81
Blank	99	86
LCS	91	86
MS	99	77
MSD	93	77

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

Quality Control Summary

Client Name: MECX, LLC

Group Number: 1026673

Reported: 03/09/07 at 09:59 AM

Surrogate Quality Control

Limits:	53-139	53-142	
Analysis Name: Selected SVOA's in soil by SIM			
Batch number: 07066SLC026			
	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
4989246	111	106	113
Blank	105	106	110
LCS	107	105	106
LCSD	104	102	106
Limits:	42-142	48-122	51-155

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
C	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	l	liter(s)
ml	milliliter(s)	ul	microliter(s)
m3	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml
<	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
ppm	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.



May 30, 2007

Ms. Elizabeth Wessling, MECx
MECx, LLC
12269 East Vassar Drive
Aurora, Colorado 80014

Re: SSFL
Project Number: 1891263
Project Name: Group 8 Step-out
Work Order: 186314
SDG: 186314H

Dear Ms. Wessling,

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on April 06, 2007. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4475.

Sincerely,

Martha Harrison
Project Manager

Purchase Order: Task Order 002
Chain of Custody: MWHSV20070403_01
Enclosures

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	11
Data Qualifiers Definitions	18
Laboratory Certifications	20
Percent Moisture	22
Metals Analysis	26
Case Narrative	27
Sample Data Summary	32
Quality Control Summary.....	36
Standards	54
Raw Data.....	64
Miscellaneous	204

Case Narrative

**Case Narrative
for
Boeing - Santa Susanna Field Laboratory
Work Order: 186314
SDG: 186314H**

May 30, 2007

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 06, 2007 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

The laboratory received the following samples:

<u>Laboratory Identification</u>	<u>Sample Description</u>
186314001	ESBS0024S02
186314002	ESBS0024S04
186314003	ESBS0022S02

Items of Note

Boeing - Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package. On May 18th, the client requested the lab to report Sodium and Aluminum analysis for samples ESBS0024S02, ESBS0024S04, and ESBS0022S02.

Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.


Martha Harrison
Project Manager

Subject: RE: Additional analyses

From: "Elizabeth Wessling" <elizabeth.wessling@mecx.net>

Date: Fri, 18 May 2007 11:42:42 -0500

To: "Lisa J Tucker" <Lisa.J.Tucker@us.mwhglobal.com>, "Martha Harrison" <Martha.Harrison@gel.com>

Martha:

I concur with the request for official purposes.

Thanks

Elizabeth A. Wessling
Senior Environmental Chemist

Phone: 720.535.5502

Cell: 303.881.6816

Fax: 720.535.7555

elizabeth.wessling@mecx.net

MECX, LLC

12269 East Vassar Drive

Aurora, Colorado 80014

www.mecx.net

A Service-Disabled Veteran-Owned Small Business

CONFIDENTIALITY NOTICE: This electronic mail transmission (message and any included attachments) may be confidential and are intended for the use of the addressee(s) only. It may contain information that is confidential, privileged, proprietary, or otherwise legally exempt from disclosure. If you are not the intended recipient, you are hereby notified that you are not authorized to read, print, retain, copy or disseminate this message, any part of it, or any attachments. If you have received this message in error, please delete this message and any attachments from your system without reading the content and notify the sender immediately of the inadvertent transmission.

-----Original Message-----

From: Lisa J Tucker [mailto:Lisa.J.Tucker@us.mwhglobal.com]

Sent: Thursday, May 17, 2007 6:22 PM

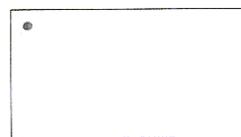
To: Martha Harrison

Cc: Elizabeth Wessling

Subject: Additional analyses

Martha,

We would like to release the following samples from hold for Aluminum and Sodium:



COC # MWHSV20070403_00

Work Order #1168426

SDG # 183796

Please let me know what the quickest achievable turn around time would be and I will send you corrected COCs.

Thanks you for your cooperation,
Lisa J. Tucker
Senior Environmental Scientist

MWH Americas, Inc.
9444 Farnham Street
Suite 300
San Diego, CA 92123
858.751.1240 - Direct Line
858.751.1201 - Fax
Lisa.Tucker@mwhglobal.com

Subject: Re: Additional analyses
From: Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>
Date: Fri, 18 May 2007 11:44:17 -0700
To: Martha Harrison <Martha.Harrison@gel.com>

Martha,
Attached are the edited COCs with hold release requested:

Thanks for pushing this through,
Lisa J. Tucker
Senior Environmental Scientist
MWH Americas, Inc.
9444 Farnham Street
Suite 300
San Diego, CA 92123
858.751.1240 - Direct Line
858.751.1201 - Fax
Lisa.Tucker@mwhglobal.com

Martha Harrison
<Martha.Harrison@gel.com>

05/18/2007 06:18 AM

To: Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>
cc: Elizabeth Wessling <elizabeth.wessling@mecx.net>, Ben Finley <ben01223@gel.com>, Christy Keenan <christy.keenan@gel.com>, Nancy Mattern <nancy.mattern@gel.com>
Subject: Re: Additional analyses

Lisa,

I will re-log the samples today. I've checked with the lab for the quickest TAT for these samples. The lab can do a 5 working day Fax and 10 working day data package and EDD.

Thanks,
Martha

~~~~~  
Martha Harrison  
Federal Project Manager  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC 29407  
(843) 769-7376 x4475  
(843) 769-7384 Direct Line  
(843) 766-1178 Fax  
Martha.Harrison@gel.com

Lisa J Tucker wrote:  
>  
> Martha,  
> We would like to release the following samples from hold for Aluminum  
> and Sodium:  
>  
>  
> COC # MWHSV20070403\_00  
> Work Order #1168426  
> SDG # 183796  
>  
> Please let me know what the quickest achievable turn around time would  
> be and I will send you corrected COCs.  
>  
> Thanks you for your cooperation,  
> Lisa J. Tucker  
> Senior Environmental Scientist  
> MWH Americas, Inc.  
> 9444 Farnham Street  
> Suite 300  
> San Diego, CA 92123  
> 858.751.1240 - Direct Line  
> 858.751.1201 - Fax  
> Lisa.Tucker@mwhglobal.com  
>

The information contained in this message is confidential and is intended only for the use of the individual or firm of record. If you are not the intended recipient and have received this message in error, you are asked not to copy or distribute any of the pages that follow. Please notify the sender immediately

Re: Additional analyses

by telephone or email if you have received this communication in error and destroy the contents that do not pertain to your business with The GEL Group, INC.

**MWHSV20070403\_Hold Release\_051707.PDF**

**Subject:** RE: TAT Extension due to Memorial Day Holiday

**From:** "Elizabeth Wessling" <elizabeth.wessling@mecx.net>

**Date:** Tue, 22 May 2007 11:32:01 -0500

**To:** "Martha Harrison" <Martha.Harrison@gel.com>, "Sarah E VonRaesfeld" <Sarah.E.VonRaesfeld@us.mwhglobal.com>, "Lisa J Tucker" <Lisa.J.Tucker@us.mwhglobal.com>

Yes, of course

Elizabeth A. Wessling  
Senior Environmental Chemist

Phone: 720.535.5502

Cell: 303. 881.6816

Fax: 720.535.7555

[elizabeth.wessling@mecx.net](mailto:elizabeth.wessling@mecx.net)

MECX, LLC

12269 East Vassar Drive

Aurora, Colorado 80014

[www.mecx.net](http://www.mecx.net)

A Service-Disabled Veteran-Owned Small Business

CONFIDENTIALITY NOTICE: This electronic mail transmission (message and any included attachments) may be confidential and are intended for the use of the addressee(s) only. It may contain information that is confidential, privileged, proprietary, or otherwise legally exempt from disclosure. If you are not the intended recipient, you are hereby notified that you are not authorized to read, print, retain, copy or disseminate this message, any part of it, or any attachments. If you have received this message in error, please delete this message and any attachments from your system without reading the content and notify the sender immediately of the inadvertent transmission.

-----Original Message-----

From: Martha Harrison [<mailto:Martha.Harrison@gel.com>]

Sent: Tuesday, May 22, 2007 11:17 AM

To: Elizabeth Wessling; Sarah E VonRaesfeld; Lisa J Tucker

Subject: TAT Extension due to Memorial Day Holiday

Elizabeth, Sarah, and Lisa,

Is it acceptable to extend the due dates one working day for all SDGs due on or after Monday, May 28th?

Thanks,  
Martha

~~~~~  
Martha Harrison
Federal Project Manager
GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
(843) 769-7376 x4475
(843) 769-7384 Direct Line
(843) 766-1178 Fax
Martha.Harrison@gel.com

The information contained in this message is confidential and is intended only for the use of the individual or firm of record. If you are not the intended recipient and have received this message in error, you are asked not to copy or distribute any of the pages that follow. Please notify the sender immediately by telephone or email if you have received this communication in error

RE: TAT Extension due to Memorial Day Holiday

and destroy
the contents that do not pertain to your business with The GEL Group,
INC.

Re: TAT Extension due to Memorial Day Holiday

Subject: Re: TAT Extension due to Memorial Day Holiday
From: Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>
Date: Tue, 22 May 2007 09:36:45 -0700
To: Martha Harrison <Martha.Harrison@gel.com>
CC: Elizabeth Wessling <elizabeth.wessling@mecx.net>, Sarah E VonRaesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>

As long as Liz is fine with the schedule I'm good too.

Martha Harrison
<Martha.Harrison@gel.com>

05/22/2007 09:16 AM

To: Elizabeth Wessling <elizabeth.wessling@mecx.net>, Sarah E VonRaesfeld
<Sarah.E.VonRaesfeld@us.mwhglobal.com>, Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>
cc:
Subject: TAT Extension due to Memorial Day Holiday

Elizabeth, Sarah, and Lisa,

Is it acceptable to extend the due dates one working day for all SDGs
due on or after Monday, May 28th?

Thanks,
Martha

~~~~~  
Martha Harrison  
Federal Project Manager  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC 29407  
(843) 769-7376 x4475  
(843) 769-7384 Direct Line  
(843) 766-1178 Fax  
Martha.Harrison@gel.com

The information contained in this message is confidential and is intended  
only for the use of the individual or firm of record. If you are not the intended  
recipient and have received this message in error, you are asked not to copy  
or distribute any of the pages that follow. Please notify the sender immediately  
by telephone or email if you have received this communication in error and destroy  
the contents that do not pertain to your business with The GEL Group, INC.

Re: TAT Extension due to Memorial Day Holiday

**Subject:** Re: TAT Extension due to Memorial Day Holiday

**From:** Sarah E VonRaesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>

**Date:** Tue, 22 May 2007 09:22:03 -0700

**To:** Martha Harrison <Martha.Harrison@gel.com>

**CC:** Elizabeth Wessling <elizabeth.wessling@mecx.net>, Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>

It is fine for my data.



**Martha Harrison** <Martha.Harrison@gel.com>

05/22/2007 09:16 AM

To Elizabeth Wessling <elizabeth.wessling@mecx.net>, Sarah E VonRaesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>, Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>

cc

Subject TAT Extension due to Memorial Day Holiday

Elizabeth, Sarah, and Lisa,

Is it acceptable to extend the due dates one working day for all SDGs due on or after Monday, May 28th?

Thanks,  
Martha

~~~~~  
Martha Harrison
Federal Project Manager
GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
(843) 769-7376 x4475
(843) 769-7384 Direct Line
(843) 766-1178 Fax
Martha.Harrison@gel.com

The information contained in this message is confidential and is intended only for the use of the individual or firm of record. If you are not the intended recipient and have received this message in error, you are asked not to copy or distribute any of the pages that follow. Please notify the sender immediately by telephone or email if you have received this communication in error and destroy the contents that do not pertain to your business with The GEL Group, INC.



SAMPLE RECEIPT & REVIEW FORM

PM use only

186314

Client: <u>Boeing / SSFL</u>	SDG/ARCOC/Work Order: <u>1837965, 183799W</u>
Date Received: <u>4-6-07</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <u>mtf</u>
Received By: <u>mtf</u>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.			<input checked="" type="checkbox"/>	Circle Coolant # ice bags <u>blue ice</u> dry ice none other (describe) <u>gc</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other (describe)
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's, containers affected and observed pH:
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			<input checked="" type="checkbox"/>	
8 Samples received within holding time?	<input checked="" type="checkbox"/>			Id's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
14 Air Bill, Tracking #'s, & Additional Comments	<u>Fed ex # 8531 6248 6610</u>			

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?	<input checked="" type="checkbox"/>			Maximum Counts Observed*: <u>CPM</u>
B PCB Regulated?	<input checked="" type="checkbox"/>			
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	<input checked="" type="checkbox"/>			Hazard Class Shipped: UN#:
D Regulated as a Foreign Soil?	<input checked="" type="checkbox"/>			

PM (or PMA) review of Hazard classification: mtf Initials 04/06/07 Date:

Data Qualifiers Definitions

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

Laboratory Certifications

List of current GEL Certifications as of 24 May 2007

State	Certification
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

Chain of Custody and Supporting Documentation

186314
183796

MWH-SV20070403_01
Page: 1 of 2

COC #:

CHAIN OF CUSTODY RECORD

Customer Information		Project Information		Project Information		Project Information		Project Information		Project Information		Project Information	
Site:	SSFPL	Client Name:	Boeing	Collector:	Shelby Valenzuela	Boeing PM:							
Company:	MWH	Sampling Event:	Group 8 Step-out	Contact #:									
Report to:	Lisa Tucker	Project Number:	1891263	Requested Analyses									
Address:	9444 Fairham Street	Project Manager:	Diana Buchanan	Metals 6020 Water Lead									
	Suite 300	PM Phone #:	(626) 568-6897	Metals 6020 Water Arsenic									
	San Diego	Field Contact:		Metals 6020 Water Antimony									
	CA	Field Contact #:		Metals 6020 Soil Lead									
	92123	Lab Name:	GEL Laboratories, LLC	Metals 6020 Soil Arsenic									
	boeingdms@ch2m.com	Lab Contact:	Martha Harrison	Metals 6010B Water Sodium									
	Lisa Tucker@mwhglobal.com	Lab Address:	2040 Savage Road	Metals 6010B Water Aluminum									
		Lab Phone:	Charleston, SC 29407	Metals 6010B Soil Sodium									
			(843) 556-8171	Metals 6010B Soil Aluminum									
				% Solids - Soil									
Sample Name		Matrix	Date	Time	No. of Divisions								
ESBS0034501	Soil		4/3/2007	9:30	1	10	10	10	10	10	10	10	
ESBS0036501	Soil		4/3/2007	10:30	1	10	10	10	10	10	10	10	
ESBS0024901	Soil		4/3/2007	11:06	1	10	10	10	10	10	10	10	
ESBS0024502	Soil		4/3/2007	11:23	1	15	H	H	5	5	5	5	Hold all analysis.
ESBS0032D01	Soil		4/3/2007	11:30	1	10	10	10	10	10	10	10	
ESBS0032S01	Soil		4/3/2007	11:30	1	10	10	10	10	10	10	10	
ESBS0024503	Soil		4/3/2007	11:46	1	H	H	H	H	H	H	H	Hold all analysis.
ESBS0024504	Soil		4/3/2007	12:01	1	15	H	H	5	5	5	5	Hold all analysis.
ESBS0033801	Soil		4/3/2007	12:15	1	10	10	10	10	10	10	10	
ESBS0023801	Soil		4/3/2007	12:17	1	10	10	10	10	10	10	10	

1. Relinquished by:	Date:	4/4/07	2. Received by:	Date:	4-6-07	3. Relinquished by:	Date:		4. Received by:	Date:	
Company:	Time:	0900	Company:	Time:	0915	Company:	Time:		Company:	Time:	
MWH			GEL								

Comments: PLEASE RELEASE THE FOLLOWING SAMPLES FROM HOLD FOR
 10 Solids, A1 & N9: ESB50022502, ESB50024502, ESB50024504
 4/3/07 05/17/07

12

186314
 183796
 183799
 MWH SV20070403_01

COC #:

Page: 2 of 2

CHAIN OF CUSTODY RECORD

BOEING

Customer Information		Project Information		Project Information	
Site:	SSFL	Client Name:	Boeing	Collector:	Shelby Valenzuela
Company:	MWH	Sampling Event:	Group 8 Step-out	Contact #:	
Report to:	Lisa Tucker	Project Number:	1891283	Requested Analysis	
Address:	9444 Farnham Street	Project Manager:	Diana Buchanan	Metals 6020 Water Lead	
	Suite 300	PM Phone #:	(626) 568-6897	Metals 6020 Water Arsenic	
	San Diego	Field Contact:		Metals 6020 Water Antimony	
	CA	Field Contact #:		Metals 6020 Soil Lead	
	92123	Lab Name:	GEL Laboratories, LLC	Metals 6020 Soil Arsenic	
	boeingdms@ch2m.com	Lab Contact:	Martha Harrison	Metals 6020 Soil Antimony	
	Lisa.Tucker@mwhglobal.com	Lab Address:	2040 Savage Road	Metals 6010B Water Sodium	
			Charleston, SC 29407	Metals 6010B Water Aluminum	
		Lab Phone:	(643) 558-8171	Metals 6010B Soil Sodium	
				Metals 6010B Soil Aluminum	
				% Solids - Soil	
Sample Name	Matrix	Date	Time	No. of Observations	Comments
ESBS0022S01	Soil	4/3/2007	12:28	1	
ESBS0022S02	Soil	4/3/2007	12:50	1	
ESBS0034S01	Soil	4/3/2007	14:00	1	
ESBS0036S01	Soil	4/3/2007	14:46	1	
ESBS0036S02	Soil	4/3/2007	14:52	1	
ESQW0002F01	Water	4/3/2007	15:10	1	

Instructions/TAT
 Legend:
 Numerical values for analyses equate to turn around time in days
 H - Hold
 EH - Extend, Hold

1. Relinquished by:		2. Received by:		3. Relinquished by:		4. Received by:	
Date:	4-4-07	Date:	4-6-07	Date:		Date:	
Time:	8:00	Company:	MWH	Time:	09:15	Company:	
Company:	MWH	Company:	MWH	Company:		Company:	
Comments:		Comments:		Comments:		Comments:	

Geotracker EDF
 Data Validation Package Level IV

13

183799

COC #:

CHAIN OF CUSTODY RECORD



Customer Information		Project Information		Project Information	
Site:	SSFL	Client Name:	DOE	Collector:	Shelby Valenzuela
Company:	MWH	Sampling Event:	Group 8 Step-out	Contact #:	
Report to:	Lisa Tucker	Project Number:	1891264	Requested Analysis	
Address:	9444 Farnham Street Suite 300 San Diego CA 92123	Project Manager:	Diana Buchanan (626) 568-6897		
Email:	boeingtlms@ch2m.com	Field Contact:		Perchlorate 314 Soil DI-WET	
	Lisa.Tucker@mwhglobal.com	Field Contact #:			
		Lab Name:	GEL Laboratories, LLC		
		Lab Contact:	Martha Harrison		
		Lab Address:	2040 Savage Road Charleston, SC 29407		
		Lab Phone:	(843) 556-8171		
Sample Name	Soil	Matrix			
FSBS0031ASD1		Date	4/3/2007	Time	9:08
		No of Characters			1
<p>Legend: Numerical values for analyses equate to turn around time in days H - Hold EH - Extract Hold</p>					
<p>Initials/Date/TAT</p>					
<p>Comments</p>					

1. Relinquished by:	<i>LA Savao</i>	Date:	4-4-07	2. Received by:	<i>Mel Fisher</i>	Date:	4-6-07	3. Relinquished by:		Date:		4. Received by:		Date:	
Company:	MWH	Time:	0900	Company:	<i>fec</i>	Time:	0915	Company:		Time:		Company:		Time:	
<p>Comments:</p> <p style="text-align: right;"> <input type="checkbox"/> Geotracker EDF <input checked="" type="checkbox"/> Data Validation Package Level IV </p>															

14

183796

183314

CHAIN OF CUSTODY RECORD

MWHSV20070403_01
Page: 1 of 2

COC #:

Customer Information		Project Information				Project Information		Requested Analyses		Instructions/TAT	
Site:	SSFL	Client Name:	Boeing	Collector:	Shelby Valenzuela	Boeing PM:					
Company:	MWH	Sampling Event:	Group 8 Step-out	Contact #:							
Report to:	Lisa Tucker	Project Number:	1891263								
Address:	9444 Farnham Street Suite 300 San Diego CA 92123	Project Manager:	Diana Buchanan (626) 568-6897								
Email:	boeingdms@ch2m.com	Field Contact:									
	Lisa.Tucker@mwhglobal.com	Field Contact #:									
		Lab Name:	GEL Laboratories, LLC								
		Lab Contact:	Martha Harrison								
		Lab Address:	2040 Savage Road Charleston, SC 29407								
		Lab Phone:	(843) 556-8171								
Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses		Instructions/TAT		Comments		
ESBS0031S01	Soil	4/3/2007	9:30	1	Metals 6010B Water Sodium	10	10				
ESBS0035S01	Soil	4/3/2007	10:30	1	Metals 6010B Water Aluminum	10	10				
ESBS0024S01	Soil	4/3/2007	11:06	1	Metals 6010B Soil Sodium	10	10				
ESBS0024S02	Soil	4/3/2007	11:23	1	Metals 6020 Water Lead	10	10				
ESBS0032D01	Soil	4/3/2007	11:30	1	Metals 6020 Water Arsenic	10	10				
ESBS0032S01	Soil	4/3/2007	11:30	1	Metals 6020 Water Antimony	10	10				
ESBS0024S03	Soil	4/3/2007	11:46	1	Metals 6020 Soil Lead	10	10				
ESBS0024S04	Soil	4/3/2007	12:01	1	Metals 6020 Soil Arsenic	10	10				
ESBS0033S01	Soil	4/3/2007	12:15	1	Metals 6020 Soil Antimony	10	10				
ESBS0023S01	Soil	4/3/2007	12:17	1	Metals 610B Water Sodium	10	10				
					Metals 6020 Soil Lead	10	10				
					Metals 6020 Soil Arsenic	10	10				
					Metals 6020 Water Lead	10	10				
					Metals 6020 Water Arsenic	10	10				
					Metals 6020 Water Antimony	10	10				
					Metals 6010B Water Aluminum	10	10				
					Metals 6010B Soil Sodium	10	10				
					Metals 6010B Water Sodium	10	10				
					% Solids - Soil	10	10				

1. Relinquished by:	Date:	44407	2. Received by:	Date:	4-6-07	3. Relinquished by:	Date:	4. Received by:	Date:
Company:	Time:	0900	Company:	Time:	0915	Company:	Time:	Company:	Time:
MW/H									

Comments: Geotracker EDF Data Validation Package Level IV

15

186314

183796
183799
MWH SV20070403_01

CHAIN OF CUSTODY RECORD

COC #:

Page: 2 of 2

Customer Information		Project Information				Project Information	
Site:	SSFL	Client Name:	Boeing	Collector:	Shelby Valenzuela	Boeing PM:	
Company:	MWH	Sampling Event:	Group 8 Step-out	Contact #:			
Report to:	Lisa Tucker	Project Number:	1891263	Requested Analyses			
Address:	9444 Farnham Street Suite 300 San Diego CA 92123	Project Manager:	Diana Buchanan (626) 568-6897				
		PM Phone #:					
		Field Contact:					
		Field Contact #:					
		Lab Name:	GEL Laboratories, LLC				
		Lab Contact:	Martha Harrison				
		Lab Address:	2040 Savage Road Charleston, SC 29407				
		Lab Phone:	(843) 556-8171				
Sample Name	Matrix	Date	Time	No. of Containers	Requested Analyses	Instructions/TAT	Comments
ESBS0022S01	Soil	4/3/2007	12:28	1	% Solids - Soil	10	
ESBS0022S02	Soil	4/3/2007	12:50	1	Metals 6010B Soil Aluminum	10	
ESBS0034S01	Soil	4/3/2007	14:00	1	Metals 6010B Soil Sodium	10	
ESBS0036S01	Soil	4/3/2007	14:45	1	Metals 6010B Water Aluminum	10	
ESBS0036S02	Soil	4/3/2007	14:52	1	Metals 6010B Water Sodium	10	
ESCN0002F01	Water	4/3/2007	15:10	1	Metals 6020 Soil Lead	10	
					Metals 6020 Soil Arsenic	10	
					Metals 6020 Soil Antimony	10	
					Metals 6020 Water Arsenic	10	
					Metals 6020 Water Antimony	10	
					Metals 6020 Water Lead	10	
					pH by SW9045C - Soil	10	

Legend:
Numerical values for analyses equate to turn around time in days
H - Hold
EH - Extract_Hold

1. Relinquished by:	Date:	2. Received by:	Date:	3. Relinquished by:	Date:	4. Received by:	Date:
<i>Ej Serrao</i>	4-4-07	<i>M. G. Serrao</i>	4-6-07				
Company: MWH	Time: 0900	Company: MWH	Time: 0915	Company:	Time:	Company:	Time:
Comments:							

Geotracker EDF

Data Validation Package Level IV

16



May 29, 2007

Ms. Elizabeth Wessling, MECx
MECx, LLC
12269 East Vassar Drive
Aurora, Colorado 80014

Re: SSFL
Project Number: 1891306-ESADA
Project Name: Group 8 Hastings Data Gaps-S
Work Order: 186102 and 186105
SDG: 186102S and 186102W



Dear Ms. Wessling,

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 16, 2007. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4475.

Sincerely,

Martha Harrison
Project Manager

Purchase Order: Task Order 002
Chain of Custody: MWHSV20070515_00
Enclosures

Table of Contents

Case Narrative	1
Chain of Custody and Supporting Documentation	8
Data Qualifiers Definitions	14
Laboratory Certification	16
Percent Moisture	18
Metals Analysis	22
Case Narrative	23
Sample Data Summary	28
Quality Control Summary.....	39
Standards	54
Raw Data.....	64
Miscellaneous	189
Metals Analysis	203
Case Narrative	204
Sample Data Summary	209
Quality Control Summary.....	211
Standards	224
Raw Data.....	234
Miscellaneous	323

Case Narrative

**Case Narrative
for
Boeing - Santa Susanna Field Laboratory
Work Order: 186102 and 186105
SDG: 186102S and 186102W**

May 29, 2007

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on May 16, 2007 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

The laboratory received the following samples:

<u>Laboratory Identification</u>	<u>Sample Description</u>
186102001	ESBS0041S01
186102002	ESBS0040S01
186102003	ESBS0041S02
186102004	ESBS0040S02
186102005	ESBS0039S01
186102006	ESBS0039S02
186102007	ESBS0043S01
186102008	ESBS0043S02
186102009	ESBS0038S01
186102010	ESBS0038S02
186105001	ESQW0003E01

Items of Note

Boeing - Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metal s.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.



Martha Harrison

Project Manager

RE: TAT Extension due to Memorial Day Holiday

Subject: RE: TAT Extension due to Memorial Day Holiday

From: "Elizabeth Wessling" <elizabeth.wessling@meccx.net>

Date: Tue, 22 May 2007 11:32:01 -0500

To: "Martha Harrison" <Martha.Harrison@gel.com>, "Sarah E VonRaesfeld" <Sarah.E.VonRaesfeld@us.mwhglobal.com>, "Lisa J Tucker" <Lisa.J.Tucker@us.mwhglobal.com>

Yes, of course

Elizabeth A. Wessling
Senior Environmental Chemist

Phone: 720.535.5502

Cell: 303. 881.6816

Fax: 720.535.7555

elizabeth.wessling@meccx.net

MECX, LLC

12269 East Vassar Drive

Aurora, Colorado 80014

www.mecx.net

A Service-Disabled Veteran-Owned Small Business

CONFIDENTIALITY NOTICE: This electronic mail transmission (message and any included attachments) may be confidential and are intended for the use of the addressee(s) only. It may contain information that is confidential, privileged, proprietary, or otherwise legally exempt from disclosure. If you are not the intended recipient, you are hereby notified that you are not authorized to read, print, retain, copy or disseminate this message, any part of it, or any attachments. If you have received this message in error, please delete this message and any attachments from your system without reading the content and notify the sender immediately of the inadvertent transmission.

-----Original Message-----

From: Martha Harrison [<mailto:Martha.Harrison@gel.com>]

Sent: Tuesday, May 22, 2007 11:17 AM

To: Elizabeth Wessling; Sarah E VonRaesfeld; Lisa J Tucker

Subject: TAT Extension due to Memorial Day Holiday

Elizabeth, Sarah, and Lisa,

Is it acceptable to extend the due dates one working day for all SDGs due on or after Monday, May 28th?

Thanks,
Martha

~~~~~  
Martha Harrison  
Federal Project Manager  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC 29407  
(843) 769-7376 x4475  
(843) 769-7384 Direct Line  
(843) 766-1178 Fax  
[Martha.Harrison@gel.com](mailto:Martha.Harrison@gel.com)

The information contained in this message is confidential and is intended only for the use of the individual or firm of record. If you are not the intended recipient and have received this message in error, you are asked not to copy or distribute any of the pages that follow. Please notify the sender immediately by telephone or email if you have received this communication in error

RE: TAT Extension due to Memorial Day Holiday

and destroy  
the contents that do not pertain to your business with The GEL Group,  
INC.

Re: TAT Extension due to Memorial Day Holiday

**Subject:** Re: TAT Extension due to Memorial Day Holiday  
**From:** Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>  
**Date:** Tue, 22 May 2007 09:36:45 -0700  
**To:** Martha Harrison <Martha.Harrison@gel.com>  
**CC:** Elizabeth Wessling <elizabeth.wessling@mecx.net>, Sarah E VonRaesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>

As long as Liz is fine with the schedule I'm good too.

**Martha Harrison**  
**<Martha.Harrison@gel.com>**

05/22/2007 09:16 AM

To: Elizabeth Wessling <elizabeth.wessling@mecx.net>, Sarah E VonRaesfeld  
<Sarah.E.VonRaesfeld@us.mwhglobal.com>, Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>  
cc:  
Subject: TAT Extension due to Memorial Day Holiday

Elizabeth, Sarah, and Lisa,

Is it acceptable to extend the due dates one working day for all SDGs  
due on or after Monday, May 28th?

Thanks,  
Martha

~~~~~  
Martha Harrison
Federal Project Manager
GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
(843) 769-7376 x4475
(843) 769-7384 Direct Line
(843) 766-1178 Fax
Martha.Harrison@gel.com

The information contained in this message is confidential and is intended
only for the use of the individual or firm of record. If you are not the intended
recipient and have received this message in error, you are asked not to copy
or distribute any of the pages that follow. Please notify the sender immediately
by telephone or email if you have received this communication in error and destroy
the contents that do not pertain to your business with The GEL Group, INC.

Re: TAT Extension due to Memorial Day Holiday

Subject: Re: TAT Extension due to Memorial Day Holiday
From: Sarah E VonRaesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>
Date: Tue, 22 May 2007 09:22:03 -0700
To: Martha Harrison <Martha.Harrison@gel.com>
CC: Elizabeth Wessling <elizabeth.wessling@mecx.net>, Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>

It is fine for my data.



Martha Harrison <Martha.Harrison@gel.com>

05/22/2007 09:16 AM

To Elizabeth Wessling <elizabeth.wessling@mecx.net>, Sarah E VonRaesfeld
<Sarah.E.VonRaesfeld@us.mwhglobal.com>, Lisa J Tucker
<Lisa.J.Tucker@us.mwhglobal.com>

cc

Subject TAT Extension due to Memorial Day Holiday

Elizabeth, Sarah, and Lisa,

Is it acceptable to extend the due dates one working day for all SDGs
due on or after Monday, May 28th?

Thanks,
Martha

~~~~~  
Martha Harrison  
Federal Project Manager  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC 29407  
(843) 769-7376 x4475  
(843) 769-7384 Direct Line  
(843) 766-1178 Fax  
Martha.Harrison@gel.com

The information contained in this message is confidential and is intended  
only for the use of the individual or firm of record. If you are not the intended  
recipient and have received this message in error, you are asked not to copy  
or distribute any of the pages that follow. Please notify the sender immediately  
by telephone or email if you have received this communication in error and destroy  
the contents that do not pertain to your business with The GEL Group, INC.



# SAMPLE RECEIPT & REVIEW FORM

PM use only

|                                |                                                                           |
|--------------------------------|---------------------------------------------------------------------------|
| Client: <u>SSFL</u>            | SDG/ARCOC/Work Order: <u>186102, 186105</u>                               |
| Date Received: <u>5/16/07</u>  | PM(A) Review (ensure non-conforming items are resolved prior to signing): |
| Received By: <u>Ben Finley</u> | <u>Matt</u>                                                               |

| Sample Receipt Criteria                                                               | Yes | NA | No | Comments/Qualifiers (Required for Non-Conforming Items)                                    |
|---------------------------------------------------------------------------------------|-----|----|----|--------------------------------------------------------------------------------------------|
| 1 Shipping containers received intact and sealed?                                     | ✓   |    |    | Circle Applicable: seals broken damaged container leaking container other (describe)       |
| 2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method. | ✓   |    |    | Circle Coolant # <u>ice bags</u> <u>blue ice</u> dry ice none other describe<br><u>3°C</u> |
| 3 Chain of custody documents included with shipment?                                  | ✓   |    |    |                                                                                            |
| 4 Sample containers intact and sealed?                                                | ✓   |    |    | Circle Applicable: seals broken damaged container leaking container other (describe)       |
| 5 Samples requiring chemical preservation at proper pH?                               | ✓   |    |    | Sample ID's, containers affected and observed pH:                                          |
| 6 VOA vials free of headspace (defined as < 6mm bubble)?                              | ✓   |    |    | Sample ID's and containers affected:                                                       |
| 7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)      | ✓   |    |    | <u>Encores set to freezer immediately after receipt. 4/5/16/07</u>                         |
| 8 Samples received within holding time?                                               | ✓   |    |    | Id's and tests affected:                                                                   |
| 9 Sample ID's on COC match ID's on bottles?                                           | ✓   |    |    | Sample ID's and containers affected:                                                       |
| 10 Date & time on COC match date & time on bottles?                                   | ✓   |    |    | Sample ID's affected:                                                                      |
| 11 Number of containers received match number indicated on COC?                       | ✓   |    |    | Sample ID's affected:                                                                      |
| 12 COC form is properly signed in relinquished/received sections?                     |     |    |    |                                                                                            |
| 14 Air Bill ,Tracking #'s, & Additional Comments                                      |     |    |    | <u>Fed Ex# 8612 6056 8314</u>                                                              |

| Suspected Hazard Information                                                       | Non-Regulated | Regulated | High Level | RSO RAD Receipt # _____<br>*If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation. |
|------------------------------------------------------------------------------------|---------------|-----------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A Radiological Classification?                                                     | ✓             |           |            | Maximum Counts Observed*: <u>CPM 60</u>                                                                                                                                                 |
| B PCB Regulated?                                                                   | ✓             |           |            |                                                                                                                                                                                         |
| C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager. | ✓             |           |            | Hazard Class Shipped:<br>UN#:                                                                                                                                                           |
| D Regulated as a Foreign Soil?                                                     | ✓             |           |            |                                                                                                                                                                                         |

PM (or PMA) review of Hazard classification: Matt Initials 05/16/07 Date:

## LABORATORY TASK ORDER (LTO) FORM

*INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingdms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.*

**Event Name:** Group 8 May 2007

**Start:** 5/14/2007      **End:** \_\_\_\_\_

**LTO DATE:**

**LTO NUMBER:**

|                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Consultant Name:</b> <u>MWH</u><br/> <b>Address:</b> <u>9444 Farnham Suite 300</u><br/> <u>San Diego, CA 92123</u></p> <p><b>Contact Name:</b> <u>Lisa Tucker</u><br/> <b>Phone Number:</b> <u>858-751-1240</u><br/> <b>Fax Number:</b> <u>858-751-1204</u><br/> <b>E-mail Address:</b> <u>Lisa.Tucker@mwhglobal.com</u></p> | <p><b>Contract Laboratory:</b> <u>GEL</u><br/> <b>Address:</b> <u>2040 Savage Rd.</u><br/> <u>Charleston, SC 29407</u></p> <p><b>Lab Contact Name:</b> <u>Martha Harrison</u><br/> <b>Phone Number:</b> <u>843-769-7384</u><br/> <b>Fax Number:</b> <u>843-766-1178</u><br/> <b>E-mail Address:</b> <u>Martha.Harrison@gel.com</u></p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### SAMPLE CONTAINER ORDER FORM

**Date Required:** \_\_\_\_\_

**Requested Analyses:** (Specify # of Samples)

**Date Sample Pickup:** NA

**Ship Containers To:**  
 Project Site \_\_\_\_\_ (enter "X")  
 Consultant Office \_\_\_\_\_ (enter "X")  
 Other Location (specify in comments) \_\_\_\_\_ (enter "X")

|                                 | Water | Soil | Contingent |
|---------------------------------|-------|------|------------|
| EPA 8015M (GRO)                 |       |      |            |
| EPA 8015M (DRO)                 |       |      |            |
| EPA 8015M (JET FUEL)            |       |      |            |
| EPA 8015M (CC)                  | 3     | 17   | 14         |
| EPA 8260B (VOC)                 | 5     | 9    | 13         |
| EPA 8270C SIM (SVOC)            | 1     | 17   | 22         |
| EPA 8310 (PAH)                  |       |      |            |
| EPA 8082 (PCB)                  | 3     | 21   | 25         |
| EPA TO-15 VOCs (Scan)           |       |      |            |
| EPA TO-15 VOCs (SIM)            |       |      |            |
| CCR Title 22 Metals             | 4     | 16   | 29         |
| Total Chromium                  |       |      |            |
| EPA 7196A (Hexavalent Chromium) | 0     | 0    | 10         |
| Total Lead                      |       |      |            |
| Wet Chemistry (pH, etc.)        |       |      |            |
| General Minerals                |       |      |            |
| Fish Bioassay                   |       |      |            |
| EPA TO-14 (VOCs)                |       |      |            |

**Container Information:**  
 Trip Blank (VOA only) No (Yes/No)  
 Temp Blank (VOA Only) No (Yes/No)  
 DI Water Required? No (Yes/No)  
 MS/MSD Extra Bottles? No (Yes/No)

**Sample Matrix:**  
 Soil X (select all applicable)  
 Water X (select all applicable)  
 Vapor \_\_\_\_\_ (select all applicable)

Est. Total # of Samples: 115

Est. Total # of EDDs 15

### LABORATORY REPORTING REQUIREMENTS

**Project TAT:**  
 Normal: X (10 Business days)  
 RUSH: 5 day (Specify- 24 / 48 / 72HRS)  
 Other : \_\_\_\_\_ (Specify # of Days)  
 Report Due Date: \_\_\_\_\_

**Laboratory Results/Reports Deliverables:**  
 Draft Results Fax?: \_\_\_\_\_ (Yes/No)  
 Draft Results E-mail?: Yes (Yes/No)  
 Specify Fax/E-mail Contact Name, #, E-mail Address: Lisa.Tucker@mwhglobal.com  
 Send Original Reports To:  
 Project Site \_\_\_\_\_ (enter "X")  
 Consultant Office \_\_\_\_\_ (enter "X")  
 Other Location (specify in comments) X (enter "X")  
 # of Copies Reports Req.: 1

**Special Reporting Requirements:**  
 Contingent Analysis? Yes (Yes/No)  
 TIC (VOC) Required? Yes (Yes/No)  
 TIC (SVOC) Required? Yes (Yes/No)  
 Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

### SPECIAL INSTRUCTIONS/LTO NOTES

1. Contingent samples for SVOCs, PCBs, and TPH will be extracted and then placed on hold. Encores will be extruded and then frozen.
2. Hardcopy data will be sent to Patti Meeks at MECX 12269 East Vassar Dr. Aurora, CO 80014
3. Hardcopy result and EDDs on 10 day TAT unless specified otherwise

### CONFIRMATION OF TRANSMITTAL & RECEIPT

**LTO Sent By:**  
 Name: Lisa Tucker  
 Date: 05/14/07

**LTO Received By-**  
 Name: \_\_\_\_\_  
 Date: \_\_\_\_\_

12

# LABORATORY TASK ORDER (LTO) FORM (PAGE 2)

## ADDITIONAL REQUIRED ANALYSES

LTO DATE:

LTO NUMBER:

**Consultant Name:** MWH  
**Address:** 9444 Farnham Suite 300  
San Diego, CA 92123

**Contract Laboratory:** GEL  
**Address:** 2040 Savage Rd.  
Charleston, SC 29407

**Contact Name:** Lisa Tucker  
**Phone Number:** 858-751-1240  
**Fax Number:** 858-751-1204  
**E-mail Address:** Lisa.Tucker@mwhglobal.com

**Lab Contact Name:** Martha Harrison  
**Phone Number:** 843-769-7384  
**Fax Number:** 843-766-1178  
**E-mail Address:** Martha.Harrison@gel.com

### SAMPLE CONTAINER ORDER FORM (CONTINUED)

Requested Analyses: (Specify # of Samples)

|                            | Water | Soil | Contingent |
|----------------------------|-------|------|------------|
| 1613B (Dioxins)            | 3     | 5    | 16         |
| % Solids (160.3)           | 0     | 71   | 28         |
| Fluoride (300.0)           | 4     | 49   | 24         |
| SVOCs w. TICs (8270C)      | 3     | 35   | 17         |
| Aluminum (6010B)           | 1     | 12   | 0          |
| Boron (6010B)              | 1     | 8    | 6          |
| Mercury (7470A/7471A)      | 2     | 16   | 30         |
| Sodium (6010B)             | 1     | 12   | 0          |
| Zirconium (6010B)          | 0     | 14   | 0          |
| Perchlorate (314.0 DI WET) | 0     | 0    | 8          |
| Terphenyls (8015B)         | 4     | 47   | 24         |

13

# **Data Qualifiers Definitions**

## Data Review Qualifier Definitions

| Qualifier | Explanation                                                                                                                                                                                           |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| *         | A quality control analyte recovery is outside of specified acceptance criteria                                                                                                                        |
| **        | Analyte is a surrogate compound                                                                                                                                                                       |
| <         | Result is less than value reported                                                                                                                                                                    |
| >         | Result is greater than value reported                                                                                                                                                                 |
| ^         | RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL                                                                                                                      |
| A         | The TIC is a suspected aldol-condensation product                                                                                                                                                     |
| B         | Target analyte was detected in the associated blank                                                                                                                                                   |
| B         | Metals-Either presence of analyte detected in the associated blank, or<br>MDL/IDL < sample value < PQL                                                                                                |
| BD        | Results are either below the MDC or tracer recovery is low                                                                                                                                            |
| C         | Analyte has been confirmed by GC/MS analysis                                                                                                                                                          |
| D         | Results are reported from a diluted aliquot of the sample                                                                                                                                             |
| d         | 5-day BOD-The 2:1 depletion requirement was not met for this sample                                                                                                                                   |
| E         | Organics-Concentration of the target analyte exceeds the instrument calibration range                                                                                                                 |
| E         | Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria                                                                                                         |
| H         | Analytical holding time was exceeded                                                                                                                                                                  |
| h         | Preparation or preservation holding time was exceeded                                                                                                                                                 |
| J         | Value is estimated                                                                                                                                                                                    |
| N         | Metals-The Matrix spike sample recovery is not within specified control limits                                                                                                                        |
| N         | Organics-Presumptive evidence based on mass spectral library search to make a tentative<br>identification of the analyte (TIC). Quantitation is based on nearest internal standard<br>response factor |
| N/A       | Spike recovery limits do not apply. Sample concentration exceeds spike concentration<br>by 4X or more                                                                                                 |
| ND        | Analyte concentration is not detected above the reporting limit                                                                                                                                       |
| UI        | Gamma Spectroscopy-Uncertain identification                                                                                                                                                           |
| X         | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier                                                                                                            |
| Y         | QC Samples were not spiked with this compound                                                                                                                                                         |
| Z         | Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.                                                                                                      |

# **Laboratory Certifications**

**List of current GEL Certifications as of 18 May 2007**

| <b>State</b>              | <b>Certification</b>       |
|---------------------------|----------------------------|
| Alaska                    | UST-062                    |
| Arizona                   | AZ0668                     |
| Arkansas                  | 88-0651                    |
| CLIA                      | 42D0904046                 |
| California                | 01151CA                    |
| Colorado                  | GenEngLabs                 |
| Connecticut               | PH-0169                    |
| Dept. of Navy             | NFESC 413                  |
| EPA                       | WG-15J                     |
| Florida/NELAP             | E87156                     |
| Georgia                   | E87156 (FL/NELAP)          |
| Hawaii                    | N/A                        |
| Idaho                     | N/A                        |
| Illinois                  | 200029                     |
| Indiana                   | C-SC-01                    |
| Kansas                    | E-10332                    |
| Kentucky                  | 90129                      |
| Louisiana                 | 03046                      |
| Maryland                  | 270                        |
| Massachusetts             | M-SC012                    |
| Michigan                  | 9903                       |
| Nevada                    | SC12                       |
| New Jersey                | SC002                      |
| New Mexico                | FL NELAP E87156            |
| New York                  | 11501                      |
| North Carolina            | 233                        |
| North Carolina Drinking W | 45709                      |
| North Dakota              | R-158                      |
| Oklahoma                  | 9904                       |
| Pennsylvania              | 68-00485                   |
| South Carolina            | 10120001/10585001/10120002 |
| Tennessee                 | 02934                      |
| Texas NELAP               | T104704235-06-TX           |
| U.S. Dept. of Agriculture | S-52597                    |
| US Army Corps of Engineer | N/A                        |
| Utah                      | 8037697376 GEL             |
| Vermont                   | VT87156                    |
| Virginia                  | 00151                      |
| Washington                | C1641                      |

# **Chain of Custody and Supporting Documentation**





**SOIL**

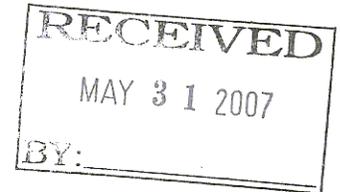
## **SOIL CASE NARRATIVES AND COCS**



May 29, 2007

Ms. Elizabeth Wessling  
MECx, LLC  
12269 East Vassar Drive  
Aurora, Colorado 80014

Re: SSFL  
Project Number: 1891306  
Project Name: Group 8 Hastings Data Gaps-S  
Work Order: 186012



Dear Ms. Wessling,

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 15, 2007. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4475.

Sincerely,

Martha Harrison  
Project Manager

Purchase Order: Task Order 002  
Chain of Custody: MWHSV20070514\_00  
Enclosures

## Table of Contents

|                                                            |           |
|------------------------------------------------------------|-----------|
| <b>Case Narrative</b> .....                                | <b>1</b>  |
| <b>Chain of Custody and Supporting Documentation</b> ..... | <b>8</b>  |
| <b>Data Qualifiers Definitions</b> .....                   | <b>13</b> |
| <b>Laboratory Certifications</b> .....                     | <b>15</b> |
| <b>Percent Moisture</b> .....                              | <b>17</b> |
| <b>Metals Analysis</b> .....                               | <b>21</b> |
| Case Narrative .....                                       | 22        |
| Sample Data Summary .....                                  | 27        |
| Quality Control Summary.....                               | 30        |
| Standards .....                                            | 44        |
| Raw Data .....                                             | 53        |
| Miscellaneous .....                                        | 124       |

# **Case Narrative**

**Case Narrative  
for  
Boeing - Santa Susanna Field Laboratory  
Work Order: 186012  
SDG: 186012**

**May 29, 2007**

**Laboratory Identification:**

GEL Laboratories LLC  
2040 Savage Road  
Charleston, South Carolina 29407  
(843) 556-8171

**Summary:**

**Sample Receipt**

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on May 15, 2007 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

The laboratory received the following samples:

| <b><u>Laboratory Identification</u></b> | <b><u>Sample Description</u></b> |
|-----------------------------------------|----------------------------------|
| 186012001                               | ESBS0042S01                      |
| 186012002                               | ESBS0042S02                      |

**Items of Note**

Boeing - Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

**Case Narrative**

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

**Data Package:**

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Metals.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

A handwritten signature in black ink that reads "Edith M. Keet". The signature is written in a cursive style with a large, stylized "K".

Martha Harrison

Project Manager

RE: TAT Extension due to Memorial Day Holiday

**Subject:** RE: TAT Extension due to Memorial Day Holiday  
**From:** "Elizabeth Wessling" <elizabeth.wessling@mecx.net>  
**Date:** Tue, 22 May 2007 11:32:01 -0500  
**To:** "Martha Harrison" <Martha.Harrison@gel.com>, "Sarah E VonRaesfeld" <Sarah.E.VonRaesfeld@us.mwhglobal.com>, "Lisa J Tucker" <Lisa.J.Tucker@us.mwhglobal.com>

Yes, of course

Elizabeth A. Wessling  
Senior Environmental Chemist

Phone: 720.535.5502

Cell: 303. 881.6816

Fax: 720.535.7555

[elizabeth.wessling@mecx.net](mailto:elizabeth.wessling@mecx.net)

MECX, LLC

12269 East Vassar Drive

Aurora, Colorado 80014

[www.mecx.net](http://www.mecx.net)

A Service-Disabled Veteran-Owned Small Business

CONFIDENTIALITY NOTICE: This electronic mail transmission (message and any included attachments) may be confidential and are intended for the use of the addressee(s) only. It may contain information that is confidential, privileged, proprietary, or otherwise legally exempt from disclosure. If you are not the intended recipient, you are hereby notified that you are not authorized to read, print, retain, copy or disseminate this message, any part of it, or any attachments. If you have received this message in error, please delete this message and any attachments from your system without reading the content and notify the sender immediately of the inadvertent transmission.

-----Original Message-----

From: Martha Harrison [<mailto:Martha.Harrison@gel.com>]  
Sent: Tuesday, May 22, 2007 11:17 AM  
To: Elizabeth Wessling; Sarah E VonRaesfeld; Lisa J Tucker  
Subject: TAT Extension due to Memorial Day Holiday

Elizabeth, Sarah, and Lisa,

Is it acceptable to extend the due dates one working day for all SDGs due on or after Monday, May 28th?

Thanks,  
Martha

~~~~~  
Martha Harrison
Federal Project Manager
GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
(843) 769-7376 x4475
(843) 769-7384 Direct Line
(843) 766-1178 Fax
Martha.Harrison@gel.com

The information contained in this message is confidential and is intended only for the use of the individual or firm of record. If you are not the intended recipient and have received this message in error, you are asked not to copy or distribute any of the pages that follow. Please notify the sender immediately by telephone or email if you have received this communication in error

RE: TAT Extension due to Memorial Day Holiday

and destroy
the contents that do not pertain to your business with The GEL Group,
INC.

Re: TAT Extension due to Memorial Day Holiday

Subject: Re: TAT Extension due to Memorial Day Holiday
From: Sarah E VonRaesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>
Date: Tue, 22 May 2007 09:22:03 -0700
To: Martha Harrison <Martha.Harrison@gel.com>
CC: Elizabeth Wessling <elizabeth.wessling@mecx.net>, Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>

It is fine for my data.



Martha Harrison <Martha.Harrison@gel.com>

05/22/2007 09:16 AM

To Elizabeth Wessling <elizabeth.wessling@mecx.net>, Sarah E VonRaesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>, Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>

cc

Subject TAT Extension due to Memorial Day Holiday

Elizabeth, Sarah, and Lisa,

Is it acceptable to extend the due dates one working day for all SDGs due on or after Monday, May 28th?

Thanks,
Martha

~~~~~  
Martha Harrison  
Federal Project Manager  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC 29407  
(843) 769-7376 x4475  
(843) 769-7384 Direct Line  
(843) 766-1178 Fax  
Martha.Harrison@gel.com

The information contained in this message is confidential and is intended only for the use of the individual or firm of record. If you are not the intended recipient and have received this message in error, you are asked not to copy or distribute any of the pages that follow. Please notify the sender immediately by telephone or email if you have received this communication in error and destroy the contents that do not pertain to your business with The GEL Group, INC.

Re: TAT Extension due to Memorial Day Holiday

**Subject:** Re: TAT Extension due to Memorial Day Holiday  
**From:** Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>  
**Date:** Tue, 22 May 2007 09:36:45 -0700  
**To:** Martha Harrison <Martha.Harrison@gel.com>  
**CC:** Elizabeth Wessling <elizabeth.wessling@mecx.net>, Sarah E VonRaesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>

As long as Liz is fine with the schedule I'm good too.

**Martha Harrison**  
<Martha.Harrison@gel.com>

05/22/2007 09:16 AM

**To:** Elizabeth Wessling <elizabeth.wessling@mecx.net>, Sarah E VonRaesfeld <Sarah.E.VonRaesfeld@us.mwhglobal.com>, Lisa J Tucker <Lisa.J.Tucker@us.mwhglobal.com>  
**cc:**  
**Subject:** TAT Extension due to Memorial Day Holiday

Elizabeth, Sarah, and Lisa,

Is it acceptable to extend the due dates one working day for all SDGs due on or after Monday, May 28th?

Thanks,  
Martha

~~~~~  
Martha Harrison
Federal Project Manager
GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
(843) 769-7376 x4475
(843) 769-7384 Direct Line
(843) 766-1178 Fax
Martha.Harrison@gel.com

The information contained in this message is confidential and is intended only for the use of the individual or firm of record. If you are not the intended recipient and have received this message in error, you are asked not to copy or distribute any of the pages that follow. Please notify the sender immediately by telephone or email if you have received this communication in error and destroy the contents that do not pertain to your business with The GEL Group, INC.



SAMPLE RECEIPT & REVIEW FORM

PVI use only

Client: <u>SSFL</u>	SDG/ARCO/Work Order: <u>186012</u>
Date Received: <u>5/15/07</u>	PM(A) Review (ensure non-conforming items are resolved prior to signing): <u>MJH</u>
Received By: <u>Bent Finley</u>	

#	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.	✓			Circle Coolant # <u>ice bags</u> blue ice dry ice none other describe) <u>5°C</u>
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?			✓	Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?			✓	Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8	Samples received within holding time?	✓			id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	✓			
14	Air Bill ,Tracking #'s, & Additional Comments				<u>FedEx# 8612 6056 8303</u>

Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A Radiological Classification?	✓			Maximum Counts Observed*: <u>CPM 60</u>
B PCB Regulated?	✓			Comments:
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: MJH Initials 05/15/07 Date:

LABORATORY TASK ORDER (LTO) FORM

INSTRUCTIONS: To be completed by Environmental Contractor & Emailed to Laboratory Project Manager, CH2M HILL (boeingdms@ch2m.com) & the Data Validator at Least 48 hrs prior to need for sample containers. Project Analytical Laboratory will confirm receipt via E-Mail.

Event Name: Group 8 May 2007 _____

Start: 5/14/2007 **End:** _____

LTO DATE: _____

LTO NUMBER: _____

<p>Consultant Name: MWH Address: 9444 Farnham Suite 300 San Diego, CA 92123</p> <p>Contact Name: Lisa Tucker Phone Number: 858-751-1240 Fax Number: 858-751-1204 E-mail Address: Lisa.Tucker@mwhglobal.com</p>	<p>Contract Laboratory: GEL Address: 2040 Savage Rd. Charleston, SC 29407</p> <p>Lab Contact Name: Martha Harrison Phone Number: 843-769-7384 Fax Number: 843-766-1178 E-mail Address: Martha.Harrison@gel.com</p>
---	---

SAMPLE CONTAINER ORDER FORM

Date Required: _____

Requested Analyses: (Specify # of Samples)

Date Sample Pickup: NA

Ship Containers To:

Project Site _____ (enter "X")
 Consultant Office _____ (enter "X")
 Other Location (specify in comments) _____ (enter "X")

Container Information:

Trip Blank (VOA only) No (Yes/No)
 Temp Blank (VOA Only) No (Yes/No)
 DI Water Required? No (Yes/No)
 MS/MSD Extra Bottles? No (Yes/No)

Sample Matrix:

Soil X (select all applicable)
 Water X (select all applicable)
 Vapor _____ (select all applicable)

Est. Total # of Samples: 115

Est. Total # of EDDs 15

	Requested Analyses: (Specify # of Samples)		
	Water	Soil	Contingent
EPA 8015M (GRO)			
EPA 8015M (DRO)			
EPA 8015M (JET FUEL)			
EPA 8015M (CC)	3	17	14
EPA 8260B (VOC)	5	9	13
EPA 8270C SIM (SVOC)	1	17	22
EPA 8310 (PAH)			
EPA 8082 (PCB)	3	21	25
EPA TO-15 VOCs (Scan)			
EPA TO-15 VOCs (SIM)			
CCR Title 22 Metals	4	16	29
Total Chromium			
EPA 7196A (Hexavalent Chromium)	0	0	10
Total Lead			
Wet Chemistry (pH, etc.)			
General Minerals			
Fish Bioassay			
EPA TO-14 (VOCs)			

LABORATORY REPORTING REQUIREMENTS

Project TAT:

Normal: X (10 Business days)
 RUSH: 5 day (Specify- 24 / 48 / 72HRS)
 Other: _____ (Specify # of Days)

Report Due Date: _____

Laboratory Results/Reports Deliverables:

Draft Results Fax?: _____ (Yes/No)
 Draft Results E-mail?: Yes (Yes/No)

Specify Fax/E-mail Contact Name, #, E-mail Address: Lisa.Tucker@mwhglobal.com

Send Original Reports To:
 Project Site _____ (enter "X")
 Consultant Office _____ (enter "X")
 Other Location (specify in comments) X (enter "X")

Special Reporting Requirements:

Contingent Analysis? Yes (Yes/No)
 TIC (VOC) Required? Yes (Yes/No)
 TIC (SVOC) Required? Yes (Yes/No)
 Data Validation Pckge.: Tier III (Boeing Tier I, II or III)

of Copies Reports Req.: 1

SPECIAL INSTRUCTIONS/LTO NOTES

1. Contingent samples for SVOCs, PCBs, and TPH will be extracted and then placed on hold. Encores will be extruded and then frozen.
2. Hardcopy data will be sent to Patti Meeks at MECX 12269 East Vassar Dr. Aurora, CO 80014
3. Hardcopy result and EDDs on 10 day TAT unless specified otherwise

CONFIRMATION OF TRANSMITTAL & RECEIPT

LTO Sent By:

Name: Lisa Tucker
 Date: 05/14/07

LTO Received By-

Name: _____
 Date: _____

LABORATORY TASK ORDER (LTO) FORM (PAGE 2)

ADDITIONAL REQUIRED ANALYSES

LTO DATE:

LTO NUMBER:

Consultant Name: MWH
 Address: 9444 Farnham Suite 300
San Diego, CA 92123

Contract Laboratory: GEL
 Address: 2040 Savage Rd.
Charleston, SC 29407

Contact Name: Lisa Tucker
 Phone Number: 858-751-1240
 Fax Number: 858-751-1204
 E-mail Address: Lisa.Tucker@mwhglobal.com

Lab Contact Name: Martha Harrison
 Phone Number: 843-769-7384
 Fax Number: 843-766-1178
 E-mail Address: Martha.Harrison@gel.com

SAMPLE CONTAINER ORDER FORM (CONTINUED)

Requested Analyses: (Specify # of Samples)

	Water	Soil	Contingent
1613B (Dioxins)	3	5	16
% Solids (160.3)	0	71	28
Fluoride (300.0)	4	49	24
SVOCs w. TICs (8270C)	3	35	17
Aluminum (6010B)	1	12	0
Boron (6010B)	1	8	6
Mercury (7470A/7471A)	2	16	30
Sodium (6010B)	1	12	0
Zirconium (6010B)	0	14	0
Perchlorate (314.0 DI WET)	0	0	8
Terphenyls (8015B)	4	47	24

Data Qualifiers Definitions

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

Laboratory Certifications

List of current GEL Certifications as of 16 May 2007

State	Certification
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

Radiochemistry Case Narrative
Boeing - Santa Susanna Field Laboratory (SSFL)
Work Order 186012

Method/Analysis Information

Procedure: Dry Weight-Percent Moisture

Analytical Method: ASTM D 2216 (Modified)

Analytical Batch Number: 634232

Sample ID	Client ID
186012001	ESBS0042S01
186012002	ESBS0042S02
1201336009	186012001(ESBS0042S01) Sample Duplicate (DUP)

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-020 REV# 7.

Quality Control (QC) Information:

Designated QC

The following sample was used for QC: 186012001 (ESBS0042S01).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation

Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Qualifier information

Manual qualifiers were not required.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Chain of Custody and Supporting Documentation

Case Narrative

**Case Narrative
for
Boeing - Santa Susanna Field Laboratory
Work Order: 183796 and 183799**

April 18, 2007

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample Receipt

The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 06, 2007 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

The laboratory received the following samples:

<u>Laboratory Identification</u>	<u>Sample Description</u>
183796001	ESBS0031S01
183796002	ESBS0035S01
183796003	ESBS0024S01
183796004	ESBS0024S02
183796005	ESBS0032D01
183796006	ESBS0032S01
183796007	ESBS0024S03
183796008	ESBS0024S04
183796009	ESBS0033S01
183796010	ESBS0023S01
183796011	ESBS0022S01
183796012	ESBS0022S02
183796013	ESBS0034S01
183796014	ESBS0036S01
183796015	ESBS0036S02
183799001	ESQW0002F01
183799002	FSBS0031AS01

Items of Note

Boeing - Santa Susanna Field Laboratory Technical Representative was contacted seeking resolution to any analytical and/or receipt issues. Please see the enclosed e-mails.

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package:

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: General Chemistry, and Metals.

I certify that this data package is in compliance with the terms and conditions of the subcontract and task order, both technically and for the completeness, for other than the conditions detailed in the attached case narratives.

Martha Harrison
Project Manager

Subject: RE: Boeing SSFL samples received at GEL Labs
From: "Elizabeth Wessling" <elizabeth.wessling@mecx.net>
Date: Fri, 6 Apr 2007 13:39:41 -0500
To: "Martha Harrison" <Martha.Harrison@gel.com>

Please go ahead and analyze the samples per the requests on the COC.
Thanks for apprising us of the situation.

Elizabeth A. Wessling
Senior Environmental Chemist

Phone: 720.535.5502

Cell: 303. 881.6816

Fax: 720.535.7555

elizabeth.wessling@mecx.net

MECX, LLC

12269 East Vassar Drive

Aurora, Colorado 80014

www.mecx.net

A Service-Disabled Veteran-Owned Small Business

CONFIDENTIALITY NOTICE: This electronic mail transmission (message and any included attachments) may be confidential and are intended for the use of the addressee(s) only. It may contain information that is confidential, privileged, proprietary, or otherwise legally exempt from disclosure. If you are not the intended recipient, you are hereby notified that you are not authorized to read, print, retain, copy or disseminate this message, any part of it, or any attachments. If you have received this message in error, please delete this message and any attachments from your system without reading the content and notify the sender immediately of the inadvertent transmission.

-----Original Message-----

From: Martha Harrison [<mailto:Martha.Harrison@gel.com>]
Sent: Friday, April 06, 2007 1:10 PM
To: Elizabeth Wessling
Cc: Nancy Mattern; Ben Finley
Subject: Boeing SSFL samples received at GEL Labs

Elizabeth,

GEL Labs received two shipments of samples today. The samples in the cooler with COC# MWHSV20070405_00 were received at 7 degrees Celsius. The samples for pH are outside of the temperature specifications for the method. These samples have been logged in under work order 183763. One sample is designated on hold per the COC.

The second set of coolers, with COC# MWHSV20070403_01 and MWHSV20070403_00, contained samples received at 9 degrees Celsius. The samples for pH and Perchlorate are outside of the temperature specifications for the method.

Please advise.

Thanks,
Martha

~~~~~  
Martha Harrison  
Federal Project Manager  
GEL Laboratories, LLC  
2040 Savage Road  
Charleston, SC 29407  
(843) 763-7376 x4475  
(843) 769-7384 Direct Line  
(843) 766-1178 Fax  
[Martha.Harrison@gel.com](mailto:Martha.Harrison@gel.com)

The information contained in this message is confidential and is intended only for the use of the individual or firm of record. If you are not the intended recipient and have received this message in error, you are asked not to copy or distribute any of the pages that follow. Please notify the sender immediately by telephone or email if you have received this communication in error and destroy the contents that do not pertain to your business with The GEL Group, INC.

# **Chain of Custody and Supporting Documentation**

183796

**CHAIN OF CUSTODY RECORD**

COC #:

MWHSV20070403\_01  
Page: 1 of 2

| Customer Information |                                                              |                  | Project Information                      |                   |                            | Requested Analyses       |                             |                           | Instructions/TAT          |                          |                       |                            |                           |                        |                      |                    |
|----------------------|--------------------------------------------------------------|------------------|------------------------------------------|-------------------|----------------------------|--------------------------|-----------------------------|---------------------------|---------------------------|--------------------------|-----------------------|----------------------------|---------------------------|------------------------|----------------------|--------------------|
| Site:                | SSFL                                                         | Client Name:     | Boeing                                   | Collector:        | Shelby Valenzuela          |                          |                             |                           | Boeing PM:                |                          |                       |                            |                           |                        |                      |                    |
| Company:             | MWH                                                          | Sampling Event:  | Group 8 Step-out                         | Contact #:        |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
| Report to:           | Lisa Tucker                                                  | Project Number:  | 1891263                                  |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
| Address:             | 9444 Farnham Street<br>Suite 300<br>San Diego<br>CA<br>92123 | Project Manager: | Diana Buchanan<br>(626) 569-6897         |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
| Email:               | boeingdms@ch2m.com                                           | PM Phone #:      |                                          |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
|                      | Lisa.Tucker@mwhglobal.com                                    | Field Contact:   |                                          |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
|                      |                                                              | Field Contact #: |                                          |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
|                      |                                                              | Lab Name:        | GEL Laboratories, LLC                    |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
|                      |                                                              | Lab Contact:     | Martha Harrison                          |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
|                      |                                                              | Lab Address:     | 2040 Savage Road<br>Charleston, SC 29407 |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
|                      |                                                              | Lab Phone:       | (843) 556-8171                           |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
|                      |                                                              |                  |                                          |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
| Sample Name          | Matrix                                                       | Date             | Time                                     | No. of Containers | Metals 6010B Soil Aluminum | Metals 6010B Soil Sodium | Metals 6010B Water Aluminum | Metals 6010B Water Sodium | Metals 6020 Soil Antimony | Metals 6020 Soil Arsenic | Metals 6020 Soil Lead | Metals 6020 Water Antimony | Metals 6020 Water Arsenic | Metals 6020 Water Lead | pH by SW9045C - Soil | Comments           |
| ESBS0031S01          | Soil                                                         | 4/3/2007         | 9:30                                     | 1                 |                            |                          |                             |                           | 10                        | 10                       | 10                    |                            |                           |                        | 10                   |                    |
| ESBS0035S01          | Soil                                                         | 4/3/2007         | 10:30                                    | 1                 |                            |                          |                             |                           | 10                        | 10                       | 10                    |                            |                           |                        | 10                   |                    |
| ESBS0024S01          | Soil                                                         | 4/3/2007         | 11:06                                    | 1                 |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |                    |
| ESBS0024S02          | Soil                                                         | 4/3/2007         | 11:23                                    | 1                 | H                          | H                        |                             |                           |                           |                          |                       |                            |                           |                        | H                    | Hold all analysis. |
| ESBS0032D01          | Soil                                                         | 4/3/2007         | 11:30                                    | 1                 |                            |                          |                             |                           | 10                        | 10                       | 10                    |                            |                           |                        | 10                   |                    |
| ESBS0032S01          | Soil                                                         | 4/3/2007         | 11:30                                    | 1                 |                            |                          |                             |                           | 10                        | 10                       | 10                    |                            |                           |                        | 10                   |                    |
| ESBS0024S03          | Soil                                                         | 4/3/2007         | 11:46                                    | 1                 | H                          | H                        |                             |                           |                           |                          |                       |                            |                           |                        | H                    | Hold all analysis. |
| ESBS0024S04          | Soil                                                         | 4/3/2007         | 12:01                                    | 1                 | H                          | H                        |                             |                           |                           |                          |                       |                            |                           |                        | H                    | Hold all analysis. |
| ESBS0033S01          | Soil                                                         | 4/3/2007         | 12:15                                    | 1                 |                            |                          |                             |                           | 10                        | 10                       | 10                    |                            |                           |                        | 10                   |                    |
| ESBS0023S01          | Soil                                                         | 4/3/2007         | 12:17                                    | 1                 |                            |                          |                             |                           | 10                        | 10                       | 10                    |                            |                           |                        | 10                   |                    |

|                                                                                                                                             |     |        |                 |          |        |                     |      |          |                 |       |       |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|-----------------|----------|--------|---------------------|------|----------|-----------------|-------|-------|
| 1. Relinquished by:                                                                                                                         |     | Date:  | 2. Received by: |          | Date:  | 3. Relinquished by: |      | Date:    | 4. Received by: |       | Date: |
| By Samaw                                                                                                                                    |     | 4-4-07 | M. K. ...       |          | 4-6-07 |                     |      |          |                 |       |       |
| Company:                                                                                                                                    | MWH | Time:  | 0900            | Company: | GEL    | Time:               | 0915 | Company: |                 | Time: |       |
| Comments:                                                                                                                                   |     |        |                 |          |        |                     |      |          |                 |       |       |
| <input type="checkbox"/> Geotracker EDF<br><input checked="" type="checkbox"/> Data Validation Package<br><input type="checkbox"/> Level IV |     |        |                 |          |        |                     |      |          |                 |       |       |

183796  
183799  
MWH-SV20070403\_01  
Page: 2 of 2

COC #:

CHAIN OF CUSTODY RECORD



| Customer Information |                           | Project Information |                       |                   |                            | Requested Analyses       |                             | Instructions/TAT          |                           |                          |                       |                            |                           |                        |                      |          |                    |
|----------------------|---------------------------|---------------------|-----------------------|-------------------|----------------------------|--------------------------|-----------------------------|---------------------------|---------------------------|--------------------------|-----------------------|----------------------------|---------------------------|------------------------|----------------------|----------|--------------------|
| Site:                | SSFL                      | Client Name:        | Boeing                | Collector:        | Shelby Valenzuela          | Boeing PM:               |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
| Company:             | MVH                       | Sampling Event:     | Group 8 Step-out      | Contact #:        |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
| Report to:           | Lisa Tucker               | Project Number:     | 1891263               |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
| Address:             | 9444 Farnham Street       | Project Manager:    | Diana Buchanan        |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
|                      | Suite 300                 | PM Phone #:         | (626) 568-6897        |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
|                      | San Diego                 | Field Contact:      |                       |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
|                      | CA                        | Field Contact #:    |                       |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
|                      | 92123                     | Lab Name:           | GEL Laboratories, LLC |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
| Email:               | boingeds@ch2m.com         | Lab Contact:        | Martha Harrison       |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
|                      | Lisa.Tucker@mwhglobal.com | Lab Address:        | 2040 Savage Road      |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
|                      |                           | Lab Phone:          | Charleston, SC 29407  |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
|                      |                           |                     | (843) 556-8171        |                   |                            |                          |                             |                           |                           |                          |                       |                            |                           |                        |                      |          |                    |
| Sample Name          | Matrix                    | Date                | Time                  | No. of Containers | Metals 6010B Soil Aluminum | Metals 6010B Soil Sodium | Metals 6010B Water Aluminum | Metals 6010B Water Sodium | Metals 6020 Soil Antimony | Metals 6020 Soil Arsenic | Metals 6020 Soil Lead | Metals 6020 Water Antimony | Metals 6020 Water Arsenic | Metals 6020 Water Lead | pH by SW9045C - Soil | Comments |                    |
| ESBS0022S01          | Soil                      | 4/3/2007            | 12:28                 | 1                 | 10                         | 10                       |                             |                           |                           |                          |                       |                            |                           |                        | 10                   |          |                    |
| ESBS0022S02          | Soil                      | 4/3/2007            | 12:50                 | 1                 | H                          | H                        |                             |                           |                           |                          |                       |                            |                           |                        | H                    |          | Hold all analysis. |
| ESBS0034S01          | Soil                      | 4/3/2007            | 14:00                 | 1                 | 10                         | 10                       |                             |                           | 10                        | 10                       | 10                    |                            |                           |                        | 10                   |          |                    |
| ESBS0036S01          | Soil                      | 4/3/2007            | 14:46                 | 1                 | 10                         | 10                       |                             |                           | 10                        | 10                       | 10                    |                            |                           |                        | H                    |          | Hold all analysis. |
| ESBS0036S02          | Soil                      | 4/3/2007            | 14:52                 | 1                 | H                          | H                        |                             |                           | H                         | H                        | H                     |                            |                           |                        | H                    |          |                    |
| ESQW002F01           | Water                     | 4/3/2007            | 15:10                 | 1                 |                            |                          | 10                          | 10                        |                           |                          |                       |                            |                           |                        |                      |          |                    |

| 1. Relinquished by: |        | 2. Received by: |        | 3. Relinquished by:     |  | 4. Received by: |  |
|---------------------|--------|-----------------|--------|-------------------------|--|-----------------|--|
| Date:               | 4-4-07 | Date:           | 4-6-07 | Date:                   |  | Date:           |  |
| Time:               | 0800   | Time:           | 0915   | Time:                   |  | Time:           |  |
| Company:            | MVH    | Company:        | fer    | Company:                |  | Company:        |  |
| Comments:           |        | Geotracker EDF  |        | Data Validation Package |  | Level IV        |  |

183799

# CHAIN OF CUSTODY RECORD

COC #:

MWHSV20070403\_00

Page: 1 of 1

| Customer Information |                          | Project Information |                                          | Project Information                                                                                                              |                   |
|----------------------|--------------------------|---------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Site:                | SSFL                     | Client Name:        | DOE                                      | Collector:                                                                                                                       | Shelby Valenzuela |
| Company:             | MWH                      | Sampling Event:     | Group 8 Step-out                         | Contact #:                                                                                                                       |                   |
| Report to:           | Lisa Tucker              | Project Number:     | 1891264                                  | Requested Analyses                                                                                                               |                   |
| Address:             | 9444 Farnham Street      | Project Manager:    | Diana Buchanan                           | Instructions/TAT<br>Legend:<br>Numerical values for analyses equate to turn around time in days<br>H - Hold<br>EH - Extract Hold |                   |
|                      | Suite 300                | PM Phone #:         | (626) 568-8897                           |                                                                                                                                  |                   |
|                      | San Diego                | Field Contact:      |                                          |                                                                                                                                  |                   |
|                      | CA                       | Field Contact #:    |                                          |                                                                                                                                  |                   |
| Email:               | 92123                    | Lab Name:           | GEL Laboratories, LLC                    | Perchlorate 314 Soil DI-WET                                                                                                      |                   |
|                      | boeingdms@ch2m.com       | Lab Contact:        | Martha Harrison                          |                                                                                                                                  |                   |
|                      | Lisa.Tucker@mwglobal.com | Lab Address:        | 2040 Savage Road<br>Charleston, SC 29407 |                                                                                                                                  |                   |
|                      |                          | Lab Phone:          | (843) 556-8171                           |                                                                                                                                  |                   |
| Sample Name          |                          | Matrix              | Date                                     | Time                                                                                                                             | No. of Containers |
| FSB0031AS01          | Soil                     |                     | 4/3/2007                                 | 9:08                                                                                                                             | 1                 |

| 1. Relinquished by: |        | 2. Received by: |        | 3. Relinquished by: |  | 4. Received by: |  |
|---------------------|--------|-----------------|--------|---------------------|--|-----------------|--|
| Date:               | 4-4-07 | Date:           | 4-6-07 | Date:               |  | Date:           |  |
| Time:               | 09:00  | Time:           | 09:15  | Time:               |  | Time:           |  |
| Company:            | MWH    | Company:        | GEL    | Company:            |  | Company:        |  |
| Comments:           |        | Comments:       |        | Comments:           |  | Comments:       |  |

Geotracker EDF  
 Data Validation Package  
 Level IV

CEIMIC  
Corporation

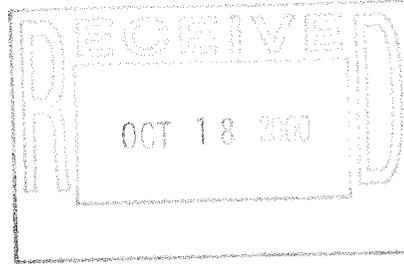
*"Analytical Chemistry for Environmental Management"*

---

RJ601

October 17, 2000

Mr. Jose Toledo  
Ogden Environmental  
5510 Morehouse Drive  
San Diego, CA 92121



Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ601. The 18 soil samples were taken from the field on September 11, 12, 15 and 21, 2000 and received at Ceimic Corporation on September 14, 16 and 23, 2000.

Please note that this data package does not include the results for sample RJ603. This sample was taken off hold, and the results will be reported under a separate cover.

These samples are reported under Ceimic Project Number 200692, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.  
Laboratory Manager

NP/djj

Enclosures

**CEIMIC  
Corporation**

*"Analytical Chemistry for Environmental Management"*

---

December 14, 2000  
Fax: 303-935-6575

Ms. Elizabeth Wessling  
Odgen Environmental, Inc.  
550 South Wadsworth Boulevard  
Suite 500  
Lakewood, CO 80226

Dear Ms. Wessling:

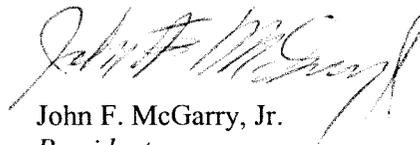
Ceimic has been working very hard in support of your Rocketdyne project and we look forward to continuing our efforts and success in meeting your project needs.

As you know, Ceimic has received several phone requests from Ogden over the past few months to place an abundance of Ogden samples on hold, until further notice by your project management team. Before we received these requests, these samples were received, logged in, and approved by our project managers at a significant cost to Ceimic without any reimbursement. Only a small fraction of these "on hold" samples were later analyzed at Ogden's request.

Ceimic will continue to store these samples in our refrigerators until the last day of the year, December 31, 2000. After this day, all samples remaining on hold will be properly disposed of by Ceimic. If you would like to procure "on hold" sample storage at our facility after this point in time, we would be happy to discuss this with you and devise a plan that would be mutually beneficial.

I have enclosed copies of all Ceimic logs that contain Rocketdyne samples currently on hold. If you have any questions or would like to discuss this matter further, please feel free to call me. We appreciate your business and look forward to continuing our work with you on this important project.

Sincerely,

  
John F. McGarry, Jr.  
*President*

# INDEX

Page #

Semivolatiles/SIMS.....

PCB.....

TPH.....

Metals .....

Inorganic Analytes .....

Dioxins.....

## Project Narrative

## SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ601. Under this SDG there are 1 SVOA, 8 SIMS, 8 PCB and 8 TPH analyses for 7 soil samples which were received at Ceimic Corporation on September 14 and 16, 2000.

This data package includes the analyses for the following samples from SDG No. RJ601, all of which are billable:

| (1) | Client ID    | Ceimic ID        | Analyses      |
|-----|--------------|------------------|---------------|
|     | RJ601        | 200692-01        | SVOA          |
|     | RJ602        | 200692-04        | SIM, PCB, TPH |
|     | RJ604        | 200692-06        | SIM, PCB, TPH |
|     | RJ605 MS/MSD | 200692-07 MS/MSD | SIM, PCB, TPH |
|     | RJ606        | 200692-08        | SIM, PCB, TPH |
|     | RJ608        | 200692-10        | SIM, PCB, TPH |
|     | RJ610        | 200692-12        | SIM, PCB, TPH |

### Sample Receipt

The submitted data covers the analysis of the Semivolatiles (SVOA), SIMS, PCB and TPH fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

### (2) Instrumentation and Column Identification

The following instruments were used for the analyses:

#### GC/MS Analysis

##### A. SVOA/SIMS

MS4: HP5970B GC/MS using 30 m x 0.25 mm ID, ZB-5 fused silica capillary column (J.W. Scientific).

MS13: HP5970B GC/MS using 30 m x 0.25 mm ID, ZB-5 fused silica capillary column (J.W. Scientific).

#### GC Analysis

##### B. PCB

AD19\_1: HP5890II using 30 m x 0.25 mm ID, DB-5 capillary column GC-3.

AD20\_1: HP5890II using 30 m x 0.25 mm ID, DB-17 capillary column GC-3.

C. TPH

AD24\_1: HP5890II using 30 m x 0.25 mm ID, DB-5 capillary column GC-9.

### (3) Sample Information

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error

A. SVOA and SIMS Fraction (Method 8270B)

The continuing calibration associated with the SIM samples had a high %D for N-Nitrosodimethylamine.

Sample RJ604 (200692-06) and the associated LCS sample had a high surrogate recovery.

B. PCB Fraction (Method 8082)

Sample and QC sample extracts underwent sulfuric acid cleanup prior to analysis.

Due to software limitations the forms VI are laboratory instrument forms that document the five level calibration. These forms include retention times and their windows, response factors, %RSD areas and amounts for each compound at each level. The continuing calibrations percent differences are documented on the chromatographic reports.

Aroclor-1254 were detected in the following sample extracts:  
RJ602, RJ605, RJ608 and RJ610.

QC sample extracts RJ605MS/MSD had coelution between Aroclor-1254 in the sample and Aroclor-1260 in the matrix spike.

All sample results were reported from the DB5 column because the responses and percent difference from the initial calibration were high for continuing calibration Aroclor-1016 standards on the DB-17 column. According to both analytical columns the Aroclor patterns identified in the sample extracts agreed well.

C. TPH Fraction (Method 80150G)

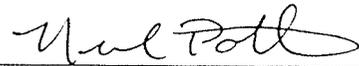
The continuing calibration standard TPH0D had a high response and percent difference from the ICAL ranging from +22-27.5%D.

**Deviations from the SOW**

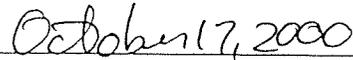
None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature.



Neil Pothier, Laboratory Manager



Date



**Observations:**

All elements except mercury were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

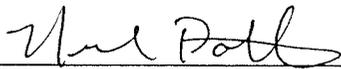
Elevated levels of iron and other spectral interferants caused analytical signal suppression for the elements cadmium and selenium. The affected samples were re-analyzed and reported from diluted runs.

**Deviations from Contract:**

None.

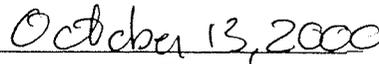
End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Neil Pothier

Laboratory Manager



Date

Chain-of-Custody

FACSIMILE

To: Dr. Neil Pothier/Ceimic Corporation  
 Fax No.: (401) 782-8905

From: Jose L. Toledo *sign:* \_\_\_\_\_

Date: 10/11/00 There are 4 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

**As per our conversation:**

Please make the changes listed below to the chain-of-custody analytical request form.  
 Include this form with the final data deliverables for these samples.

| COC No. | EPA Sample ID | OGDEN Sample ID | Date Collected | Method (s) Originally Requested | Method (s) Now Requested*    |
|---------|---------------|-----------------|----------------|---------------------------------|------------------------------|
| RJ602   | RJ603         | P2TS07S02       | 09/15/00       | On Hold                         | Dioxins                      |
| RJ611   | RJ616         | P2TS36S01       | 09/22/00       | On Hold                         | Dioxins                      |
| RJ611   | RJ617         | P2TS14S01       | 09/22/00       | On Hold                         | Dioxins                      |
| RJ611   | RJ618         | P2TS43S01       | 09/22/00       | On Hold                         | Dioxins                      |
| RJ623   | RJ624         | BTTS01S01       | 09/26/00       | On Hold                         | TPH, 8270CSIM, Metals, & pH. |
| RJ623   | RJ625         | BTTS02S01       | 09/26/00       | On Hold                         | TPH, 8270CSIM, Metals, & pH. |
|         |               |                 |                |                                 |                              |
|         |               |                 |                |                                 |                              |

\*Please Run for Requested Analyses Only.

The reason for these changes is:

- Incorrectly marked on COC form* \_\_\_\_\_
- Lack of sample volume* \_\_\_\_\_
- Ogden office personnel require this change*     X
- Other: Containers mislabeled* \_\_\_\_\_

Thank you.









5510 MOREHOUSE DRIVE  
SAN DIEGO, CA 92121  
(619) 458-9044

200692 (2)

# Chain of Custody

Control Number: **COC RJ 040**  
Date **9/21/00** Page 1 of 1

Sample Disposal Instructions: Laboratory Disposal  
Shipment Method:  
Comment:

Bill To: Purchasing  
Company: Ogden Environmental  
Address: 5510 Morehouse Drive, San Diego, CA 92121

Project Manager: Dixie Hambrick  
Project Name: Rocketdyne  
Project Number: 313150002  
Deliver results to the address above or as stated in contract

|               |                 |     |
|---------------|-----------------|-----|
| Preservatives | HCL, PH<2       | 4°C |
|               | HCL, PH<2       | 4°C |
|               | HCL, PH<2       | 4°C |
|               | H2SO4, PH<2     | 4°C |
|               | FORMALDEHYDE    | 4°C |
|               | ASTM D19        | 4°C |
|               | 8290 DIOXIN     | 4°C |
|               | 8270R SVOC      | 4°C |
|               | 8270S SVOC      | 4°C |
|               | 80150G TPH      | 4°C |
|               | 8021 VOC        | 4°C |
|               | 7196 HEX CHROME | 4°C |
|               | 340.2 FLUORIDE  | 4°C |
|               | 300 ANIONS      | 4°C |
|               | 9045/9040 PH    | 4°C |
|               | 8082 PCBs       | 4°C |
|               | IC HYDRAZ       | 4°C |
|               | HNO3, PH<2      | 4°C |
|               | 1LM02, IRT      | 4°C |
|               | 8330 ORDNANCE   | 4°C |
|               | 8290 DIOXIN     | 4°C |
|               | ASTM D19        | 4°C |
|               | FORMALDEHYDE    | 4°C |
|               | 8270S SVOC      | 4°C |
|               | 8270R SVOC      | 4°C |
|               | 80150G TPH      | 4°C |
|               | 8021 VOC        | 4°C |

|        |         |   |
|--------|---------|---|
| Matrix | Water   |   |
|        | Soil    | X |
|        | Product |   |

| Sample ID | Description (for Ogden use only) | Depth | Date Collected | Time Collected | ULS Number | Lab ID |
|-----------|----------------------------------|-------|----------------|----------------|------------|--------|
| RJ 040    | ESSS 02 S01                      | 0     | 9/21/00        | 1225           | 8          | 13     |
| RJ 041    | ESSS 03 S01                      | 0     | 1230           | 1230           | 9          | 14     |
| RJ 042    | ESSS 04 S01                      | 0     | 1305           | 1305           | 10         | 15     |
| RJ 043    | ESSS 05 S01                      | 0     | 1320           | 1320           | 11         | 16     |
| RJ 044    | ESSS 06 S01                      | 0     | 1335           | 1335           | 12         | 17     |
| RJ 045    | ESSS 07 S01                      | 0     | 1340           | 1340           | 13         | 18     |
| RJ 046    | ESSS 08 S01                      | 0     | 1355           | 1355           | 14         | 19     |
| RJ 047    | ESSS 09 S01                      | 0     | 1400           | 1400           | 15         | 20     |

J.B. 9/22/00

For Lab Use

Lab Number:

Do COC match samples: Y or N  
Broken container: Y or N  
Received within holding time: Y or N  
COC seal intact: Y or N  
Any other problems: Y or N  
If any YES, Ogden contacted: Y or N  
Date contacted: 9/21/00  
Temperature °C: 30

Samplers Signature: *Thomas J. Butts* Date: 9/21/00 Time: 1200  
Relinquished By: *Thomas J. Butts* Date: 9/22/00 Time: 1530  
Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Received By (LAB): *Robert Davis* Date: 9/22/00 Time: 16:00

Lisa/Jay-  
ESSS09 may be contained unit sample

CEIMIC CORPORATION  
Sample Receiving Checklist

LIMS # 200642  
Client: ogden  
Project: rocketdyne

Cooler Number: 1  
Number of Coolers: 1  
Date Received: 9/16/00

- A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 9/16/00
1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 9/16/00
  2. Did cooler come with a shipping slip (airbill, etc.)?  YES  NO  
If YES, enter carrier name & airbill number here: FX 3470339832
  3. Were custody seals on outside of cooler?  YES  NO  
How many & where: 3 front seal date: no / date / seal name: signature
  4. Were custody seals unbroken and intact at the date and time of arrival  YES  NO
  5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading:  YES  NO
  6. Chain of Custody #: RJ602
  7. Were custody papers sealed in a plastic bag & taped inside to the lid?  YES  NO
  8. Were custody papers filled out properly (ink, signed, etc.)?  YES  NO
  9. Did you sign custody papers in the appropriate place?  YES  NO
  10. Was project identifiable from custody papers?  YES  NO
  11. If required, was enough ice used? ..... Cooler Temperature: 8 °C Type of ice: blue  YES  NO
- B. LOG-IN PHASE: Date samples were logged-in: 9/16/00  
by (print): RD (sign): RD
12. Describe type of packing in cooler: \_\_\_\_\_
  13. Were all bottles sealed in separate plastic bags?  YES  NO
  14. Did all bottles arrive unbroken and were labels in good condition?  YES  NO
  15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)?  YES  NO
  16. Did all bottle labels agree with custody papers?  YES  NO
  17. Were correct containers used for the tests indicated?  YES  NO
  18. Were samples received at the correct pH? ..... YES  NO
  19. Was a sufficient amount of sample sent for tests indicated?  YES  NO
  20. Were bubbles absent in VOA samples? If NO, list by sample#: \_\_\_\_\_ YES  NO
  21. Laboratory labelling verified by: (Initials): RD (date): 9/16/00

CEIMIC CORPORATION  
Sample Receiving Checklist

LIMS # 200692  
Client: ogden  
Project: rocketdyne

Cooler Number: 1  
Number of Coolers: 1  
Date Received: 9/14/00

- A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 9,14,00
1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 9,14,00
2. Did cooler come with a shipping slip (airbill, etc.)? .....  YES  NO  
If YES, enter carrier name & airbill number here: FX 3470334681
3. Were custody seals on outside of cooler? .....  YES  NO  
How many & where: \_\_\_\_\_ seal date: 1 / 1 seal name: \_\_\_\_\_
4. Were custody seals unbroken and intact at the date and time of arrival .....  YES  NO
5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: \_\_\_\_\_  YES  NO
6. Chain of Custody #: RS591, RS594
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .....  YES  NO
8. Were custody papers filled out properly (ink, signed, etc.)? .....  YES  NO
9. Did you sign custody papers in the appropriate place? .....  YES  NO
10. Was project identifiable from custody papers? .....  YES  NO
11. If required, was enough ice used? ..... Cooler Temperature: 6 °C Type of ice: blue  YES  NO
- B. LOG-IN PHASE: Date samples were logged-in: 9,14,00  
by (print): RD (sign): RD
12. Describe type of packing in cooler: \_\_\_\_\_
13. Were all bottles sealed in separate plastic bags? .....  YES  NO
14. Did all bottles arrive unbroken and were labels in good condition? .....  YES  NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .....  YES  NO
16. Did all bottle labels agree with custody papers? .....  YES  NO
17. Were correct containers used for the tests indicated? .....  YES  NO
18. Were samples received at the correct pH? .....  YES  NO
19. Was a sufficient amount of sample sent for tests indicated? .....  YES  NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: \_\_\_\_\_  YES  NO
21. Laboratory labelling verified by: (Initials): RD (date): 9,14,00

CEIMIC CORPORATION  
Sample Receiving Checklist

LIMS # 200692

Cooler Number: 1

Client: Ogden

Number of Coolers: 1

Project: rocketdyne

Date Received: 9/23/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 9/23/00

1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 9/23/00

2. Did cooler come with a shipping slip (airbill, etc.)? .....  YES  NO

If YES, enter carrier name & airbill number here: Fx 3470339666

3. Were custody seals on outside of cooler? ..... YES  NO

How many & where: \_\_\_\_\_ seal date:     /     /     seal name: \_\_\_\_\_

4. Were custody seals unbroken and intact at the date and time of arrival ..... YES  NO

5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: \_\_\_\_\_  YES  NO

6. Chain of Custody #: RS #40, RS 611

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .....  YES  NO

8. Were custody papers filled out properly (ink, signed, etc.)? .....  YES  NO

9. Did you sign custody papers in the appropriate place? .....  YES  NO

10. Was project identifiable from custody papers? .....  YES  NO

11. If required, was enough ice used? ..... Cooler Temperature: 3 °C Type of ice: cubes, blue  YES  NO

B. LOG-IN PHASE: Date samples were logged-in: 9/23/00

by (print): RD (sign): RD

12. Describe type of packing in cooler: \_\_\_\_\_

13. Were all bottles sealed in separate plastic bags? .....  YES  NO

14. Did all bottles arrive unbroken and were labels in good condition? .....  YES  NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... YES  NO

16. Did all bottle labels agree with custody papers? .....  YES  NO

17. Were correct containers used for the tests indicated? .....  YES  NO

18. Were samples received at the correct pH? ..... YES  NO

19. Was a sufficient amount of sample sent for tests indicated? .....  YES  NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: \_\_\_\_\_ YES  NO

21. Laboratory labelling verified by: (Initials): RD (date): 9/23/00

**CEIMIC  
Corporation**

*"Analytical Chemistry for Environmental Management"*

---

September 29, 2000



Ms. Dixie Hambrick  
Ogden Environmental  
5510 Morehouse Drive  
San Diego, CA 92121

Dear Ms. Hambrick:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ601. The 9 soil samples were taken from the field on September 11, 12 and 15, 2000 and received at Ceimic Corporation on September 14 and 16, 2000.

This data package includes the Mercury results for the rush samples only. All other data will be reported later under a separate cover.

These samples are reported under Ceimic Project Number 200692, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.  
Laboratory Manager

NP/djj

Enclosures

CHAIN OF CUSTODY

**CEIMIC  
Corporation**

*"Analytical Chemistry for Environmental Management"*

# Corrective Action Form

Name: Karen Willhansen

Date: 10/18/00

**Out of Control Situation:**

Pace Analy. contacted me to let me know samples they received for Dioxin analysis are ~~no~~ out of hold or close to out of hold.

Client(s): Ogden Rocketdyne

Samples Affected: RJG03, RJG16, RJG17, RJG18, RJG20, RJG22

Action Taken: Fax to Elizabeth Wessling that these samples were taken off hold by Ogden last week and that Pace will go forward and analyze the samples ASAP

Name: KW

Date: 10/18/00

**Proof of Return to Control:**

Supervisor: \_\_\_\_\_

QA/QC Officer: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Corrective Action Tracking # \_\_\_\_\_

QAT0046

Page # 43



5510 MOREHOUSE DRIVE  
SAN DIEGO, CA 92121  
(619) 458-9044

200692 (24)

# Chain of Custody

Control Number: **COC RJ 594**  
Date **9/11/00** Page 1 of 1

|                                                               |                                                              |
|---------------------------------------------------------------|--------------------------------------------------------------|
| Project Manager:<br><b>Dixie Hambrick</b>                     | Bill To:<br><b>Purchasing</b>                                |
| Project Name:<br><b>Rocketdyne</b>                            | Company:<br><b>Ogden Environmental</b>                       |
| Project Number:<br><b>313150002</b>                           | Address:<br><b>5510 Morehouse Drive, San Diego, CA 92121</b> |
| Deliver results to the address above or as stated in contract | Sample Disposal Instructions: <b>Laboratory Disposal</b>     |
| Cooler No:<br><b>936</b>                                      | Shipment Method:                                             |
| QC Level:<br><b>Level 4</b>                                   | Comment:                                                     |

|               |                |     |
|---------------|----------------|-----|
| Preservatives | HCL PH2        | 4°C |
|               | HCL PH2        | 4°C |
|               | H2SO4 PH2      | 4°C |
|               | HNO3 PH2       | 4°C |
|               | 1LM2 IRT       | 4°C |
|               | HEX CHROME     | 4°C |
|               | 340.2 FLUORIDE | 4°C |
|               | 300 ANIONS     | 4°C |
|               | 9045/9040 PH   | 4°C |
|               | 8082 PCBs      | 4°C |
|               | IC HYDRAZ      | 4°C |

| Sample ID   | Description<br>(for Ogden use only) | Depth | Date Collected | Time Collected | US Number | Lab ID | Matrix                              |       |         | ASTM D19 | FORMALDEHYDE | 8330 ORDINANCE | 1LM2 IRT | 7196 HEX CHROME | 340.2 FLUORIDE | 300 ANIONS | 9045/9040 PH | 8082 PCBs | IC HYDRAZ | Method | Extra Volume MS/MSD | Total # of Bottles |  |
|-------------|-------------------------------------|-------|----------------|----------------|-----------|--------|-------------------------------------|-------|---------|----------|--------------|----------------|----------|-----------------|----------------|------------|--------------|-----------|-----------|--------|---------------------|--------------------|--|
|             |                                     |       |                |                |           |        | Soil                                | Water | Product |          |              |                |          |                 |                |            |              |           |           |        |                     |                    |  |
| RS594       | NST502 S02                          | 3'    | 9/11/00        | 1700           | ---       | 2      | <input checked="" type="checkbox"/> |       |         |          |              |                |          |                 |                |            |              |           |           |        |                     |                    |  |
| RS595       | NST502 S03                          | 5'    | 9/11/00        | 1725           | ---       | 3      | <input checked="" type="checkbox"/> |       |         |          |              |                |          |                 |                |            |              |           |           |        |                     |                    |  |
| <i>S.H.</i> |                                     |       |                |                |           |        |                                     |       |         |          |              |                |          |                 |                |            |              |           |           |        |                     |                    |  |

|                                                  |                 |               |
|--------------------------------------------------|-----------------|---------------|
| Sampler's Signature<br><i>Thomas [Signature]</i> | Date<br>9/11/00 | Time<br>1700  |
| Relinquished By:<br><i>David [Signature]</i>     | Date<br>9/15/00 | Time<br>18:00 |
| Received By:                                     | Date            | Time          |
| Relinquished By:                                 | Date            | Time          |
| Received By (LAB):<br><i>Robert [Signature]</i>  | Date<br>9/17/00 | Time<br>10:00 |

Lab Number: \_\_\_\_\_

For Lab Use

Do COC match samples: Y or N  
Broken container: Y or N  
Received within holding time: Y or N  
COC seal intact: Y or N  
Any other problems: Y or N  
If any YES, Ogden contacted: Y or N  
Date contacted: \_\_\_/\_\_\_/\_\_\_  
Temperature °C **6**





5510 MOREHOUSE DRIVE  
SAN DIEGO, CA 92121  
(619) 456-9044

# Chain of Custody

RJ 591

Control Number: COC

Date 9/11/00 Page 1 of 1

200677 (vote) (24)

|                                                               |                                                    |
|---------------------------------------------------------------|----------------------------------------------------|
| Project Manager: Dixie Hambrick                               | Bill To: Purchasing                                |
| Project Name: Rocketdyne                                      | Company: Ogdan Environmental                       |
| Project Number: 313150002                                     | Address: 5510 Morehouse Drive, San Diego, CA 92121 |
| Deliver results to the address above or as stated in contract | Sample Disposal Instructions: Laboratory Disposal  |
| Cooler No: 936                                                | Shipment Method:                                   |
| QC Level: Level4                                              | Comment:                                           |
| TAT: 14-day hardcopy summary<br>28-day full package           |                                                    |

| Sample ID | Description (for Ogdan use only) | Q <sub>ph</sub> | Date Collected | Time Collected | ULS Number | Lab ID |
|-----------|----------------------------------|-----------------|----------------|----------------|------------|--------|
| RJ591     | ECTS φ2 S φ1                     | 1.5             | 9/11/00        | 9:30           | 29         | 13     |
| RJ592     | ECTS φ2 S φ2                     | 3               | 9/11/00        | 10:55          | 29         | 14     |
| RJ593     | ECTS φ2 S φ3                     | 7               | 9/11/00        | 11:30          | 29         | 15     |
| RJ596     | ECTS φ2 S φ4                     | 2               | 9/12/00        | 8:30           | 29         | 16     |
| RJ597     | ECTS φ2 S φ5                     | 3.5             | 9/12/00        | 8:55           | 29         | 17     |
| RJ598     | ECTS φ2 S φ6                     | 5               | 9/12/00        | 9:10           | 29         | 18     |
| RJ599     | ECTS φ3 S φ1                     | 3.5             | 9/14/00        | 9:30           | 29         | 19     |
| RJ600     | ECTS φ3 S φ2                     | 6               | 9/12/00        | 10:15          | 29         | 20     |
| RJ601     | ECTS φ4 S φ1                     | 1               | 9/12/00        | 10:30          | 34         |        |

| Preservatives |         | Matrix |       | For Lab Use |          |            |             |            |             |                       |                |          |                 |                |            |              |           |           |                 |                     |                    |
|---------------|---------|--------|-------|-------------|----------|------------|-------------|------------|-------------|-----------------------|----------------|----------|-----------------|----------------|------------|--------------|-----------|-----------|-----------------|---------------------|--------------------|
| HC, PH2       | HC, PH2 | Soil   | Water | Product     | 8021 VOC | 8015OG TPH | 8270SM SVOC | 8270R SVOC | 8290 DIOXIN | ASTM D19 FORMALDEHYDE | 8330 ORDINANCE | TLM2 IRT | 7196 HEX CHROME | 340.2 FLUORIDE | 300 ANIONS | 9045.9040 PH | 8082 PCBs | IC HYDRAZ | Sampling Method | Extra Volume MS/MSD | Total # of Bottles |
| X             | X       | X      | X     | X           | X        | X          | X           | X          | X           | X                     | X              | X        | X               | X              | X          | X            | X         | X         |                 |                     | 1                  |
| X             | X       | X      | X     | X           | X        | X          | X           | X          | X           | X                     | X              | X        | X               | X              | X          | X            | X         | X         |                 |                     | 1                  |
| X             | X       | X      | X     | X           | X        | X          | X           | X          | X           | X                     | X              | X        | X               | X              | X          | X            | X         | X         |                 |                     | 4                  |
| X             | X       | X      | X     | X           | X        | X          | X           | X          | X           | X                     | X              | X        | X               | X              | X          | X            | X         | X         |                 |                     | 4                  |
| X             | X       | X      | X     | X           | X        | X          | X           | X          | X           | X                     | X              | X        | X               | X              | X          | X            | X         | X         |                 |                     | 4                  |

|                                        |               |             |
|----------------------------------------|---------------|-------------|
| Samplers Signature: <i>[Signature]</i> | Date: 9/12/00 | Time: 14:00 |
| Relinquished By: <i>[Signature]</i>    | Date: 9/13/00 | Time: 17:00 |
| Received By:                           | Date:         | Time:       |
| Relinquished By:                       | Date:         | Time:       |
| Received By (LAB): <i>[Signature]</i>  | Date: 9/14/00 | Time: 10:00 |

Lab Number: \_\_\_\_\_

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogdan contacted: Y or N

Date contacted: \_\_\_/\_\_\_/\_\_\_

Temperature °C: 6

Hold samples ECTSP2 Sφ3, ECTSP2 Sφ5, ECTSP2 Sφ6.

HOMOGENIZE ALL SAMPLES.



CEIMIC CORPORATION  
Sample Receiving Checklist

LIMS # 200642

Cooler Number: 1

Client: ogden

Number of Coolers: 1

Project: rocketdyne

Date Received: 9/16/00

- A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 9/16/00
1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 9/16/00
  2. Did cooler come with a shipping slip (airbill, etc.)? .....  YES NO  
If YES, enter carrier name & airbill number here: FX 3470339832
  3. Were custody seals on outside of cooler? .....  YES NO  
How many & where: 3 front seal date: no / date seal name: signature
  4. Were custody seals unbroken and intact at the date and time of arrival .....  YES NO
  5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: .....  YES NO
  6. Chain of Custody #: RJ 602
  7. Were custody papers sealed in a plastic bag & taped inside to the lid? .....  YES NO
  8. Were custody papers filled out properly (ink, signed, etc.)? .....  YES NO
  9. Did you sign custody papers in the appropriate place? .....  YES NO
  10. Was project identifiable from custody papers? .....  YES NO
  11. If required, was enough ice used? ..... Cooler Temperature: 8 °C Type of ice: blue  YES NO
- B. LOG-IN PHASE: Date samples were logged-in: 9/16/00  
by (print): RD (sign): RD
12. Describe type of packing in cooler: \_\_\_\_\_
  13. Were all bottles sealed in separate plastic bags? ..... YES  NO
  14. Did all bottles arrive unbroken and were labels in good condition? .....  YES NO
  15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .....  YES NO
  16. Did all bottle labels agree with custody papers? .....  YES NO
  17. Were correct containers used for the tests indicated? .....  YES NO
  18. Were samples received at the correct pH? ..... YES NO
  19. Was a sufficient amount of sample sent for tests indicated? .....  YES NO
  20. Were bubbles absent in VOA samples? If NO, list by sample#: \_\_\_\_\_ YES NO
  21. Laboratory labelling verified by: (Initials): RD (date): 9/16/00

CEMIC CORPORATION  
Sample Receiving Checklist

LIMS # 200692

Client: ogden

Project: rocketdyne

Cooler Number: 1

Number of Coolers: 1

Date Received: 9/14/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 9, 14, 00

1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 9, 14, 00

2. Did cooler come with a shipping slip (airbill, etc.)? .....  YES NO

If YES, enter carrier name & airbill number here: FX 3470334681

3. Were custody seals on outside of cooler? ..... YES  NO

How many & where: \_\_\_\_\_ seal date: 1 / 1 seal name: \_\_\_\_\_

4. Were custody seals unbroken and intact at the date and time of arrival ..... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: \_\_\_\_\_  YES NO

6. Chain of Custody #: RS591, RS594

7. Were custody papers sealed in a plastic bag & taped inside to the lid? .....  YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? .....  YES NO

9. Did you sign custody papers in the appropriate place? .....  YES NO

10. Was project identifiable from custody papers? .....  YES NO

11. If required, was enough ice used? ..... Cooler Temperature: 6 °C Type of ice: blue  YES NO

B. LOG-IN PHASE: Date samples were logged-in: 9, 14, 00

by (print): RD (sign): RD

12. Describe type of packing in cooler: \_\_\_\_\_

13. Were all bottles sealed in separate plastic bags? .....  YES NO

14. Did all bottles arrive unbroken and were labels in good condition? .....  YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? .....  YES NO

16. Did all bottle labels agree with custody papers? .....  YES NO

17. Were correct containers used for the tests indicated? .....  YES NO

18. Were samples received at the correct pH? ..... YES NO

19. Was a sufficient amount of sample sent for tests indicated? .....  YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: \_\_\_\_\_ YES NO

21. Laboratory labelling verified by: (Initials): RD (date): 9, 14, 00

CEIMIC CORPORATION  
Sample Receiving Checklist

LIMS # 200692

Cooler Number: 1

Client: Ogden

Number of Coolers: 1

Project: rocketdyne

Date Received: 9/23/00

- A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 9/23/00
1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 9/23/00
2. Did cooler come with a shipping slip (airbill, etc.)? .....  YES  NO  
If YES, enter carrier name & airbill number here: FX 3470339666
3. Were custody seals on outside of cooler? ..... YES  NO   
How many & where: \_\_\_\_\_ seal date:  / /  seal name: \_\_\_\_\_
4. Were custody seals unbroken and intact at the date and time of arrival ..... YES  NO
5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: \_\_\_\_\_  YES  NO
6. Chain of Custody #: RS 140, RS 611
7. Were custody papers sealed in a plastic bag & taped inside to the lid? .....  YES  NO
8. Were custody papers filled out properly (ink, signed, etc.)? .....  YES  NO
9. Did you sign custody papers in the appropriate place? .....  YES  NO
10. Was project identifiable from custody papers? .....  YES  NO
11. If required, was enough ice used? ..... Cooler Temperature: 3 °C Type of ice: cubes blue  YES  NO
- B. LOG-IN PHASE: Date samples were logged-in: 9/23/00  
by (print): RD (sign): RD
12. Describe type of packing in cooler: \_\_\_\_\_
13. Were all bottles sealed in separate plastic bags? .....  YES  NO
14. Did all bottles arrive unbroken and were labels in good condition? .....  YES  NO
15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... YES  NO
16. Did all bottle labels agree with custody papers? .....  YES  NO
17. Were correct containers used for the tests indicated? .....  YES  NO
18. Were samples received at the correct pH? ..... YES  NO
19. Was a sufficient amount of sample sent for tests indicated? .....  YES  NO
20. Were bubbles absent in VOA samples? If NO, list by sample#: \_\_\_\_\_ YES  NO
21. Laboratory labelling verified by: (Initials): RD (date): 9/23/00

**TOOK RJ603 OFF HOLD FOR DIOXINS**

**CEIMIC Corporation**  
*Sample Log In Information*

Date: 10/12/00 -16:09:51

Date Samples Received: 09/14/00

Date Due: 10/21/00

Client: Ogden Environmental

Project Name: Rocketdyne

Client Task: 313150002

Client Contact: Dixie Hambrick

Project #: 200692  
 SDG: RJ601  
 Case: 313150

Project Amount: \$8,710.00

Stored : 24

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : Ogden Environmental  
 5510 Morehouse Drive  
 San Diego, CA 92121

Attn : Dixie Hambrick

Invoice To: Ogden Environmental  
 5510 Morehouse Dr, Suite 300  
 San Diego, CA 92121

Attn : Accounts Payable

| LAB ID | CLIENT ID | NO. CONT. | MATRIX | DATE RCVD | DATE SAMP | TIME SAMP | ANALYSIS & METHOD                                                                                                   |
|--------|-----------|-----------|--------|-----------|-----------|-----------|---------------------------------------------------------------------------------------------------------------------|
| -01A   | RJ601     |           | SOIL   | 09/14/00  | 09/12/00  | 10:30:00  | Semivolatiles(8270B)<br>pH(9045)                                                                                    |
| -02A   | RJ594     | 1         | SOIL   | 09/14/00  | 09/11/00  | 17:00:00  | TAL Metals(6010B)<br>TAL Metals(6010B), TRACE                                                                       |
| -03A   | RJ595     | 1         | SOIL   | 09/14/00  | 09/11/00  | 17:25:00  | TAL Metals(6010B)<br>TAL Metals(6010B), TRACE                                                                       |
| -04A   | RJ602     | 1         | SOIL   | 09/16/00  | 09/15/00  | 08:30:00  | TPH(8015OG)<br>PCB(8082)<br>pH(9045)<br>Dioxins(8290)<br>TAL Metals(6010B)<br>SIM(8270)<br>TAL Metals(6010B), TRACE |
| -05A   | RJ603     | 1         | SOIL   | 09/16/00  | 09/15/00  | 09:00:00  | Dioxins(8290)                                                                                                       |
| -06A   | RJ604     | 1         | SOIL   | 09/16/00  | 09/15/00  | 13:00:00  | TPH(8015OG)<br>PCB(8082)<br>pH(9045)<br>TAL Metals(6010B)<br>SIM(8270)<br>TAL Metals(6010B), TRACE                  |
| -07A   | RJ605     | 3         | SOIL   | 09/16/00  | 09/15/00  | 14:15:00  | TPH(8015OG)<br>PCB(8082)<br>pH(9045)                                                                                |

| LAB ID | CLIENT ID    | NO. CONT. | MATRIX | DATE RCVD | DATE SAMP | TIME SAMP | ANALYSIS & METHOD                                                                                                   |
|--------|--------------|-----------|--------|-----------|-----------|-----------|---------------------------------------------------------------------------------------------------------------------|
| -07A   | RJ605        | 3         | SOIL   | 09/16/00  | 09/15/00  | 14:15:00  | Dioxins(8290)<br>TAL Metals(6010B)<br>SIM(8270)<br>TAL Metals(6010B), TRACE                                         |
| -07B   | RJ605ms      |           | SOIL   | 09/16/00  | 09/15/00  | 14:15:00  | TPH(8015OG)<br>PCB(8082)<br>TAL Metals(6010B)<br>SIM(8270)<br>TAL Metals(6010B), TRACE                              |
| -07C   | RJ605msd/dup |           | SOIL   | 09/16/00  | 09/15/00  | 14:15:00  | TPH(8015OG)<br>PCB(8082)<br>pH(9045)<br>TAL Metals(6010B)<br>SIM(8270)<br>TAL Metals(6010B), TRACE                  |
| -08A   | RJ606        | 1         | SOIL   | 09/16/00  | 09/15/00  | 14:30:00  | TPH(8015OG)<br>PCB(8082)<br>pH(9045)<br>Dioxins(8290)<br>TAL Metals(6010B)<br>SIM(8270)<br>TAL Metals(6010B), TRACE |
| -09A   | RJ607        | 1         | SOIL   | 09/16/00  | 09/15/00  | 15:00:00  | Sample on hold                                                                                                      |
| -10A   | RJ608        | 1         | SOIL   | 09/16/00  | 09/15/00  | 15:10:00  | TPH(8015OG)<br>PCB(8082)<br>pH(9045)<br>TAL Metals(6010B)<br>SIM(8270)<br>TAL Metals(6010B), TRACE                  |
| -11A   | RJ609        | 1         | SOIL   | 09/16/00  | 09/15/00  | 15:20:00  | Sample on hold                                                                                                      |
| -12A   | RJ610        | 1         | SOIL   | 09/16/00  | 09/15/00  | 15:30:00  | TPH(8015OG)<br>PCB(8082)<br>pH(9045)<br>TAL Metals(6010B)<br>SIM(8270)<br>TAL Metals(6010B), TRACE                  |
| -13A   | RJ040        | 1         | SOIL   | 09/23/00  | 09/21/00  | 12:25:00  | T Mercury                                                                                                           |
| -14A   | RJ041        | 1         | SOIL   | 09/23/00  | 09/21/00  | 12:30:00  | T Mercury                                                                                                           |
| -15A   | RJ042        | 1         | SOIL   | 09/23/00  | 09/21/00  | 13:05:00  | T Mercury                                                                                                           |

Project #: 200692

| LAB ID | CLIENT ID | NO. CONT. | MATRIX | DATE RCVD | DATE SAMP | TIME SAMP | ANALYSIS & METHOD |
|--------|-----------|-----------|--------|-----------|-----------|-----------|-------------------|
| -16A   | RJ043     | 1         | SOIL   | 09/23/00  | 09/21/00  | 13:20:00  | T Mercury         |
| -17A   | RJ044     | 1         | SOIL   | 09/23/00  | 09/21/00  | 13:35:00  | T Mercury         |
| -17B   | RJ044 ms  |           | SOIL   | 09/23/00  | 09/21/00  | 13:35:00  | T Mercury         |
| -17C   | RJ044 msd |           | SOIL   | 09/23/00  | 09/21/00  | 13:35:00  | T Mercury         |
| -18A   | RJ045     | 1         | SOIL   | 09/23/00  | 09/21/00  | 13:40:00  | T Mercury         |
| -19A   | RJ046     | 1         | SOIL   | 09/23/00  | 09/21/00  | 13:55:00  | T Mercury         |
| -20A   | RJ047     | 1         | SOIL   | 09/23/00  | 09/21/00  | 14:00:00  | T Mercury         |

**Comments:**

*Metals for -02 and -03 are Ag only*

*Composite 3 sleeves for RJ605 (-07)*

**Requirements:**

*Level IV; 28 day TAT*

*TPH = Ogden 4 ranges; 8270SIM = PAH's and NDMA*

*Dioxin and Asbestos and Formaldehyde subcontracted*

*8260B to include TIC's for soils*

K.T.: 01/19/01

LIMS Identifier: 0009024

LIMS Project Code: OGDEN\_ROCKET

Approved by: *[Signature]*  
10/12/00

## **SOIL VALIDATION REPORTS**



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026  
303.935.6505, Fax 303.935.6575

## DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI  
Project Manager: D. Hambrick  
Analysis/Method: Metals by Method ILM04  
QC Level: V<sup>1</sup>  
SDG: RJ313  
Matrix: Soil  
No. of Samples: 4  
Date Reviewed: September 12, 2001  
Reviewer: P. Meeks  
Reference: USEPA SW-846 Methods 3050B, 6010B, and 7471A (11/90)  
Samples Reviewed: RJ313, RJ314, RJ315, RJ316

### Data Validation Findings

|                             | Findings                                                                                                                                                                                                                              | Qualifications                                                                                                                                                                                               |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Sample Management</u> | One cooler was received within the QC limits and one was received above the QC limits of 4°±2° C. COCs match samples and account for analyses. No custody seals were present on the coolers. Analyses performed within holding times. | Due to the nonvolatile nature of the analytes, no qualifications were required for the exceeded temperature.                                                                                                 |
| 3. <u>Method Blanks</u>     | Sb = 0.184 mg/kg<br>Cd = -0.055 mg/kg                                                                                                                                                                                                 | Nondetected cadmium and detected antimony in RJ313, RJ314, and RJ316 were qualified "UJ," and nondetected cadmium in RJ315 was qualified "UJ." Antimony was later rejected for poor matrix spike recoveries. |
| 5. <u>LCS/BS</u>            | A solid LCS was analyzed with the samples. The recoveries for all analytes were within the laboratory defined QC limits.                                                                                                              | No qualifications were required.                                                                                                                                                                             |

|                                                                                                         | Findings                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Qualifications                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6. Duplicates</b><br>Performed for RJ314 MS/MSD                                                      | The molybdenum results were not reported on the summary form. The reviewer checked the values on the spike/spike duplicate summary forms. The molybdenum RPD was within QC limits. The mercury results were incorrectly reported on the summary form. The reviewer corrected the mercury results and confirmed the RPD, which was above QC limits, at 26.1%. Additionally, the RPDs for antimony (27.4%) and calcium (25.8%) were above the $\pm 20\%$ control limit. | Antimony detected in RJ315 and mercury detected in RJ313 were qualified "J." Calcium detected in samples RJ313, RJ314, RJ315, and RJ316 was qualified "J."                                                                                           |
| <b>7. MS/MSDs</b><br>Performed for RJ314                                                                | Sb: MS = 18.7%; MSD = 13.7%<br>As: MSD = 64.9%<br>B: MS = 54.5%; MSD = 53.9%<br>Cd: MS = 68.9%; MSD = 68.9%<br>Cr: MSD = 71.0%<br>Hg: MS = 69.0%<br>Mo: MS = 73.7%; MSD = 73.2%<br>Se: MS = 135.2%<br>Tl: MS = 0%; MSD = 0%<br>Zn: MSD = 73.4%                                                                                                                                                                                                                        | Nondetected antimony and thallium were rejected, "R."<br><br>Antimony, boron, mercury, selenium, arsenic, chromium, and zinc detected in the samples were qualified "J." Nondetected cadmium, mercury, molybdenum, and thallium were qualified "UJ." |
| <b>9. ICP Serial Dilution</b><br>Performed for RJ314                                                    | All %Ds were within the $\pm 10$ control limits.                                                                                                                                                                                                                                                                                                                                                                                                                      | No qualifications required.                                                                                                                                                                                                                          |
| <b>10. Other</b>                                                                                        | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No qualifications were required.                                                                                                                                                                                                                     |
| <b>11. Field QC Samples</b><br>ER: RJ552 (SDG RJ028)<br>FB: RJ543 (SDG RJ514)<br>Field duplicates: none | Barium, iron, magnesium, and zinc were detected in the equipment rinsate, but not at sufficient concentration to qualify site samples. Cobalt, lead, nickel, antimony, and vanadium were detected in the field blank, but not at sufficient concentration to qualify site samples.                                                                                                                                                                                    | No qualifications were required.                                                                                                                                                                                                                     |
| <b>Comments</b>                                                                                         | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | None                                                                                                                                                                                                                                                 |

<sup>1</sup> Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.

**TOTAL METALS**  
-1-  
**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

RJ313

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 010371

SAS No.:

SDG NO.: RJ313

Matrix (soil/water): SOIL

Lab Sample ID: 010371-01

Level (low/med): LOW

Date Received: 05/03/01

% Solids: 90.0

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

| CAS No.   | Analyte    | Concentration | C | Q  | M  | Per<br>Qual | Qual<br>Code |
|-----------|------------|---------------|---|----|----|-------------|--------------|
| 7429-90-5 | Aluminum   | 11800         |   |    | P  |             |              |
| 7440-36-0 | Antimony   | 0.87          | B | N* | P  | UJR         | B, Q         |
| 7440-38-2 | Arsenic    | 5.2           |   | N  | P  | J           | Q            |
| 7440-39-3 | Barium     | 76.5          |   |    | P  |             |              |
| 7440-41-7 | Beryllium  | 0.70          |   |    | P  |             |              |
| 7440-42-8 | Boron      | 6.1           | B | N  | P  | J           | Q            |
| 7440-43-9 | Cadmium    | 0.02          | U | N  | P  | UJ          | B, Q         |
| 7440-70-2 | Calcium    | 14800         |   | *  | P  | J           | E            |
| 7440-47-3 | Chromium   | 18.0          |   | N  | P  | J           | Q            |
| 7440-48-4 | Cobalt     | 8.1           |   |    | P  |             |              |
| 7440-50-8 | Copper     | 9.3           |   |    | P  |             |              |
| 7439-89-6 | Iron       | 19500         |   |    | P  |             |              |
| 7439-92-1 | Lead       | 7.4           |   |    | P  |             |              |
| 7439-95-4 | Magnesium  | 4760          |   |    | P  |             |              |
| 7439-96-5 | Manganese  | 357           |   |    | P  |             |              |
| 7439-97-6 | Mercury    | 0.07          | B | *N | AV | J           | E, Q         |
| 7439-98-7 | Molybdenum | 0.62          | U | N  | P  | UJ          | Q            |
| 7440-02-0 | Nickel     | 13.8          |   |    | P  |             |              |
| 7440-09-7 | Potassium  | 1700          |   |    | P  |             |              |
| 7782-49-2 | Selenium   | 0.86          |   | N  | P  | J           | Q            |
| 7440-22-4 | Silver     | 0.43          | U |    | P  | U           |              |
| 7440-23-5 | Sodium     | 100           | B |    | P  |             |              |
| 7440-28-0 | Thallium   | 1.7           | U | N  | P  | UJR         | Q            |
| 7440-62-2 | Vanadium   | 37.6          |   | N  | P  |             |              |
| 7440-66-6 | Zinc       | 47.0          |   | N  | P  | J           | Q            |

**AMEC VALIDATED** Pm 09/12/01

**LEVEL V**

Color Before: BROWN

Clarity Before:

Texture:

Color After: YELLOW

Clarity After: MEDIUM

Artifacts:

Comments:

**TOTAL METALS**  
-1-  
**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

RJ314

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 010371

SAS No.:

SDG NO.: RJ313

Matrix (soil/water): SOIL

Lab Sample ID: 010371-02

Level (low/med): LOW

Date Received: 05/03/01

% Solids: 89.8

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

| CAS No.   | Analyte    | Concentration | C | Q  | M  | Per Qual | Qual Code |
|-----------|------------|---------------|---|----|----|----------|-----------|
| 7429-90-5 | Aluminum   | 15700         |   |    | P  |          |           |
| 7440-36-0 | Antimony   | 0.66          | B | N* | P  | USR      | B, Q      |
| 7440-38-2 | Arsenic    | 4.9           |   | N  | P  | J        | Q         |
| 7440-39-3 | Barium     | 95.4          |   |    | P  |          |           |
| 7440-41-7 | Beryllium  | 0.80          |   |    | P  |          |           |
| 7440-42-8 | Boron      | 7.2           | B | N  | P  | J        | Q         |
| 7440-43-9 | Cadmium    | 0.02          | U | N  | P  | USJ      | B, Q      |
| 7440-70-2 | Calcium    | 9130          |   | *  | P  | J        | E         |
| 7440-47-3 | Chromium   | 22.8          |   | N  | P  | J        | Q         |
| 7440-48-4 | Cobalt     | 8.8           |   |    | P  |          |           |
| 7440-50-8 | Copper     | 10.7          |   |    | P  |          |           |
| 7439-89-6 | Iron       | 22800         |   |    | P  |          |           |
| 7439-92-1 | Lead       | 17.2          |   |    | P  |          |           |
| 7439-95-4 | Magnesium  | 5410          |   |    | P  |          |           |
| 7439-96-5 | Manganese  | 268           |   |    | P  |          |           |
| 7439-97-6 | Mercury    | 0.01          | U | *N | AV | UJ       | Q         |
| 7439-98-7 | Molybdenum | 0.58          | U | N  | P  | UJ       | Q         |
| 7440-02-0 | Nickel     | 13.6          |   |    | P  |          |           |
| 7440-09-7 | Potassium  | 1640          |   |    | P  |          |           |
| 7782-49-2 | Selenium   | 0.74          |   | N  | P  | J        | Q         |
| 7440-22-4 | Silver     | 0.40          | U |    | P  | U        |           |
| 7440-23-5 | Sodium     | 132           | B |    | P  |          |           |
| 7440-28-0 | Thallium   | 1.6           | U | N  | P  | USR      | Q         |
| 7440-62-2 | Vanadium   | 42.9          |   | N  | P  |          |           |
| 7440-66-6 | Zinc       | 49.9          |   | N  | P  | J        | Q         |

**AMEC VALIDATED**  
**LEVEL V**

PM 09/12/01

Color Before: BROWN

Clarity Before:

Texture:

Color After: YELLOW

Clarity After: MEDIUM

Artifacts:

Comments:

**TOTAL METALS**  
-1-  
**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

RJ315

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 010371

SAS No.:

SDG NO.: RJ313

Matrix (soil/water): SOIL

Lab Sample ID: 010371-03

Level (low/med): LOW

Date Received: 05/03/01

% Solids: 93.0

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

| CAS No.   | Analyte    | Concentration | C | Q  | M  | Rev Qual | Qual Code |
|-----------|------------|---------------|---|----|----|----------|-----------|
| 7429-90-5 | Aluminum   | 8570          |   |    | P  |          |           |
| 7440-36-0 | Antimony   | 30.2          |   | N* | P  | J        | E, Q      |
| 7440-38-2 | Arsenic    | 30.9          |   | N  | P  | J        | Q         |
| 7440-39-3 | Barium     | 58.7          |   |    | P  |          |           |
| 7440-41-7 | Beryllium  | 0.47          |   |    | P  |          |           |
| 7440-42-8 | Boron      | 6.8           | B | N  | P  | J        | Q         |
| 7440-43-9 | Cadmium    | 0.02          | U | N  | P  | UJ       | B, Q      |
| 7440-70-2 | Calcium    | 38300         |   | *  | P  | J        | E         |
| 7440-47-3 | Chromium   | 13.5          |   | N  | P  | J        | Q         |
| 7440-48-4 | Cobalt     | 5.8           |   |    | P  |          |           |
| 7440-50-8 | Copper     | 8.3           |   |    | P  |          |           |
| 7439-89-6 | Iron       | 13700         |   |    | P  |          |           |
| 7439-92-1 | Lead       | 2360          |   |    | P  |          |           |
| 7439-95-4 | Magnesium  | 12300         |   |    | P  |          |           |
| 7439-96-5 | Manganese  | 248           |   |    | P  |          |           |
| 7439-97-6 | Mercury    | 0.02          | U | *N | AV | UJ       | Q, Q      |
| 7439-98-7 | Molybdenum | 0.51          | U | N  | P  | UJ       | Q         |
| 7440-02-0 | Nickel     | 9.3           |   |    | P  |          |           |
| 7440-09-7 | Potassium  | 3310          |   |    | P  |          |           |
| 7782-49-2 | Selenium   | 0.60          |   | N  | P  | J        | Q         |
| 7440-22-4 | Silver     | 0.35          | U |    | P  | U        |           |
| 7440-23-5 | Sodium     | 78.9          | B |    | P  |          |           |
| 7440-28-0 | Thallium   | 1.4           | U | N  | P  | UJ R     | Q         |
| 7440-62-2 | Vanadium   | 26.9          |   | N  | P  |          |           |
| 7440-66-6 | Zinc       | 42.2          |   | N  | P  | J        | Q         |

**AMEC VALIDATED**

**LEVEL V**

am 10/26/01

Color Before: **BROWN**

Clarity Before:

Texture:

Color After: **YELLOW**

Clarity After: **MEDIUM**

Artifacts:

Comments:

**TOTAL METALS**  
-1-  
**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

RJ316

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 010371

SAS No.:

SDG NO.: RJ313

Matrix (soil/water): SOIL

Lab Sample ID: 010371-04

Level (low/med): LOW

Date Received: 05/03/01

% Solids: 84.6

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

| CAS No.   | Analyte    | Concentration | C | Q  | M  | Raw Qual | Qual Code |
|-----------|------------|---------------|---|----|----|----------|-----------|
| 7429-90-5 | Aluminum   | 12000         |   |    | <P |          |           |
| 7440-36-0 | Antimony   | 0.81          | B | N* | P  | UJR      | B, Q      |
| 7440-38-2 | Arsenic    | 4.6           |   | N  | P  | J        | Q         |
| 7440-39-3 | Barium     | 92.7          |   |    | P  |          |           |
| 7440-41-7 | Beryllium  | 0.77          |   |    | P  |          |           |
| 7440-42-8 | Boron      | 8.1           | B | N  | P  | J        | Q         |
| 7440-43-9 | Cadmium    | 0.03          | U | N  | P  | UJ       | B, Q      |
| 7440-70-2 | Calcium    | 13700         |   | *  | P  | J        | E         |
| 7440-47-3 | Chromium   | 20.5          |   | N  | P  | J        | Q         |
| 7440-48-4 | Cobalt     | 9.2           |   |    | P  |          |           |
| 7440-50-8 | Copper     | 13.8          |   |    | P  |          |           |
| 7439-89-6 | Iron       | 21800         |   |    | P  |          |           |
| 7439-92-1 | Lead       | 12.0          |   |    | P  |          |           |
| 7439-95-4 | Magnesium  | 5700          |   |    | P  |          |           |
| 7439-96-5 | Manganese  | 394           |   |    | P  |          |           |
| 7439-97-6 | Mercury    | 0.02          | U | *N | AV | UJ       | Q         |
| 7439-98-7 | Molybdenum | 0.70          | U | N  | P  | UJ       | Q         |
| 7440-02-0 | Nickel     | 14.8          |   |    | P  |          |           |
| 7440-09-7 | Potassium  | 3870          |   |    | P  |          |           |
| 7782-49-2 | Selenium   | 1.2           |   | N  | P  | J        | Q         |
| 7440-22-4 | Silver     | 0.49          | U |    | P  | U        |           |
| 7440-23-5 | Sodium     | 103           | B |    | P  |          |           |
| 7440-28-0 | Thallium   | 1.9           | U | N  | P  | UJR      | Q         |
| 7440-62-2 | Vanadium   | 43.1          |   | N  | P  |          |           |
| 7440-66-6 | Zinc       | 61.4          |   | N  | P  | J        | Q         |

**AMEC VALIDATED**  
**LEVEL V**

pm 09/12/01

Color Before: BROWN

Clarity Before:

Texture:

Color After: YELLOW

Clarity After: MEDIUM

Artifacts:

Comments:



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI  
Project Manager: D. Hambrick  
Analysis/Method: Metals by Method ILM04  
QC Level: V<sup>1</sup>  
SDG: RJ601  
Matrix: Soil  
No. of Samples: 16  
Date Reviewed: December 26, 2000  
Reviewer: P. Meeks  
Reference: USEPA SW-846 Methods 3050B, 6010B, and 7471A (11/90)  
Samples Reviewed: RJ594, RJ595, RJ602, RJ604, RJ605, RJ606, RJ608, RJ610, RJ040, RJ041, RJ042, RJ043, RJ044, RJ045, RJ046, RJ047

Data Validation Findings

|                             | Findings                                                                                                                                                                                                                                               | Qualifications                                                                                                                                                                             |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. <u>Sample Management</u> | Temperatures were within QC limits of 4°±2°C, except for samples RJ602, RJ604, RJ605, RJ606, RJ608, and RJ610, which were received at 8°C. COCs match samples and account for analyses. Custody seals intact. Analyses performed within holding times. | Due to the nonvolatile nature of the analytes, no qualifications required.                                                                                                                 |
| 3. <u>Method Blanks</u>     | Hg = -0.025 mg/kg<br><br>Cadmium and cobalt were also detected/reported in the method blank, but not at sufficient concentration to qualify site samples.                                                                                              | Mercury detected in samples RJ602, RJ604, RJ606, RJ608, RJ610, RJ041, RJ043, RJ044, RJ046, and RJ047 was qualified "J."<br><br>Nondetected mercury in the site samples was qualified "UJ." |
| 5. <u>LCS/BS</u>            | The recovery for mercury was above the laboratory defined QC limits.                                                                                                                                                                                   | Mercury detected in samples RJ602, RJ604, RJ605, RJ606, RJ608, RJ610, RJ041, RJ043, RJ044, RJ046, and RJ047 was qualified "J."                                                             |



# Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

## CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LOS ANGELES REGION

### LABORATORY REPORT FORM

Laboratory Name: Centrum Analytical Laboratories, Inc.

Address: 290 Tennessee Street, Redlands, CA 92373

Telephone/FAX: (909) 798-9336/(909) 793-1559

Laboratory Certification:

(ELAP) No.: 2373 Expiration Date: June 30, 2001

Laboratory Director's Name: Dr. Robert R. Clark

Laboratory Director's Signature :

*Robert R. Clark, Jr.* FOR ROBERT CLARK

Client: Ogden Environmental and Energy Services

Project No: 313150002

|                    |           |           |           |
|--------------------|-----------|-----------|-----------|
| Analytical Method: | EPA 502.1 | EPA 502.2 | EPA 524.2 |
|                    | EPA 601   |           | EPA 624   |
|                    | EPA 8010  | EPA 8021  | EPA 8240  |
|                    |           |           | EPA 8260  |

Other: \_\_\_\_\_ **GC/MS** \_\_\_\_\_

Analytical Batch: \_\_\_\_\_ 990928M4V038

Date Sampled: \_\_\_\_\_ 09/28/99

Date Received: \_\_\_\_\_ 09/28/99

Date Reported: \_\_\_\_\_ 09/28/99

Sample Matrix: \_\_\_\_\_ Vapor

Extraction Method: \_\_\_\_\_ EPA 5030

Extraction Material: \_\_\_\_\_ NA

Chain of Custody Received: **Yes**  **No**

Sample Condition: Samples were received by the mobile laboratory in covered, 100-150 ml glass bulbs.

Comments:

(RWQCB LabForm; Ves 8/97)





# HydroGeoSpectrum SOIL V<sup>2</sup> FOR CHAIN OF CUSTODY

PROJECT Rocketdyne/NASA/DOE CLIENT Ogden

DATE 9/28/99

| SAMPLE ID | Depth (ft) | INSTRALLED | SAMPLED           | BULB ID | FLOW ml/min | TIME min | Purge Vol | Flow Rate | MISC   | US # |
|-----------|------------|------------|-------------------|---------|-------------|----------|-----------|-----------|--------|------|
| LXSV03S01 | 7'         | 9/27/99    | 9/28/99 1108-1116 | Y4      | 150         | 8        |           | 4.6       | RV 711 | 11   |
| LXSV04S02 | 10'        |            | 1120-1132         | A3      |             | 12       |           |           | RV 712 | 12   |
| LXSV04S01 | 5'         |            | 1120-1128         | N5      |             | 8        |           |           | RV 713 | 12   |
| LXSV02S02 | 9'         |            | 1144-1156         | E9      |             | 12       |           |           | RV 714 | 13   |
| LXSV02S01 | 5'         |            | 1144-1152         | E2      |             | 8        |           |           | RV 715 | 13   |
| LXSV01S03 | 16'        |            | 1203-1218         | E6      |             | 15       |           |           | RV 716 | 14   |
| LXSV01S02 | 10'        |            | 1204-1216         | B3      |             | 12       |           |           | RV 717 | 14   |
| LXSV01S01 | 5'         |            | 1207-1215         | S6      |             | 8        |           |           | RV 718 | 14   |
| ESSV01S02 | 10'        |            | 1536-1548         | B2      |             | 12       |           | 7.9       | RV 719 | 7    |
| ESSV01S01 | 5'         |            | 1536-1544         | S1      |             | 8        |           |           | RV 720 | 7    |
| ESSV02S02 | 9'         |            | 1536-1548         | F2      |             | 12       |           |           | RV 721 | 6    |
| ESSV02S01 | 5'         |            | 1538-1546         | F9      |             | 8        |           |           | RV 722 | 6    |

URROGATES: D6-Benzene D8-Toluene D-Chloroform D6-DMK D-DCM

RELINQUISHED BY: Thomas J. B.A.

RECEIVED BY: Samuel M. Reed

RELINQUISHED BY: \_\_\_\_\_ DATE/TIME \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_ DATE/TIME 9/28/99

RELINQUISHED BY: \_\_\_\_\_ DATE/TIME \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_ DATE/TIME \_\_\_\_\_

# HydroGeoSpectrum SOIL VAPOR CHAIN OF CUSTODY

PROJECT Rocketdyne/NASA/DOE CLIENT Ogden DATE 9/29/99

| SAMPLE ID-Depth(ft) | Depth | INSTALLED | SAMPLED           | BULB ID | FLOW ml/min | TIME min | Purge Vol | Leak Check<br>SWTAV | MISC EPA ID | OLS # |
|---------------------|-------|-----------|-------------------|---------|-------------|----------|-----------|---------------------|-------------|-------|
| CD SVØ1 SØ2         | 10'   | 9/27/99   | 9/29/99 0834-0846 | L6      | 150         | 12       |           | ✓ AII AOC           | RV 723      | 27    |
| CD SVØ1 SØ1         | 5'    | ↓         | 0834-0842         | F1      |             | 8        |           | ✓                   | RV 724      | 27    |
| CD SVØ2 SØ1         | 7'    | ↓         | 0832-0840         | R4      |             | 8        |           | ✓                   | RV 725      | 28    |
| BH SVØ1 SØ1         | 4.5'  | 9/28/99   | 0832-0904         | E3      |             | 8        |           | ✓ 7.5               | RV 726      | 3     |
| BH SVØ2 SØ1         | 6.5'  | ↓         | 0901-0909         | Y2      |             | 8        |           | ✓                   | RV 727      | 4     |
| B1 SVØ1 SØ1         | 5'    | ↓         | 0923-0928         | E4      |             | 8        |           | ✓ 4.1               | RV 728      | 4     |
| B1 SVØ1 SØ2         | 10'   | ↓         | 0923-0935         | F4      |             | 12       |           | ✓                   | RV 729      | 4     |
| B1 SVØ1 SØ3         | 15'   | ↓         | 0923-0938         | F3      |             | 15       |           | ✓                   | RV 730      | 4     |
| B1 SVØ1 SØ4         | 19'   | ↓         | 0923-0942         | S2      |             | 17       |           | ✓                   | RV 731      | 4     |
| ELS VØ7 SØ1         | 4'    | ↓         | 1640-1648         | B2      |             | 8        |           | ✓ 6.9               | RV 732      | 13    |
| ELS VØ8 SØ1         | 5'    | ↓         | 1645-1653         | E6      |             | 8        |           | ✓                   | RV 733      | 12    |
| ELS VØ7 DØ1         | 4'    | ↓         | 1650-1658         | B3      |             | 8        |           | ✓                   | RV 734      | 13    |
|                     |       |           |                   |         |             |          |           |                     |             |       |
|                     |       |           |                   |         |             |          |           |                     |             |       |
|                     |       |           |                   |         |             |          |           |                     |             |       |
|                     |       |           |                   |         |             |          |           |                     |             |       |

SURROGATES: D6-Benzene \_\_\_\_\_ D8-Toluene \_\_\_\_\_ D-Chloroform \_\_\_\_\_ D6-DMK \_\_\_\_\_ D-DCM \_\_\_\_\_

RELINQUISHED BY: Thomas M. Reed DATE/TIME 9/29/99

RELINQUISHED BY: \_\_\_\_\_ DATE/TIME \_\_\_\_\_

# HydroGeoSpectrum SOIL VAPOR CHAIN OF CUSTODY

PROJECT Rocketdyne CLIENT Ogden DATE 9/30/99

| SAMPLE ID-Depth(ft) | Depth | INSTALLED | SAMPLED                                           | BULB ID | FLOW ml/min | TIME min | Purge Vol | Leak Check EPA 8260-A | MISC EPA ID | WIS # |
|---------------------|-------|-----------|---------------------------------------------------|---------|-------------|----------|-----------|-----------------------|-------------|-------|
| 5 CASV03 S01        | 5'    | 9/29/99   | 9/30/99 <sup>1351-1359</sup> <del>1046-1054</del> | Y7      | 150         | 8        |           | ✓ 5.78                | RV 735      | 9d    |
| 1 CASV03 S02        | 10'   | ↓         | 1046-1058                                         | T4      |             | 12       |           | ✓                     | RV 736      |       |
| 2 CASV03 S03        | 12.4' | ↓         | <del>1046-1058</del> 1348-1403                    | N11     |             | 15       |           | ✓                     | RV 737      |       |
| 3 CASV03 S04        | 19'   |           | 1046-1103                                         | J2      |             | 17       |           | ✓                     |             |       |
| 2 CASV03 F01        | -     | 9/28/99   | 1107-1108                                         | E5      |             | 1        |           | ✓ ↓                   | RV 738      | 2     |
| 4 SESV02 S01        | 4'    | 9/28/99   | 1213-1221                                         | Y3      |             | 8        |           | ✓ A4 AOC              | RV 739      | 2     |
| 3 SESV01 S01        | 4'    | 9/28/99   | 1227-1235                                         | N2      |             | 8        |           | ✓ ↓                   | RV 740      | 1     |
| 7 CASV04 S01        | 1'    | 9/29/99   | 1410-1416                                         | A9      |             | 6        |           | ✓ 5.18                | RV 741      | 29    |
| 8 CASV05 S01        | 3'    | 9/29/99   | 1426-1434                                         | L4      |             | 8        |           | ✓ ↓                   | RV 742      | 30    |
| 9 CASV06 S01        | 4'    | ↓         | 1432-1441                                         | F7      |             | 9        |           | ✓ ↓                   | RV 743      | 31    |
| 11 DAVS09 S01       | 4'    | 9/29/99   | 1600-1609                                         | L6      |             | 9        |           | ✓ 5.23                | RV 744      | 23    |
| 12 DAVS09 S02       | 8.5'  | ↓         | 1558-1611                                         | R7      |             | 13       |           | ✓ ↓                   | RV 745      | 23    |
| 10 DAVS08 S01       | 6'    | ↓         | 1616-1626                                         | R4      |             | 10       |           | ✓ ↓                   | RV 746      | 22    |

SURROGATES: D6-Benzene D8-Toluene D-Chloroform D6-DMK D-DCM

RELINQUISHED BY: Shane J. [Signature] RECEIVED BY: [Signature] DATE/TIME: 9/30/99 440

RELINQUISHED BY: \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

|                                                                                                               | Findings                                                                                                                                                                                                                                                                                                                       | Qualifications                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6. <u>Duplicates</u></b><br><br><u>Performed on samples RJ605 and RJ044 (mercury only)– MS/MSD</u>         | The recoveries for all analytes were within control limits.                                                                                                                                                                                                                                                                    | No qualifications were required.                                                                                                                                                                                                                                                                                               |
| <b>7. <u>MS/MSDs</u></b><br><br><u>Performed on samples RJ605 and RJ044 (mercury only)</u>                    | Sb – MS = 10.3% / MSD = 12.8%<br>Mo – MS = 73.0% / MSD = 70.0%<br>Se – MS = 35.4% / MSD = 3.0%<br>Hg – MSD = 151.2%<br>Ag – MSD = 128.4%<br>Zn – MSD = 70.6%<br><br>The MS/MSD recoveries all other analytes were within the 75-125% control limits.                                                                           | Antimony, molybdenum, silver, and zinc detected in the site samples were qualified “J.”<br><br>Nondetected molybdenum in the samples was qualified “UJ.”<br><br>Mercury detected in samples RJ602, RJ604, RJ605, RJ606, RJ608, and RJ610 was qualified “J.”<br><br>Nondetected selenium in the site samples was rejected, “R.” |
| <b>9. <u>ICP Serial Dilution</u></b><br><br><u>Performed on sample RJ605</u>                                  | The %Ds for all analytes were within the ±10% control limit except for calcium (13.3%).                                                                                                                                                                                                                                        | Calcium detected in the site samples was qualified “J.”                                                                                                                                                                                                                                                                        |
| <b>10. <u>Other</u></b>                                                                                       | None                                                                                                                                                                                                                                                                                                                           | No qualifications were required.                                                                                                                                                                                                                                                                                               |
| <b>11. <u>Field QC Samples</u></b><br><br>ER: RJ552 (SDG RJ028)<br>FB: RJ543 (SDG RJ514)<br>Field Duplicates: | Barium, iron, magnesium, and zinc were detected in the equipment rinsate, but not at sufficient concentration to qualify site samples. Cobalt, lead, nickel, and vanadium were detected in the field blank, but not at sufficient concentration to qualify site samples. Antimony was detected in the field blank at 2.0 µg/L. | Antimony detected in samples RJ586, RJ587, RJ591, and RJ599 were qualified “J.”                                                                                                                                                                                                                                                |
| <u>Comments</u>                                                                                               | None                                                                                                                                                                                                                                                                                                                           | None                                                                                                                                                                                                                                                                                                                           |

<sup>1</sup> Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.

TOTAL METALS  
-1-  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ040

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-13

Level (low/med): LOW

Date Received: 09/23/00

% Solids: 100.0

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

| CAS No.   | Analyte | Concentration | C | Q | M  | Raw Qual | Qual Code |
|-----------|---------|---------------|---|---|----|----------|-----------|
| 7439-97-6 | Mercury | 0.01          | U |   | AV | UT       | B         |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ041

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-14

Level (low/med): LOW

Date Received: 09/23/00

% Solids: 100.0

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

| CAS No.   | Analyte | Concentration | C | Q | M  | RW Qual | Qual Code |
|-----------|---------|---------------|---|---|----|---------|-----------|
| 7439-97-6 | Mercury | 0.01          | B |   | AV | J       | B, L      |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ042

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-15

Level (low/med): LOW

Date Received: 09/23/00

% Solids: 100.0

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

| CAS No.   | Analyte | Concentration | C | Q | M  | Rev<br>Qual | Qual<br>Code |
|-----------|---------|---------------|---|---|----|-------------|--------------|
| 7439-97-6 | Mercury | 0.01          | U |   | AV | UJ          | B            |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS  
-1-  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ043

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-16

Level (low/med): LOW

Date Received: 09/23/00

% Solids: 100.0

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

| CAS No.   | Analyte | Concentration | C | Q | M  | Raw Qual | Qual Code        |
|-----------|---------|---------------|---|---|----|----------|------------------|
| 7439-97-6 | Mercury | 0.01          | B |   | AV | J        | B <sub>1</sub> L |

CGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS  
-1-  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ044

Contract: Rocketdyne

Lab Code: CEIMIC Case No.: 200692 SAS No.: \_\_\_\_\_ SDG NO.: RJ601

Matrix (soil/water): SOIL Lab Sample ID: 200692-17

Level (low/med): LOW Date Received: 09/23/00

Solids: 100.0

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

| CAS No.   | Analyte | Concentration | C | Q | M  | Rev<br>Qual | Qual<br>Code |
|-----------|---------|---------------|---|---|----|-------------|--------------|
| 7439-97-6 | Mercury | 0.02          | B |   | AV | J           | B, L         |

OGDEN VALIDATED

Color Before: BROWN Clarity Before: \_\_\_\_\_ Texture: MEDIUM

Color After: YELLOW Clarity After: \_\_\_\_\_ Artifacts: \_\_\_\_\_

Comments: \_\_\_\_\_

LEVEL V

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ045

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-18

Level (low/med): LOW

Date Received: 09/23/00

% Solids: 100.0

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

| CAS No.   | Analyte | Concentration | C | Q | M  | Rev<br>Qual | Qual<br>Code |
|-----------|---------|---------------|---|---|----|-------------|--------------|
| 7439-97-6 | Mercury | 0.01          | U |   | AV | UJ          | B            |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ046

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-19

Level (low/med): LOW

Date Received: 09/23/00

% Solids: 100.0

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

| CAS No.   | Analyte | Concentration | C | Q | M  | Rev<br>Qual | Qual<br>Code |
|-----------|---------|---------------|---|---|----|-------------|--------------|
| 7439-97-6 | Mercury | 0.02          | B |   | AV | J           | B, L         |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ047

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-20

Level (low/med): LOW

Date Received: 09/23/00

% Solids: 100.0

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

| CAS No.   | Analyte | Concentration | C | Q | M  | Raw<br>Qual | Qual<br>Code |
|-----------|---------|---------------|---|---|----|-------------|--------------|
| 7439-97-6 | Mercury | 0.01          | B |   | AV | J           | B, L         |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ594

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-02

Level (low/med): LOW

Date Received: 09/14/00

% Solids: 92.7

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

| CAS No.   | Analyte | Concentration | C | Q | M | Raw Qual | Qual Code |
|-----------|---------|---------------|---|---|---|----------|-----------|
| 7440-22-4 | Silver  | 4.5           |   |   | P | J        | Q         |

**OGDEN VALIDATED  
LEVEL V**

Color Before: **BROWN**

Clarity Before:

Texture: **MEDIUM**

Color After: **YELLOW**

Clarity After:

Artifacts:

Comments:

TOTAL METALS  
-1-  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ595

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-03

Level (low/med): LOW

Date Received: 09/14/00

% Solids: 87.9

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

| CAS No.   | Analyte | Concentration | C | Q | M | Re<br>Qual | Qual<br>Code |
|-----------|---------|---------------|---|---|---|------------|--------------|
| 7440-22-4 | Silver  | 3.5           |   |   | P | J          | Q            |

**OGDEN VALIDATED  
LEVEL V**

Color Before: **BROWN**

Clarity Before:

Texture: **MEDIUM**

Color After: **YELLOW**

Clarity After:

Artifacts:

Comments:

TOTAL METALS  
-1-  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ602

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-04

Level (low/med): LOW

Date Received: 09/16/00

% Solids: 96.4

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

| CAS No.   | Analyte    | Concentration | C | Q | M  | Per Qual | Qual Code |
|-----------|------------|---------------|---|---|----|----------|-----------|
| 7429-90-5 | Aluminum   | 14900         |   |   | P  |          |           |
| 7440-36-0 | Antimony   | 0.42          | B | N | P  | J        | Q, F      |
| 7440-38-2 | Arsenic    | 6.7           |   |   | P  |          |           |
| 7440-39-3 | Barium     | 84.8          |   |   | P  |          |           |
| 7440-41-7 | Beryllium  | 0.70          |   |   | P  |          |           |
| 7440-42-8 | Boron      | 4.5           | U | N | P  | U        |           |
| 7440-43-9 | Cadmium    | 0.07          | U |   | P  | U        |           |
| 7440-70-2 | Calcium    | 5390          |   | E | P  | J        | A         |
| 7440-47-3 | Chromium   | 22.1          |   |   | P  |          |           |
| 7440-48-4 | Cobalt     | 7.3           |   |   | P  |          |           |
| 7440-50-8 | Copper     | 51.1          |   |   | P  |          |           |
| 7439-89-6 | Iron       | 20700         |   |   | P  |          |           |
| 7439-92-1 | Lead       | 11.1          |   |   | P  |          |           |
| 7439-95-4 | Magnesium  | 4630          |   |   | P  |          |           |
| 7439-96-5 | Manganese  | 274           |   |   | P  |          |           |
| 7439-97-6 | Mercury    | 0.04          |   |   | AV | J        | B, Q, L   |
| 7439-98-7 | Molybdenum | 0.87          | U | N | P  | UJ       | Q         |
| 7440-02-0 | Nickel     | 11.1          |   |   | P  |          |           |
| 7440-09-7 | Potassium  | 2780          |   |   | P  |          |           |
| 7782-49-2 | Selenium   | 0.73          | U | N | P  | R        | Q         |
| 7440-22-4 | Silver     | 6.6           |   |   | P  | J        | Q         |
| 7440-23-5 | Sodium     | 80.7          | B |   | P  |          |           |
| 7440-28-0 | Thallium   | 2.4           |   |   | P  |          |           |
| 7440-62-2 | Vanadium   | 33.5          |   |   | P  |          |           |
| 7440-66-6 | Zinc       | 73.1          |   |   | P  | J        | Q         |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS  
-1-  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ604

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-06

Level (low/med): LOW

Date Received: 09/16/00

% Solids: 97.4

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

| CAS No.   | Analyte    | Concentration | C | Q | M  | Raw Qual | Qual Code |
|-----------|------------|---------------|---|---|----|----------|-----------|
| 7429-90-5 | Aluminum   | 13900         |   |   | P  |          |           |
| 7440-36-0 | Antimony   | 0.32          | B | N | P  | J        | Q, F      |
| 7440-38-2 | Arsenic    | 4.2           |   |   | P  |          |           |
| 7440-39-3 | Barium     | 84.1          |   |   | P  |          |           |
| 7440-41-7 | Beryllium  | 0.62          |   |   | P  |          |           |
| 7440-42-8 | Boron      | 4.4           | U | N | P  | U        |           |
| 7440-43-9 | Cadmium    | 0.17          | U |   | P  | U        |           |
| 7440-70-2 | Calcium    | 3500          |   | E | P  | J        | A         |
| 7440-47-3 | Chromium   | 20.2          |   |   | P  |          |           |
| 7440-48-4 | Cobalt     | 7.0           |   |   | P  |          |           |
| 7440-50-8 | Copper     | 11.7          |   |   | P  |          |           |
| 7439-89-6 | Iron       | 18600         |   |   | P  |          |           |
| 7439-92-1 | Lead       | 6.3           |   |   | P  |          |           |
| 7439-95-4 | Magnesium  | 4140          |   |   | P  |          |           |
| 7439-96-5 | Manganese  | 248           |   |   | P  |          |           |
| 7439-97-6 | Mercury    | 0.01          | B |   | AV | J        | B, Q, L   |
| 7439-98-7 | Molybdenum | 0.85          | U | N | P  | UJ       | Q         |
| 7440-02-0 | Nickel     | 12.2          |   |   | P  |          |           |
| 7440-09-7 | Potassium  | 2400          |   |   | P  |          |           |
| 7782-49-2 | Selenium   | 1.8           | U | N | P  | R        | Q         |
| 7440-22-4 | Silver     | 4.9           |   |   | P  | J        | Q         |
| 7440-23-5 | Sodium     | 72.6          | B |   | P  |          |           |
| 7440-28-0 | Thallium   | 2.8           |   |   | P  |          |           |
| 7440-62-2 | Vanadium   | 32.5          |   |   | P  |          |           |
| 7440-66-6 | Zinc       | 46.2          |   |   | P  | J        | Q         |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ605

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-07

Level (low/med): LOW

Date Received: 09/16/00

% Solids: 94.3

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

| CAS No.   | Analyte    | Concentration | C | Q | M  | Res Qual | Qual Code |
|-----------|------------|---------------|---|---|----|----------|-----------|
| 7429-90-5 | Aluminum   | 11400         |   |   | P  |          |           |
| 7440-36-0 | Antimony   | 0.53          | B | N | P  | J        | Q, F      |
| 7440-38-2 | Arsenic    | 5.0           |   |   | P  |          |           |
| 7440-39-3 | Barium     | 69.2          |   |   | P  |          |           |
| 7440-41-7 | Beryllium  | 0.58          |   |   | P  |          |           |
| 7440-42-8 | Boron      | 4.8           | U | N | P  | U        |           |
| 7440-43-9 | Cadmium    | 0.04          | U |   | P  | U        |           |
| 7440-70-2 | Calcium    | 6580          |   | E | P  | J        | A         |
| 7440-47-3 | Chromium   | 16.8          |   |   | P  |          |           |
| 7440-48-4 | Cobalt     | 6.1           |   |   | P  |          |           |
| 7440-50-8 | Copper     | 31.7          |   |   | P  |          |           |
| 7439-89-6 | Iron       | 16500         |   |   | P  |          |           |
| 7439-92-1 | Lead       | 9.4           |   |   | P  |          |           |
| 7439-95-4 | Magnesium  | 3790          |   |   | P  |          |           |
| 7439-96-5 | Manganese  | 235           |   |   | P  |          |           |
| 7439-97-6 | Mercury    | 0.35          |   |   | AV | J        | Q, Q, L   |
| 7439-98-7 | Molybdenum | 0.92          | U | N | P  | UJ       | Q         |
| 7440-02-0 | Nickel     | 10.4          |   |   | P  |          |           |
| 7440-09-7 | Potassium  | 2320          |   |   | P  |          |           |
| 7782-49-2 | Selenium   | 0.78          | U | N | P  | R        | Q         |
| 7440-22-4 | Silver     | 4.8           |   |   | P  | J        | Q         |
| 7440-23-5 | Sodium     | 172           | B |   | P  |          |           |
| 7440-28-0 | Thallium   | 2.2           |   |   | P  |          |           |
| 7440-62-2 | Vanadium   | 27.5          |   |   | P  |          |           |
| 7440-66-6 | Zinc       | 91.7          |   |   | P  | J        | Q         |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS  
-1-  
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ606

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-08

Level (low/med): LOW

Date Received: 09/16/00

% Solids: 98.0

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

| CAS No.   | Analyte    | Concentration | C | Q | M  | Raw Qual | Qual Code |
|-----------|------------|---------------|---|---|----|----------|-----------|
| 7429-90-5 | Aluminum   | 12700         |   |   | P  |          |           |
| 7440-36-0 | Antimony   | 0.52          | B | N | P  | J        | Q, F      |
| 7440-38-2 | Arsenic    | 5.8           |   |   | P  |          |           |
| 7440-39-3 | Barium     | 72.9          |   |   | P  |          |           |
| 7440-41-7 | Beryllium  | 0.61          |   |   | P  |          |           |
| 7440-42-8 | Boron      | 4.4           | U | N | P  | U        |           |
| 7440-43-9 | Cadmium    | 0.07          | U |   | P  | U        |           |
| 7440-70-2 | Calcium    | 4750          |   | E | P  | J        | A         |
| 7440-47-3 | Chromium   | 20.2          |   |   | P  |          |           |
| 7440-48-4 | Cobalt     | 6.5           |   |   | P  |          |           |
| 7440-50-8 | Copper     | 20.2          |   |   | P  |          |           |
| 7439-89-6 | Iron       | 19200         |   |   | P  |          |           |
| 7439-92-1 | Lead       | 8.9           |   |   | P  |          |           |
| 7439-95-4 | Magnesium  | 4540          |   |   | P  |          |           |
| 7439-96-5 | Manganese  | 268           |   |   | P  |          |           |
| 7439-97-6 | Mercury    | 0.06          |   |   | AV | J        | B, Q, L   |
| 7439-98-7 | Molybdenum | 0.84          | U | N | P  | UJ       | Q         |
| 7440-02-0 | Nickel     | 10.4          |   |   | P  |          |           |
| 7440-09-7 | Potassium  | 2640          |   |   | P  |          |           |
| 7782-49-2 | Selenium   | 0.71          | U | N | P  | R        | Q         |
| 7440-22-4 | Silver     | 5.2           |   |   | P  | J        | Q         |
| 7440-23-5 | Sodium     | 74.7          | B |   | P  |          |           |
| 7440-28-0 | Thallium   | 2.1           |   |   | P  |          |           |
| 7440-62-2 | Vanadium   | 30.8          |   |   | P  |          |           |
| 7440-66-6 | Zinc       | 62.4          |   |   | P  | J        | Q         |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

**TOTAL METALS**

-1-

**INORGANIC ANALYSIS DATA SHEET**

SAMPLE NO.

RJ608

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-10

Level (low/med): LOW

Date Received: 09/16/00

% Solids: 94.9

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

| CAS No.   | Analyte    | Concentration | C | Q | M  | Rev Qual | Qual Code |
|-----------|------------|---------------|---|---|----|----------|-----------|
| 7429-90-5 | Aluminum   | 14500         |   |   | P  |          |           |
| 7440-36-0 | Antimony   | 0.76          | B | N | P  | J        | Q, F      |
| 7440-38-2 | Arsenic    | 6.1           |   |   | P  |          |           |
| 7440-39-3 | Barium     | 80.9          |   |   | P  |          |           |
| 7440-41-7 | Beryllium  | 0.58          |   |   | P  |          |           |
| 7440-42-8 | Boron      | 4.2           | U | N | P  | U        |           |
| 7440-43-9 | Cadmium    | 0.16          | U |   | P  | U        |           |
| 7440-70-2 | Calcium    | 5300          |   | E | P  | J        | A         |
| 7440-47-3 | Chromium   | 55.0          |   |   | P  |          |           |
| 7440-48-4 | Cobalt     | 15.0          |   |   | P  |          |           |
| 7440-50-8 | Copper     | 13.2          |   |   | P  |          |           |
| 7439-89-6 | Iron       | 24400         |   |   | P  |          |           |
| 7439-92-1 | Lead       | 5.0           |   |   | P  |          |           |
| 7439-95-4 | Magnesium  | 14100         |   |   | P  |          |           |
| 7439-96-5 | Manganese  | 471           |   |   | P  |          |           |
| 7439-97-6 | Mercury    | 0.02          | B |   | AV | J        | B, Q, L   |
| 7439-98-7 | Molybdenum | 0.80          | U | N | P  | UJ       | Q         |
| 7440-02-0 | Nickel     | 108           |   |   | P  |          |           |
| 7440-09-7 | Potassium  | 2450          |   |   | P  |          |           |
| 7782-49-2 | Selenium   | 1.7           | U | N | P  | R        | Q         |
| 7440-22-4 | Silver     | 5.0           |   |   | P  | J        | Q         |
| 7440-23-5 | Sodium     | 99.7          | B |   | P  |          |           |
| 7440-28-0 | Thallium   | 2.0           |   |   | P  |          |           |
| 7440-62-2 | Vanadium   | 45.7          |   |   | P  |          |           |
| 7440-66-6 | Zinc       | 65.8          |   |   | P  | J        | Q         |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ610

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200692

SAS No.:

SDG NO.: RJ601

Matrix (soil/water): SOIL

Lab Sample ID: 200692-12

Level (low/med): LOW

Date Received: 09/16/00

% Solids: 93.0

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

| CAS No.   | Analyte    | Concentration | C | Q | M  | Raw Qual | Qual Code |
|-----------|------------|---------------|---|---|----|----------|-----------|
| 7429-90-5 | Aluminum   | 17000         |   |   | P  |          |           |
| 7440-36-0 | Antimony   | 0.51          | B | N | P  | J        | Q, F      |
| 7440-38-2 | Arsenic    | 6.9           |   |   | P  |          |           |
| 7440-39-3 | Barium     | 92.9          |   |   | P  |          |           |
| 7440-41-7 | Beryllium  | 0.78          |   |   | P  |          |           |
| 7440-42-8 | Boron      | 4.6           | U | N | P  | U        |           |
| 7440-43-9 | Cadmium    | 0.18          | U |   | P  | U        |           |
| 7440-70-2 | Calcium    | 7350          |   | E | P  | J        | A         |
| 7440-47-3 | Chromium   | 25.6          |   |   | P  |          |           |
| 7440-48-4 | Cobalt     | 7.3           |   |   | P  |          |           |
| 7440-50-8 | Copper     | 31.4          |   |   | P  |          |           |
| 7439-89-6 | Iron       | 21500         |   |   | P  |          |           |
| 7439-92-1 | Lead       | 10.6          |   |   | P  |          |           |
| 7439-95-4 | Magnesium  | 5000          |   |   | P  |          |           |
| 7439-96-5 | Manganese  | 282           |   |   | P  |          |           |
| 7439-97-6 | Mercury    | 0.06          |   |   | AV | J        | B, Q, L   |
| 7439-98-7 | Molybdenum | 0.88          | U | N | P  | UJ       | Q         |
| 7440-02-0 | Nickel     | 12.6          |   |   | P  |          |           |
| 7440-09-7 | Potassium  | 3040          |   |   | P  |          |           |
| 7782-49-2 | Selenium   | 1.9           | U | N | P  | R        | Q         |
| 7440-22-4 | Silver     | 7.1           |   |   | P  | J        | Q         |
| 7440-23-5 | Sodium     | 109           | B |   | P  |          |           |
| 7440-28-0 | Thallium   | 2.7           |   |   | P  |          |           |
| 7440-62-2 | Vanadium   | 36.2          |   |   | P  |          |           |
| 7440-66-6 | Zinc       | 71.9          |   |   | P  | J        | Q         |

OGDEN VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

LEVEL V



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026  
303.935.6505, Fax 303.935.6575

## DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI  
Project Manager: D. Hambrick  
Analysis/Method: General Minerals by 9045  
QC Level: V<sup>1</sup>  
SDG: L9904022  
Matrix: Soil  
No. of Samples: 3  
Date Reviewed: March 06, 2002  
Reviewer: P. Meeks  
Reference: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (2/94)  
Samples Reviewed: RS330, RS901, RS904

### Data Validation Findings

|                                                       | Findings                                                                                                                                                                                                                                  | Qualifications                                     |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| 1. <u>Sample Management</u>                           | The samples were received within the temperature limits of 4 <sup>o</sup> ±2 <sup>o</sup> C. The COCs matched the samples and accounted for the analyses. No custody seal information was provided. The holding time for pH was exceeded. | The pH results for all samples were qualified "J." |
| 3. <u>Method Blanks</u>                               | Not applicable to the pH analysis.                                                                                                                                                                                                        | No qualifications were required.                   |
| 5. <u>LCS/BS</u>                                      | Not applicable to the pH analysis.                                                                                                                                                                                                        | No qualifications were required.                   |
| 6. <u>Duplicates</u><br>Performed for RS901           | The RPD was less than the control limits of ±20%.                                                                                                                                                                                         | No qualifications were required.                   |
| 7. <u>MS/MSDs</u>                                     | Not applicable to the pH analysis.                                                                                                                                                                                                        | No qualifications were required.                   |
| 10. <u>Other</u>                                      | None                                                                                                                                                                                                                                      | No qualifications were required.                   |
| 11. <u>Field QC Samples</u><br>Field duplicates: none | No field QC samples for pH.                                                                                                                                                                                                               | No qualifications were required.                   |
| <u>Comments</u>                                       | None                                                                                                                                                                                                                                      | None                                               |

<sup>1</sup> Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

**Client:** Ogden Environmental  
**Project:** Rocketdyne/313150002  
**Sample Matrix:** Soil

**Service Request:** L9904022  
**Date Collected:** 9/24/99  
**Date Received:** 9/24/99

Inorganic Parameters

Sample Name: RS330  
Lab Code: L9904022-010  
Test Notes:

Basis: Dry

| Analyte | Units    | Analysis Method | PQL | Dilution Factor | Date Extracted | Date Analyzed | Result | Result Notes | Flow Qual | Qual Code |
|---------|----------|-----------------|-----|-----------------|----------------|---------------|--------|--------------|-----------|-----------|
| pH      | pH UNITS | 9045            | 0.1 | 1               | 9/25/99        | 9/25/99       | 9.6    |              | ✓         | #         |

**AMEC VALIDATED  
LEVEL V**

Approved By: Eydie Schwartz  
1S44/021397p

Date: 11/4/99

001802

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental  
Project: Rocketdyne/313150002  
Sample Matrix: Soil

Service Request: L9904022  
Date Collected: 9/24/99  
Date Received: 9/24/99

Inorganic Parameters

Sample Name: RS901  
Lab Code: L9904022-006  
Test Notes:

Basis: Dry

| Analyte | Units    | Analysis Method | PQL | Dilution Factor | Date Extracted | Date Analyzed | Result | Result Notes | Low Qual | Qual Code |
|---------|----------|-----------------|-----|-----------------|----------------|---------------|--------|--------------|----------|-----------|
| pH      | pH UNITS | 9045            | 0.1 | 1               | 9/25/99        | 9/25/99       | 6.9    | J            |          | #         |

AMEC VALIDATED  
LEVEL V

Approved By:

*Eydie Schwartz*

Date:

*11/4/99*

001800

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental  
Project: Rocketdyne/313150002  
Sample Matrix: Soil

Service Request: L9904022  
Date Collected: 9/24/99  
Date Received: 9/24/99

Inorganic Parameters

Sample Name: RS904  
Lab Code: L9904022-009  
Test Notes:

Basis: Dry

| Analyte | Units    | Analysis Method | PQL | Dilution Factor | Date Extracted | Date Analyzed | Result | Result Notes |      |
|---------|----------|-----------------|-----|-----------------|----------------|---------------|--------|--------------|------|
|         |          |                 |     |                 |                |               |        | Raw          | Qual |
| pH      | pH UNITS | 9045            | 0.1 | 1               | 9/25/99        | 9/25/99       | 6.8    | J            | H    |

AMEC VALIDATED

LEVEL V

Approved By: Eydie Schwartz Date: 11/4/99

001801



## DATA ASSESSMENT FORM

Project Title: Rocketdyne  
Project Manager: D. Hambrick  
Analysis/Method: Total Fuel Hydrocarbons by GC/EPA Method 8015M  
QC Level: V<sup>1</sup>  
SDG: L9904022  
Matrix: Soil  
No. of Samples: 7  
No. of Reanalyses/Dilutions: 0  
Date Reviewed: March 28, 2002  
Reviewer: L. Calvin  
References: National Functional Guidelines for Organic Data Review (2/94)  
Samples Reviewed: RS325, RS326, RS327, RS328, RS329, RS330, RS904

### Data Validation Findings

|                             | Findings                                                                                                                                                                                                                                                                                                | Qualifications                   |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 1. <u>Sample Management</u> | <p>The COC was signed by both field and laboratory personnel. The samples were received at Columbia Analytical in good condition with a cooler temperature within the limits of 4°C ±2°C.</p> <p>The samples were extracted within 14 days of collection and analyzed within 40 days of extraction.</p> | No qualifications were required. |
| 3. <u>Method Blanks</u>     | One soil method blank was extracted and analyzed with the samples in this SDG. There were no reported target compounds in the method blank.                                                                                                                                                             | No qualifications were required. |
| 4. <u>LCS/BS</u>            | One soil LCS was extracted and analyzed with the samples in this SDG. The recovery for diesel was within the laboratory QC limits of 70-130%.                                                                                                                                                           | No qualifications were required. |
| 5. <u>Surrogates</u>        | Recoveries for p-terphenyl were within the laboratory QC limits of 78-122% for all samples.                                                                                                                                                                                                             | No qualifications were required. |

|                                                                | Findings                                                                                                                                                                                               | Qualifications                   |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 6. <u>MS/MSDs</u>                                              | MS/MSD analyses were performed on sample RS328. Recoveries for diesel were within the laboratory QC limits of 73-130%. An RPD limit was not provided; however, the reviewer deemed the RPD acceptable. | No qualifications were required. |
| 7. <u>Field QC Samples</u><br>ER: None<br>FB: None<br>FD: None | No field QC samples were identified for the samples in this SDG.                                                                                                                                       | No qualifications were required. |
| 8. <u>Other</u>                                                | The sample results were reported on a dry-weight basis.                                                                                                                                                | No qualifications were required. |
| <u>Comments</u>                                                | None.                                                                                                                                                                                                  | No qualifications were required. |

<sup>1</sup> Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9904022
Date Collected: 9/23/99
Date Received: 9/23/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS325
Lab Code: L9904022-001
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, Qual Code. Rows include C8 - C11 GRO, C11 - C14 KRO, C14 - C20 DRO, and C20 - C30 LORO.

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

AMEC VALIDATED
LEVEL V

Approved By: Eydia Schunz

Date: 11/4/99

000901

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9904022
Date Collected: 9/23/99
Date Received: 9/23/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS326
Lab Code: L9904022-002
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, and Qual Code. Rows include C8-C11 GRO, C11-C14 KRO, C14-C20 DRO, and C20-C30 LORO.

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

AMEC VALIDATED

LEVEL V

Approved By: Eydie Schwartz Date: 11/4/99

000902

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

**Client:** Ogden Environmental  
**Project:** Rocketdyne/313150002  
**Sample Matrix:** Soil  
**Batch Number:** GC06092799S

**Service Request:** I.9904022  
**Date Collected:** 9/23/99  
**Date Received:** 9/23/99

Hydrocarbon Scan / Fuel Characterization

**Sample Name:** RS327  
**Lab Code:** I.9904022-003  
**Test Notes:** X

**Units:** MG/KG  
**Basis:** Dry

| Analyte        | Prep Method | Analysis Method | PQL | Dilution Factor | Date Extracted | Date Analyzed | Result | Result Notes | Quality |      |
|----------------|-------------|-----------------|-----|-----------------|----------------|---------------|--------|--------------|---------|------|
|                |             |                 |     |                 |                |               |        |              | qual    | date |
| C8 - C11 GRO   | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/27/99       | 11     | U            | u       |      |
| C11 - C14 KRO  | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/27/99       | 11     | U            |         |      |
| C14 - C20 DRO  | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/27/99       | 11     | U            |         |      |
| C20 - C30 LORO | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/27/99       | 11     | U            |         |      |

**GRO** Gasoline Range Organics  
**KRO** Kerosene Range Organics  
**DRO** Diesel Range Organics  
**LRO** Lubricating Oil Range Organics  
**X** Quantified with diesel fuel

**AMEC VALIDATED**  
**LEVEL V**

Approved By: Eydie Schwarz

Date: 11/4/99

000903  
 Page No.:

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Ogden Environmental  
**Project:** Rocketdyne/313150002  
**Sample Matrix:** Soil  
**Batch Number:** GC06092799S

**Service Request:** L9904022  
**Date Collected:** 9/23/99  
**Date Received:** 9/23/99

Hydrocarbon Scan / Fuel Characterization

**Sample Name:** RS328  
**Lab Code:** L9904022-004  
**Test Notes:** X

**Units:** MG/KG  
**Basis:** Dry

| Analyte        | Prep Method | Analysis Method | PQL | Dilution Factor | Date Extracted | Date Analyzed | Result | Result Notes | rel  | qual |
|----------------|-------------|-----------------|-----|-----------------|----------------|---------------|--------|--------------|------|------|
|                |             |                 |     |                 |                |               |        |              | qual | code |
| C8 - C11 GRO   | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/27/99       | 11     | U            | u    |      |
| C11 - C14 KRO  | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/27/99       | 11     | U            | ↓    |      |
| C14 - C20 DRO  | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/27/99       | 11     | U            | ↓    |      |
| C20 - C30 LORO | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/27/99       | 11     | U            | ↓    |      |

**GRO** Gasoline Range Organics  
**KRO** Kerosene Range Organics  
**DRO** Diesel Range Organics  
**LRO** Lubricating Oil Range Organics  
**X** Quantified with diesel fuel

**AMEC VALIDATED**  
**LEVEL V**

Approved By: Eydie Schwartz Date: 11/4/99

000904

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9904022
Date Collected: 9/23/99
Date Received: 9/23/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS329
Lab Code: L9904022-005
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, and Qual Code. Rows include C8 - C11 GRO, C11 - C14 KRO, C14 - C20 DRO, and C20 - C30 LORO.

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

AMEC VALIDATED
LEVEL V

000905

Approved By: Eydie Schwarz Date: 11/4/99

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Ogden Environmental  
**Project:** Rocketdyne/313150002  
**Sample Matrix:** Soil  
**Batch Number:** GC06092799S

**Service Request:** L9904022  
**Date Collected:** 9/24/99  
**Date Received:** 9/24/99

Hydrocarbon Scan / Fuel Characterization

**Sample Name:** RS330  
**Lab Code:** L9904022-010  
**Test Notes:** X

**Units:** MG/KG  
**Basis:** Dry

| Analyte        | Prep Method | Analysis Method | PQL | Dilution Factor | Date Extracted | Date Analyzed | Result | Result |           |
|----------------|-------------|-----------------|-----|-----------------|----------------|---------------|--------|--------|-----------|
|                |             |                 |     |                 |                |               |        | Notes  | Qual Code |
| C8 - C11 GRO   | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/28/99       | 11     | U      | u         |
| C11 - C14 KRO  | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/28/99       | 11     | U      | ↓         |
| C14 - C20 DRO  | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/28/99       | 11     | U      | ↓         |
| C20 - C30 LORO | EPA 3550M   | 8015M           | 11  | 1               | 9/27/99        | 9/28/99       | 11     | U      | ↓         |

**GRO** Gasoline Range Organics  
**KRO** Kerosene Range Organics  
**DRO** Diesel Range Organics  
**LRO** Lubricating Oil Range Organics  
**X** Quantified with diesel fuel

**AMEC VALIDATED**  
**LEVEL V**

Approved By: Eydie Schwartz Date: 11/4/99 000907

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9904022
Date Collected: 9/24/99
Date Received: 9/24/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS904
Lab Code: L9904022-009
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, and handwritten 'val qual' and 'code' columns. Rows include C8-C11 GRO, C11-C14 KRO, C14-C20 DRO, and C20-C30 LORO.

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

AMEC VALIDATED
LEVEL V

Approved By: Eydie Schwartz

Date: 11/4/99

000906



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026  
303.935.6505, Fax 303.935.6575

## DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI  
Project Manager: D. Hambrick  
Analysis/Method: PCBs by EPA Method 8082  
QC Level: V<sup>1</sup>  
SDG: L9904022  
Matrix: Soil  
No. of samples: 1  
Dilution/Reanalyses: 0  
Date Reviewed: March 11, 2002  
Reviewer: M. Pokorny  
Reference: National Functional Guidelines for Organic Data Review (2/94)  
Samples Reviewed: RS330

### Data Validation Findings

|                             | Findings                                                                                                                                                                                                                                                                                                                          | Qualifications                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 1. <u>Sample Management</u> | <p>The COC was signed by both field and laboratory personnel. The COC noted that the sample was received intact at a temperature of 2 °C.</p> <p>According to the extraction and analysis dates on the sample result form, the samples were extracted within 14 days of collection and analyzed within 40 days of extraction.</p> | No qualifications were required. |
| 4. <u>Method Blanks</u>     | One soil method blank was extracted and analyzed with the sample in this SDG. No target compound detects were reported in the method blank.                                                                                                                                                                                       | No qualifications were required. |
| 5. <u>LCS/BS</u>            | One soil LCS fortified with Aroclor-1260 was extracted and analyzed with the samples in this SDG. The percent recovery for Aroclor-1260 was within the laboratory QC limits of 78-140%.                                                                                                                                           | No qualifications were required. |
| 6. <u>Surrogates</u>        | The surrogate recovery for the site sample and all QC samples were within the laboratory QC limits of 53-164%.                                                                                                                                                                                                                    | No qualifications were required. |

|                                                                                | Findings                                                                                                                                                                                                              | Qualifications                   |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 7. <u>MS/MSDs</u>                                                              | Sample RS330 was analyzed as the MS/MSD sample associated with this SDG, and was fortified with Aroclor-1260. The percent recovery for Aroclor-1260 was within the laboratory QC limits of 55-180% with an RPD of 4%. | No qualifications were required. |
| 8. <u>Field QC Samples</u><br><br>ER: None<br>TB: None<br>FB: None<br>FD: None | There were no identified field QC samples associated with the sample in this SDG. No evaluation of possible field contamination was performed.                                                                        | No qualifications were required. |
| 9. <u>Other</u>                                                                | The sample in this SDG did not require dilution. Reporting limits were adjusted for sample percent moisture and variation in the sample weight.                                                                       | No qualifications were required. |
| <u>Comments</u>                                                                | None                                                                                                                                                                                                                  | No qualifications were required. |

---

<sup>1</sup> Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Ogden Environmental  
**Project:** Rocketdyne/313150002  
**Sample Matrix:** Soil

**Service Request:** L9904022  
**Date Collected:** 9/24/99  
**Date Received:** 9/24/99

Polychlorinated Biphenyls (PCBs)

**Sample Name:** RS330  
**Lab Code:** L9904022-010  
**Test Notes:** D1

**Units:** UG/KG  
**Basis:** Dry

| Analyte      | Prep Method | Analysis Method | PQL | Dilution Factor | Date Extracted | Date Analyzed | Result | Result Notes | Ref | Qual | Ca |
|--------------|-------------|-----------------|-----|-----------------|----------------|---------------|--------|--------------|-----|------|----|
| Aroclor 1016 | EPA 3550    | 8082            | 110 | 1               | 10/13/99       | 10/14/99      | 110    | U            | U   |      |    |
| Aroclor 1221 | EPA 3550    | 8082            | 110 | 1               | 10/13/99       | 10/14/99      | 110    | U            |     |      |    |
| Aroclor 1232 | EPA 3550    | 8082            | 110 | 1               | 10/13/99       | 10/14/99      | 110    | U            |     |      |    |
| Aroclor 1242 | EPA 3550    | 8082            | 110 | 1               | 10/13/99       | 10/14/99      | 110    | U            |     |      |    |
| Aroclor 1248 | EPA 3550    | 8082            | 110 | 1               | 10/13/99       | 10/14/99      | 110    | U            |     |      |    |
| Aroclor 1254 | EPA 3550    | 8082            | 110 | 1               | 10/13/99       | 10/14/99      | 110    | U            |     |      |    |
| Aroclor 1260 | EPA 3550    | 8082            | 110 | 1               | 10/13/99       | 10/14/99      | 110    | U            |     |      |    |

**AMEC VALIDATED  
LEVEL V**

D1

Sample was extracted past the end of the recommended maximum holding time.

Approved By: *Eydie Schwartz*

Date: *11/4/99*

000701



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026  
303.935.6505, Fax 303.935.6575

## DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI  
Project Manager: D. Hambrick  
Analysis/Method: Metals by EPA Methods SW6010B, SW7060, SW7740, SW7841, and SW7471  
QC Level: V<sup>1</sup>  
SDG: L9904022  
Matrix: Soil  
No. of Samples: 3  
Date Reviewed: March 14, 2002  
Reviewer: A. Lang  
Reference: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)  
Samples Reviewed: RS901, RS904, RS330

### Data Validation Findings

|                             | Findings                                                                                                                                                                                                                                                                                                      | Qualifications                                             |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| 1. <u>Sample Management</u> | The COCs were signed by the field and laboratory personnel and accounted for the analyses presented in the data package. Presence of custody seals was not documented. The cooler temperature at arrival was within the established temperature limit of 4°±2° C. The sample analysis holding times were met. | No qualifications were required.                           |
| 3. <u>Method Blanks</u>     | One soil method blank was reported for this SDG. No target analyte detects were reported in the method blanks.                                                                                                                                                                                                | No qualifications were required.                           |
| 5. <u>LCS/BS</u>            | One soil LCS was reported for this SDG. All percent recoveries were within the method QC limits, except copper, which had a recovery of 83%, which is below the limits of 85-104%.                                                                                                                            | Detects for copper in the site samples were qualified "J." |

|                                                                                   | Findings                                                                                                                                                                                                                                                                                                                                                                | Qualifications                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7. <u>MS/MSDs</u><br><br>Performed on Sample RS901                                | All spike recoveries were within the 75-125%R control limit, with the exception of antimony MS/MSD (48%, 40%), arsenic MS/MSD (69%, 79%), lead MSD (66%), molybdenum MS/MSD (72%, 68%, and selenium MS (45%).<br><br>Precision: The %RPDs between the MS/MSD spike results were with the 20% RPD control limit, with the exception of selenium which had an RPD of 48%. | Detects for antimony, arsenic, lead, molybdenum, and selenium were qualified "J," and nondetects were qualified "UJ."<br><br>Selenium was not detected in the samples; therefore, no qualifications were required due to precision. |
| 8. <u>Furnace Atomic absorption QC</u>                                            | A post digestion spike analysis was performed on RS904 for the GFAA arsenic, thallium, and selenium analyses. The post digestion spike recoveries were within the 75-115%R control limit, with the exception of selenium (117%) and thallium (126%).                                                                                                                    | Selenium and thallium were not detected in the samples; therefore, no qualifications were required.                                                                                                                                 |
| 9. <u>ICP Serial Dilution</u><br><br>None                                         | No serial dilution analysis was reported.                                                                                                                                                                                                                                                                                                                               | Samples not assessed for this criteria.                                                                                                                                                                                             |
| 10. <u>Other</u>                                                                  | At the Level V validation, site samples are not assessed for the laboratory QC samples that evaluate instrument performance. The QC samples which are not assessed include initial and continuing calibration information, initial and continuing calibration blank information, and the ICP Interference Check Solution, ICS, sample analyses.                         | None.                                                                                                                                                                                                                               |
| 11. <u>Field QC Samples</u><br><br>ER: None<br>FB: None<br>Field Duplicates: None | None                                                                                                                                                                                                                                                                                                                                                                    | None                                                                                                                                                                                                                                |
| 12. <u>Comments</u>                                                               | Sample results are reported on a dry weight basis, but the hardcopy does not include the individual sample dry weight reporting limits.                                                                                                                                                                                                                                 | None                                                                                                                                                                                                                                |

<sup>1</sup> Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

**Client:** Ogden Environmental  
**Project:** Rocketdyne/313150002  
**Sample Matrix:** Soil

**Service Request:** L9904022  
**Date Collected:** 9/24/99  
**Date Received:** 9/24/99

Metals

Sample Name: RS330  
 Lab Code: L9904022-010  
 Test Notes:

Units: MG/KG  
 Basis: Dry

| Analyte    | Prep Method | Analysis Method | PQL | Dilution Factor | Date Digested | Date Analyzed | Result | Result Notes | By | Check |
|------------|-------------|-----------------|-----|-----------------|---------------|---------------|--------|--------------|----|-------|
| Aluminum   | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 22000  |              |    |       |
| Antimony   | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 10     | U            | US | Q     |
| Arsenic    | EPA 3050    | 7060            | 5   | 1               | 10/11/99      | 10/12/99      | 5      | U            | US | Q     |
| Barium     | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 130    |              |    |       |
| Beryllium  | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 1      |              |    |       |
| Boron      | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 10     | U            | u  |       |
| Cadmium    | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 1      | U            | u  |       |
| Chromium   | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 28     |              |    |       |
| Cobalt     | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 10     |              |    |       |
| Copper     | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 13     |              | J  | L     |
| Lead       | EPA 3050    | 6010            | 5   | 1               | 10/12/99      | 10/12/99      | 5      | U            | US | Q     |
| Mercury    | EPA 7471    | 7471            | 0.2 | 1               | 10/13/99      | 10/13/99      | 0.2    | U            | u  |       |
| Molybdenum | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 10     | U            | US | Q     |
| Nickel     | EPA 3050    | 6010            | 5   | 1               | 10/12/99      | 10/12/99      | 19     |              |    |       |
| Selenium   | EPA 3050    | 7740            | 5   | 1               | 10/11/99      | 10/11/99      | 5      | U            | US | Q     |
| Silver     | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 1      | U            | u  |       |
| Thallium   | EPA 3050    | 7841            | 5   | 1               | 10/11/99      | 10/12/99      | 5      | U            | u  |       |
| Vanadium   | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 58     |              |    |       |
| Zinc       | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 51     |              |    |       |

**AMEC VALIDATED**

**LEVEL V**

Approved By: Eydie Schwartz  
 1844/021397/p

Date: 11/15/99

001603

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental  
 Project: Rocketdyne/313150002  
 Sample Matrix: Soil

Service Request: L9904022  
 Date Collected: 9/24/99  
 Date Received: 9/24/99

Metals

Sample Name: RS901  
 Lab Code: L9904022-006  
 Test Notes:

Units: MG/KG  
 Basis: Dry

| Analyte    | Prep Method | Analysis Method | PQL | Dilution Factor | Date Digested | Date Analyzed | Result | Result Notes | By | Initials |
|------------|-------------|-----------------|-----|-----------------|---------------|---------------|--------|--------------|----|----------|
| Aluminum   | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 8300   |              |    |          |
| Antimony   | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 10     | U            | UT | Q        |
| Arsenic    | EPA 3050    | 7060            | 5   | 1               | 10/11/99      | 10/12/99      | 5      | U            | UT | Q        |
| Barium     | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 64     |              |    |          |
| Beryllium  | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 1      | U            | u  |          |
| Boron      | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 10     | U            | u  |          |
| Cadmium    | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 1      | U            | u  |          |
| Chromium   | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 11     |              |    |          |
| Cobalt     | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 5      |              |    |          |
| Copper     | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 7      |              | J  | Q        |
| Lead       | EPA 3050    | 6010            | 5   | 1               | 10/12/99      | 10/12/99      | 21     |              | J  | Q        |
| Mercury    | EPA 7471    | 7471            | 0.2 | 1               | 10/13/99      | 10/13/99      | 0.2    | U            | u  |          |
| Molybdenum | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 10     | U            | UT | Q        |
| Nickel     | EPA 3050    | 6010            | 5   | 1               | 10/12/99      | 10/12/99      | 8      |              |    |          |
| Selenium   | EPA 3050    | 7740            | 5   | 1               | 10/11/99      | 10/11/99      | 5      | U            | UT | Q        |
| Silver     | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 1      | U            | u  |          |
| Thallium   | EPA 3050    | 7841            | 5   | 1               | 10/11/99      | 10/12/99      | 5      | U            | u  |          |
| Vanadium   | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 24     |              |    |          |
| Zinc       | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 53     |              |    |          |

AMEC VALIDATED

LEVEL V

Approved By: Eydie Schwarz Date: 11/15/99

001601

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Ogden Environmental  
**Project:** Rocketdyne/313150002  
**Sample Matrix:** Soil

**Service Request:** L9904022  
**Date Collected:** 9/24/99  
**Date Received:** 9/24/99

Metals

Sample Name: RS904  
 Lab Code: L9904022-009  
 Test Notes:

Units: MG/KG  
 Basis: Dry

| Analyte    | Prep Method | Analysis Method | PQL | Dilution Factor | Date Digested | Date Analyzed | Result | Result Notes | Pass/Fail | Lab |
|------------|-------------|-----------------|-----|-----------------|---------------|---------------|--------|--------------|-----------|-----|
| Aluminum   | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 20000  |              |           |     |
| Antimony   | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 10     | U            | UJ        | Q   |
| Arsenic    | EPA 3050    | 7060            | 5   | 1               | 10/11/99      | 10/12/99      | 5      | U            | UJ        | Q   |
| Barium     | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 130    |              |           |     |
| Beryllium  | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 1      |              |           |     |
| Boron      | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 10     | U            | U         |     |
| Cadmium    | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 1      | U            | U         |     |
| Chromium   | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 28     |              |           |     |
| Cobalt     | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 11     |              |           |     |
| Copper     | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 16     |              | J         | L   |
| Lead       | EPA 3050    | 6010            | 5   | 1               | 10/12/99      | 10/12/99      | 5      | U            | UJ        | Q   |
| Mercury    | EPA 7471    | 7471            | 0.2 | 1               | 10/13/99      | 10/13/99      | 0.2    | U            | U         |     |
| Molybdenum | EPA 3050    | 6010            | 10  | 1               | 10/12/99      | 10/12/99      | 10     | U            | UJ        | Q   |
| Nickel     | EPA 3050    | 6010            | 5   | 1               | 10/12/99      | 10/12/99      | 24     |              |           |     |
| Selenium   | EPA 3050    | 7740            | 5   | 1               | 10/11/99      | 10/11/99      | 5      | U            | UJ        | Q   |
| Silver     | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 1      | U            | U         |     |
| Thallium   | EPA 3050    | 7841            | 5   | 1               | 10/11/99      | 10/12/99      | 5      | U            | U         |     |
| Vanadium   | EPA 3050    | 6010            | 2   | 1               | 10/12/99      | 10/12/99      | 51     |              |           |     |
| Zinc       | EPA 3050    | 6010            | 1   | 1               | 10/12/99      | 10/12/99      | 76     |              |           |     |

**AMEC VALIDATED**

**LEVEL V**

Approved By: Eydie Schwartz Date: 11/15/99  
1S44/021397p

001602

550 South Wadsworth Blvd. Ste. 500  
 Denver, CO 80226  
 (303) 935-6505

**Rocketdyne**

Analysis/Method: General Minerals

No. of Samples: 12

Date Completed: March 22, 1999

Reviewer: A. Lang

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994).

SDG: New Conservation Yard & ESADA

Samples Reviewed: ESADA 1, ESADA 2, ESADA 3, ESADA 4, ESADA 5, ESADA 6, NEW CONS 1, NEW CONS 2, NEW CONS 3, NEW CONS 4, NEW CONS 5, NEW CONS 6

EPA Level V- General Minerals Assessment Form

|                             | Problems                                                                                                                                                                                                                                                                      | Qualifications                                          |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 1. <u>Sample Management</u> | Holding time exceeded for pH analysis.<br>The COCs were signed by field and laboratory personnel. Sample conditions and cooler temperatures were not recorded on the COCs; therefore, no evaluation of the sample data could be made based on sample conditions upon receipt. | All site sample pH results qualified as estimated, "J." |
| 2. <u>Method Blanks</u>     | Method blank results were not included in the laboratory's report. Evaluation of possible laboratory contamination could not be made.                                                                                                                                         | No qualifications were required.                        |
| 3. <u>LCS/BS</u>            | There were no blank spikes included in the laboratory's report. Evaluation of laboratory accuracy was not possible.                                                                                                                                                           | No qualifications were required.                        |
| 4. <u>Duplicates</u>        | There were no laboratory duplicates included in the laboratory's report. Evaluation of laboratory precision was not possible.                                                                                                                                                 | No qualifications were required.                        |

|                            |                                |      |
|----------------------------|--------------------------------|------|
| 5. <u>MS/MSDs</u>          | Not applicable.                | None |
| 6. <u>Field QC Samples</u> | Not applicable to pH analysis. | None |
| 7. <u>Other</u>            | None                           | None |
| 8. <u>Comments</u>         | None                           | None |





ATI I.D. : 808317

C NT : GROUNDWATER RESOURCES  
PROJECT # : 8640-4  
PROJECT NAME : SSFL-AREA IV

DATE RECEIVED : 08/27/88

*ESADA*  
*Non Valid*  
*Qual Code*  
**NEW** REPORT DATE 09/21/88  
*Non Valid*  
*Qual Code*  
*Non Valid*  
*Qual Code*  
*Non Valid*  
*Qual Code*  
*Non Valid*  
*Qual Code*

| PARAMETER  | UNITS | 06     | 07       | 08       | 09       | 10       |
|------------|-------|--------|----------|----------|----------|----------|
| % MOISTURE |       | 8.86   | * 4.42   | * 11.0   | * 4.69   | * 4.17   |
| PH         | UNITS | 8.13 J | # 7.35 J | H 6.55 J | H 6.93 J | H 6.81 J |

**UGDEN VALIDATED**

**LEVEL V**

\*Analysis Not Validated



ATI I.D. : 808317

ENT : GROUNDWATER RESOURCES  
PROJECT # : 8640-4  
PROJECT NAME : SSFL-AREA IV

DATE RECEIVED : 08/27/88

REPORT DATE : 09/21/88

| PARAMETER  | UNITS | 11   | 12     | 13     | 14   | 15   |
|------------|-------|------|--------|--------|------|------|
| % MOISTURE |       | 3.77 | * 4.72 | * 4.02 | 6.94 | 4.61 |
| PH         |       | 5.84 | H 6.34 | H 6.74 | 6.87 | 6.53 |

*NEW CON*  
*Ground*  
*Water*  
*Ground*  
*Water*

*SEDIMENT*

**OGDEN VALIDATED**

**LEVEL V**

\*Analysis Not Validated

550 South Wadsworth Blvd. Suite 500  
 Denver, CO 80226  
 (303) 935-6505

**Rocketdyne**

Analysis/Method: EPA Method 8240

No. of Samples: 12

Date Reviewed: 02/23/99

Reviewer: L. Calvin

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Ogden Data Validation Procedure for Volatile Organics by GC/MS (DVP-2, Rev. 2).

SDG: NEW YARD

Samples Reviewed: ESADA 1 1.5'-2.0', ESADA 1 4.0'-4.5', ESADA 2 1.0'-1.5', ESADA 2 4.5'-5.0', ESADA 3 1.0'-1.5', ESADA 3 3.5'-4.0', NEWCONS 1 1.5'-2.0', NEWCONS 1 3.5'-4.0', NEWCONS 2 1.0'-1.5', NEWCONS 2 3.5'-4.0', NEWCONS 3 1.0'-1.5', NEWCONS 3 3.3'-3.8'

Matrix: Soil

**EPA Level V- Volatiles Assessment Form**

|                             | <b>Problems</b>                                                                                                                                                                                                                                                                                       | <b>Qualifications</b>            |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>1. Sample Management</b> | The COCs were signed by field and laboratory personnel. Sample conditions and cooler temperatures were not recorded on the COCs; therefore, no evaluation of the sample data could be made based on sample conditions upon receipt. Samples were extracted and analyzed within 14 days of collection. | No qualifications were required. |
| <b>4. Method Blanks</b>     | The method blank associated with the samples of this SDG was analyzed each day samples were analyzed. Methylene chloride was detected in the first analysis of the blank, and benzene and toluene were detected in two subsequent                                                                     | No qualifications were required. |

|                                                                                              | <b>Problems</b>                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Qualifications</b>            |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|                                                                                              | analyses of the blank. Toluene was detected in one sample associated only with the first analysis of the method blank. None of the blank contaminants were detected in any sample associated with its respective blank analysis.                                                                                                                                                                                |                                  |
| <b>5. LCS/BS</b>                                                                             | One blank spike/blank spike duplicate pair was associated with the samples of this SDG, analyzed each day that associated samples were analyzed. The laboratory's report did not include recovery or RPD QC limits; however, in the professional judgement of the reviewer, percent recoveries and RPDs for all spiked analytes were acceptable for all analyses of the blank spike/blank spike duplicate pair. | No qualifications were required. |
| <b>6. Surrogates</b>                                                                         | Though the laboratory's report did not include surrogate recovery QC limits, none of the sample surrogate recoveries were flagged as outliers, and in the professional judgement of the reviewer, surrogate percent recoveries were acceptable for all samples in this SDG.                                                                                                                                     | No qualifications were required. |
| <b>7. MS/MSDs</b>                                                                            | The laboratory did not analyze any MS/MSD pairs with the samples of this SDG. No evaluation of the sample data could be made regarding accuracy and precision.                                                                                                                                                                                                                                                  | No qualifications were required. |
| <b>8. Field QC Samples</b><br><br>TB: none<br>ER: none<br>FB: none<br>Field duplicates: none | The data package did not contain field QC sample information; no evaluation of sample data was made based on field QC.                                                                                                                                                                                                                                                                                          | No qualifications were required. |
| <b>10. Other</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                 |                                  |

|                              | <b>Problems</b>                                                                                                                                                                                                                                                                                                        | <b>Qualifications</b>                                                                                                                                                                                    |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | There were no TICs detected in the samples of this SDG. The compound name "dichlorobenzenes" was included on each TIC report as an added compound with a reporting limit.                                                                                                                                              | Because the dichlorobenzene isomers were apparently searched for as TICs, and would have been quantitated as TICs if detected, nondetect results for dichlorobenzenes were qualified as estimated, "UJ." |
| <b>10. Other</b> (continued) | Nominal reporting limits for the samples of this SDG were approximately 25 <sup>H</sup> less than the EPA CLP reporting limits for medium-level soils. Neither a laboratory method detection limit study (MDL) nor sample prep information were available to aid in determining how the reporting limits were derived. | No qualifications were required.                                                                                                                                                                         |
| <b>11. Comments</b>          | None                                                                                                                                                                                                                                                                                                                   | None                                                                                                                                                                                                     |



ATI I.D. : 80831701

ANALYSIS : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 1 1.5'-2.0'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/02/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, and handwritten 'qual' and 'code' columns. Lists various organic compounds and their detection levels (e.g., CHLOROMETHANE <0.50).

SURROGATE PERCENT RECOVERIES

Table showing surrogate percent recoveries for 1,1-DICHLOROETHANE-D4 (86%), TOLUENE (92%), and TOLUENE-D8 (95%).



| ADDITIONAL MAJOR COMPOUNDS | RESULTS | <i>vet<br/>qual</i> | <i>qual<br/>code</i> |
|----------------------------|---------|---------------------|----------------------|
| DICHLOROBENZENES           | <0.05   | <i>UJ</i>           | <i>* 10</i>          |



ATI I.D. : 80831702

TEST : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 1 4.0'-4.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/02/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, and handwritten 'ret qual' and 'qual code' columns. Lists various organic compounds and their detection levels.

SURROGATE PERCENT RECOVERIES

Table showing surrogate percent recoveries for 1,2-DICHLOROETHANE-D4, Toluene, and Toluene-D8.



| ADDITIONAL MAJOR COMPOUNDS | RESULTS | ret<br>qual | qual<br>code |
|----------------------------|---------|-------------|--------------|
| DICHLOROBENZENES           | <0.05   | UJ          | *10          |



ATI I.D. : 80831703

TEST : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : ESADA 2 1.0'-1.5'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 08/30/88  
 DATE ANALYZED : 09/03/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                   | RESULTS |
|-----------------------------|---------|
| CHLOROMETHANE               | <0.50   |
| BROMOMETHANE                | <0.50   |
| VINYL CHLORIDE              | <0.05   |
| CHLOROETHANE                | <0.05   |
| METHYLENE CHLORIDE          | <0.3    |
| ACETONE                     | <0.50   |
| CARBON DISULFIDE            | <0.05   |
| 1,1-DICHLOROETHENE          | <0.05   |
| 1,1-DICHLOROETHANE          | <0.05   |
| TRANS-1,2-DICHLOROETHENE    | <0.05   |
| CHLOROFORM                  | <0.05   |
| 1,2-DICHLOROETHANE          | <0.05   |
| 2-BUTANONE (MEK)            | <0.50   |
| 1,1,1-TRICHLOROETHANE       | <0.05   |
| CARBON TETRACHLORIDE        | <0.05   |
| VINYL ACETATE               | <0.50   |
| BROMODICHLOROMETHANE        | <0.05   |
| 1,1,2,2-TETRACHLOROETHANE   | <0.05   |
| 1,2-DICHLOROPROPANE         | <0.05   |
| TRANS-1,3-DICHLOROPROPENE   | <0.05   |
| TRICHLOROETHENE             | <0.05   |
| DIBROMOCHLOROMETHANE        | <0.05   |
| 1,1,2 TRICHLOROETHANE       | <0.05   |
| BENZENE                     | <0.05   |
| CIS-1,3-DICHLOROPROPENE     | <0.05   |
| 2-CHLOROETHYLVINYLEETHER    | <0.50   |
| BROMOFORM                   | <0.3    |
| 2-HEXANONE (MBK)            | <0.50   |
| 4-METHYL-2-PENTANONE (MIBK) | <0.50   |
| TETRACHLOROETHENE           | <0.05   |
| TOLUENE                     | <0.05   |
| CHLOROBENZENE               | <0.05   |
| ETHYL BENZENE               | <0.05   |
| STYRENE                     | <0.05   |
| TOTAL XYLENES               | <0.05   |

ret qual  
 qual code

u  
 ↓

## SURROGATE PERCENT RECOVERIES

|                           |     |
|---------------------------|-----|
| 1,1-DICHLOROETHANE-D4 (%) | 111 |
| BFB (%)                   | 99  |
| TOLUENE-D8 (%)            | 111 |



| ADDITIONAL MAJOR COMPOUNDS | RESULTS | ret<br>qual | qual<br>code |
|----------------------------|---------|-------------|--------------|
| DICHLOROBENZENES           | <0.05   | UT          | *10          |



ATI I.D. : 80831704

T T : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : ESADA 2 4.5'-5.0'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 08/30/88  
 DATE ANALYZED : 09/03/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                   | RESULTS | rel<br>qual | qual<br>code |
|-----------------------------|---------|-------------|--------------|
| CHLOROMETHANE               | <0.50   | u           |              |
| BROMOMETHANE                | <0.50   |             |              |
| VINYL CHLORIDE              | <0.05   |             |              |
| CHLOROETHANE                | <0.05   |             |              |
| METHYLENE CHLORIDE          | <0.3    |             |              |
| ACETONE                     | <0.50   |             |              |
| CARBON DISULFIDE            | <0.05   |             |              |
| 1,1-DICHLOROETHENE          | <0.05   |             |              |
| 1,1-DICHLOROETHANE          | <0.05   |             |              |
| TRANS-1,2-DICHLOROETHENE    | <0.05   |             |              |
| CHLOROFORM                  | <0.05   |             |              |
| 1,2-DICHLOROETHANE          | <0.05   |             |              |
| 2-BUTANONE (MEK)            | <0.50   |             |              |
| 1,1,1-TRICHLOROETHANE       | <0.05   |             |              |
| CARBON TETRACHLORIDE        | <0.05   |             |              |
| VINYL ACETATE               | <0.50   |             |              |
| BROMODICHLOROMETHANE        | <0.05   |             |              |
| 1,1,2,2-TETRACHLOROETHANE   | <0.05   |             |              |
| 1,2-DICHLOROPROPANE         | <0.05   |             |              |
| TRANS-1,3-DICHLOROPROPENE   | <0.05   |             |              |
| TRICHLOROETHENE             | <0.05   |             |              |
| DIBROMOCHLOROMETHANE        | <0.05   |             |              |
| 1,1,2 TRICHLOROETHANE       | <0.05   |             |              |
| BENZENE                     | <0.05   |             |              |
| CIS-1,3-DICHLOROPROPENE     | <0.05   |             |              |
| 2-CHLOROETHYLVINYLEETHER    | <0.50   |             |              |
| BROMOFORM                   | <0.3    |             |              |
| 2-HEXANONE (MBK)            | <0.50   |             |              |
| 4-METHYL-2-PENTANONE (MIBK) | <0.50   |             |              |
| TETRACHLOROETHENE           | <0.05   |             |              |
| TOLUENE                     | <0.05   |             |              |
| CHLOROBENZENE               | <0.05   |             |              |
| ETHYL BENZENE               | <0.05   |             |              |
| STYRENE                     | <0.05   |             |              |
| TOTAL XYLENES               | <0.05   |             |              |

## SURROGATE PERCENT RECOVERIES

|                           |     |
|---------------------------|-----|
| 1,1-DICHLOROETHANE-D4 (%) | 100 |
| B. (%)                    | 96  |
| TOLUENE-D8 (%)            | 104 |



| ADDITIONAL MAJOR COMPOUNDS | RESULTS | vw<br>qual | qua<br>code |
|----------------------------|---------|------------|-------------|
| DICHLOROBENZENES           | <0.05   | us         | *10         |



ATI I.D. : 80831705

TEST : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 3 1.0'-1.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/03/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, rel qual, qual code. Lists various organic compounds and their detection levels (e.g., CHLOROMETHANE <0.50).

SURROGATE PERCENT RECOVERIES

Table showing surrogate percent recoveries: 1,1-DICHLOROETHANE-D4 (%): 94, BrB (%): 98, TOLUENE-D8 (%): 102.



ADDITIONAL MAJOR COMPOUNDS

RESULTS

*rev* | *qual*  
*qual* | *code*  
*UJ* | *\*10*

DICHLOROBENZENES

<0.05



ATI I.D. : 80831706

T : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : ESADA 3 3.5'-4.0'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 08/30/88  
 DATE ANALYZED : 09/07/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                   | RESULTS | ret<br>qual | qual<br>code |
|-----------------------------|---------|-------------|--------------|
| CHLOROMETHANE               | <0.50   | u           |              |
| BROMOMETHANE                | <0.50   |             |              |
| VINYL CHLORIDE              | <0.05   |             |              |
| CHLOROETHANE                | <0.05   |             |              |
| METHYLENE CHLORIDE          | <0.3    |             |              |
| ACETONE                     | <0.50   |             |              |
| CARBON DISULFIDE            | <0.05   |             |              |
| 1,1-DICHLOROETHENE          | <0.05   |             |              |
| 1,1-DICHLOROETHANE          | <0.05   |             |              |
| TRANS-1,2-DICHLOROETHENE    | <0.05   |             |              |
| CHLOROFORM                  | <0.05   |             |              |
| 1,2-DICHLOROETHANE          | <0.05   |             |              |
| 2-BUTANONE (MEK)            | <0.50   |             |              |
| 1,1,1-TRICHLOROETHANE       | <0.05   |             |              |
| CARBON TETRACHLORIDE        | <0.05   |             |              |
| VINYL ACETATE               | <0.50   |             |              |
| BROMODICHLOROMETHANE        | <0.05   |             |              |
| 1,1,2,2-TETRACHLOROETHANE   | <0.05   |             |              |
| 1,2-DICHLOROPROPANE         | <0.05   |             |              |
| TRANS-1,3-DICHLOROPROPENE   | <0.05   |             |              |
| TRICHLOROETHENE             | <0.05   |             |              |
| DIBROMOCHLOROMETHANE        | <0.05   |             |              |
| 1,1,2 TRICHLOROETHANE       | <0.05   |             |              |
| BENZENE                     | <0.05   |             |              |
| CIS-1,3-DICHLOROPROPENE     | <0.05   |             |              |
| 2-CHLOROETHYLVINYLETHER     | <0.50   |             |              |
| BROMOFORM                   | <0.3    |             |              |
| 2-HEXANONE (MBK)            | <0.50   |             |              |
| 4-METHYL-2-PENTANONE (MIBK) | <0.50   |             |              |
| TETRACHLOROETHENE           | <0.05   |             |              |
| TOLUENE                     | <0.05   |             |              |
| CHLOROBENZENE               | <0.05   |             |              |
| ETHYL BENZENE               | <0.05   |             |              |
| STYRENE                     | <0.05   |             |              |
| TOTAL XYLENES               | <0.05   |             |              |

## SURROGATE PERCENT RECOVERIES

|                           |    |
|---------------------------|----|
| 1,2-DICHLOROETHANE-D4 (%) | 77 |
| BENZENE (%)               | 82 |
| TOLUENE-D8 (%)            | 80 |



ADDITIONAL MAJOR COMPOUNDS

RESULTS

*ret* | *qual*  
*qual* | *code*

DICHLOROBENZENES

<0.05

*UJ* | *\*10*



ATI I.D. : 80831707

T : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : NEWCONS 1 1.5'-2.0'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 08/30/88  
 DATE ANALYZED : 09/03/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                   | RESULTS | rel<br>qual | qual<br>code |
|-----------------------------|---------|-------------|--------------|
| CHLOROMETHANE               | <0.50   | u           |              |
| BROMOMETHANE                | <0.50   |             |              |
| VINYL CHLORIDE              | <0.05   |             |              |
| CHLOROETHANE                | <0.05   |             |              |
| METHYLENE CHLORIDE          | <0.3    |             |              |
| ACETONE                     | <0.50   |             |              |
| CARBON DISULFIDE            | <0.05   |             |              |
| 1,1-DICHLOROETHENE          | <0.05   |             |              |
| 1,1-DICHLOROETHANE          | <0.05   |             |              |
| TRANS-1,2-DICHLOROETHENE    | <0.05   |             |              |
| CHLOROFORM                  | <0.05   |             |              |
| 1,2-DICHLOROETHANE          | <0.05   |             |              |
| 2-BUTANONE (MEK)            | <0.50   |             |              |
| 1,1,1-TRICHLOROETHANE       | <0.05   |             |              |
| CARBON TETRACHLORIDE        | <0.05   |             |              |
| VINYL ACETATE               | <0.50   |             |              |
| BROMODICHLOROMETHANE        | <0.05   |             |              |
| 1,1,2,2-TETRACHLOROETHANE   | <0.05   |             |              |
| 1,2-DICHLOROPROPANE         | <0.05   |             |              |
| TRANS-1,3-DICHLOROPROPENE   | <0.05   |             |              |
| TRICHLOROETHENE             | <0.05   |             |              |
| DIBROMOCHLOROMETHANE        | <0.05   |             |              |
| 1,1,2 TRICHLOROETHANE       | <0.05   |             |              |
| BENZENE                     | <0.05   |             |              |
| CIS-1,3-DICHLOROPROPENE     | <0.05   |             |              |
| 2-CHLOROETHYLVINYLEETHER    | <0.50   |             |              |
| BROMOFORM                   | <0.3    |             |              |
| 2-HEXANONE (MBK)            | <0.50   |             |              |
| 4-METHYL-2-PENTANONE (MIBK) | <0.50   |             |              |
| TETRACHLOROETHENE           | <0.05   |             |              |
| TOLUENE                     | <0.05   |             |              |
| CHLOROBENZENE               | <0.05   |             |              |
| ETHYL BENZENE               | <0.05   |             |              |
| STYRENE                     | <0.05   |             |              |
| TOTAL XYLENES               | <0.05   |             |              |

## SURROGATE PERCENT RECOVERIES

|                           |    |
|---------------------------|----|
| 1,2-DICHLOROETHANE-D4 (%) | 98 |
| 1,2-DICHLOROETHANE (%)    | 97 |
| TOLUENE-D8 (%)            | 96 |



ADDITIONAL MAJOR COMPOUNDS

RESULTS

| <i>ret</i> | <i>qual</i> |
|------------|-------------|
| <i>UJ</i>  | <i>* 10</i> |

DICHLOROBENZENES

<0.05



TEST : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 1 3.5'-4.0'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/07/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, and handwritten 'rel qual' and 'code' headers. Lists various organic compounds and their detection levels (e.g., CHLOROMETHANE <0.50).

SURROGATE PERCENT RECOVERIES

Table showing surrogate percent recoveries for 1,2-DICHLOROETHANE-D4 (93%), BFB (98%), and TOLUENE-D8 (94%).



ADDITIONAL MAJOR COMPOUNDS

RESULTS

*val* | *qual*  
*qual* | *code*  
*UJ* | *\*10*

DICHLOROBENZENES

<0.05



1 P : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 2 1'-1.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/07/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, and handwritten 'rel qual' and 'code' columns. Lists various organic compounds and their detection levels.

SURROGATE PERCENT RECOVERIES

Table showing surrogate percent recoveries for 1,2-DICHLOROETHANE-D4, LUB, and TOLUENE-D8.



| ADDITIONAL MAJOR COMPOUNDS | RESULTS | rev<br>qual | qual<br>code |
|----------------------------|---------|-------------|--------------|
| DICHLOROBENZENES           | <0.05   | UT          | *10          |



ATI I.D. : 80831710

TEST : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 2 3.5'-4.0'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/07/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, and handwritten 'rel qual' and 'qual code' headers. Lists various organic compounds and their detection levels (e.g., CHLOROMETHANE <0.50).

SURROGATE PERCENT RECOVERIES

Table showing surrogate percent recoveries for 1,2-DICHLOROETHANE-D4 (93%), BFB (99%), and TOLUENE-D8 (98%).



ADDITIONAL MAJOR COMPOUNDS

RESULTS

*rev*  
*qual* | *qual*  
*code*

DICHLOROBENZENES

<0.05

*UT*

*\*10*



ATI I.D. : 80831711

1 T : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : NEWCONS 3 1.0'-1.5'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 08/30/88  
 DATE ANALYZED : 09/02/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                   | RESULTS | vet<br>qual | qua<br>code |
|-----------------------------|---------|-------------|-------------|
| CHLOROMETHANE               | <0.50   | u           |             |
| BROMOMETHANE                | <0.50   |             |             |
| VINYL CHLORIDE              | <0.05   |             |             |
| CHLOROETHANE                | <0.05   |             |             |
| METHYLENE CHLORIDE          | <0.3    |             |             |
| ACETONE                     | <0.50   |             |             |
| CARBON DISULFIDE            | <0.05   |             |             |
| 1,1-DICHLOROETHENE          | <0.05   |             |             |
| 1,1-DICHLOROETHANE          | <0.05   |             |             |
| TRANS-1,2-DICHLOROETHENE    | <0.05   |             |             |
| CHLOROFORM                  | <0.05   |             |             |
| 1,2-DICHLOROETHANE          | <0.05   |             |             |
| 2-BUTANONE (MEK)            | <0.50   |             |             |
| 1,1,1-TRICHLOROETHANE       | <0.05   |             |             |
| CARBON TETRACHLORIDE        | <0.05   |             |             |
| VINYL ACETATE               | <0.50   |             |             |
| BROMODICHLOROMETHANE        | <0.05   |             |             |
| 1,1,2,2-TETRACHLOROETHANE   | <0.05   |             |             |
| 1,2-DICHLOROPROPANE         | <0.05   |             |             |
| TRANS-1,3-DICHLOROPROPENE   | <0.05   |             |             |
| TRICHLOROETHENE             | <0.05   |             |             |
| DIBROMOCHLOROMETHANE        | <0.05   |             |             |
| 1,1,2 TRICHLOROETHANE       | <0.05   |             |             |
| BENZENE                     | <0.05   |             |             |
| CIS-1,3-DICHLOROPROPENE     | <0.05   |             |             |
| 2-CHLOROETHYLVINYLEETHER    | <0.50   |             |             |
| BROMOFORM                   | <0.3    |             |             |
| 2-HEXANONE (MBK)            | <0.50   |             |             |
| 4-METHYL-2-PENTANONE (MIBK) | <0.50   |             |             |
| TETRACHLOROETHENE           | <0.05   |             |             |
| TOLUENE                     | * 0.11  |             |             |
| CHLOROBENZENE               | <0.05   | u           |             |
| ETHYL BENZENE               | <0.05   |             |             |
| STYRENE                     | <0.05   |             |             |
| TOTAL XYLENES               | <0.05   |             |             |

## SURROGATE PERCENT RECOVERIES

1,1-DICHLOROETHANE-D4 (%) 92  
 B.B (%) 98  
 TOLUENE-D8 (%) 97



| ADDITIONAL MAJOR COMPOUNDS | RESULTS | <i>ret<br/>qual</i> | <i>qual<br/>code</i> |
|----------------------------|---------|---------------------|----------------------|
| DICHLOROBENZENES           | <0.05   | <i>UT</i>           | <i>*10</i>           |



ATI I.D. : 80831712

PLUF : VOLATILE ORGANICS (EPA 8240)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : NEWCONS 3 3.3'-3.8'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 08/30/88  
 DATE ANALYZED : 09/06/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                   | RESULTS | rel<br>qual | qual<br>code |
|-----------------------------|---------|-------------|--------------|
| CHLOROMETHANE               | <0.50   | u           |              |
| BROMOMETHANE                | <0.50   |             |              |
| VINYL CHLORIDE              | <0.05   |             |              |
| CHLOROETHANE                | <0.05   |             |              |
| METHYLENE CHLORIDE          | <0.3    |             |              |
| ACETONE                     | <0.50   |             |              |
| CARBON DISULFIDE            | <0.05   |             |              |
| 1,1-DICHLOROETHENE          | <0.05   |             |              |
| 1,1-DICHLOROETHANE          | <0.05   |             |              |
| TRANS-1,2-DICHLOROETHENE    | <0.05   |             |              |
| CHLOROFORM                  | <0.05   |             |              |
| 1,2-DICHLOROETHANE          | <0.05   |             |              |
| 2-BUTANONE (MEK)            | <0.50   |             |              |
| 1,1,1-TRICHLOROETHANE       | <0.05   |             |              |
| CARBON TETRACHLORIDE        | <0.05   |             |              |
| VINYL ACETATE               | <0.50   |             |              |
| BROMODICHLOROMETHANE        | <0.05   |             |              |
| 1,1,2,2-TETRACHLOROETHANE   | <0.05   |             |              |
| 1,2-DICHLOROPROPANE         | <0.05   |             |              |
| TRANS-1,3-DICHLOROPROPENE   | <0.05   |             |              |
| TRICHLOROETHENE             | <0.05   |             |              |
| DIBROMOCHLOROMETHANE        | <0.05   |             |              |
| 1,1,2 TRICHLOROETHANE       | <0.05   |             |              |
| BENZENE                     | <0.05   |             |              |
| CIS-1,3-DICHLOROPROPENE     | <0.05   |             |              |
| 2-CHLOROETHYLVINYLEETHER    | <0.50   |             |              |
| BROMOFORM                   | <0.3    |             |              |
| 2-HEXANONE (MBK)            | <0.50   |             |              |
| 4-METHYL-2-PENTANONE (MIBK) | <0.50   |             |              |
| TETRACHLOROETHENE           | <0.05   |             |              |
| TOLUENE                     | <0.05   |             |              |
| CHLOROBENZENE               | <0.05   |             |              |
| ETHYL BENZENE               | <0.05   |             |              |
| STYRENE                     | <0.05   |             |              |
| TOTAL XYLENES               | <0.05   |             |              |

## SURROGATE PERCENT RECOVERIES

|                           |    |
|---------------------------|----|
| 1,1-DICHLOROETHANE-D4 (%) | 82 |
| BFB (%)                   | 96 |
| TOLUENE-D8 (%)            | 96 |



ADDITIONAL MAJOR COMPOUNDS

RESULTS

ret  
qual

qual  
code

DICHLOROBENZENES

<0.05

UT

\* 10



550 South Wadsworth Blvd. Suite 500  
 Denver, CO 80226  
 (303) 935-6505

**Rocketdyne**

Analysis/Method: Modified EPA Method 8015

No. of Samples: 12

Date Reviewed: 02/24/99

Reviewer: L. Calvin

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Ogden Data Validation Procedure for Extractable Total Fuel Hydrocarbons by GC (DVP-8, Rev. 2).

SDG: NEW YARD

Samples Reviewed: ESADA 1 1.5'-2.0', ESADA 1 4.0'-4.5', ESADA 2 1.0'-1.5', ESADA 2 4.5'-5.0', ESADA 3 1.0'-1.5', ESADA 3 3.5'-4.0', NEWCONS 1 1.5'-2.0', NEWCONS 1 3.5'-4.0', NEWCONS 2 1.0'-1.5', NEWCONS 2 3.5'-4.0', NEWCONS 3 1.0'-1.5', NEWCONS 3 3.3'-3.8'

Matrix: Soil

**EPA Level V- Volatiles Assessment Form**

|                             | <b>Problems</b>                                                                                                                                                                                                                                                                                                                        | <b>Qualifications</b>            |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 1. <u>Sample Management</u> | The COCs were signed by field and laboratory personnel. Sample conditions and cooler temperatures were not recorded on the COCs; therefore, no evaluation of the sample data could be made based on sample conditions upon receipt. The samples were extracted within 14 days of collection and analyzed within 40 days of extraction. | No qualifications were required. |
| 4. <u>Method Blanks</u>     | Method blank results were not included in the laboratory's report. Evaluation of possible laboratory contamination could not be made; however, as there were no reported detects in the samples of this SDG, the possibility of contamination was unlikely.                                                                            | No qualifications were required. |
| 5. <u>LCS/BS</u>            | There were several blank spike/blank spike duplicate summaries provided in the data package. The summaries did                                                                                                                                                                                                                         | No qualifications were required. |

|                                                                                              | <b>Problems</b>                                                                                                                                                                                                                                                                                                                                                              | <b>Qualifications</b>                                                                                                                                                |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                              | not, however, include extraction dates, and association of blank spikes with particular samples was not possible. The summaries also did not include recovery or RPD QC limits; however, in the professional judgement of the reviewer, percent recoveries and RPDs for all spiked analytes were acceptable for all analyses of the blank spike/blank spike duplicate pairs. |                                                                                                                                                                      |
| 6. <u>Surrogates</u>                                                                         | Whether the samples were spiked with a surrogate could not be determined, as sample surrogate recoveries were not included in the laboratory's report. No evaluation of sample data was made on the basis of surrogate recoveries.                                                                                                                                           | No qualifications were required.                                                                                                                                     |
| 7. <u>MS/MSDs</u>                                                                            | The laboratory did not analyze any MS/MSD pairs with the samples of this SDG. The laboratory did, however analyze blank spike/blank spike duplicate pairs, providing data for evaluation of laboratory accuracy and precision (see section 5.).                                                                                                                              | No qualifications were required.                                                                                                                                     |
| 8. <u>Field QC Samples</u><br><br>TB: none<br>ER: none<br>FB: none<br>Field duplicates: none | The data package did not contain field QC sample information; no evaluation of sample data was made based on field QC.                                                                                                                                                                                                                                                       | No qualifications were required.                                                                                                                                     |
| 10. <u>Other</u>                                                                             | No hydrocarbon ranges were provided by the laboratory. In addition, the laboratory did not provide a basis for quantitation. A report from the same laboratory for another SDG indicated that the laboratory reported results in the n-alkane range of C18-C23 and quantitated results using a diesel standard; however this information could not be verified for this SDG. | As there were no target compounds reported in the samples, the omission of the aforementioned information does not impact the data. No qualifications were required. |
| <b>11. Comments</b>                                                                          | None                                                                                                                                                                                                                                                                                                                                                                         | None                                                                                                                                                                 |



ATI I.D. : 80831701

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 1 1.5'-2.0'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/29/88
DATE ANALYZED : 08/31/88
UNITS : MG/KG
DILUTION FACTOR : 1

COMPOUNDS

RESULTS

Handwritten notes: 'rel qual' and 'qual code' with a vertical line separating them.

FUEL HYDROCARBONS
HYDROCARBON RANGE
HYDROCARBONS QUANTITATED USING

<5
-
-

QGDEN VALIDATED

LEVEL V



ATI I.D. : 80831702

T I : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 1 4.0'-4.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/29/88
DATE ANALYZED : 08/31/88
UNITS : MG/KG
DILUTION FACTOR : 1

COMPOUNDS

RESULTS ret qual
qual code

FUEL HYDROCARBONS
HYDROCARBON RANGE
HYDROCARBONS QUANTITATED USING

<5
-
-

u

OGDEN VALIDATED

LEVEL V



ATI I.D. : 80831703

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 2 1.0'-1.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/29/88
DATE ANALYZED : 08/31/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, and handwritten 'very qual' and 'qual code' headers. Rows include FUEL HYDROCARBONS, HYDROCARBON RANGE, and HYDROCARBONS QUANTITATED USING.

OGDEN VALIDATED

LEVEL V



ATI I.D. : 80831704

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES  
PROJECT # : 8640-4  
PROJECT NAME : SSFL-AREA IV  
CLIENT I.D. : ESADA 2 4.5'-5.0'  
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88  
DATE RECEIVED : 08/27/88  
DATE EXTRACTED : 08/29/88  
DATE ANALYZED : 08/31/88  
UNITS : MG/KG  
DILUTION FACTOR : 1

-----  
COMPOUNDS

RESULTS

*vet qual*  
*qual code*  
|  
*u*

-----  
FUEL HYDROCARBONS  
HYDROCARBON RANGE  
HYDROCARBONS QUANTITATED USING

<5  
-  
-

**OGDEN VALIDATED**

**LEVEL V**



ATI I.D. : 80831705

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 3 1.0'-1.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/29/88
DATE ANALYZED : 09/01/88
UNITS : MG/KG
DILUTION FACTOR : 1

COMPOUNDS

RESULTS

Handwritten notes: 'very qual', 'qual code', 'u' with a vertical line

FUEL HYDROCARBONS
HYDROCARBON RANGE
HYDROCARBONS QUANTITATED USING

<5
-
-

OGDEN VALIDATED

LEVEL V



ATI I.D. : 80831706

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES  
PROJECT # : 8640-4  
PROJECT NAME : SSFL-AREA IV  
CLIENT I.D. : ESADA 3 3.5'-4.0'  
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
DATE RECEIVED : 08/27/88  
DATE EXTRACTED : 08/29/88  
DATE ANALYZED : 09/01/88  
UNITS : MG/KG  
DILUTION FACTOR : 1

-----  
COMPOUNDS

RESULTS

*ret* | *qual*  
*qual* | *code*  
-----  
*u*

FUEL HYDROCARBONS  
HYDROCARBON RANGE  
HYDROCARBONS QUANTITATED USING

<5  
-  
-

**OGDEN VALIDATED**

**LEVEL V**



ATI I.D. : 80831707

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 1 1.5'-2.0'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/29/88
DATE ANALYZED : 09/01/88
UNITS : MG/KG
DILUTION FACTOR : 1

COMPOUNDS

RESULTS

Handwritten table with columns 'ret', 'qua', and 'code'. 'ret' and 'qua' are written vertically, and 'code' is written horizontally. A handwritten 'u' is present in the 'qua' column.

FUEL HYDROCARBONS <5
HYDROCARBON RANGE -
HYDROCARBONS QUANTITATED USING -

OGDEN VALIDATED

LEVEL V



ATI I.D. : 80831708

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 1 3.5'-4.0'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/01/88
UNITS : MG/KG
DILUTION FACTOR : 1

COMPOUNDS

RESULTS

Handwritten: rel qual, qual code

FUEL HYDROCARBONS
HYDROCARBON RANGE
HYDROCARBONS QUANTITATED USING

<5
-
-

OGDEN VALIDATED

LEVEL V



ATI I.D. : 80831709

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 2 1'-1.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/01/88
UNITS : MG/KG
DILUTION FACTOR : 1

COMPOUNDS

RESULTS

Handwritten notes: 'rel qual' and 'code' with a vertical line separating them.

FUEL HYDROCARBONS
HYDROCARBON RANGE
HYDROCARBONS QUANTITATED USING

<5
-
-

OGDEN VALIDATED

LEVEL V



ATI I.D. : 80831710

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 2 3.5'-4.0'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/01/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, and handwritten 'vet qual' and 'u' codes. Rows include FUEL HYDROCARBONS (<5), HYDROCARBON RANGE (-), and HYDROCARBONS QUANTITATED USING (-).

OGDEN VALIDATED

LEVEL V



ATI I.D. : 80831711

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 3 1.0'-1.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/01/88
UNITS : MG/KG
DILUTION FACTOR : 1

COMPOUNDS

RESULTS rel qual qual code

FUEL HYDROCARBONS <5
HYDROCARBON RANGE -
HYDROCARBONS QUANTITATED USING -

OGDEN VALIDATED

LEVEL V



ATI I.D. : 80831712

TEST : FUEL HYDROCARBONS (MOD.EPA 8015)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 3 3.3'-3.8'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 08/30/88
DATE ANALYZED : 09/01/88
UNITS : MG/KG
DILUTION FACTOR : 1

COMPOUNDS

RESULTS

Handwritten notes: 'rel qual' and 'code' in the top right, and 'u' in the middle right.

FUEL HYDROCARBONS
HYDROCARBON RANGE
HYDROCARBONS QUANTITATED USING

<5
-
-

OGDEN VALIDATED

LEVEL V



550 South Wadsworth Blvd. Suite 500  
 Denver, CO 80226  
 (303) 935-6505

**Rocketdyne**

Analysis/Method: EPA Method 8270

No. of Samples: 12

Date Reviewed: 02/19/99

Reviewer: M. Pokorny

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Ogden Data Validation Procedure for Semivolatile Organics by GC/MS (DVP-3, Rev. 2).

SDG: NEW YARD

Samples Reviewed: ESADA 1 1.5'-2.0', ESADA 1 4.0'-4.5', ESADA 2 1.0'-1.5', ESADA 2 4.5'-5.0', ESADA 3 1.0'-1.5', ESADA 3 3.5'-4.0', NEWCONS 1 1.5'-2.0', NEWCONS 1 3.5'-4.0', NEWCONS 2 1.0'-1.5', NEWCONS 2 3.5'-4.0', NEWCONS 3 1.0'-1.5', NEWCONS 3 3.3'-3.8'

Matrix: Soil

**EPA Level V- Semivolatiles Assessment Form**

|                             | <b>Problems</b>                                                                                                                                                                                                                                       | <b>Qualifications</b>                                                                                              |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 1. <u>Sample Management</u> | The COC was signed by field and laboratory personnel. The conditions of the samples or the temperatures at which they were received were not recorded on the COC; no evaluation of the samples could be made in regards to sample receipt conditions. | No qualifications were required.                                                                                   |
| 4. <u>Method Blanks</u>     | The laboratory analyzed two method blanks with the sample of this SDG. No target compounds or TICs were detected in the method blanks.                                                                                                                | No qualifications were required.                                                                                   |
| 5. <u>LCS/BS</u>            | The data package did not contain blank spike information; no evaluation of the samples could be made in regards to laboratory accuracy.                                                                                                               | No qualifications were required.                                                                                   |
| 6. <u>Surrogates</u>        | Samples ESADA 1 4.0'-4.5', ESADA 2 1.0'-1.5', ESADA 3 1.0'-1.5', ESADA 3 3.5'-4.0', and NEWCONS 3 1.0'-1.5' had recoveries of 2-fluorobiphenyl                                                                                                        | No qualifications were required since none of the samples with surrogate outliers had any target compound detects. |

|                                                                                          | <b>Problems</b>                                                                                                                                                                                                                                                                        | <b>Qualifications</b>                                        |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
|                                                                                          | above QC limits. Sample NEWCONS 3 1.0'-1.5' also had a recovery of terphenyl-d14 above QC limits. All other sample surrogate recoveries were within the EPA Method 8270 QC limits.                                                                                                     |                                                              |
| 7. <u>MS/MSDs</u><br><br>NEWCONS 3 1.0'-1.5'                                             | The laboratory MS/MSD summary did not have QC limits listed. All of the spiked compounds were recovered within 67% to 130% for both the MS and MSD and all RPDs were 23% or less. In the professional judgement of the reviewer, the MS and MSD % recoveries and RPDs were acceptable. | No qualifications were required.                             |
| 8. <u>Field QC Samples</u><br><br>ER: none<br><br>FB: none<br><br>Field duplicates: None | The data package did not contain field QC sample information; no evaluation of the samples could be made in regards to field QC samples.                                                                                                                                               | No qualifications were required.                             |
| 10. <u>Other</u>                                                                         | TICs were reported in several of the samples of this SDG.<br>Nominal reporting limits for the samples of this SDG were one half the normal reporting limits for Method 8270.                                                                                                           | TICs were qualified "NJ," estimated, tentatively identified. |
| 11. <b>Comments</b>                                                                      | None                                                                                                                                                                                                                                                                                   | None                                                         |



ATI I.D. : 80831701

TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 1 1.5'-2.0'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 09/01/88
DATE ANALYZED : 10/02/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, REV QUAL, QUAL CODE. Lists various chemical compounds and their corresponding results, mostly <0.17. Includes handwritten 'U' and a vertical line with an arrow pointing down.

(CONTINUED NEXT PAGE)

LEVEL V

OGDEN VALIDATED

LEVEL V



T : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE             | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLEETHER  | <0.17   |             |              |
| FLUORENE                     | <0.17   |             |              |
| 4-NITROANILINE               | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL   | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE       | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLEETHER   | <0.17   |             |              |
| HEXACHLOROBENZENE            | <0.17   |             |              |
| PENTACHLOROPHENOL            | <0.85   |             |              |
| PHENANTHRENE                 | <0.17   |             |              |
| ANTHRACENE                   | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE          | <0.17   |             |              |
| FLUORANTHENE                 | <0.17   |             |              |
| BENZIDINE                    | <1.7    |             |              |
| PYRENE                       | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE         | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE        | <0.34   |             |              |
| BENZO (a) ANTHRACENE         | <0.17   |             |              |
| BIS (2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                     | <0.17   |             |              |
| i N-OCTYLPHTHALATE           | <0.17   |             |              |
| BENZO (b) FLUORANTHENE       | <0.17   |             |              |
| BENZO (k) FLUORANTHENE       | <0.17   |             |              |
| BENZO (a) PYRENE             | <0.17   |             |              |
| INDENO (1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO (a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO (g,h,i) PERYLENE       | <0.17   |             |              |

## SURROGATE PERCENT RECOVERIES

|                          |    |
|--------------------------|----|
| NITROBENZENE-D5 (%)      | 66 |
| 2-FLUOROBIPHENYL (%)     | 66 |
| TERPHENYL (%)            | 56 |
| PHENOL-D5 (%)            | 37 |
| 2-FLUOROPHENOL (%)       | 51 |
| 2,4,6-TRIBROMOPHENOL (%) | 57 |



-----  
ADDITIONAL MAJOR COMPOUNDS

-----  
RESULTS

-----  
NONE DETECTED

-----  
N/A

**OGDEN VALIDATED**

**LEVEL V**



ATI I.D. : 80831702

TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 1 4.0'-4.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 09/01/88
DATE ANALYZED : 10/03/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, REV QUAL, and QUAL CODE. Lists various chemical compounds and their corresponding results, mostly <0.17. Includes a handwritten '0' and a vertical line with an arrow pointing down.

(CONTINUED NEXT PAGE)

OGDEN VALIDATED

LEVEL V



TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE             | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLEETHER  | <0.17   |             |              |
| FLUORENE                     | <0.17   |             |              |
| 4-NITROANILINE               | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL   | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE       | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLEETHER   | <0.17   |             |              |
| HEXACHLOROBENZENE            | <0.17   |             |              |
| PENTACHLOROPHENOL            | <0.85   |             |              |
| PHENANTHRENE                 | <0.17   |             |              |
| ANTHRACENE                   | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE          | <0.17   |             |              |
| FLUORANTHENE                 | <0.17   |             |              |
| BENZIDINE                    | <1.7    |             |              |
| PYRENE                       | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE         | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE        | <0.34   |             |              |
| BENZO (a) ANTHRACENE         | <0.17   |             |              |
| BIS (2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                     | <0.17   |             |              |
| DIOCTYLPHTHALATE             | <0.17   |             |              |
| BENZO (b) FLUORANTHENE       | <0.17   |             |              |
| BENZO (k) FLUORANTHENE       | <0.17   |             |              |
| BENZO (a) PYRENE             | <0.17   |             |              |
| INDENO (1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO (a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO (g,h,i) PERYLENE       | <0.17   |             |              |

## SURROGATE PERCENT RECOVERIES

|                          |     |
|--------------------------|-----|
| NITROBENZENE-D5 (%)      | 98  |
| 2-FLUOROBIPHENYL (%)     | 129 |
| TERPHENYL (%)            | 122 |
| PHENOL-D5 (%)            | 79  |
| 2-FLUOROPHENOL (%)       | 102 |
| 2,4,6-TRIBROMOPHENOL (%) | 102 |

**OGDEN VALIDATED****LEVEL V**



-----  
ADDITIONAL MAJOR COMPOUNDS

-----  
RESULTS

NONE DETECTED

-----  
N/A

**OGDEN VALIDATED**

**LEVEL V**



ATI I.D. : 80831703

TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 2 1.0'-1.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 09/01/88
DATE ANALYZED : 10/03/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, REV QUAL, QUAL CODE. Lists various organic compounds and their detection levels (e.g., N-NITROSODIMETHYLAMINE <0.17).

(CONTINUED NEXT PAGE)

OGDEN VALIDATED

LEVEL V

T : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE             | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLEETHER  | <0.17   |             |              |
| FLUORENE                     | <0.17   |             |              |
| 4-NITROANILINE               | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL   | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE       | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLEETHER   | <0.17   |             |              |
| HEXACHLOROBENZENE            | <0.17   |             |              |
| PENTACHLOROPHENOL            | <0.85   |             |              |
| PHENANTHRENE                 | <0.17   |             |              |
| ANTHRACENE                   | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE          | <0.17   |             |              |
| FLUORANTHENE                 | <0.17   |             |              |
| BENZIDINE                    | <1.7    |             |              |
| PYRENE                       | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE         | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE        | <0.34   |             |              |
| BENZO (a) ANTHRACENE         | <0.17   |             |              |
| BIS (2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                     | <0.17   |             |              |
| 1-OCTYLPHTHALATE             | <0.17   |             |              |
| BENZO (b) FLUORANTHENE       | <0.17   |             |              |
| BENZO (k) FLUORANTHENE       | <0.17   |             |              |
| BENZO (a) PYRENE             | <0.17   |             |              |
| INDENO (1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO (a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO (g,h,i) PERYLENE       | <0.17   |             |              |

SURROGATE PERCENT RECOVERIES

|                          |     |
|--------------------------|-----|
| NITROBENZENE-D5 (%)      | 100 |
| 2-FLUOROBIPHENYL (%)     | 143 |
| TERPHENYL (%)            | 137 |
| PHENOL-D5 (%)            | 50  |
| 2-FLUOROPHENOL (%)       | 104 |
| 2,4,6-TRIBROMOPHENOL (%) | 100 |



| ADDITIONAL MAJOR COMPOUNDS  | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|-----------------------------|---------|-------------|--------------|
| 906 BRANCHED HYDROCARBON C6 | 0.9     | NJ          |              |



ATI I.D. : 80831704

TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : ESADA 2 4.5'-5.0'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/23/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 09/01/88  
 DATE ANALYZED : 10/04/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                             | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|---------------------------------------|---------|-------------|--------------|
| N-NITROSODIMETHYLAMINE                | <0.17   | U           |              |
| PHENOL                                | <0.17   |             |              |
| ANILINE                               | <0.17   |             |              |
| BIS(2-CHLOROETHYL) ETHER              | <0.17   |             |              |
| 2-CHLOROPHENOL                        | <0.17   |             |              |
| 1,3-DICHLOROBENZENE                   | <0.17   |             |              |
| 1,4-DICHLOROBENZENE                   | <0.17   |             |              |
| BENZYL ALCOHOL                        | <0.17   |             |              |
| 1,2-DICHLOROBENZENE                   | <0.17   |             |              |
| 2-METHYLPHENOL                        | <0.17   |             |              |
| BIS(2-CHLOROISOPROPYL) ETHER          | <0.17   |             |              |
| 4-METHYLPHENOL                        | <0.17   |             |              |
| N-NITROSO-DI-N-PROPYLAMINE            | <0.17   |             |              |
| 1,1-DICHLOROETHANE                    | <0.17   |             |              |
| NITROBENZENE                          | <0.17   |             |              |
| ISOPHORONE                            | <0.17   |             |              |
| 2-NITROPHENOL                         | <0.17   |             |              |
| 2,4-DIMETHYLPHENOL                    | <0.17   |             |              |
| BENZOIC ACID                          | <0.85   |             |              |
| BIS(2-CHLOROETHOXY) METHANE           | <0.17   |             |              |
| 2,4-DICHLOROPHENOL                    | <0.17   |             |              |
| 1,2,4-TRICHLOROBENZENE                | <0.17   |             |              |
| NAPHTHALENE                           | <0.17   |             |              |
| 4-CHLOROANILINE                       | <0.17   |             |              |
| HEXACHLOROBUTADIENE                   | <0.17   |             |              |
| 4-CHLORO-3-METHYLPHENOL               | <0.17   |             |              |
| 2-METHYLNAPHTHALENE                   | <0.17   |             |              |
| HEXACHLOROCYCLOPENTADIENE             | <0.17   |             |              |
| 2,4,6-TRICHLOROPHENOL                 | <0.17   |             |              |
| 2,4,5-TRICHLOROPHENOL                 | <0.85   |             |              |
| 2-CHLORONAPHTHALENE                   | <0.17   |             |              |
| 2-NITROANILINE                        | <0.85   |             |              |
| DIMETHYL PHTHALATE                    | <0.17   |             |              |
| ACENAPHTHYLENE                        | <0.17   |             |              |
| 3-NITROANILINE                        | <0.85   |             |              |
| ACENAPHTHENE                          | <0.17   |             |              |
| 2,4-DINITROPHENOL                     | <0.85   |             |              |
| 4-NITROPHENOL                         | <0.85   |             |              |
| 1,2,3,4-TETRAHYDRO-2H-1,4-BENZOXAZINE | <0.17   |             |              |
| 2,4-DINITROTOLUENE                    | <0.17   |             |              |
| 2,6-DINITROTOLUENE                    | <0.17   |             |              |

(CONTINUED NEXT PAGE)

**OGDEN VALIDATED****LEVEL V**



T : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                   | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|-----------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE            | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLEETHER | <0.17   |             |              |
| FLUORENE                    | <0.17   |             |              |
| 4-NITROANILINE              | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL  | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE      | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLEETHER  | <0.17   |             |              |
| HEXACHLOROBENZENE           | <0.17   |             |              |
| PENTACHLOROPHENOL           | <0.85   |             |              |
| PHENANTHRENE                | <0.17   |             |              |
| ANTHRACENE                  | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE         | <0.17   |             |              |
| FLUORANTHENE                | <0.17   |             |              |
| BENZIDINE                   | <1.7    |             |              |
| PYRENE                      | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE        | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE       | <0.34   |             |              |
| BENZO(a) ANTHRACENE         | <0.17   |             |              |
| BIS(2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                    | <0.17   |             |              |
| D-OCTYLPHTHALATE            | <0.17   |             |              |
| BENZO(b) FLUORANTHENE       | <0.17   |             |              |
| BENZO(k) FLUORANTHENE       | <0.17   |             |              |
| BENZO(a) PYRENE             | <0.17   |             |              |
| INDENO(1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO(a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO(g,h,i) PERYLENE       | <0.17   |             |              |

## SURROGATE PERCENT RECOVERIES

|                          |    |
|--------------------------|----|
| NITROBENZENE-D5 (%)      | 83 |
| 2-FLUOROBIPHENYL (%)     | 88 |
| TERPHENYL (%)            | 92 |
| PHENOL-D5 (%)            | 64 |
| 2-FLUOROPHENOL (%)       | 66 |
| 2,4,6-TRIBROMOPHENOL (%) | 82 |

OGDEN VALIDATED

LEVEL V



Analytical **Technologies, Inc.**

ADDITIONAL MAJOR COMPOUNDS

ATI I.D. : 80831704

-----  
ADDITIONAL MAJOR COMPOUNDS

-----  
RESULTS

NONE DETECTED

-----  
N/A

**OGDEN VALIDATED**

**LEVEL V**

ATI I.D. : 80831705

TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : ESADA 3 1.0'-1.5'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 09/01/88  
 DATE ANALYZED : 10/03/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| N-NITROSODIMETHYLAMINE       | <0.17   | U           |              |
| PHENOL                       | <0.17   |             |              |
| ANILINE                      | <0.17   |             |              |
| BIS(2-CHLOROETHYL) ETHER     | <0.17   |             |              |
| 2-CHLOROPHENOL               | <0.17   |             |              |
| 1,3-DICHLOROBENZENE          | <0.17   |             |              |
| 1,4-DICHLOROBENZENE          | <0.17   |             |              |
| BENZYL ALCOHOL               | <0.17   |             |              |
| 1,2-DICHLOROBENZENE          | <0.17   |             |              |
| 2-METHYLPHENOL               | <0.17   |             |              |
| BIS(2-CHLOROISOPROPYL) ETHER | <0.17   |             |              |
| 4-METHYLPHENOL               | <0.17   |             |              |
| N-NITROSO-DI-N-PROPYLAMINE   | <0.17   |             |              |
| 1,1-DICHLOROETHANE           | <0.17   |             |              |
| NITROBENZENE                 | <0.17   |             |              |
| ISOPHORONE                   | <0.17   |             |              |
| 2-NITROPHENOL                | <0.17   |             |              |
| 2,4-DIMETHYLPHENOL           | <0.17   |             |              |
| BENZOIC ACID                 | <0.85   |             |              |
| BIS(2-CHLOROETHOXY) METHANE  | <0.17   |             |              |
| 2,4-DICHLOROPHENOL           | <0.17   |             |              |
| 1,2,4-TRICHLOROBENZENE       | <0.17   |             |              |
| NAPHTHALENE                  | <0.17   |             |              |
| 4-CHLOROANILINE              | <0.17   |             |              |
| HEXACHLOROBUTADIENE          | <0.17   |             |              |
| 4-CHLORO-3-METHYLPHENOL      | <0.17   |             |              |
| 2-METHYLNAPHTHALENE          | <0.17   |             |              |
| HEXACHLOROCYCLOPENTADIENE    | <0.17   |             |              |
| 2,4,6-TRICHLOROPHENOL        | <0.17   |             |              |
| 2,4,5-TRICHLOROPHENOL        | <0.85   |             |              |
| 2-CHLORONAPHTHALENE          | <0.17   |             |              |
| 2-NITROANILINE               | <0.85   |             |              |
| DIMETHYL PHTHALATE           | <0.17   |             |              |
| ACENAPHTHYLENE               | <0.17   |             |              |
| 3-NITROANILINE               | <0.85   |             |              |
| ACENAPHTHENE                 | <0.17   |             |              |
| 2,4-DINITROPHENOL            | <0.85   |             |              |
| 1-NITROPHENOL                | <0.85   |             |              |
| BENZOFURAN                   | <0.17   |             |              |
| 2,4-DINITROTOLUENE           | <0.17   |             |              |
| 2,6-DINITROTOLUENE           | <0.17   |             |              |

(CONTINUED NEXT PAGE)

OGDEN VALIDATED

LEVEL V

T T : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE             | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLETHER   | <0.17   |             |              |
| FLUORENE                     | <0.17   |             |              |
| 4-NITROANILINE               | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL   | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE       | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLETHER    | <0.17   |             |              |
| HEXACHLOROBENZENE            | <0.17   |             |              |
| PENTACHLOROPHENOL            | <0.85   |             |              |
| PHENANTHRENE                 | <0.17   |             |              |
| ANTHRACENE                   | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE          | <0.17   |             |              |
| FLUORANTHENE                 | <0.17   |             |              |
| BENZIDINE                    | <1.7    |             |              |
| PYRENE                       | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE         | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE        | <0.34   |             |              |
| BENZO (a) ANTHRACENE         | <0.17   |             |              |
| BIS (2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                     | <0.17   |             |              |
| Γ N-OCTYLPHTHALATE           | <0.17   |             |              |
| BENZO (b) FLUORANTHENE       | <0.17   |             |              |
| BENZO (k) FLUORANTHENE       | <0.17   |             |              |
| BENZO (a) PYRENE             | <0.17   |             |              |
| INDENO (1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO (a, h) ANTHRACENE    | <0.17   |             |              |
| BENZO (g, h, i) PERYLENE     | <0.17   |             |              |

SURROGATE PERCENT RECOVERIES

|                          |     |
|--------------------------|-----|
| NITROBENZENE-D5 (%)      | 102 |
| 2-FLUOROBIPHENYL (%)     | 129 |
| TERPHENYL (%)            | 126 |
| PHENOL-D5 (%)            | 83  |
| 2-FLUOROPHENOL (%)       | 101 |
| 2,4,6-TRIBROMOPHENOL (%) | 89  |



-----  
ADDITIONAL MAJOR COMPOUNDS

-----  
RESULTS

-----  
NONE DETECTED

-----  
N/A

**OGDEN VALIDATED**

**LEVEL V**



ATI I.D. : 80831706

TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : ESADA 3 3.5'-4.0'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 09/01/88
DATE ANALYZED : 10/03/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, REV QUAL, QUAL CODE. Lists various chemical compounds and their corresponding results, mostly <0.17. Includes a vertical line and a 'U' symbol in the REV QUAL column.

(CONTINUED NEXT PAGE)

OGDEN VALIDATED

LEVEL V



TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE             | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLEETHER  | <0.17   |             |              |
| FLUORENE                     | <0.17   |             |              |
| 4-NITROANILINE               | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL   | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE       | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLEETHER   | <0.17   |             |              |
| HEXACHLOROBENZENE            | <0.17   |             |              |
| PENTACHLOROPHENOL            | <0.85   |             |              |
| PHENANTHRENE                 | <0.17   |             |              |
| ANTHRACENE                   | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE          | <0.17   |             |              |
| FLUORANTHENE                 | <0.17   |             |              |
| BENZIDINE                    | <1.7    |             |              |
| PYRENE                       | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE         | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE        | <0.34   |             |              |
| BENZO (a) ANTHRACENE         | <0.17   |             |              |
| BIS (2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                     | <0.17   |             |              |
| DI-N-OCTYLPHTHALATE          | <0.17   |             |              |
| BENZO (b) FLUORANTHENE       | <0.17   |             |              |
| BENZO (k) FLUORANTHENE       | <0.17   |             |              |
| BENZO (a) PYRENE             | <0.17   |             |              |
| INDENO (1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO (a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO (g,h,i) PERYLENE       | <0.17   |             |              |

SURROGATE PERCENT RECOVERIES

|                          |     |
|--------------------------|-----|
| NITROBENZENE-D5 (%)      | 107 |
| 2-FLUOROBIPHENYL (%)     | 130 |
| TERPHENYL (%)            | 122 |
| PHENOL-D5 (%)            | 79  |
| 2-FLUOROPHENOL (%)       | 102 |
| 2,4,6-TRIBROMOPHENOL (%) | 81  |



-----  
ADDITIONAL MAJOR COMPOUNDS

RESULTS

-----  
NONE DETECTED

N/A

**OGDEN VALIDATED**

**LEVEL V**



ATI I.D. : 80831707

T : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : NEWCONS 1 1.5'-2.0'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 09/01/88  
 DATE ANALYZED : 10/03/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| N-NITROSODIMETHYLAMINE       | <0.17   | U           |              |
| PHENOL                       | <0.17   |             |              |
| ANILINE                      | <0.17   |             |              |
| BIS(2-CHLOROETHYL) ETHER     | <0.17   |             |              |
| 2-CHLOROPHENOL               | <0.17   |             |              |
| 1,3-DICHLOROBENZENE          | <0.17   |             |              |
| 1,4-DICHLOROBENZENE          | <0.17   |             |              |
| BENZYL ALCOHOL               | <0.17   |             |              |
| 1,2-DICHLOROBENZENE          | <0.17   |             |              |
| 2-METHYLPHENOL               | <0.17   |             |              |
| BIS(2-CHLOROISOPROPYL) ETHER | <0.17   |             |              |
| 4-METHYLPHENOL               | <0.17   |             |              |
| N-NITROSO-DI-N-PROPYLAMINE   | <0.17   |             |              |
| HEXACHLOROETHANE             | <0.17   |             |              |
| 1,2-DICHLOROBENZENE          | <0.17   |             |              |
| ISOPHORONE                   | <0.17   |             |              |
| 2-NITROPHENOL                | <0.17   |             |              |
| 2,4-DIMETHYLPHENOL           | <0.17   |             |              |
| BENZOIC ACID                 | <0.85   |             |              |
| BIS(2-CHLOROETHOXY) METHANE  | <0.17   |             |              |
| 2,4-DICHLOROPHENOL           | <0.17   |             |              |
| 1,2,4-TRICHLOROBENZENE       | <0.17   |             |              |
| NAPHTHALENE                  | <0.17   |             |              |
| 4-CHLOROANILINE              | <0.17   |             |              |
| HEXACHLOROBUTADIENE          | <0.17   |             |              |
| 4-CHLORO-3-METHYLPHENOL      | <0.17   |             |              |
| 2-METHYLNAPHTHALENE          | <0.17   |             |              |
| HEXACHLOROCYCLOPENTADIENE    | <0.17   |             |              |
| 2,4,6-TRICHLOROPHENOL        | <0.17   |             |              |
| 2,4,5-TRICHLOROPHENOL        | <0.85   |             |              |
| 2-CHLORONAPHTHALENE          | <0.17   |             |              |
| 2-NITROANILINE               | <0.85   |             |              |
| DIMETHYL PHTHALATE           | <0.17   |             |              |
| ACENAPHTHYLENE               | <0.17   |             |              |
| 3-NITROANILINE               | <0.85   |             |              |
| ACENAPHTHENE                 | <0.17   |             |              |
| 2,4-DINITROPHENOL            | <0.85   |             |              |
| 4-NITROPHENOL                | <0.85   |             |              |
| BENZOFURAN                   | <0.17   |             |              |
| 2,4-DINITROTOLUENE           | <0.17   |             |              |
| 2,6-DINITROTOLUENE           | <0.17   |             |              |

(CONTINUED NEXT PAGE)

OGDEN VALIDATED

LEVEL V



TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| DIETHYLPHthalate             | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLETHER   | <0.17   |             |              |
| FLUORENE                     | <0.17   |             |              |
| 4-NITROANILINE               | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL   | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE       | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLETHER    | <0.17   |             |              |
| HEXACHLOROBENZENE            | <0.17   |             |              |
| PENTACHLOROPHENOL            | <0.85   |             |              |
| PHENANTHRENE                 | <0.17   |             |              |
| ANTHRACENE                   | <0.17   |             |              |
| DI-N-BUTYLPHthalate          | <0.17   |             |              |
| FLUORANTHENE                 | <0.17   |             |              |
| BENZIDINE                    | <1.7    |             |              |
| PYRENE                       | <0.17   |             |              |
| BUTYLBENZYLPHthalate         | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE        | <0.34   |             |              |
| BENZO (a) ANTHRACENE         | <0.17   |             |              |
| BIS (2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                     | <0.17   |             |              |
| DI-N-OCTYLPHthalate          | <0.17   |             |              |
| BENZO (b) FLUORANTHENE       | <0.17   |             |              |
| BENZO (k) FLUORANTHENE       | <0.17   |             |              |
| BENZO (a) PYRENE             | <0.17   |             |              |
| INDENO (1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO (a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO (g,h,i) PERYLENE       | <0.17   |             |              |

## SURROGATE PERCENT RECOVERIES

|                          |    |
|--------------------------|----|
| NITROBENZENE-D5 (%)      | 86 |
| 2-FLUOROBIPHENYL (%)     | 79 |
| TERPHENYL (%)            | 69 |
| PHENOL-D5 (%)            | 49 |
| 2-FLUOROPHENOL (%)       | 52 |
| 2,4,6-TRIBROMOPHENOL (%) | 91 |

OGDEN VALIDATED

LEVEL V



| ADDITIONAL MAJOR COMPOUNDS  | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|-----------------------------|---------|-------------|--------------|
| 1188 CYCLIC HYDROCARBON C16 | 0.2     | NJ          |              |

ATI I.D. : 80831708

T T : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : NEWCONS 1 3.5'-4.0'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 09/01/88  
 DATE ANALYZED : 10/03/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| N-NITROSODIMETHYLAMINE       | <0.17   | U           |              |
| PHENOL                       | <0.17   |             |              |
| ANILINE                      | <0.17   |             |              |
| BIS(2-CHLOROETHYL) ETHER     | <0.17   |             |              |
| 2-CHLOROPHENOL               | <0.17   |             |              |
| 1,3-DICHLOROBENZENE          | <0.17   |             |              |
| 1,4-DICHLOROBENZENE          | <0.17   |             |              |
| BENZYL ALCOHOL               | <0.17   |             |              |
| 1,2-DICHLOROBENZENE          | <0.17   |             |              |
| 2-METHYLPHENOL               | <0.17   |             |              |
| BIS(2-CHLOROISOPROPYL) ETHER | <0.17   |             |              |
| 4-METHYLPHENOL               | <0.17   |             |              |
| N-NITROSO-DI-N-PROPYLAMINE   | <0.17   |             |              |
| HEXACHLOROETHANE             | <0.17   |             |              |
| 1 ROBENZENE                  | <0.17   |             |              |
| ISOPHORONE                   | <0.17   |             |              |
| 2-NITROPHENOL                | <0.17   |             |              |
| 2,4-DIMETHYLPHENOL           | <0.17   |             |              |
| BENZOIC ACID                 | <0.85   |             |              |
| BIS(2-CHLOROETHOXY) METHANE  | <0.17   |             |              |
| 2,4-DICHLOROPHENOL           | <0.17   |             |              |
| 1,2,4-TRICHLOROBENZENE       | <0.17   |             |              |
| NAPHTHALENE                  | <0.17   |             |              |
| 4-CHLOROANILINE              | <0.17   |             |              |
| HEXACHLOROBUTADIENE          | <0.17   |             |              |
| 4-CHLORO-3-METHYLPHENOL      | <0.17   |             |              |
| 2-METHYLNAPHTHALENE          | <0.17   |             |              |
| HEXACHLOROCYCLOPENTADIENE    | <0.17   |             |              |
| 2,4,6-TRICHLOROPHENOL        | <0.17   |             |              |
| 2,4,5-TRICHLOROPHENOL        | <0.85   |             |              |
| 2-CHLORONAPHTHALENE          | <0.17   |             |              |
| 2-NITROANILINE               | <0.85   |             |              |
| DIMETHYL PHTHALATE           | <0.17   |             |              |
| ACENAPHTHYLENE               | <0.17   |             |              |
| 3-NITROANINLINE              | <0.85   |             |              |
| ACENAPHTHENE                 | <0.17   |             |              |
| 2,4-DINITROPHENOL            | <0.85   |             |              |
| 4-NITROPHENOL                | <0.85   |             |              |
| FURAN                        | <0.17   |             |              |
| 2,4-DINITROTOLUENE           | <0.17   |             |              |
| 2,6-DINITROTOLUENE           | <0.17   |             |              |

(CONTINUED NEXT PAGE)



TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE             | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLEETHER  | <0.17   |             |              |
| FLUORENE                     | <0.17   |             |              |
| 4-NITROANILINE               | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL   | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE       | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLEETHER   | <0.17   |             |              |
| HEXACHLOROBENZENE            | <0.17   |             |              |
| PENTACHLOROPHENOL            | <0.85   |             |              |
| PHENANTHRENE                 | <0.17   |             |              |
| ANTHRACENE                   | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE          | <0.17   |             |              |
| FLUORANTHENE                 | <0.17   |             |              |
| BENZIDINE                    | <1.7    |             |              |
| PYRENE                       | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE         | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE        | <0.34   |             |              |
| BENZO (a) ANTHRACENE         | <0.17   |             |              |
| BIS (2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                     | <0.17   |             |              |
| DI-N-OCTYLPHTHALATE          | <0.17   |             |              |
| BENZO (b) FLUORANTHENE       | <0.17   |             |              |
| BENZO (k) FLUORANTHENE       | <0.17   |             |              |
| BENZO (a) PYRENE             | <0.17   |             |              |
| INDENO (1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO (a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO (g,h,i) PERYLENE       | <0.17   |             |              |

SURROGATE PERCENT RECOVERIES

|                          |    |
|--------------------------|----|
| NITROBENZENE-D5 (%)      | 82 |
| 2-FLUOROBIPHENYL (%)     | 87 |
| TERPHENYL (%)            | 82 |
| PHENOL-D5 (%)            | 49 |
| 2-FLUOROPHENOL (%)       | 59 |
| 2,4,6-TRIBROMOPHENOL (%) | 99 |

OGDEN VALIDATED

LEVEL V



| ADDITIONAL MAJOR COMPOUNDS | RESULTS |
|----------------------------|---------|
| NONE DETECTED              | N/A     |



ATI I.D. : 80831709

T : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : NEWCONS 2 1'-1.5'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 09/01/88  
 DATE ANALYZED : 10/03/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| N-NITROSODIMETHYLAMINE       | <0.17   | U           |              |
| PHENOL                       | <0.17   |             |              |
| ANILINE                      | <0.17   |             |              |
| BIS(2-CHLOROETHYL) ETHER     | <0.17   |             |              |
| 2-CHLOROPHENOL               | <0.17   |             |              |
| 1,3-DICHLOROBENZENE          | <0.17   |             |              |
| 1,4-DICHLOROBENZENE          | <0.17   |             |              |
| BENZYL ALCOHOL               | <0.17   |             |              |
| 1,2-DICHLOROBENZENE          | <0.17   |             |              |
| 2-METHYLPHENOL               | <0.17   |             |              |
| BIS(2-CHLOROISOPROPYL) ETHER | <0.17   |             |              |
| 4-METHYLPHENOL               | <0.17   |             |              |
| N-NITROSO-DI-N-PROPYLAMINE   | <0.17   |             |              |
| HEXACHLOROETHANE             | <0.17   |             |              |
| 1,2-DICHLOROBENZENE          | <0.17   |             |              |
| ISOPHORONE                   | <0.17   |             |              |
| 2-NITROPHENOL                | <0.17   |             |              |
| 2,4-DIMETHYLPHENOL           | <0.17   |             |              |
| BENZOIC ACID                 | <0.85   |             |              |
| BIS(2-CHLOROETHOXY) METHANE  | <0.17   |             |              |
| 2,4-DICHLOROPHENOL           | <0.17   |             |              |
| 1,2,4-TRICHLOROBENZENE       | <0.17   |             |              |
| NAPHTHALENE                  | <0.17   |             |              |
| 4-CHLOROANILINE              | <0.17   |             |              |
| HEXACHLOROBUTADIENE          | <0.17   |             |              |
| 4-CHLORO-3-METHYLPHENOL      | <0.17   |             |              |
| 2-METHYLNAPHTHALENE          | <0.17   |             |              |
| HEXACHLOROCYCLOPENTADIENE    | <0.17   |             |              |
| 2,4,6-TRICHLOROPHENOL        | <0.17   |             |              |
| 2,4,5-TRICHLOROPHENOL        | <0.85   |             |              |
| 2-CHLORONAPHTHALENE          | <0.17   |             |              |
| 2-NITROANILINE               | <0.85   |             |              |
| DIMETHYL PHTHALATE           | <0.17   |             |              |
| ACENAPHTHYLENE               | <0.17   |             |              |
| 3-NITROANILINE               | <0.85   |             |              |
| ACENAPHTHENE                 | <0.17   |             |              |
| 2,4-DINITROPHENOL            | <0.85   |             |              |
| 4-NITROPHENOL                | <0.85   |             |              |
| BENZOFURAN                   | <0.17   |             |              |
| 2,4-DINITROTOLUENE           | <0.17   |             |              |
| 2,6-DINITROTOLUENE           | <0.17   |             |              |

(CONTINUED NEXT PAGE)

OGDEN VALIDATED

LEVEL V



TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE             | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLEETHER  | <0.17   |             |              |
| FLUORENE                     | <0.17   |             |              |
| 4-NITROANILINE               | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL   | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE       | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLEETHER   | <0.17   |             |              |
| HEXACHLOROBENZENE            | <0.17   |             |              |
| PENTACHLOROPHENOL            | <0.85   |             |              |
| PHENANTHRENE                 | <0.17   |             |              |
| ANTHRACENE                   | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE          | <0.17   |             |              |
| FLUORANTHENE                 | <0.17   |             |              |
| BENZIDINE                    | <1.7    |             |              |
| PYRENE                       | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE         | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE        | <0.34   |             |              |
| BENZO (a) ANTHRACENE         | <0.17   |             |              |
| BIS (2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                     | <0.17   |             |              |
| DI-N-OCTYLPHTHALATE          | <0.17   |             |              |
| BENZO (b) FLUORANTHENE       | <0.17   |             |              |
| BENZO (k) FLUORANTHENE       | <0.17   |             |              |
| BENZO (a) PYRENE             | <0.17   |             |              |
| INDENO (1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO (a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO (g,h,i) PERYLENE       | <0.17   |             |              |

## SURROGATE PERCENT RECOVERIES

|                          |    |
|--------------------------|----|
| NITROBENZENE-D5 (%)      | 92 |
| 2-FLUOROBIPHENYL (%)     | 89 |
| TERPHENYL (%)            | 74 |
| PHENOL-D5 (%)            | 53 |
| 2-FLUOROPHENOL (%)       | 57 |
| 2,4,6-TRIBROMOPHENOL (%) | 92 |



| ADDITIONAL MAJOR COMPOUNDS | RESULTS |
|----------------------------|---------|
| NONE DETECTED              | N/A     |



ATI I.D. : 80831710

T : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES  
 PROJECT # : 8640-4  
 PROJECT NAME : SSFL-AREA IV  
 CLIENT I.D. : NEWCONS 2 3.5'-4.0'  
 SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88  
 DATE RECEIVED : 08/27/88  
 DATE EXTRACTED : 09/01/88  
 DATE ANALYZED : 10/03/88  
 UNITS : MG/KG  
 DILUTION FACTOR : 1

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| N-NITROSODIMETHYLAMINE       | <0.17   | U           |              |
| PHENOL                       | <0.17   |             |              |
| ANILINE                      | <0.17   |             |              |
| BIS(2-CHLOROETHYL) ETHER     | <0.17   |             |              |
| 2-CHLOROPHENOL               | <0.17   |             |              |
| 1,3-DICHLOROBENZENE          | <0.17   |             |              |
| 1,4-DICHLOROBENZENE          | <0.17   |             |              |
| BENZYL ALCOHOL               | <0.17   |             |              |
| 1,2-DICHLOROBENZENE          | <0.17   |             |              |
| 2-METHYLPHENOL               | <0.17   |             |              |
| BIS(2-CHLOROISOPROPYL) ETHER | <0.17   |             |              |
| 4-METHYLPHENOL               | <0.17   |             |              |
| N-NITROSO-DI-N-PROPYLAMINE   | <0.17   |             |              |
| HEXACHLOROETHANE             | <0.17   |             |              |
| 1,2,4-TRICHLOROBENZENE       | <0.17   |             |              |
| ISOPHORONE                   | <0.17   |             |              |
| 2-NITROPHENOL                | <0.17   |             |              |
| 2,4-DIMETHYLPHENOL           | <0.17   |             |              |
| BENZOIC ACID                 | <0.85   |             |              |
| BIS(2-CHLOROETHOXY) METHANE  | <0.17   |             |              |
| 2,4-DICHLOROPHENOL           | <0.17   |             |              |
| 1,2,4-TRICHLOROBENZENE       | <0.17   |             |              |
| NAPHTHALENE                  | <0.17   |             |              |
| 4-CHLOROANILINE              | <0.17   |             |              |
| HEXACHLOROBUTADIENE          | <0.17   |             |              |
| 4-CHLORO-3-METHYLPHENOL      | <0.17   |             |              |
| 2-METHYLNAPHTHALENE          | <0.17   |             |              |
| HEXACHLOROCYCLOPENTADIENE    | <0.17   |             |              |
| 2,4,6-TRICHLOROPHENOL        | <0.17   |             |              |
| 2,4,5-TRICHLOROPHENOL        | <0.85   |             |              |
| 2-CHLORONAPHTHALENE          | <0.17   |             |              |
| 2-NITROANILINE               | <0.85   |             |              |
| DIMETHYL PHTHALATE           | <0.17   |             |              |
| ACENAPHTHYLENE               | <0.17   |             |              |
| 3-NITROANILINE               | <0.85   |             |              |
| ACENAPHTHENE                 | <0.17   |             |              |
| 2,4-DINITROPHENOL            | <0.85   |             |              |
| 4-NITROPHENOL                | <0.85   |             |              |
| BENZOFURAN                   | <0.17   |             |              |
| 2,4-DINITROTOLUENE           | <0.17   |             |              |
| 2,6-DINITROTOLUENE           | <0.17   |             |              |

(CONTINUED NEXT PAGE)

OGDEN VALIDATED

LEVEL V



TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                   | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|-----------------------------|---------|-------------|--------------|
| DIETHYLPHthalate            | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLETHER  | <0.17   |             |              |
| FLUORENE                    | <0.17   |             |              |
| 4-NITROANILINE              | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL  | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE      | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLETHER   | <0.17   |             |              |
| HEXACHLOROBENZENE           | <0.17   |             |              |
| PENTACHLOROPHENOL           | <0.85   |             |              |
| PHENANTHRENE                | <0.17   |             |              |
| ANTHRACENE                  | <0.17   |             |              |
| DI-N-BUTYLPHthalate         | <0.17   |             |              |
| FLUORANTHENE                | <0.17   |             |              |
| BENZIDINE                   | <1.7    |             |              |
| PYRENE                      | <0.17   |             |              |
| BUTYLBENZYLPHthalate        | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE       | <0.34   |             |              |
| BENZO(a) ANTHRACENE         | <0.17   |             |              |
| BIS(2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                    | <0.17   |             |              |
| DI-N-OCTYLPHthalate         | <0.17   |             |              |
| BENZO(b) FLUORANTHENE       | <0.17   |             |              |
| BENZO(k) FLUORANTHENE       | <0.17   |             |              |
| BENZO(a) PYRENE             | <0.17   |             |              |
| INDENO(1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO(a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO(g,h,i) PERYLENE       | <0.17   |             |              |

## SURROGATE PERCENT RECOVERIES

|                          |    |
|--------------------------|----|
| NITROBENZENE-D5 (%)      | 85 |
| 2-FLUOROBIPHENYL (%)     | 86 |
| TERPHENYL (%)            | 73 |
| PHENOL-D5 (%)            | 59 |
| 2-FLUOROPHENOL (%)       | 54 |
| 2,4,6-TRIBROMOPHENOL (%) | 81 |

OGDEN VALIDATED

LEVEL V



ADDITIONAL MAJOR COMPOUNDS

RESULTS

NONE DETECTED

N/A

**OGDEN VALIDATED**

**LEVEL V**



ATI I.D. : 80831711

TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 3 1.0'-1.5'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 09/01/88
DATE ANALYZED : 10/03/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, REV QUAL, QUAL CODE. Lists various chemical compounds and their corresponding results, mostly <0.17. Includes handwritten '0' and a vertical arrow pointing down.

(CONTINUED NEXT PAGE)

OGDEN VALIDATED

LEVEL V



TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                    | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|------------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE             | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLEETHER  | <0.17   |             |              |
| FLUORENE                     | <0.17   |             |              |
| 4-NITROANILINE               | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL   | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE       | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLEETHER   | <0.17   |             |              |
| HEXACHLOROBENZENE            | <0.17   |             |              |
| PENTACHLOROPHENOL            | <0.85   |             |              |
| PHENANTHRENE                 | <0.17   |             |              |
| ANTHRACENE                   | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE          | <0.17   |             |              |
| FLUORANTHENE                 | <0.17   |             |              |
| BENZIDINE                    | <1.7    |             |              |
| PYRENE                       | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE         | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE        | <0.34   |             |              |
| BENZO (a) ANTHRACENE         | <0.17   |             |              |
| BIS (2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                     | <0.17   |             |              |
| DI-N-OCTYLPHTHALATE          | <0.17   |             |              |
| BENZO (b) FLUORANTHENE       | <0.17   |             |              |
| BENZO (k) FLUORANTHENE       | <0.17   |             |              |
| BENZO (a) PYRENE             | <0.17   |             |              |
| INDENO (1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO (a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO (g,h,i) PERYLENE       | <0.17   |             |              |

## SURROGATE PERCENT RECOVERIES

|                          |      |
|--------------------------|------|
| NITROBENZENE-D5 (%)      | 98   |
| 2-FLUOROBIPHENYL (%)     | 128- |
| TERPHENYL (%)            | 140- |
| PHENOL-D5 (%)            | 90   |
| 2-FLUOROPHENOL (%)       | 102  |
| 2,4,6-TRIBROMOPHENOL (%) | 97   |



| ADDITIONAL MAJOR COMPOUNDS | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|----------------------------|---------|-------------|--------------|
| 2220 BRANCHED ALKANE C22   | 0.7     | NJ          |              |



ATI I.D. : 80831712

TEST : SEMI-VOLATILE ORGANICS (EPA 8270)

CLIENT : GROUNDWATER RESOURCES
PROJECT # : 8640-4
PROJECT NAME : SSFL-AREA IV
CLIENT I.D. : NEWCONS 3 3.3'-3.8'
SAMPLE MATRIX : SOIL

DATE SAMPLED : 08/24/88
DATE RECEIVED : 08/27/88
DATE EXTRACTED : 09/01/88
DATE ANALYZED : 10/03/88
UNITS : MG/KG
DILUTION FACTOR : 1

Table with columns: COMPOUNDS, RESULTS, REV QUAL, QUAL CODE. Lists various chemical compounds and their corresponding results, mostly <0.17. Includes a vertical line and a 'U' symbol in the REV QUAL column.

(CONTINUED NEXT PAGE)



T : SEMI-VOLATILE ORGANICS (EPA 8270)

| COMPOUNDS                   | RESULTS | REV<br>QUAL | QUAL<br>CODE |
|-----------------------------|---------|-------------|--------------|
| DIETHYLPHTHALATE            | <0.17   | U           |              |
| 4-CHLOROPHENYL-PHENYLEETHER | <0.17   |             |              |
| FLUORENE                    | <0.17   |             |              |
| 4-NITROANILINE              | <0.85   |             |              |
| 4,6-DINITRO-2-METHYLPHENOL  | <0.85   |             |              |
| N-NITROSODIPHENYLAMINE      | <0.17   |             |              |
| 4-BROMOPHENYL-PHENYLEETHER  | <0.17   |             |              |
| HEXACHLOROBENZENE           | <0.17   |             |              |
| PENTACHLOROPHENOL           | <0.85   |             |              |
| PHENANTHRENE                | <0.17   |             |              |
| ANTHRACENE                  | <0.17   |             |              |
| DI-N-BUTYLPHTHALATE         | <0.17   |             |              |
| FLUORANTHENE                | <0.17   |             |              |
| BENZIDINE                   | <1.7    |             |              |
| PYRENE                      | <0.17   |             |              |
| BUTYLBENZYLPHTHALATE        | <0.17   |             |              |
| 3,3-DICHLOROBENZIDINE       | <0.34   |             |              |
| BENZO(a) ANTHRACENE         | <0.17   |             |              |
| BIS(2-ETHYLHEXYL) PHTHALATE | <0.17   |             |              |
| CHRYSENE                    | <0.17   |             |              |
| I N-OCTYLPHTHALATE          | <0.17   |             |              |
| BENZO(b) FLUORANTHENE       | <0.17   |             |              |
| BENZO(k) FLUORANTHENE       | <0.17   |             |              |
| BENZO(a) PYRENE             | <0.17   |             |              |
| INDENO(1,2,3-cd) PYRENE     | <0.17   |             |              |
| DIBENZO(a,h) ANTHRACENE     | <0.17   |             |              |
| BENZO(g,h,i) PERYLENE       | <0.17   |             |              |

## SURROGATE PERCENT RECOVERIES

|                          |    |
|--------------------------|----|
| NITROBENZENE-D5 (%)      | 88 |
| 2-FLUOROBIPHENYL (%)     | 89 |
| TERPHENYL (%)            | 75 |
| PHENOL-D5 (%)            | 53 |
| 2-FLUOROPHENOL (%)       | 52 |
| 2,4,6-TRIBROMOPHENOL (%) | 91 |



-----  
ADDITIONAL MAJOR COMPOUNDS

-----  
RESULTS

-----  
NONE DETECTED

-----  
N/A